

# RADOX® OFL®

**Outstanding. Flexible. Lightweight.**

The revolutionary cable solutions  
for offshore applications

Edition 2026/07





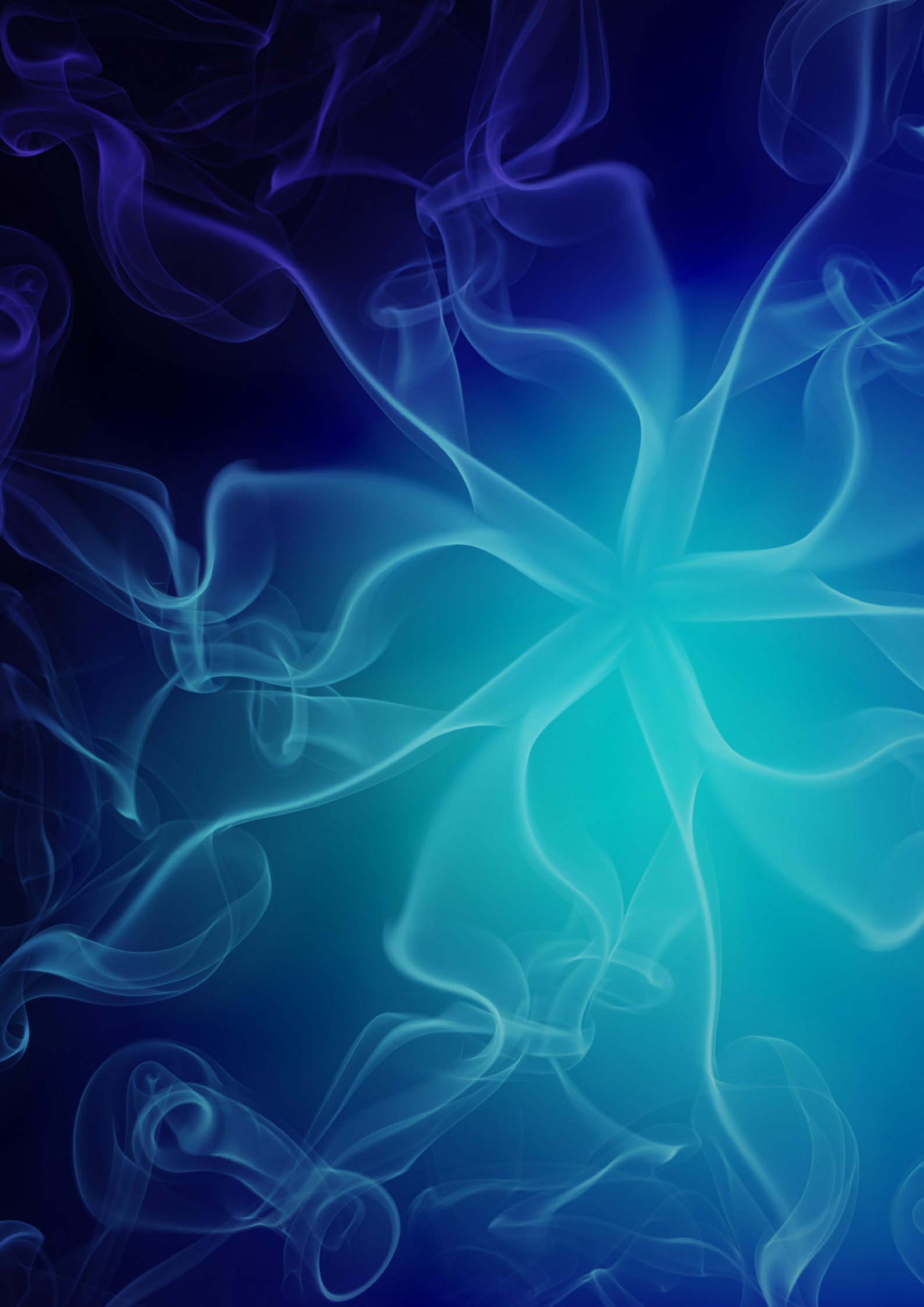
**Connecting – today and beyond**



HUBER+SUHNER, headquartered in Switzerland, develops and manufactures components and system solutions for electrical and optical connectivity and has a global presence in over 80 countries. Our cables, connectors and systems are developed based on radio frequency, fiber optics, and low frequency technologies and serve the industrial, communication and transportation sectors.

We develop products that deliver quality, reliability, and long service life even under the toughest conditions and we maintain close relationships with our customers.

In the oil and gas industry, our high-quality solutions have helped reduce maintenance costs and carbon footprint, driving the sustainability goals of these industries. As a leading provider, we deliver high safety, cost-effective, and industry-certified connectivity solutions that have proven successful in the most challenging environments.



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# Engineered for offshore applications where weight, space, and safety are critical

## Offshore oil and gas platforms



HUBER+SUHNER originally developed its unique RADOX® cable technology 40 years ago to meet the unique challenges of the railway and defense industries. Since then, our product portfolio has expanded to suit applications in harsh environments typically found in the oil and gas industry, where safety and operational reliability are critical.

## Multiple benefits, one solution

- NEK 606 compliance for oil and mud resistance (cat a – d)
- Excellent mechanical, abrasion, and heat resistance
- High and low temperature tolerant (from -50° up to +130°C)
- Up to 10 times longer lifetime even in high temperature environments such as boiler or flare installations
- Up to 60% less weight than conventional cables

## FPSOs (Floating Production, Storage and Offloading)



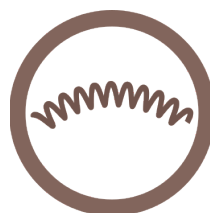
## Offshore HVDC platforms



**Safety**



**Lightweight**



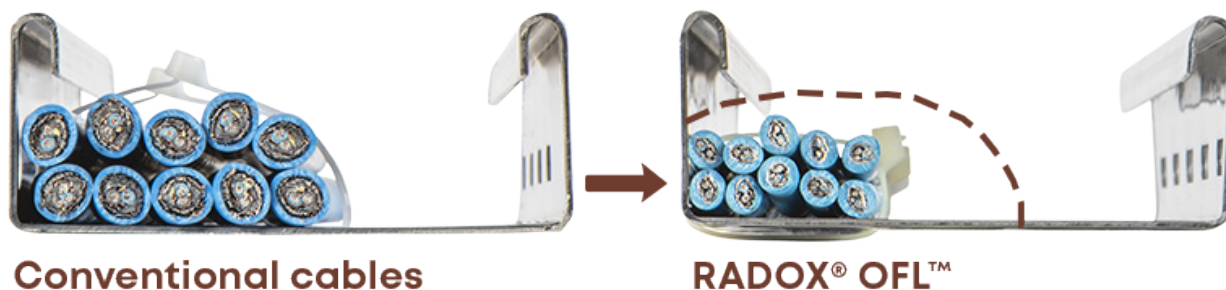
**Highly Flexible**



**Reduced Total Cost  
of Ownership**

## A safe way to save weight

Thanks to its innovative lightweight design, RADOX® OFL® cables can reduce weight by 40% to 50% on average, which immediately can result in 100 tons weight saving. As a result, the weight of accessories such as cable glands, multi-cable transits (MCTs) and cable trays can also be reduced due to their smaller size. The much smaller size of the cable allows for extreme small bending radii which means smaller and compact designs of modules are possible.



## Reduced total cost of ownership

The RADOX® OFL® cables feature the innovative electron-beam cross-link technology that delivers excellent mechanical strength and resistance against challenging environmental factors. The cable's high-performance compound ensures longer operational lifetime (up to 10 times), easier processing and installation, along with increased safety and durability – all resulting in reduced total cost of ownership when compared to other cables on the market.

## Fully compliant with DNV class program

Standards in the oil and gas industry have progressively become more stringent over the years and operators face increasing challenges in meeting both safety and cost requirements. Therefore, the DNV has introduced class programme that look into the weight, lifetime and environmental requirements for cables designed for use in offshore and marine. DNV-CP0400 – Electrical light-weight cables



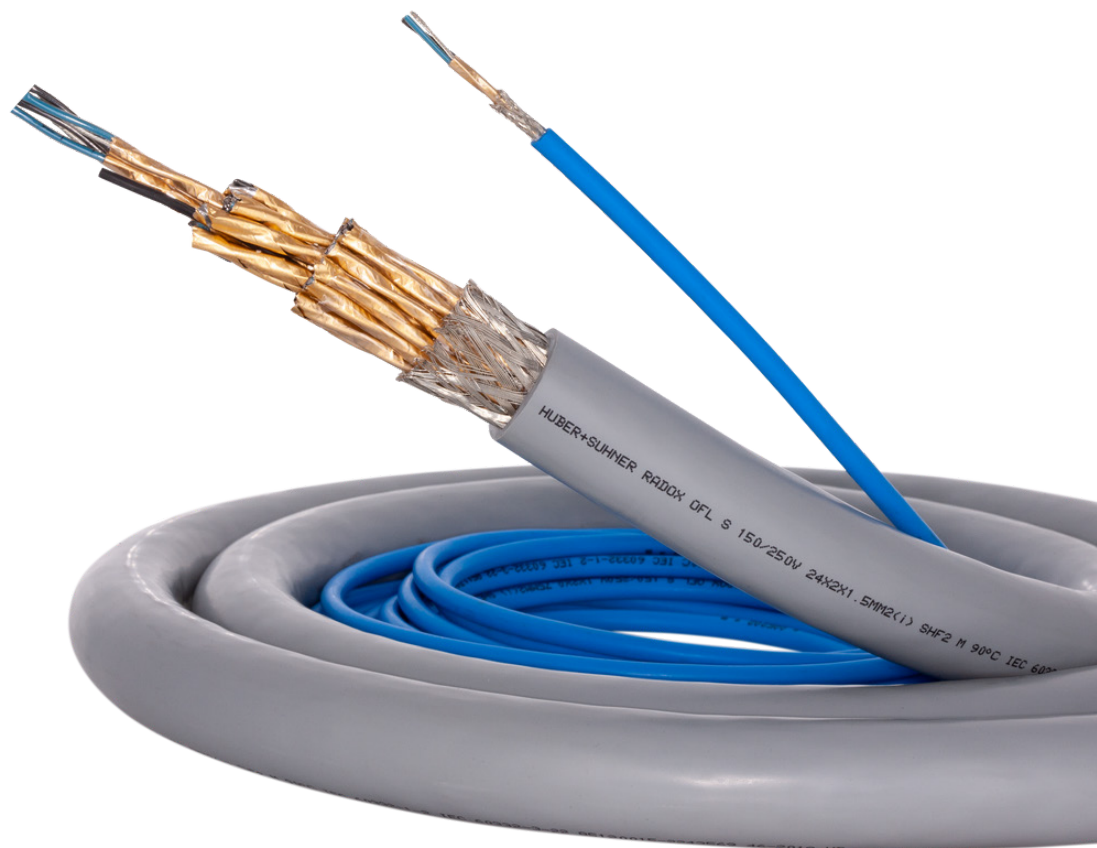
## Highest NEK TS 606:2022 standard

While most other industrial cables on the market meet only the minimum requirements of NEK 606 Category A approval, RADOX® OFL® goes beyond and is approved for NEK 606 Categories A to D.

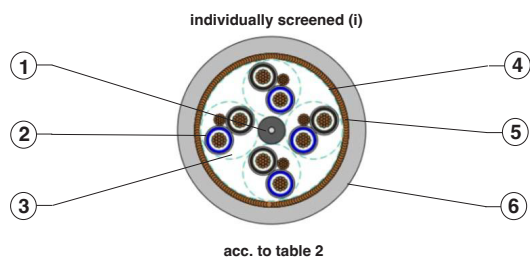


## **RADOX® OFL® Instrumentation cables**

- For high-temperature process environments like steam boiler applications
- SHF2 sheath with extreme oil, mud & chemical resistance
- Pair, triples & quadruples from 0.5–2.5 mm<sup>2</sup>
- -40...+130°C



## Instrumentation cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® S 150/250V<br/>(i) Flame &amp; Mud Resistant<br/>Instrumentation cable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description  | <p>Mud, diesel fuel, oil, ozone, hydrolysis resistant, excellent flexibility, light weight, halogen free, flame retardant, easily strippable, free of hygroscopic material, instrumentation cable following RFOU(i).</p> <p>Highly flexible cable for fixed and free installations for electrical instrument, control alarm and communication systems, applications where harsh environments can generate a potential risk on life and equipment in areas exposed to mud, oil and drilling fluids and/or safety areas.</p> |

| General data |                                                                           |                |                                                  |
|--------------|---------------------------------------------------------------------------|----------------|--------------------------------------------------|
| 1.           | <b>Center and Fillers (by definition, not used in every cable design)</b> | Characteristic | Non hygroscopic                                  |
| 2.           | <b>Cores RADOX</b>                                                        | Conductor      | Stranded tin-plated copper                       |
|              | <b>Type OFL</b>                                                           | Insulation     | RADOX TI303 (thin- wall)                         |
|              |                                                                           |                | Dual layer high performance polymer (thin-wall)  |
|              |                                                                           | Colours        | see table 2                                      |
| 3.           | <b>Element</b>                                                            | Cores          | 2 or 3 cores                                     |
|              |                                                                           | Drain wire     | Flexible tin-plated copper                       |
|              |                                                                           | Alu tape       | Wrapping                                         |
|              |                                                                           | Tape           | Wrapping                                         |
| 4.           | <b>Layer</b>                                                              | Tape           | Wrapping                                         |
| 5.           | <b>Shielding</b>                                                          | Screen         | Tin-plated copper braid, coverage density: ≥ 90% |
| 6.           | <b>Outer layer</b>                                                        | Sheath         | RADOX Elastomer S FH                             |
|              |                                                                           |                | Type SHF2 acc. to IEC 60092- 360 and NEK TS 606  |
|              |                                                                           | Colour         | Grey or Blue acc. NEK TS 606: 2016               |

## Printing on sheath

[a] HUBER+SUHNER RADOX OFL S 150/250V [b] SHF2 M 90°C IEC 60332-1-2

IEC 60332-3-22 [c]-[d] [e] [f]

|     |                          |              |
|-----|--------------------------|--------------|
| [a] | Meter marking (in m)     | = 123456 = m |
| [b] | Construction (in mm²)    | 2x2x0.75(i)  |
| [c] | Part number              | 12345678     |
| [d] | Batch number             | 1234567      |
| [e] | Production week and year | 01-2025      |
| [f] | Production place         | CH           |

## Technical data

|                                     |               |                    |
|-------------------------------------|---------------|--------------------|
| acc. to IEC 60092 - 376 and - 350   |               |                    |
| Rated voltage                       | $U_o/U (U_m)$ | 150/250 (300) V AC |
| Test voltage                        |               | 3500 V AC          |
| Max. voltage conductor to earth     |               | 250 V DC           |
| Max. voltage conductor to conductor |               | 500 V DC           |
| Test voltage                        |               | 8400 V DC          |



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### Storage, Installation and Operation recommendation

|                                                             |           |          |
|-------------------------------------------------------------|-----------|----------|
| Max. rated conductor temperature normal operation IEC 60092 |           | +90 °C   |
| Temperature index of core insulation TI/20kh                |           | +145 °C  |
| Temperature index of sheath TI/20kh                         |           | +130 °C  |
| Max. storage temperature                                    |           | +40 °C   |
| Max. storage temperature ≤ 5000h                            |           | +65 °C   |
| Min. operation, installation and handling temperature       |           | -40 °C   |
| Min. storage temperature                                    |           | -50 °C   |
| Max. tensile load, only for installation                    |           | 50 x A N |
| A = number of conductors cross section mm <sup>2</sup>      |           |          |
| Min. bending radius fixed installation                      | D ≤ 12 mm | 3 x D    |
|                                                             | D > 12 mm | 4 x D    |
| free movement                                               | D ≤ 12 mm | 5 x D    |
|                                                             | D > 12 mm | 6 x D    |

### The cable sheath passes the following fluid tests

|                                                                       |               |                          |
|-----------------------------------------------------------------------|---------------|--------------------------|
| Drilling fluid resistance for SHF mud                                 | Fulfilled     | NEK TS 606, 4.4.1        |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | NEK TS 606, 4.4.1 Cat. b |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Base oil EDC 95-11                                                    | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Drilling fluid resistance                                             | Fulfilled     | IEC 60092-360            |
| Mineral oil type IRM 902                                              | 24 h / 100 °C | IEC 60811-404            |
| Mineral oil type IRM 902                                              | 7 d / 100 °C  | IEC 60092-360, An. C     |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | IEC 60092-360, An. D     |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | IEC 60092-360, An. D     |
| Oil based test fluid (CAS no.: 64742-46-7)                            | 56 d / 70 °C  | IEC 60092-360, An. D     |

### The cable passes the following fire tests

|                                         |                        |                             |
|-----------------------------------------|------------------------|-----------------------------|
| Fire protection in ships                | Fulfilled              | IEC 60092-350 + DNV-CP-0400 |
| Vertical flame spread of a single cable | 50 < L ≤ 540 mm        | IEC 60332-1-2               |
| Vertical flame spread of bunched cables | L ≤ 2.5 m              | IEC 60332-3- 22 Cat. A      |
| Smoke density                           | T ≥ 70 %               | IEC 61034-1,2               |
| Corrosivity of combustion gases         | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754-2                 |
| Amount of halogen acid gas              | HCl+HBr ≤ 0.5%         | IEC 60754-1                 |
| Content of fluorine                     | HF ≤ 0.1 %             | IEC 60684-2, 45.2           |
| Toxicity                                | ITC ≤ 3                | EN 50305, 9.2               |

### Applicable standards

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DNV-CP-0400    | Class programme - Type approval - Lightweight electric cables                                                                     |
| EN 50306       | Railway rolling stock cables having special fire performance - Thin wall                                                          |
| NEK TS 606     | Cables for offshore installation, halogenfree and/or mud resistant                                                                |
| IEC 60092- 350 | General construction and test methods of cables for shipboard and offshore applications                                           |
| IEC 60092- 360 | Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables |
| IEC 60092- 376 | Electrical Installations in ships, cables for control and instrumentation circuits 150/250V (300V)                                |

### Approvals

|     |                        |
|-----|------------------------|
| DNV | Certificate TAE00004KB |
|-----|------------------------|

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**Table 1: Capacitance, Inductance & L/R ratio**

| Cable<br>[mm²] | Family    | Type of measuring<br>Core - Core |                        | L/R Ratio<br>[µH/ Ω] | Resistance at<br>20°C max.<br>[Ω/km] |
|----------------|-----------|----------------------------------|------------------------|----------------------|--------------------------------------|
|                |           | C<br>nom.<br>[nf/km]             | L<br>nom.<br>[mH/km]** |                      |                                      |
| pair 0.75      | OFL S (i) | 150                              | 0.55                   | 10.3                 | 26.7                                 |
| triple 0.75    | OFL S (i) | 140                              | 0.62                   | 11.6                 | 26.7                                 |
| pair 1.5       | OFL S (i) | 175                              | 0.53                   | 19.3                 | 13.7                                 |
| triple 1.5     | OFL S (i) | 165*                             | 0.6*                   | 21.9*                | 13.7                                 |
| pair 2.5       | OFL S (i) | 195                              | 0.52                   | 31.7                 | 8.21                                 |
| triple 2.5     | OFL S (i) | 185*                             | 0.57*                  | 34.7*                | 8.21                                 |

\*calculated values, verification pending

\*\*measurements were carried at 1kHz, all values refer to (1xnxm)mm²

EX attachment: worst case values depend on construction of cables and customer applications, therefore worst case values (inductivity / capacity / LR ratio) are available only on request.

**Table 2: individually screened (i)**

| Cable Type<br>[n x mm²] | Conductor |             | Core        |            | Drain wire<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm²] | Cable    |                            |                          | Sheath colour | H+S part number |
|-------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                         | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                           |                       |                                    | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 1X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 3.0                   | 1.6                                | 5.75±0.3 | 3.3                        | 6.5                      | BU            | 85117001        |
| 1X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 3.0                   | 1.6                                | 5.75±0.3 | 3.3                        | 6.5                      | GY            | 85116997        |
| 1X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 3.3                   | 1.7                                | 6.0±0.3  | 4.1                        | 7.3                      | BU            | 85120001        |
| 1X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 3.3                   | 1.7                                | 6.0±0.3  | 4.1                        | 7.3                      | GY            | 85117011        |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 6.1                   | 2.8                                | 8.70±0.3 | 6.4                        | 12.9                     | BU            | 85116990        |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 6.1                   | 2.8                                | 8.70±0.3 | 6.4                        | 12.9                     | GY            | 85117002        |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 6.8                   | 3.1                                | 9.75±0.3 | 8.1                        | 16.2                     | BU            | 85116992        |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 6.8                   | 3.1                                | 9.75±0.3 | 8.1                        | 16.2                     | GY            | 85186544        |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 7.7                   | 3.3                                | 10.0±0.3 | 10.5                       | 19.1                     | BU            | 85119993        |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 7.7                   | 3.3                                | 10.0±0.3 | 10.5                       | 19.1                     | GY            | 85117005        |
| 4X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 8.4                   | 3.8                                | 11.0±0.4 | 13.8                       | 23.2                     | BU            | 85120003        |
| 4X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 8.4                   | 3.8                                | 11.0±0.4 | 13.8                       | 23.2                     | GY            | 85117013        |
| 8X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 9.4                   | 5.55                               | 12.0±0.4 | 20.1                       | 29.6                     | BU            | 85119995        |
| 8X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 9.4                   | 5.55                               | 12.0±0.4 | 20.1                       | 29.6                     | GY            | 85117007        |
| 8X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 11.5                  | 7.1                                | 14.7±0.4 | 27.2                       | 42.6                     | BU            | 85120004        |
| 8X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 11.5                  | 7.1                                | 14.7±0.4 | 27.2                       | 42.6                     | GY            | 85116993        |
| 12X2X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 12.2                  | 7.5                                | 15.6±0.5 | 29.1                       | 44.4                     | BU            | 85119996        |
| 12X2X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 12.2                  | 7.5                                | 15.6±0.5 | 29.1                       | 44.4                     | GY            | 85117008        |
| 12X3X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 13.3                  | 8.3                                | 16.8±0.5 | 38.7                       | 55.5                     | BU            | 85120005        |
| 12X3X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 13.3                  | 8.3                                | 16.8±0.5 | 38.7                       | 55.5                     | GY            | 85117015        |
| 16X2X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 14.4                  | 8.3                                | 16.7±0.5 | 37.7                       | 56.2                     | BU            | 85119997        |
| 16X2X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 14.4                  | 8.3                                | 16.7±0.5 | 37.7                       | 56.2                     | GY            | 85117009        |
| 16X3X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 15.6                  | 9.5                                | 19.0±0.5 | 50.1                       | 72.4                     | BU            | 85116994        |
| 16X3X0.75               | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 15.6                  | 9.5                                | 19.0±0.5 | 50.1                       | 72.4                     | GY            | 85117016        |

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>Ø max. [mm] | Bundle<br>Ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | Ø max. [mm] | Ø nom. [mm] | Colours    |                           |                       |                                                 | Ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 19X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 15.1                  | 9.5                                             | 18.3±0.5 | 44.5                       | 65.2                     | BU            | 85116991        |
| 19X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 15.1                  | 9.5                                             | 18.3±0.5 | 44.5                       | 65.2                     | GY            | 85119999        |
| 19X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 16.4                  | 9.5                                             | 19.3±0.5 | 57.8                       | 80.2                     | BU            | 85116995        |
| 19X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 16.4                  | 9.5                                             | 19.3±0.5 | 57.8                       | 80.2                     | GY            | 85117020        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 17.4                  | 10.1                                            | 20.7±0.5 | 54.9                       | 80.5                     | BU            | 85120000        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 17.4                  | 10.1                                            | 20.7±0.5 | 54.9                       | 80.5                     | GY            | 85117010        |
| 24X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 19.7                  | 11.9                                            | 23.1±0.5 | 73.0                       | 104.4                    | BU            | 85116996        |
| 24X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 0.9                       | 19.7                  | 11.9                                            | 23.1±0.5 | 73.0                       | 104.4                    | GY            | 85117021        |
| 32X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 20.1                  | 11.9                                            | 23.5±0.5 | 71.1                       | 103.2                    | BU            | 85120008        |
| 32X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 20.1                  | 11.9                                            | 23.5±0.5 | 71.1                       | 103.2                    | GY            | 85120027        |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 4.1                   | 2.0                                             | 6.8±0.3  | 5.2                        | 9.3                      | BU            | 85117024        |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 4.1                   | 2.0                                             | 6.8±0.3  | 5.2                        | 9.3                      | GY            | 85117022        |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 4.4                   | 2.2                                             | 7.2±0.3  | 6.8                        | 11.2                     | BU            | 85120016        |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 4.4                   | 2.2                                             | 7.2±0.3  | 6.8                        | 11.2                     | GY            | 85117038        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 8.4                   | 3.5                                             | 10.7±0.4 | 10.4                       | 21.0                     | BU            | 85117026        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 8.4                   | 3.5                                             | 10.7±0.4 | 10.4                       | 21.0                     | GY            | 85117025        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 9.0                   | 5.6                                             | 12.3±0.4 | 14.8                       | 28.5                     | BU            | 85117028        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 9.0                   | 5.6                                             | 12.3±0.4 | 14.8                       | 28.5                     | GY            | 85186547        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 9.9                   | 5.6                                             | 12.6±0.4 | 19.0                       | 31.1                     | BU            | 85117004        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 9.9                   | 5.6                                             | 12.6±0.4 | 19.0                       | 31.1                     | GY            | 85116297        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 11.0                  | 6.3                                             | 14.3±0.4 | 25.2                       | 39.7                     | BU            | 85117029        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 11.0                  | 6.3                                             | 14.3±0.4 | 25.2                       | 39.7                     | GY            | 85186549        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 12.8                  | 7.1                                             | 16.5±0.5 | 27.8                       | 48.4                     | BU            | 85137338        |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 13.1                  | 7.9                                             | 16.6±0.5 | 35.0                       | 52.4                     | BU            | 85120010        |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 13.1                  | 7.9                                             | 16.6±0.5 | 35.0                       | 52.4                     | GY            | 85117030        |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 15.2                  | 8.9                                             | 18.8±0.5 | 47.4                       | 71.5                     | BU            | 85120019        |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 15.2                  | 8.9                                             | 18.8±0.5 | 47.4                       | 71.5                     | GY            | 85117043        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 16.4                  | 9.5                                             | 19.3±0.5 | 50.3                       | 72.7                     | BU            | 85120011        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 16.4                  | 9.5                                             | 19.3±0.5 | 50.3                       | 72.7                     | GY            | 85117031        |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 18.7                  | 11.3                                            | 22.2±0.5 | 68.4                       | 97.8                     | BU            | 85120024        |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 18.7                  | 11.3                                            | 22.2±0.5 | 68.4                       | 97.8                     | GY            | 85117045        |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 19.3                  | 11.3                                            | 22.3±0.5 | 65.3                       | 95.0                     | BU            | 85120013        |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 19.3                  | 11.3                                            | 22.3±0.5 | 65.3                       | 95.0                     | GY            | 85117121        |
| 16X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 21.5                  | 16.2                                            | 25.7±0.6 | 92.4                       | 131.6                    | BU            | 85120025        |
| 16X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 21.5                  | 16.2                                            | 25.7±0.6 | 92.4                       | 131.6                    | GY            | 85117496        |
| 19X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 20.1                  | 11.9                                            | 23.6±0.5 | 76.7                       | 107.9                    | BU            | 85120014        |
| 19X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 20.1                  | 11.9                                            | 23.6±0.5 | 76.7                       | 107.9                    | GY            | 85117034        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 23.1                  | 16.2                                            | 26.5±0.6 | 98.0                       | 140.0                    | BU            | 85117006        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 23.1                  | 16.2                                            | 26.5±0.6 | 98.0                       | 140.0                    | GY            | 85120015        |
| 24X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 25.7                  | 22.2                                            | 30.4±0.6 | 136.8                      | 185.9                    | BU            | 85117046        |

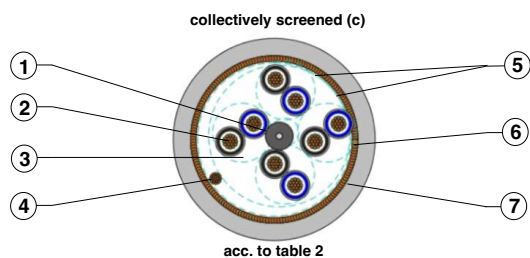
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→ **RADOX® OFL® S 150/250V (i) Flame & Mud Resistant Instrumentation cable**  
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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>Ø max. [mm] | Bundle<br>Ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | Ø max. [mm] | Ø nom. [mm] | Colours    |                           |                       |                                                 | Ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 24X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 25.7                  | 22.2                                            | 30.4±0.6 | 136.8                      | 185.9                    | GY            | 85117497        |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 26.7                  | 22.2                                            | 30.2±0.6 | 132.3                      | 182.0                    | BU            | 85117027        |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 26.7                  | 22.2                                            | 30.2±0.6 | 132.3                      | 182.0                    | GY            | 85180879        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | BU            | 85119992        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | GY            | 85117044        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.3                     | BU            | 85119994        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.3                     | GY            | 85117047        |

## Instrumentation cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® S 150/250V (c) Flame &amp; Mud Resistant Instrumentation cable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Description  | <p>Mud, diesel fuel, oil, ozone, hydrolysis resistant, excellent flexibility, light weight, halogen free, flame retardant, easily strippable, free of hygroscopic material, instrumentation cable following RFOU(c).</p> <p>Highly flexible cable for fixed and free installations for electrical instrument, control alarm and communication systems, applications where harsh environments can generate a potential risk on life and equipment in areas exposed to mud, oil and drilling fluids and/or safety areas.</p> |

| General data |                                      |                |                                                        |
|--------------|--------------------------------------|----------------|--------------------------------------------------------|
| 1.           | <b>Center and Fillers (optional)</b> | Characteristic | Non hygroscopic                                        |
| 2.           | <b>Cores RADOX</b>                   | Conductor      | Stranded tin-plated copper                             |
|              | <b>Type OFL</b>                      | Insulation     | RADOX TI303 (thin wall)                                |
|              |                                      |                | Dual layer high performance polymer (thin wall)        |
|              |                                      | Colours        | see table 2                                            |
| 3.           | <b>Element</b>                       | Cores          | 2 or 3 cores                                           |
| 4.           | <b>Conductor</b>                     | Drain wire     | Flexible tin-plated copper                             |
| 5.           | <b>First layer</b>                   | Alu tape       | Wrapping                                               |
| 5.           | <b>Second layer</b>                  | Tape           | Wrapping                                               |
| 6.           | <b>Shielding</b>                     | Screen         | Tin-plated copper braid, coverage density: $\geq 90\%$ |
| 7.           | <b>Outer layer</b>                   | Sheath         | RADOX Elastomer S FH                                   |
|              |                                      |                | Type SHF2 acc. to IEC 60092- 360 and NEK TS 606        |
|              |                                      | Colour         | Grey or Blue acc. NEK TS 606: 2016                     |

## Printing on sheath

[a] HUBER+SUHNER RADOX OFL S 150/250V [b] SHF2 M 90°C IEC 60332-1-2

IEC 60332-3-22 [c]-[d] [e] [f]

|     |                                    |              |
|-----|------------------------------------|--------------|
| [a] | Meter marking (in m)               | = 123456 = m |
| [b] | Construction (in mm <sup>2</sup> ) | 2x2x0.75(c)  |
| [c] | Part number                        | 12345678     |
| [d] | Batch number                       | 1234567      |
| [e] | Production week and year           | 01-2025      |
| [f] | Production place                   | CH           |

## Technical data

|                                     |               |                    |
|-------------------------------------|---------------|--------------------|
| acc. to IEC 60092 - 376 and - 350   |               |                    |
| Rated voltage                       | $U_o/U (U_m)$ | 150/250 (300) V AC |
| Test voltage                        |               | 3500 V AC          |
| Max. voltage conductor to earth     |               | 250 V DC           |
| Max. voltage conductor to conductor |               | 500 V DC           |
| Test voltage                        |               | 8400 V DC          |



→ **RADOX® OFL® S 150/250V (c) Flame & Mud Resistant Instrumentation cable**  
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### Storage, Installation and Operation recommendation

|                                                             |           |          |
|-------------------------------------------------------------|-----------|----------|
| Max. rated conductor temperature normal operation IEC 60092 |           | +90 °C   |
| Temperature index of core insulation TI/20kh                |           | +145 °C  |
| Temperature index of sheath TI/20kh                         |           | +130 °C  |
| Max. storage temperature                                    |           | +40 °C   |
| Max. storage temperature ≤ 5000h                            |           | +65 °C   |
| Min. operation, installation and handling temperature       |           | -40 °C   |
| Min. storage temperature                                    |           | -50 °C   |
| Max. tensile load, only for installation                    |           | 50 x A N |
| A = number of conductors cross section mm <sup>2</sup>      |           |          |
| Min. bending radius fixed installation                      | D ≤ 12 mm | 3 x D    |
|                                                             | D > 12 mm | 4 x D    |
| free movement                                               | D ≤ 12 mm | 5 x D    |
|                                                             | D > 12 mm | 6 x D    |

### The cable sheath passes the following fluid tests

|                                                                       |               |                          |
|-----------------------------------------------------------------------|---------------|--------------------------|
| Drilling fluid resistance for SHF mud                                 | Fulfilled     | NEK TS 606, 4.4.1        |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | NEK TS 606, 4.4.1 Cat. b |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Base oil EDC 95-11                                                    | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Drilling fluid resistance                                             | Fulfilled     | IEC 60092-360            |
| Mineral oil type IRM 902                                              | 24 h / 100 °C | IEC 60811-404            |
| Mineral oil type IRM 902                                              | 7 d / 100 °C  | IEC 60092-360, An. C     |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | IEC 60092-360, An. D     |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | IEC 60092-360, An. D     |
| Oil based test fluid (CAS no.: 64742-46-7)                            | 56 d / 70 °C  | IEC 60092-360, An. D     |

### The cable passes the following fire tests

|                                         |                        |                             |
|-----------------------------------------|------------------------|-----------------------------|
| Fire protection in ships                | Fulfilled              | IEC 60092-350 + DNV-CP-0400 |
| Vertical flame spread of a single cable | 50 < L ≤ 540 mm        | IEC 60332-1-2               |
| Vertical flame spread of bunched cables | L ≤ 2.5 m              | IEC 60332-3- 22 Cat. A      |
| Smoke density                           | T ≥ 70 %               | IEC 61034-1,2               |
| Corrosivity of combustion gases         | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754-2                 |
| Amount of halogen acid gas              | HCl+HBr ≤ 0.5%         | IEC 60754-1                 |
| Content of fluorine                     | HF ≤ 0.1 %             | IEC 60684-2, 45.2           |
| Toxicity                                | ITC ≤ 3                | EN 50305, 9.2               |

### Applicable standards

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DNV-CP-0400    | Class programme - Type approval - Lightweight electric cables                                                                     |
| EN 50306       | Railway rolling stock cables having special fire performance - Thin wall                                                          |
| NEK TS 606     | Cables for offshore installation, halogenfree and/or mud resistant                                                                |
| IEC 60092- 350 | General construction and test methods of cables for shipboard and offshore applications                                           |
| IEC 60092- 360 | Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables |
| IEC 60092- 376 | Electrical Installations in ships, cables for control and instrumentation circuits 150/250V (300V)                                |

### Approvals

|     |                        |
|-----|------------------------|
| DNV | Certificate TAE00004KB |
|-----|------------------------|

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→ **RADOX® OFL® S 150/250V (c) Flame & Mud Resistant Instrumentation cable**  
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**Table 1: Capacitance, Inductance & L/R ratio**

| Cable<br>[mm²] | Family    | Type of measuring<br>Core - Core |                        | L/R Ratio<br>[µH/ Ω] | Resistance at<br>20°C max.<br>[Ω/km] |
|----------------|-----------|----------------------------------|------------------------|----------------------|--------------------------------------|
|                |           | C<br>nom.<br>[nf/km]             | L<br>nom.<br>[mH/km]** |                      |                                      |
| pair 0.75      | OFL S (c) | 150                              | 0.55                   | 10.3                 | 26.7                                 |
| triple 0.75    | OFL S (c) | 140                              | 0.62                   | 11.6                 | 26.7                                 |
| pair 1         | OFL S (c) | 165*                             | 0.54*                  | 13.5*                | 20                                   |
| triple 1       | OFL S (c) | 155*                             | 0.61*                  | 15.3*                | 20                                   |
| pair 1.5       | OFL S (c) | 175                              | 0.53                   | 19.3                 | 13.7                                 |
| triple 1.5     | OFL S (c) | 165*                             | 0.6*                   | 21.9*                | 13.7                                 |
| pair 2.5       | OFL S (c) | 195                              | 0.52                   | 31.7                 | 8.21                                 |
| triple 2.5     | OFL S (c) | 185*                             | 0.57*                  | 34.7*                | 8.21                                 |

\*calculated values, verification pending

\*\*measurements were carried at 1kHz, all values refer to (1xnxm)mm²

EX attachment: worst case values depend on construction of cables and customer applications, therefore worst case values (inductivity / capacity / LR ratio) are available only on request.

**Table 2: collectively screened (c)**

| Cable Type<br>[n x mm²] | Conductor |             | Core        |            | Drain wire<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm²] | Cable    |                            |                          | Sheath colour | H+S part number                                              |
|-------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|------------------------------------|----------|----------------------------|--------------------------|---------------|--------------------------------------------------------------|
|                         | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                           |                       |                                    | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                                                              |
| 1X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                       | 3.0                   | 1.6                                | 5.75±0.3 | 3.3                        | 6.5                      | BK            | 85185973                                                     |
| 1X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                       | 3.0                   | 1.6                                | 5.75±0.3 | 3.3                        | 6.5                      | BU            | 85189786                                                     |
| 1X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 3.0                   | 1.6                                | 5.75±0.3 | 3.3                        | 6.5                      | BU            | Equal to<br>type (i) see<br>Technical<br>Datasheet<br>586795 |
| 1X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 0.9                       | 3.0                   | 1.6                                | 5.75±0.3 | 3.3                        | 6.5                      | GY            |                                                              |
| 1X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                       | 3.3                   | 1.7                                | 6.00±0.3 | 4.1                        | 7.3                      | BK            | 85185986                                                     |
| 1X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                       | 3.3                   | 1.7                                | 6.00±0.3 | 4.1                        | 7.3                      | BU            | 85189797                                                     |
| 1X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                       | 3.3                   | 1.7                                | 6.00±0.3 | 4.1                        | 7.3                      | BU            | Equal to<br>type (i) see<br>Technical<br>Datasheet<br>586795 |
| 1X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                       | 3.3                   | 1.7                                | 6.00±0.3 | 4.1                        | 7.3                      | GY            |                                                              |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 6.5                   | 3.0                                | 9.40±0.3 | 5.7                        | 14.5                     | BK            | 85185974                                                     |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 6.5                   | 3.0                                | 9.40±0.3 | 5.7                        | 14.5                     | BU            | 85189787                                                     |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 6.5                   | 3.0                                | 9.40±0.3 | 5.7                        | 14.5                     | BU            | 85117672                                                     |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 6.5                   | 3.0                                | 9.40±0.3 | 5.7                        | 14.5                     | GY            | 85116813                                                     |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 7.0                   | 3.3                                | 9.95±0.3 | 7.3                        | 16.9                     | BK            | 85185987                                                     |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 7.0                   | 3.3                                | 9.95±0.3 | 7.3                        | 16.9                     | BU            | 85189798                                                     |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 7.0                   | 3.3                                | 9.95±0.3 | 7.3                        | 16.9                     | BU            | 85119964                                                     |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 7.0                   | 3.3                                | 9.95±0.3 | 7.3                        | 16.9                     | GY            | 85116820                                                     |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 7.3                   | 3.3                                | 10.4±0.4 | 8.7                        | 18.5                     | BK            | 85185975                                                     |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 7.3                   | 3.3                                | 10.4±0.4 | 8.7                        | 18.5                     | BU            | 85189788                                                     |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 7.3                   | 3.3                                | 10.4±0.4 | 8.7                        | 18.5                     | BU            | 85116802                                                     |

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→ **RADOX® OFL® S 150/250V (c) Flame & Mud Resistant Instrumentation cable**  
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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                           |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 4X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 7.3                   | 3.3                                             | 10.4±0.4 | 8.7                        | 18.5                     | GY            | 85116296        |
| 4X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 7.9                   | 3.8                                             | 10.9±0.4 | 12.0                       | 21.8                     | BK            | 85185988        |
| 4X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 7.9                   | 3.8                                             | 10.9±0.4 | 12.0                       | 21.8                     | BU            | 85189799        |
| 4X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 7.9                   | 3.8                                             | 10.9±0.4 | 12.0                       | 21.8                     | BU            | 85116809        |
| 4X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 7.9                   | 3.8                                             | 10.9±0.4 | 12.0                       | 21.8                     | GY            | 85186541        |
| 5X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 8.0                   | 3.5                                             | 11.3±0.4 | 10.3                       | 21.5                     | BK            | 85185853        |
| 5X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 8.0                   | 3.5                                             | 11.3±0.4 | 10.3                       | 21.5                     | BU            | 85189789        |
| 5X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 9.2                   | 4.2                                             | 12.4±0.4 | 14.5                       | 27.4                     | BK            | 85185879        |
| 5X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 9.2                   | 4.2                                             | 12.4±0.4 | 14.5                       | 27.4                     | BU            | 85189800        |
| 6X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 8.8                   | 5.6                                             | 11.8±0.4 | 13.6                       | 25.9                     | BK            | 85185854        |
| 6X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 8.8                   | 5.6                                             | 11.8±0.4 | 13.6                       | 25.9                     | BU            | 85189790        |
| 6X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 10.1                  | 5.9                                             | 13.6±0.4 | 18.4                       | 33.4                     | BK            | 85185880        |
| 6X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 10.1                  | 5.9                                             | 13.6±0.4 | 18.4                       | 33.4                     | BU            | 85189801        |
| 8X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 9.3                   | 5.6                                             | 12.3±0.4 | 16.5                       | 28.2                     | BU            | 85116805        |
| 8X2X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 9.3                   | 5.6                                             | 12.3±0.4 | 16.5                       | 28.2                     | GY            | 85116814        |
| 8X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 10.0                  | 6.3                                             | 13.5±0.4 | 22.9                       | 35.6                     | BU            | 85119977        |
| 8X3X0.75                             | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 10.0                  | 6.3                                             | 13.5±0.4 | 22.9                       | 35.6                     | GY            | 85116822        |
| 10X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 11.1                  | 6.7                                             | 14.2±0.4 | 20.4                       | 35.5                     | BK            | 85185855        |
| 10X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 11.1                  | 6.7                                             | 14.2±0.4 | 20.4                       | 35.5                     | BU            | 85189792        |
| 10X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 12.3                  | 7.1                                             | 15.6±0.5 | 27.8                       | 46.1                     | BK            | 85185881        |
| 10X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 12.3                  | 7.1                                             | 15.6±0.5 | 27.8                       | 46.1                     | BU            | 85189802        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 11.2                  | 6.7                                             | 14.5±0.4 | 23.3                       | 38.0                     | BK            | 85185977        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 11.2                  | 6.7                                             | 14.5±0.4 | 23.3                       | 38.0                     | BU            | 85189793        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 11.2                  | 6.7                                             | 14.5±0.4 | 23.3                       | 38.0                     | BU            | 85116806        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 11.2                  | 6.7                                             | 14.5±0.4 | 23.3                       | 38.0                     | GY            | 85116816        |
| 12X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 12.2                  | 7.1                                             | 15.7±0.5 | 33.2                       | 46.8                     | BK            | 85185882        |
| 12X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 12.2                  | 7.1                                             | 15.7±0.5 | 33.2                       | 46.8                     | BU            | 85189803        |
| 12X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 12.2                  | 7.1                                             | 15.7±0.5 | 33.2                       | 46.8                     | BU            | 85119978        |
| 12X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 12.2                  | 7.1                                             | 15.7±0.5 | 33.2                       | 46.8                     | GY            | 85116823        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 12.6                  | 7.5                                             | 16.2±0.5 | 28.2                       | 46.6                     | BK            | 85185856        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 12.6                  | 7.5                                             | 16.2±0.5 | 28.2                       | 46.6                     | BU            | 85189794        |
| 16X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 12.9                  | 7.5                                             | 16.4±0.5 | 29.8                       | 48.3                     | BU            | 85116807        |
| 16X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 12.9                  | 7.5                                             | 16.4±0.5 | 29.8                       | 48.3                     | GY            | 85116817        |
| 16X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 13.7                  | 8.3                                             | 17.2±0.5 | 41.7                       | 61.0                     | BU            | 85116810        |
| 16X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 13.7                  | 8.3                                             | 17.2±0.5 | 41.7                       | 61.0                     | GY            | 85116824        |
| 19X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 13.9                  | 8.3                                             | 17.3±0.5 | 34.6                       | 54.3                     | BU            | 85116808        |
| 19X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 13.9                  | 8.3                                             | 17.3±0.5 | 34.6                       | 54.3                     | GY            | 85116818        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 13.9                  | 7.9                                             | 17.5±0.5 | 36.0                       | 55.4                     | BK            | 85185857        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 13.9                  | 7.9                                             | 17.5±0.5 | 36.0                       | 55.4                     | BU            | 85189795        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 16.3                  | 9.5                                             | 19.9±0.5 | 42.9                       | 67.8                     | BK            | 85185978        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 1.11                      | 16.3                  | 9.5                                             | 19.9±0.5 | 42.9                       | 67.8                     | BU            | 85189796        |

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→ **RADOX® OFL® S 150/250V (c) Flame & Mud Resistant Instrumentation cable**  
586 897 I (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                           |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 16.3                  | 9.5                                             | 19.9±0.5 | 42.9                       | 67.8                     | BU            | 85119962        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU     | 1.11                      | 16.3                  | 9.5                                             | 19.9±0.5 | 42.9                       | 67.8                     | GY            | 85116819        |
| 24X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 17.6                  | 10.7                                            | 21.4±0.5 | 61.9                       | 86.1                     | BK            | 85185883        |
| 24X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 1.11                      | 17.6                  | 10.7                                            | 21.4±0.5 | 61.9                       | 86.1                     | BU            | 85189804        |
| 24X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 17.6                  | 10.7                                            | 21.4±0.5 | 61.9                       | 86.1                     | BU            | 85119979        |
| 24X3X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, BU, BN | 1.11                      | 17.6                  | 10.7                                            | 21.4±0.5 | 61.9                       | 86.1                     | GY            | 85116852        |
| 1X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                      | 3.3                   | 1.7                                             | 6.05±0.3 | 4.1                        | 7.5                      | BK            | 85185858        |
| 1X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                      | 3.3                   | 1.7                                             | 6.05±0.3 | 4.1                        | 7.5                      | BU            | 85189805        |
| 1X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                      | 3.6                   | 1.7                                             | 6.35±0.3 | 5.1                        | 8.4                      | BK            | 85185884        |
| 1X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                      | 3.6                   | 1.7                                             | 6.35±0.3 | 5.1                        | 8.4                      | BU            | 85189815        |
| 2X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 7.2                   | 3.3                                             | 10.3±0.4 | 6.7                        | 17.4                     | BK            | 85185859        |
| 2X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 7.2                   | 3.3                                             | 10.3±0.4 | 6.7                        | 17.4                     | BU            | 85189806        |
| 2X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 7.7                   | 3.5                                             | 10.8±0.4 | 8.7                        | 20.0                     | BK            | 85185885        |
| 2X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 7.7                   | 3.5                                             | 10.8±0.4 | 8.7                        | 20.0                     | BU            | 85189816        |
| 4X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 8.0                   | 3.5                                             | 11.2±0.4 | 10.6                       | 21.7                     | BK            | 85185860        |
| 4X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 8.0                   | 3.5                                             | 11.2±0.4 | 10.6                       | 21.7                     | BU            | 85189807        |
| 4X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 9.0                   | 5.2                                             | 12.4±0.4 | 15.8                       | 28.7                     | BK            | 85185886        |
| 4X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 9.0                   | 5.2                                             | 12.4±0.4 | 15.8                       | 28.7                     | BU            | 85189817        |
| 5X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 8.9                   | 5.6                                             | 12.3±0.4 | 14.2                       | 26.9                     | BK            | 85185861        |
| 5X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 8.9                   | 5.6                                             | 12.3±0.4 | 14.2                       | 26.9                     | BU            | 85189808        |
| 5X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 10.1                  | 5.9                                             | 13.6±0.4 | 19.2                       | 35.0                     | BK            | 85185887        |
| 5X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 10.1                  | 5.9                                             | 13.6±0.4 | 19.2                       | 35.0                     | BU            | 85189818        |
| 6X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 10.2                  | 6.3                                             | 13.8±0.4 | 16.8                       | 32.0                     | BK            | 85185862        |
| 6X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 10.2                  | 6.3                                             | 13.8±0.4 | 16.8                       | 32.0                     | BU            | 85189809        |
| 6X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 11.2                  | 6.7                                             | 14.9±0.5 | 22.5                       | 40.6                     | BK            | 85185888        |
| 6X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 11.2                  | 6.7                                             | 14.9±0.5 | 22.5                       | 40.6                     | BU            | 85189819        |
| 10X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 12.2                  | 7.1                                             | 15.5±0.5 | 24.7                       | 42.9                     | BK            | 85185863        |
| 10X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 12.2                  | 7.1                                             | 15.5±0.5 | 24.7                       | 42.9                     | BU            | 85189810        |
| 10X3X1                               | 19X0.23   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 13.5                  | 7.9                                             | 16.9±0.5 | 34.5                       | 55.7                     | BK            | 85185889        |
| 10X3X1                               | 19X0.23   | 1.25        | 1.67        | BK, WH, RD | 1.25                      | 13.5                  | 7.9                                             | 16.9±0.5 | 34.5                       | 55.7                     | BU            | 85189820        |
| 12X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 12.3                  | 7.5                                             | 15.9±0.5 | 28.7                       | 46.4                     | BK            | 85185864        |
| 12X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 12.3                  | 7.5                                             | 15.9±0.5 | 28.7                       | 46.4                     | BU            | 85189811        |
| 15X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 14.2                  | 8.3                                             | 17.7±0.5 | 35.0                       | 57.2                     | BK            | 85184200        |
| 15X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 14.2                  | 8.3                                             | 17.7±0.5 | 35.0                       | 57.2                     | BU            | 85189812        |
| 20X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 15.3                  | 8.9                                             | 18.9±0.5 | 44.6                       | 66.8                     | BK            | 85185865        |
| 20X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 15.3                  | 8.9                                             | 18.9±0.5 | 44.6                       | 66.8                     | BU            | 85189813        |
| 24X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 17.9                  | 10.7                                            | 21.7±0.5 | 53.4                       | 82.3                     | BK            | 85185866        |
| 24X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.25                      | 17.9                  | 10.7                                            | 21.7±0.5 | 53.4                       | 82.3                     | BU            | 85189814        |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                      | 4.1                   | 2.0                                             | 6.8 ±0.3 | 5.2                        | 9.3                      | BK            | 85185979        |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                      | 4.1                   | 2.0                                             | 6.8±0.3  | 5.2                        | 9.3                      | BU            | 85189821        |

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→ **RADOX® OFL® S 150/250V (c) Flame & Mud Resistant Instrumentation cable**  
586 897 I (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>Ø max. [mm] | Bundle<br>Ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number                                              |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|--------------------------------------------------------------|
|                                      | [n x mm]  | Ø max. [mm] | Ø nom. [mm] | Colours    |                           |                       |                                                 | Ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                                                              |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 4.1                   | 2.0                                             | 6.8±0.3  | 5.2                        | 9.3                      | BU            | Equal to<br>type (i) see<br>Technical<br>Datasheet<br>586795 |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.11                      | 4.1                   | 2.0                                             | 6.8±0.3  | 5.2                        | 9.3                      | GY            |                                                              |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                      | 4.4                   | 2.2                                             | 7.25±0.3 | 6.8                        | 11.2                     | BK            | 85185891                                                     |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                      | 4.4                   | 2.2                                             | 7.25±0.3 | 6.8                        | 11.2                     | BU            | 85189833                                                     |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 4.4                   | 2.2                                             | 7.2±0.3  | 6.8                        | 11.2                     | BU            | Equal to<br>type (i) see<br>Technical<br>Datasheet<br>586795 |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.11                      | 4.4                   | 2.2                                             | 7.2±0.3  | 6.8                        | 11.2                     | GY            |                                                              |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 8.6                   | 3.8                                             | 11.6±0.4 | 9.1                        | 22.2                     | BK            | 85185980                                                     |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 8.6                   | 3.8                                             | 11.6±0.4 | 9.1                        | 22.2                     | BU            | 85189822                                                     |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 8.6                   | 3.8                                             | 11.6±0.4 | 9.1                        | 22.2                     | BU            | 85119980                                                     |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 8.6                   | 3.8                                             | 11.6±0.4 | 9.1                        | 22.2                     | GY            | 85116857                                                     |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 9.2                   | 5.6                                             | 12.1±0.4 | 13.4                       | 27.5                     | BK            | 85185989                                                     |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 9.2                   | 5.6                                             | 12.1±0.4 | 13.4                       | 27.5                     | BU            | 85189834                                                     |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 9.2                   | 5.6                                             | 12.1±0.4 | 13.4                       | 27.5                     | BU            | 85119987                                                     |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 9.2                   | 5.6                                             | 12.1±0.4 | 13.4                       | 27.5                     | GY            | 85116958                                                     |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 9.9                   | 5.6                                             | 12.3±0.4 | 17.5                       | 27.3                     | BK            | 85185981                                                     |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 9.9                   | 5.6                                             | 12.3±0.4 | 17.5                       | 27.3                     | BU            | 85189823                                                     |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 9.9                   | 5.6                                             | 12.3±0.4 | 17.5                       | 27.3                     | BU            | 85116812                                                     |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 9.9                   | 5.6                                             | 12.3±0.4 | 17.5                       | 27.3                     | GY            | 85116858                                                     |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 10.3                  | 6.3                                             | 14.0±0.4 | 22.4                       | 37.6                     | BK            | 85185990                                                     |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 10.3                  | 6.3                                             | 14.0±0.4 | 22.4                       | 37.6                     | BU            | 85189835                                                     |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 10.3                  | 6.3                                             | 14.0±0.4 | 22.4                       | 37.6                     | BU            | 85116985                                                     |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 10.5                  | 6.7                                             | 14.3±0.4 | 20.0                       | 36.8                     | BK            | 85185867                                                     |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 10.5                  | 6.7                                             | 14.3±0.4 | 20.0                       | 36.8                     | BU            | 85189824                                                     |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 12.3                  | 7.1                                             | 16.1±0.5 | 27.3                       | 47.9                     | BK            | 85185892                                                     |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 12.3                  | 7.1                                             | 16.1±0.5 | 27.3                       | 47.9                     | BU            | 85189836                                                     |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 11.5                  | 7.1                                             | 15.3±0.5 | 23.1                       | 41.8                     | BK            | 85185868                                                     |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 11.5                  | 7.1                                             | 15.3±0.5 | 23.1                       | 41.8                     | BU            | 85189825                                                     |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 13.2                  | 7.9                                             | 17.0±0.5 | 39.6                       | 61.9                     | BK            | 85185893                                                     |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 13.2                  | 7.9                                             | 17.0±0.5 | 39.6                       | 61.9                     | BU            | 85189837                                                     |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 12.4                  | 7.5                                             | 16.0±0.5 | 29.0                       | 47.3                     | BU            | 85116815                                                     |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 12.4                  | 7.5                                             | 16.0±0.5 | 29.0                       | 47.3                     | GY            | 85116859                                                     |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 15.0                  | 8.9                                             | 19.0±0.5 | 42.6                       | 62.1                     | BU            | 85116986                                                     |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 15.0                  | 8.9                                             | 19.0±0.5 | 42.6                       | 62.1                     | GY            | 85116971                                                     |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 14.9                  | 8.9                                             | 18.3±0.5 | 35.8                       | 61.5                     | BK            | 85185869                                                     |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 14.9                  | 8.9                                             | 18.3±0.5 | 35.8                       | 61.5                     | BU            | 85189826                                                     |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 16.5                  | 9.5                                             | 19.9±0.5 | 50.0                       | 78.0                     | BK            | 85185894                                                     |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 16.5                  | 9.5                                             | 19.9±0.5 | 50.0                       | 78.0                     | BU            | 85189838                                                     |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 15.1                  | 8.9                                             | 18.6±0.5 | 41.3                       | 63.9                     | BK            | 85185983                                                     |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 15.1                  | 8.9                                             | 18.6±0.5 | 41.3                       | 63.9                     | BU            | 85189827                                                     |

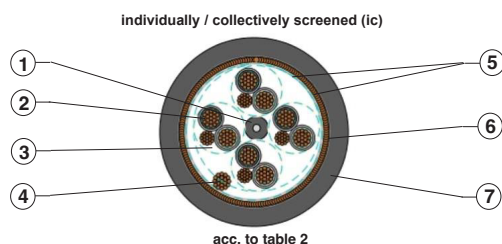


→ **RADOX® OFL® S 150/250V (c) Flame & Mud Resistant Instrumentation cable**  
586 897 I (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number                                              |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|--------------------------------------------------------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                           |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                                                              |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 15.1                  | 8.9                                             | 18.6±0.5 | 41.3                       | 63.9                     | BU            | 85119984                                                     |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 15.1                  | 8.9                                             | 18.6±0.5 | 41.3                       | 63.9                     | GY            | 85116862                                                     |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 16.3                  | 9.5                                             | 20.0±0.5 | 59.6                       | 79.7                     | BK            | 85185895                                                     |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 16.3                  | 9.5                                             | 20.0±0.5 | 59.6                       | 79.7                     | BU            | 85189839                                                     |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 16.3                  | 9.5                                             | 20.0±0.5 | 59.6                       | 79.7                     | BU            | 85119988                                                     |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 16.3                  | 9.5                                             | 20.0±0.5 | 59.6                       | 79.7                     | GY            | 85116972                                                     |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 17.1                  | 10.1                                            | 20.9±0.5 | 50.6                       | 79.4                     | BK            | 85185870                                                     |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 17.1                  | 10.1                                            | 20.9±0.5 | 50.6                       | 79.4                     | BU            | 85189829                                                     |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 17.1                  | 10.1                                            | 20.8±0.5 | 53.4                       | 81.3                     | BU            | 85116853                                                     |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 17.1                  | 10.1                                            | 20.8±0.5 | 53.4                       | 81.3                     | GY            | 85116864                                                     |
| 16X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 18.4                  | 10.7                                            | 22.2±0.5 | 77.2                       | 103.0                    | BU            | 85119989                                                     |
| 16X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 18.4                  | 10.7                                            | 22.2±0.5 | 77.2                       | 103.0                    | GY            | 85116973                                                     |
| 19X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 18.7                  | 11.3                                            | 22.5±0.5 | 62.7                       | 92.9                     | BU            | 85116955                                                     |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 18.7                  | 11.3                                            | 22.5±0.5 | 65.5                       | 95.6                     | BK            | 85185871                                                     |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 18.7                  | 11.3                                            | 22.5±0.5 | 65.5                       | 95.6                     | BU            | 85189830                                                     |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 21.9                  | 16.2                                            | 26.1±0.6 | 81.2                       | 121.2                    | BK            | 85185984                                                     |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 21.9                  | 16.2                                            | 26.1±0.6 | 81.2                       | 121.2                    | BU            | 85189831                                                     |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 21.9                  | 16.2                                            | 26.1±0.6 | 81.2                       | 121.2                    | BU            | 85116957                                                     |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 21.9                  | 16.2                                            | 26.1±0.6 | 81.2                       | 121.2                    | GY            | 85116868                                                     |
| 24X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 23.6                  | 17.1                                            | 28.0±0.6 | 116.3                      | 154.5                    | BK            | 85185896                                                     |
| 24X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.25                      | 23.6                  | 17.1                                            | 28.0±0.6 | 116.3                      | 154.5                    | BU            | 85189840                                                     |
| 24X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 23.6                  | 17.1                                            | 28.0±0.6 | 116.3                      | 154.5                    | BU            | 85119990                                                     |
| 24X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU, BN | 1.25                      | 23.6                  | 17.1                                            | 28.0±0.6 | 116.3                      | 154.5                    | GY            | 85116974                                                     |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 23.9                  | 18.0                                            | 28.2±0.6 | 104.9                      | 149.7                    | BK            | 85185985                                                     |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.25                      | 23.9                  | 18.0                                            | 28.2±0.6 | 104.9                      | 149.7                    | BU            | 85189832                                                     |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 23.9                  | 18.0                                            | 28.2±0.6 | 104.9                      | 149.7                    | BU            | 85119986                                                     |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, BU     | 1.25                      | 23.9                  | 18.0                                            | 28.2±0.6 | 104.9                      | 149.7                    | GY            | 85116956                                                     |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, WH     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | BK            | 85185872                                                     |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, WH     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | BU            | 85189841                                                     |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | BU            | Equal to<br>type (i) see<br>Technical<br>Datasheet<br>586795 |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | GY            |                                                              |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, WH, RD | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.5                     | BK            | 85185897                                                     |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, WH, RD | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.5                     | BU            | 85189843                                                     |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.5                     | BU            | Equal to<br>type (i) see<br>Technical<br>Datasheet<br>586795 |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.5                     | GY            |                                                              |
| 2X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.55                      | 10.7                  | 6.3                                             | 14.1±0.4 | 14.6                       | 33.6                     | BU            | 85119991                                                     |
| 2X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.55                      | 10.7                  | 6.3                                             | 14.1±0.4 | 14.6                       | 33.6                     | GY            | 85116976                                                     |
| 2X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.55                      | 11.5                  | 6.3                                             | 14.2±0.4 | 18.9                       | 38.4                     | BU            | 85189309                                                     |
| 2X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.55                      | 11.5                  | 6.3                                             | 14.2±0.4 | 18.9                       | 38.4                     | GY            | 85181500                                                     |

## Instrumentation cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® S<br/>150/250V (ic) Flame<br/>&amp; Mud Resistant<br/>Instrumentation cable</b>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Description  | <p>Mud, diesel fuel, oil, ozone, hydrolysis resistant, excellent flexibility, light weight, halogen free, flame retardant, easily strippable, free of hygroscopic material, instrumentation cable following RFOU(ic).</p> <p>Highly flexible cable for fixed and free installations for electrical instrument, control alarm and communication systems, applications where harsh environments can generate a potential risk on life and equipment in areas exposed to mud, oil drilling fluids and/or safety areas.</p> |

| General data |                                      |                |                                                                            |
|--------------|--------------------------------------|----------------|----------------------------------------------------------------------------|
| 1.           | <b>Center and Fillers (optional)</b> | Characteristic | Non-hygroscopic                                                            |
| 2.           | <b>Cores RADOX</b>                   | Conductor      | Stranded tin-plated copper                                                 |
|              | <b>Type OFL</b>                      | Insulation     | RADOX TI301 (thin wall)<br>Dual layer high performance polymer (thin wall) |
|              |                                      | Colours        | see table 2                                                                |
| 3.           | <b>Element</b>                       | Cores          | 2 or 3 cores                                                               |
|              |                                      | Drain wire     | Flexible tin-plated copper                                                 |
|              |                                      | Alu tape       | Wrapping                                                                   |
|              |                                      | Tape           | Wrapping                                                                   |
| 4.           | <b>Conductor</b>                     | Drain wire     | Flexible tin-plated copper                                                 |
| 5.           | <b>First layer</b>                   | Alu tape       | Wrapping                                                                   |
| 5.           | <b>Second layer</b>                  | Tape           | Wrapping                                                                   |
| 6.           | <b>Shielding</b>                     | Screen         | Tin-plated copper braid, coverage density: ≥ 90%                           |
| 7.           | <b>Outer layer</b>                   | Sheath         | RADOX Elastomer S FH                                                       |
|              |                                      |                | Type SHF2 acc. to IEC 60092- 360 and NEK TS 606                            |
|              |                                      | Colour         | Grey or Blue acc. NEK TS 606: 2016                                         |

## Printing on sheath

[a] HUBER+SUHNER RADOX OFL S 150/250V [b] SHF2 M 90°C IEC 60332-1-2

IEC 60332-3-22 [c]-[d] [e] [f]

|     |                          |              |
|-----|--------------------------|--------------|
| [a] | Meter marking (in m)     | = 123456 = m |
| [b] | Construction (in mm²)    | 2x2x0.75(i)  |
| [c] | Part number              | 12345678     |
| [d] | Batch number             | 1234567      |
| [e] | Production week and year | 01-2025      |
| [f] | Production place         | CH           |

## Technical data

|                                      |               |                    |
|--------------------------------------|---------------|--------------------|
| acc. to EN 50306 and IEC 60092 - 350 |               |                    |
| Rated voltage                        | $U_o/U (U_m)$ | 150/250 (300) V AC |
| Test voltage                         |               | 2000 V AC          |
| Max. voltage conductor to earth      |               | 250 V DC           |
| Max. voltage conductor to conductor  |               | 500 V DC           |
| Test voltage                         |               | 4800 V DC          |



→ **RADOX® OFL® S 150/250V (ic) Flame & Mud Resistant Instrumentation cable**

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586 883 D (e)

**Storage, Installation and Operation recommendation**

|                                                             |           |          |
|-------------------------------------------------------------|-----------|----------|
| Max. rated conductor temperature normal operation IEC 60092 |           | +90 °C   |
| Temperature index of core insulation TI/20kh                |           | +135 °C  |
| Temperature index of sheath TI/20kh                         |           | +130 °C  |
| Max. storage temperature                                    |           | +40 °C   |
| Max. storage temperature ≤ 5000h                            |           | +65 °C   |
| Min. operation, installation and handling temperature       |           | -40 °C   |
| Min. storage temperature                                    |           | -50 °C   |
| Max. tensile load, only for installation                    |           | 50 x A N |
| A = number of conductors cross section mm <sup>2</sup>      |           |          |
| Min. bending radius fixed installation                      | D ≤ 12 mm | 3 x D    |
|                                                             | D > 12 mm | 4 x D    |
| free movement                                               | D ≤ 12 mm | 5 x D    |
|                                                             | D > 12 mm | 6 x D    |

**The cable sheath passes the following fluid tests**

|                                                                       |               |                          |
|-----------------------------------------------------------------------|---------------|--------------------------|
| Drilling fluid resistance for SHF mud                                 | Fulfilled     | NEK TS 606, 4.4.1        |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | NEK TS 606, 4.4.1 Cat. b |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Base oil EDC 95-11                                                    | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Drilling fluid resistance                                             | Fulfilled     | IEC 60092-360            |
| Mineral oil type IRM 902                                              | 24 h / 100 °C | IEC 60811-404            |
| Mineral oil type IRM 902                                              | 7 d / 100 °C  | IEC 60092-360, An. C     |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | IEC 60092-360, An. D     |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | IEC 60092-360, An. D     |
| Oil based test fluid (CAS no.: 64742-46-7)                            | 56 d / 70 °C  | IEC 60092-360, An. D     |

**The cable passes the following fire tests**

|                                         |                        |                             |
|-----------------------------------------|------------------------|-----------------------------|
| Fire protection in ships                | Fulfilled              | IEC 60092-350 + DNV-CP-0400 |
| Vertical flame spread of a single cable | 50 < L ≤ 540 mm        | IEC 60332-1-2               |
| Vertical flame spread of bunched cables | L ≤ 2.5 m              | IEC 60332-3- 22 Cat. A      |
| Smoke density                           | T ≥ 70 %               | IEC 61034-1,2               |
| Corrosivity of combustion gases         | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754-2                 |
| Amount of halogen acid gas              | HCl+HBr ≤ 0.5%         | IEC 60754-1                 |
| Content of fluorine                     | HF ≤ 0.1 %             | IEC 60684-2, 45.2           |
| Toxicity                                | ITC ≤ 3                | EN 50305, 9.2               |

**Applicable standards**

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DNV-CP-0400    | Class programme - Type approval - Lightweight electric cables                                                                     |
| EN 50306       | Railway rolling stock cables having special fire performance - Thin wall                                                          |
| NEK TS 606     | Cables for offshore installation, halogenfree and/or mud resistant                                                                |
| IEC 60092- 350 | General construction and test methods of cables for shipboard and offshore applications                                           |
| IEC 60092- 353 | Electrical installations in ships - Power cables                                                                                  |
| IEC 60092- 360 | Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables |

**Approvals**

|     |                        |
|-----|------------------------|
| DNV | Certificate TAE00004T2 |
|-----|------------------------|

→

→ **RADOX® OFL® S 150/250V (ic) Flame & Mud Resistant Instrumentation cable**  
586 883 D (e)

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**Table 1: Capacitance, Inductance & L/R ratio**

| Cable<br>[mm²] | Family     | Type of measuring<br>Core - Core |                        | L/R Ratio<br>[µH/ Ω] | Resistance at<br>20°C max.<br>[Ω/km] |
|----------------|------------|----------------------------------|------------------------|----------------------|--------------------------------------|
|                |            | C<br>nom.<br>[nf/km]             | L<br>nom.<br>[mH/km]** |                      |                                      |
| pair 0.5       | OFL S (ic) | 110*                             | 0.56*                  | 7*                   | 40.1                                 |
| triple 0.5     | OFL S (ic) | 100*                             | 0.63*                  | 79*                  | 40.1                                 |
| pair 0.75      | OFL S (ic) | 150                              | 0.55                   | 10.3                 | 26.7                                 |
| triple 0.75    | OFL S (ic) | 140                              | 0.62                   | 11.6                 | 26.7                                 |
| pair 1         | OFL S (ic) | 165*                             | 0.54*                  | 13.5*                | 20                                   |
| triple 1       | OFL S (ic) | 155*                             | 0.61*                  | 15.3*                | 20                                   |
| pair 1.5       | OFL S (ic) | 175                              | 0.53                   | 19.3                 | 13.7                                 |
| triple 1.5     | OFL S (ic) | 165*                             | 0.6*                   | 21.9*                | 13.7                                 |
| pair 2.5       | OFL S (ic) | 195                              | 0.52                   | 31.7                 | 8.21                                 |
| triple 2.5     | OFL S (ic) | 185*                             | 0.57*                  | 34.7*                | 8.21                                 |

\*calculated values, verification pending

\*\*measurements were carried at 1kHz, all values refer to (1xnxm)mm²

EX attachment: worst case values depend on construction of cables and customer applications, therefore worst case values (inductivity / capacity / LR ratio) are available only on request.

**Table 2: individually and collectively screened (ic)**

| Cable Type<br>[n x mm²] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Drain wire c<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm²] | Cable    |                            |                          | Sheath colour | H+S part number |
|-------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------------|-----------------------|------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                         | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                             |                       |                                    | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 6.6                   | 3.1                                | 9.50±0.3 | 6.7                        | 15.1                     | BK            | 85185917        |
| 2X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 6.6                   | 3.1                                | 9.50±0.3 | 6.7                        | 15.1                     | BU            | 85189858        |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 7.4                   | 3.3                                | 10.6±0.4 | 8.3                        | 18.6                     | BK            | 85185956        |
| 2X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 7.4                   | 3.3                                | 10.6±0.4 | 8.3                        | 18.6                     | BU            | 85189867        |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 8.3                   | 3.8                                | 11.3±0.4 | 11.0                       | 22.2                     | BK            | 85185918        |
| 4X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 8.3                   | 3.8                                | 11.3±0.4 | 11.0                       | 22.2                     | BU            | 85189859        |
| 4X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 8.8                   | 5.2                                | 12.2±0.4 | 15.1                       | 26.8                     | BK            | 85185958        |
| 4X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 8.8                   | 5.2                                | 12.2±0.4 | 15.1                       | 26.8                     | BU            | 85189868        |
| 5X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 9.1                   | 5.6                                | 12.7±0.4 | 14.5                       | 27.7                     | BK            | 85185919        |
| 5X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 9.1                   | 5.6                                | 12.7±0.4 | 14.5                       | 27.7                     | BU            | 85189860        |
| 5X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 9.6                   | 5.9                                | 13.1±0.4 | 18.4                       | 31.3                     | BK            | 85185959        |
| 5X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 9.6                   | 5.9                                | 13.1±0.4 | 18.4                       | 31.3                     | BU            | 85189869        |
| 6X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 10.0                  | 5.9                                | 13.6±0.4 | 17.9                       | 30.0                     | BK            | 85185921        |
| 6X2X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 10.0                  | 5.9                                | 13.6±0.4 | 17.9                       | 30.0                     | BU            | 85189861        |
| 6X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 11.0                  | 6.7                                | 14.5±0.5 | 21.8                       | 37.8                     | BK            | 85185960        |
| 6X3X0.75                | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 11.0                  | 6.7                                | 14.5±0.5 | 21.8                       | 37.8                     | BU            | 85189870        |
| 10X2X0.75               | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 12.0                  | 7.1                                | 15.3±0.5 | 25.4                       | 43.0                     | BK            | 85185922        |
| 10X2X0.75               | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 12.0                  | 7.1                                | 15.3±0.5 | 25.4                       | 43.0                     | BU            | 85189862        |
| 10X3X0.75               | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 13.2                  | 7.5                                | 16.5±0.5 | 32.9                       | 52.3                     | BK            | 85185961        |
| 10X3X0.75               | 19X0.23   | 1.11        | 1.52        | BK, WH, RD | 0.9                         | 1.11                        | 13.2                  | 7.5                                | 16.5±0.5 | 32.9                       | 52.3                     | BU            | 85189871        |

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→ **RADOX® OFL® S 150/250V (ic) Flame & Mud Resistant Instrumentation cable**  
586 883 D (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Drain wire c<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 12X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 12.5                  | 7.5                                             | 16.0±0.5 | 29.5                       | 46.9                     | BK            | 85185923        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 12.5                  | 7.5                                             | 16.0±0.5 | 29.5                       | 46.9                     | BU            | 85189863        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 14.5                  | 8.3                                             | 18.1±0.5 | 36.1                       | 58.2                     | BK            | 85185924        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 14.5                  | 8.3                                             | 18.1±0.5 | 36.1                       | 58.2                     | BU            | 85189864        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 15.2                  | 8.9                                             | 18.9±0.5 | 45.8                       | 67.8                     | BK            | 85185925        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 15.2                  | 8.9                                             | 18.9±0.5 | 45.8                       | 67.8                     | BU            | 85189865        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 17.6                  | 10.7                                            | 21.4±0.5 | 54.9                       | 83.2                     | BK            | 85185926        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 1.52        | BK, WH     | 0.9                         | 1.11                        | 17.6                  | 10.7                                            | 21.4±0.5 | 54.9                       | 83.2                     | BU            | 85189866        |
| 2X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 3.3                   | 3.3                                             | 10.2±0.4 | 8.2                        | 18.2                     | BK            | 85185927        |
| 2X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 3.3                   | 3.3                                             | 10.2±0.4 | 8.2                        | 18.2                     | BU            | 85189872        |
| 2X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 3.8                   | 3.8                                             | 11.4±0.4 | 10.3                       | 23.6                     | BK            | 85185963        |
| 2X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 3.8                   | 3.8                                             | 11.4±0.4 | 10.3                       | 23.6                     | BU            | 85189881        |
| 4X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 5.6                   | 5.6                                             | 12.7±0.4 | 15.2                       | 28.7                     | BK            | 85185931        |
| 4X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 5.6                   | 5.6                                             | 12.7±0.4 | 15.2                       | 28.7                     | BU            | 85189873        |
| 4X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 5.9                   | 5.9                                             | 13.4±0.4 | 19.2                       | 33.3                     | BK            | 85185964        |
| 4X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 5.9                   | 5.9                                             | 13.4±0.4 | 19.2                       | 33.3                     | BU            | 85189882        |
| 5X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 5.9                   | 5.9                                             | 13.6±0.4 | 18.1                       | 33.8                     | BK            | 85185934        |
| 5X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 5.9                   | 5.9                                             | 13.6±0.4 | 18.1                       | 33.8                     | BU            | 85189874        |
| 5X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 6.3                   | 6.3                                             | 14.5±0.4 | 23.1                       | 39.2                     | BK            | 85185965        |
| 5X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 6.3                   | 6.3                                             | 14.5±0.4 | 23.1                       | 39.2                     | BU            | 85189883        |
| 6X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 6.7                   | 6.7                                             | 14.7±0.4 | 21.3                       | 38.5                     | BK            | 85185935        |
| 6X2X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 6.7                   | 6.7                                             | 14.7±0.4 | 21.3                       | 38.5                     | BU            | 85189875        |
| 6X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 7.1                   | 7.1                                             | 15.8±0.5 | 27.2                       | 46.2                     | BK            | 85185966        |
| 6X3X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 7.1                   | 7.1                                             | 15.8±0.5 | 27.2                       | 46.2                     | BU            | 85189884        |
| 102X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 7.7                   | 7.7                                             | 16.5±0.5 | 32.3                       | 52.3                     | BK            | 85185936        |
| 102X1                                | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 7.7                   | 7.7                                             | 16.5±0.5 | 32.3                       | 52.3                     | BU            | 85189876        |
| 10X3X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 8.3                   | 8.3                                             | 17.8±0.5 | 41.9                       | 65.4                     | BK            | 85185967        |
| 10X3X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH, RD | 1.11                        | 1.25                        | 8.3                   | 8.3                                             | 17.8±0.5 | 41.9                       | 65.4                     | BU            | 85189885        |
| 12X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 8.3                   | 8.3                                             | 17.2±0.5 | 37.9                       | 57.6                     | BK            | 85185937        |
| 12X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 8.3                   | 8.3                                             | 17.2±0.5 | 37.9                       | 57.6                     | BU            | 85189877        |
| 15X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 9.5                   | 9.5                                             | 19.3±0.5 | 46.6                       | 72.7                     | BK            | 85184173        |
| 15X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 9.5                   | 9.5                                             | 19.3±0.5 | 46.6                       | 72.7                     | BU            | 85189878        |
| 20X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 10.1                  | 10.1                                            | 20.3±0.5 | 59.7                       | 84.3                     | BK            | 85185938        |
| 20X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 10.1                  | 10.1                                            | 20.3±0.5 | 59.7                       | 84.3                     | BU            | 85189879        |
| 24X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 11.9                  | 11.9                                            | 23.5±0.5 | 71.5                       | 106.1                    | BK            | 85185939        |
| 24X2X1                               | 19X0.26   | 1.25        | 1.67        | BK, WH     | 1.11                        | 1.25                        | 11.9                  | 11.9                                            | 23.5±0.5 | 71.5                       | 106.1                    | BU            | 85189880        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 8.6                   | 4.0                                             | 11.7±0.4 | 10.6                       | 23.4                     | BK            | 85185940        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 8.6                   | 4.0                                             | 11.7±0.4 | 10.6                       | 23.4                     | BU            | 85189886        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 9.7                   | 5.6                                             | 13.2±0.4 | 14.9                       | 29.7                     | BK            | 85185968        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 9.7                   | 5.6                                             | 13.2±0.4 | 14.9                       | 29.7                     | BU            | 85189896        |

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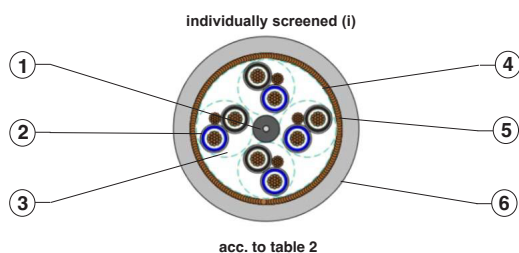
→ **RADOX® OFL® S 150/250V (ic) Flame & Mud Resistant Instrumentation cable**  
586 883 D (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Drain wire c<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 11.0                  | 6.7                                             | 14.4±0.4 | 20.1                       | 37.0                     | BK            | 85185941        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 11.0                  | 6.7                                             | 14.4±0.4 | 20.1                       | 37.0                     | BU            | 85189887        |
| 4X3X1.5                              | 37 x 0.23 | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 11.6                  | 6.7                                             | 15.4±0.5 | 25.6                       | 43.4                     | BK            | 85185969        |
| 4X3X1.5                              | 37 x 0.23 | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 11.6                  | 6.7                                             | 15.4±0.5 | 25.6                       | 43.4                     | BU            | 85189897        |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 11.8                  | 7.1                                             | 15.4±0.5 | 23.9                       | 42.6                     | BK            | 85185942        |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 11.8                  | 7.1                                             | 15.4±0.5 | 23.9                       | 42.6                     | BU            | 85189888        |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 12.8                  | 7.1                                             | 16.6±0.5 | 31.1                       | 51.0                     | BK            | 85185970        |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 12.8                  | 7.1                                             | 16.6±0.5 | 31.1                       | 51.0                     | BU            | 85189898        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 13.0                  | 7.9                                             | 16.9±0.5 | 28.1                       | 49.8                     | BK            | 85185943        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 13.0                  | 7.9                                             | 16.9±0.5 | 28.1                       | 49.8                     | BU            | 85189889        |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 14.1                  | 8.3                                             | 18.1±0.5 | 36.7                       | 60.3                     | BK            | 85185971        |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 14.1                  | 8.3                                             | 18.1±0.5 | 36.7                       | 60.3                     | BU            | 85189899        |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 15.8                  | 9.5                                             | 19.5±0.5 | 43.4                       | 69.9                     | BK            | 85185944        |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 15.8                  | 9.5                                             | 19.5±0.5 | 43.4                       | 69.9                     | BU            | 85189890        |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 17.4                  | 9.5                                             | 20.8±0.5 | 57.5                       | 85.9                     | BK            | 85185972        |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH, RD | 1.11                        | 1.25                        | 17.4                  | 9.5                                             | 20.8±0.5 | 57.5                       | 85.9                     | BU            | 85189900        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 16.4                  | 9.5                                             | 20.1±0.5 | 50.4                       | 75.5                     | BK            | 85185945        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 16.4                  | 9.5                                             | 20.1±0.5 | 50.4                       | 75.5                     | BU            | 85189891        |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 18.9                  | 10.7                                            | 22.8±0.5 | 62.1                       | 94.5                     | BK            | 85185946        |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 18.9                  | 10.7                                            | 22.8±0.5 | 62.1                       | 94.5                     | BU            | 85189892        |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 20.1                  | 14.4                                            | 23.8±0.5 | 82.6                       | 115.0                    | BK            | 85185947        |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 20.1                  | 14.4                                            | 23.8±0.5 | 82.6                       | 115.0                    | BU            | 85189893        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 23.5                  | 17.1                                            | 27.8±0.6 | 98.9                       | 142.6                    | BK            | 85185948        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 23.5                  | 17.1                                            | 27.8±0.6 | 98.9                       | 142.6                    | BU            | 85189894        |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 26.7                  | 22.2                                            | 30.4±0.6 | 131.5                      | 183.7                    | BK            | 85184201        |
| 32X2X1.5                             | 37X0.23   | 1.55        | 2.04        | BK, WH     | 1.11                        | 1.25                        | 26.7                  | 22.2                                            | 30.4±0.6 | 131.5                      | 183.7                    | BU            | 85189895        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, WH     | 1.25                        | 1.55                        | 10.6                  | 6.3                                             | 14.1±0.4 | 16.4                       | 34.2                     | BK            | 85185949        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, WH     | 1.25                        | 1.55                        | 10.6                  | 6.3                                             | 14.1±0.4 | 16.4                       | 34.2                     | BU            | 85189901        |

Other articles on request

## Instrumentation cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® SFR 150/250V (i) Fire &amp; Mud Resistant Instrumentation cable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description  | <p>Mud, diesel fuel, oil, ozone, hydrolysis resistant, excellent flexibility, light weight, halogen free, flame retardant and FIRE RESISTANT, easily strippable, free of hygroscopic material, instrumentation cable following BFOU(i).</p> <p>Highly flexible cable for fixed and free installations for electrical instrument, control alarm and communication systems, applications where harsh environments can generate a potential risk on life and equipment in areas exposed to mud, oil and drilling fluids and/or safety areas.</p> |

## General data

|    |                                                                           |                |                                                                            |
|----|---------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------|
| 1. | <b>Center and Fillers (by definition, not used in every cable design)</b> | Characteristic | Non-hygroscopic                                                            |
| 2. | <b>Cores RADOX</b>                                                        | Conductor      | Stranded tin-plated copper                                                 |
|    | <b>Type OFL FR</b>                                                        | Wrapping       | Mica Tape                                                                  |
|    |                                                                           | Insulation     | RADOX EI303 (thin wall)<br>Dual layer high performance polymer (thin wall) |
|    |                                                                           | Colours        | See table 2                                                                |
| 3. | <b>Element</b>                                                            | Cores          | 2 or 3 cores                                                               |
|    |                                                                           | Drain wire     | Flexible tin-plated copper                                                 |
|    |                                                                           | Alu tape       | Wrapping                                                                   |
| 4. | <b>Layer</b>                                                              | Tape           | Wrapping                                                                   |
| 5. | <b>Shielding</b>                                                          | Screen         | Tin-plated copper braid, coverage density: ≥ 90%                           |
| 6. | <b>Outer layer</b>                                                        | Sheath         | RADOX Elastomer S FH<br>Type SHF2 acc. to IEC 60092- 360 and NEK TS 606    |
|    |                                                                           | Colour         | Grey or Blue acc. NEK TS 606: 2016                                         |

## Printing on sheath

|                       |                                                                                                    |              |
|-----------------------|----------------------------------------------------------------------------------------------------|--------------|
| Outer Diameter > 20mm | [a] HUBER+SUHNER RADOX OFL SFR 150/250V [b] SHF2 M 90°C IEC 60332-1 IEC 60332-3-22 [c]-[d] [e] [f] |              |
| Outer Diameter ≤ 20mm | [a] HUBER+SUHNER RADOX OFL SFR 150/250V [b] SHF2 M 90°C IEC 60332-2 IEC 60332-3-22 [c]-[d] [e] [f] |              |
| [a]                   | Meter marking (in m)                                                                               | = 123456 = m |
| [b]                   | Construction (in mm²)                                                                              | 2x2x0.75(c)  |
| [c]                   | Part number                                                                                        | 12345678     |
| [d]                   | Batch number                                                                                       | 1234567      |
| [e]                   | Production week and year                                                                           | 01-2025      |
| [f]                   | Production place                                                                                   | CH           |

## Technical data

|                                     |           |                    |
|-------------------------------------|-----------|--------------------|
| acc. to IEC 60092 - 376 and - 350   |           |                    |
| Rated voltage                       | $U_o/U_m$ | 150/250 (300) V AC |
| Test voltage                        |           | 2000 V AC          |
| Max. voltage conductor to earth     |           | 250 V DC           |
| Max. voltage conductor to conductor |           | 500 V DC           |
| Test voltage                        |           | 4800 V DC          |



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### Storage, Installation and Operation recommendation

|                                                             |           |          |
|-------------------------------------------------------------|-----------|----------|
| Max. rated conductor temperature normal operation IEC 60092 |           | +90 °C   |
| Temperature index of core insulation TI/20kh                |           | +135 °C  |
| Temperature index of sheath TI/20kh                         |           | +130 °C  |
| Max. storage temperature                                    |           | +40 °C   |
| Max. storage temperature ≤ 5000h                            |           | +65 °C   |
| Min. operation, installation and handling temperature       |           | -40 °C   |
| Min. storage temperature                                    |           | -50 °C   |
| Max. tensile load, only for installation                    |           | 50 x A N |
| A = number of conductors cross section mm <sup>2</sup>      |           |          |
| Min. bending radius fixed installation                      | D ≤ 12 mm | 3 x D    |
|                                                             | D > 12 mm | 4 x D    |
| free movement                                               | D ≤ 12 mm | 5 x D    |
|                                                             | D > 12 mm | 6 x D    |

### The cable sheath passes the following fluid tests

|                                                                       |               |                          |
|-----------------------------------------------------------------------|---------------|--------------------------|
| Drilling fluid resistance for SHF mud                                 | Fulfilled     | NEK TS 606, 4.4.1        |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | NEK TS 606, 4.4.1 Cat. b |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Base oil EDC 95-11                                                    | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Drilling fluid resistance                                             | Fulfilled     | IEC 60092-360            |
| Mineral oil type IRM 902                                              | 24 h / 100 °C | IEC 60811-404            |
| Mineral oil type IRM 902                                              | 7 d / 100 °C  | IEC 60092-360, An. C     |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | IEC 60092-360, An. D     |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | IEC 60092-360, An. D     |
| Oil based test fluid (CAS no.: 64742-46-7)                            | 56 d / 70 °C  | IEC 60092-360, An. D     |

### The cable passes the following fire tests

| Electric cables under fire conditions   |                        |                             |
|-----------------------------------------|------------------------|-----------------------------|
| Outer Diameter > 20 mm                  | 830°C, 120 min.        | IEC 60331-1                 |
| Outer Diameter ≤ 20 mm                  | 830°C, 120 min.        | IEC 60331-2                 |
| Fire protection in ships                | Fulfilled              | IEC 60092-350 + DNV-CP-0400 |
| Vertical flame spread of a single cable | 50 < L ≤ 540 mm        | IEC 60332-1-2               |
| Vertical flame spread of bunched cables | L ≤ 2.5 m              | IEC 60332-3- 22 Cat. A      |
| Smoke density                           | T ≥ 70 %               | IEC 61034-1,2               |
| Corrosivity of combustion gases         | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754-2                 |
| Amount of halogen acid gas              | HCl+HBr ≤ 0.5%         | IEC 60754-1                 |
| Content of fluorine                     | HF ≤ 0.1 %             | IEC 60684-2, 45.2           |
| Toxicity                                | ITC ≤ 3                | EN 50305, 9.2               |

### Applicable standards

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DNV-CP-0400    | Class programme - Type approval - Lightweight electric cables                                                                     |
| EN 50306       | Railway rolling stock cables having special fire performance - Thin wall                                                          |
| NEK TS 606     | Cables for offshore installation, halogenfree and/or mud resistant                                                                |
| IEC 60092- 350 | General construction and test methods of cables for shipboard and offshore applications                                           |
| IEC 60092- 360 | Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables |
| IEC 60092- 376 | Electrical Installations in ships, cables for control and instrumentation circuits 150/250V (300V)                                |

### Approvals

|     |                        |
|-----|------------------------|
| DNV | Certificate TAE00004KC |
|-----|------------------------|

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**Table 1: Capacitance, Inductance & L/R ratio**

| Cable<br>[mm²] | Family      | Type of measuring<br>Core - Core |                        | L/R Ratio<br>[µH/ Ω] | Resistance at<br>20°C max.<br>[Ω/km] |
|----------------|-------------|----------------------------------|------------------------|----------------------|--------------------------------------|
|                |             | C<br>nom.<br>[nf/km]             | L<br>nom.<br>[mH/km]** |                      |                                      |
| pair 0.75      | OFL SFR (i) | 95                               | 0.71                   | 13.3                 | 26.7                                 |
| triple 0.75    | OFL SFR (i) | 90*                              | 0.81*                  | 15.2*                | 26.7                                 |
| pair 1.5       | OFL SFR (i) | 115                              | 0.65                   | 23.7                 | 13.7                                 |
| triple 1.5     | OFL SFR (i) | 110                              | 0.71                   | 25.9                 | 13.7                                 |
| pair 2.5       | OFL SFR (i) | 130                              | 0.6                    | 36.5                 | 8.21                                 |
| triple 2.5     | OFL SFR (i) | 125*                             | 0.62*                  | 37.8*                | 8.21                                 |

\*calculated values, verification pending

\*\*measurements were carried at 1kHz, all values refer to (1xnxm)mm²

EX attachment: worst case values depend on construction of cables and customer applications, therefore worst case values (inductivity / capacity / LR ratio) are available only on request.

**Table 2: individually screened (i)**

| Cable Type<br>[n x mm²] | Conductor |             | Core        |            | Drain wire<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm²] | Cable    |                            |                          | Sheath colour | H+S part number |
|-------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                         | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                           |                       |                                    | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 1X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 4.8                   | 2.2                                | 7.55±0.3 | 3.9                        | 9.9                      | BU            | 85183132        |
| 1X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 4.8                   | 2.2                                | 7.55±0.3 | 3.9                        | 9.9                      | GY            | 85189568        |
| 1X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 5.1                   | 2.5                                | 8.00±0.3 | 4.9                        | 11.2                     | BU            | 85192257        |
| 1X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 5.1                   | 2.5                                | 8.00±0.3 | 4.9                        | 11.2                     | GY            | 85185608        |
| 2X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 9.4                   | 5.2                                | 11.5±0.4 | 8.6                        | 21.9                     | BU            | 85189582        |
| 2X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 9.4                   | 5.2                                | 11.5±0.4 | 8.6                        | 21.9                     | GY            | 85186529        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 10.4                  | 5.9                                | 13.3±0.4 | 10.7                       | 27.0                     | BU            | 85192258        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 10.4                  | 5.9                                | 13.3±0.4 | 10.7                       | 27.0                     | GY            | 85192250        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 11.5                  | 6.3                                | 13.9±0.4 | 13.4                       | 31.0                     | BU            | 85119600        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 11.5                  | 6.3                                | 13.9±0.4 | 13.4                       | 31.0                     | GY            | 85189598        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 12.3                  | 7.1                                | 15.6±0.5 | 17.0                       | 37.5                     | BU            | 85192259        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 12.3                  | 7.1                                | 15.6±0.5 | 17.0                       | 37.5                     | GY            | 85192251        |
| 8X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 14.3                  | 8.3                                | 17.2±0.5 | 22.7                       | 45.2                     | BU            | 85192254        |
| 8X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 14.3                  | 8.3                                | 17.2±0.5 | 22.7                       | 45.2                     | GY            | 85189574        |
| 8X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 16.1                  | 9.5                                | 19.8±0.5 | 29.8                       | 60.4                     | BU            | 85192260        |
| 8X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 0.9                       | 16.1                  | 9.5                                | 19.8±0.5 | 29.8                       | 60.4                     | GY            | 85192252        |
| 12X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 18.5                  | 10.7                               | 21.2±0.5 | 32.4                       | 65.3                     | BU            | 85189600        |
| 12X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 18.5                  | 10.7                               | 21.2±0.5 | 32.4                       | 65.3                     | GY            | 85117102        |
| 16X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 21.7                  | 16.2                               | 25.6±0.6 | 45.1                       | 91.5                     | BU            | 85192255        |
| 16X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 21.7                  | 16.2                               | 25.6±0.6 | 45.1                       | 91.5                     | GY            | 85189576        |
| 24X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 26.8                  | 22.2                               | 30.8±0.6 | 66.6                       | 133.0                    | BU            | 85192256        |
| 24X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, BU     | 0.9                       | 26.8                  | 22.2                               | 30.8±0.6 | 66.6                       | 133.0                    | GY            | 85189579        |
| 1X2X1.5                 | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 5.8                   | 2.7                                | 8.70±0.3 | 5.9                        | 13.5                     | BU            | 85189607        |
| 1X2X1.5                 | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 5.8                   | 2.7                                | 8.70±0.3 | 5.9                        | 13.5                     | GY            | 85186530        |
| 1X3X1.5                 | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 6.3                   | 3.1                                | 9.20±0.3 | 7.7                        | 15.6                     | BU            | 85192266        |

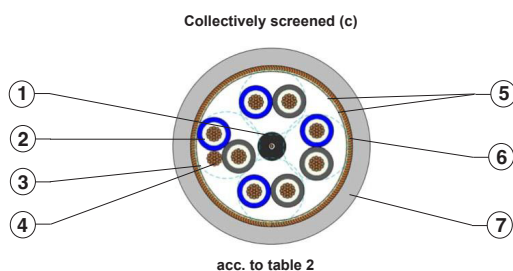
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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire<br>Ø max. [mm] | Bundle<br>Ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|---------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | Ø max. [mm] | Ø nom. [mm] | Colours    |                           |                       |                                                 | Ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 6.3                   | 3.1                                             | 9.20±0.3 | 7.7                        | 15.6                     | GY            | 85189606        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 11.5                  | 6.0                                             | 13.2±0.4 | 12.5                       | 29.8                     | BU            | 85192261        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 11.5                  | 6.0                                             | 13.2±0.4 | 12.5                       | 29.8                     | GY            | 85189571        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 12.6                  | 7.1                                             | 16.1±0.5 | 16.4                       | 39.1                     | BU            | 85192267        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 12.6                  | 7.1                                             | 16.1±0.5 | 16.4                       | 39.1                     | GY            | 85189580        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 13.7                  | 7.6                                             | 16.4±0.5 | 20.8                       | 43.6                     | BU            | 85192262        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 13.7                  | 7.6                                             | 16.4±0.5 | 20.8                       | 43.6                     | GY            | 85189577        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 15.0                  | 8.3                                             | 18.3±0.5 | 27.0                       | 54.1                     | BU            | 85192268        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 15.0                  | 8.3                                             | 18.3±0.5 | 27.0                       | 54.1                     | GY            | 85189566        |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 17.3                  | 10.1                                            | 20.4±0.5 | 37.0                       | 65.5                     | BU            | 85192263        |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 17.3                  | 10.1                                            | 20.4±0.5 | 37.0                       | 65.5                     | GY            | 85189581        |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 20.1                  | 11.9                                            | 24.0±0.5 | 49.7                       | 91.5                     | BU            | 85192269        |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.11                      | 20.1                  | 11.9                                            | 24.0±0.5 | 49.7                       | 91.5                     | GY            | 85189572        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 22.7                  | 15.3                                            | 25.1±0.6 | 55.8                       | 101.1                    | BU            | 85192264        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 22.7                  | 15.3                                            | 25.1±0.6 | 55.8                       | 101.1                    | GY            | 85189583        |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 26.3                  | 18.0                                            | 29.9±0.6 | 72.5                       | 132.7                    | BU            | 85192265        |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 26.3                  | 18.0                                            | 29.9±0.6 | 72.5                       | 132.7                    | GY            | 85189599        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 32.1                  | 22.2                                            | 35.2±0.7 | 107.1                      | 190.8                    | BU            | 85189575        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.11                      | 32.1                  | 22.2                                            | 35.2±0.7 | 107.1                      | 190.8                    | GY            | 85183134        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU     | 1.25                      | 6.8                   | 3.0                                             | 9.75±0.3 | 8.0                        | 17.6                     | BU            | 85192270        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU     | 1.25                      | 6.8                   | 3.0                                             | 9.75±0.3 | 8.0                        | 17.6                     | GY            | 85189578        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU, BN | 1.25                      | 7.3                   | 3.3                                             | 10.4±0.4 | 13.7                       | 23.8                     | BU            | 85189573        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU, BN | 1.25                      | 7.3                   | 3.3                                             | 10.4±0.4 | 13.7                       | 23.8                     | GY            | 85192253        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | BU            | 85119992        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU     | 1.25                      | 5.1                   | 2.4                                             | 7.85±0.3 | 7.4                        | 12.9                     | GY            | 85117044        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.5                     | BU            | 85119994        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 2.54        | BK, BU, BN | 1.25                      | 5.5                   | 2.7                                             | 8.25±0.3 | 9.8                        | 15.5                     | GY            | 85117047        |

## Instrumentation cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® SFR 150/250V (c) Fire &amp; Mud Resistant Instrumentation cable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description  | <p>Mud, diesel fuel, oil, ozone, hydrolysis resistant, excellent flexibility, light weight, halogen free, flame retardant and FIRE RESISTANT, easily strippable, free of hygroscopic material, instrumentation cable following BFOU(c).</p> <p>Highly flexible cable for fixed and free installations for electrical instrument, control alarm and communication systems, applications where harsh environments can generate a potential risk on life and equipment in areas exposed to mud, oil and drilling fluids and/or safety areas.</p> |

| General data          |                                      |                                                                                                      |                                                                         |
|-----------------------|--------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 1.                    | <b>Center and Fillers (optional)</b> | Characteristic                                                                                       | Non-hygroscopic                                                         |
| 2.                    | <b>Cores RADOX</b>                   | Conductor                                                                                            | Stranded tin-plated copper                                              |
|                       | <b>Type OFL</b>                      | Wrapping                                                                                             | Mica tape                                                               |
|                       |                                      | Insulation                                                                                           | RADOX TI301 (thin wall)                                                 |
|                       |                                      | Colours                                                                                              | see table 2                                                             |
| 3.                    | <b>Element</b>                       | Cores                                                                                                | 2 or 3 cores                                                            |
| 4.                    | <b>Conductor</b>                     | Drain wire                                                                                           | Flexible tin-plated copper                                              |
| 5.                    | <b>First layer</b>                   | Alu tape                                                                                             | Wrapping                                                                |
| 5.                    | <b>Second layer</b>                  | Tape                                                                                                 | Wrapping                                                                |
| 6.                    | <b>Shielding</b>                     | Screen                                                                                               | Tin-plated copper braid, coverage density: ≥ 90%                        |
| 7.                    | <b>Outer layer</b>                   | Sheath                                                                                               | RADOX Elastomer S FH<br>Type SHF2 acc. to IEC 60092- 360 and NEK TS 606 |
|                       |                                      | Colour                                                                                               | Grey or Blue acc. NEK TS 606: 2016                                      |
| Printing on sheath    |                                      |                                                                                                      |                                                                         |
| Outer Diameter > 20mm |                                      | [a] HUBER+SUHNER RADOX OFL SFR 150/250V [b] SHF2 M 90°C IEC 60332-1-1 IEC 60332-3-22 [c]-[d] [e] [f] |                                                                         |
| Outer Diameter ≤ 20mm |                                      | [a] HUBER+SUHNER RADOX OFL SFR 150/250V [b] SHF2 M 90°C IEC 60332-1-2 IEC 60332-3-22 [c]-[d] [e] [f] |                                                                         |
| [a]                   | Meter marking (in m)                 | = 123456 = m                                                                                         |                                                                         |
| [b]                   | Construction (in mm²)                | 2x2x0.75(c)                                                                                          |                                                                         |
| [c]                   | Part number                          | 12345678                                                                                             |                                                                         |
| [d]                   | Batch number                         | 1234567                                                                                              |                                                                         |
| [e]                   | Production week and year             | 01-2025                                                                                              |                                                                         |
| [f]                   | Production place                     | CH                                                                                                   |                                                                         |

| Technical data                      |                                     |                    |
|-------------------------------------|-------------------------------------|--------------------|
| acc. to IEC 60092 - 376 and - 350   |                                     |                    |
| Rated voltage                       | U <sub>o</sub> /U (U <sub>m</sub> ) | 150/250 (300) V AC |
| Test voltage                        |                                     | 2000 V AC          |
| Max. voltage conductor to earth     |                                     | 250 V DC           |
| Max. voltage conductor to conductor |                                     | 500 V DC           |
| Test voltage                        |                                     | 4800 V DC          |



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### Storage, Installation and Operation recommendation

|                                                             |           |          |
|-------------------------------------------------------------|-----------|----------|
| Max. rated conductor temperature normal operation IEC 60092 |           | +90 °C   |
| Temperature index of core insulation TI/20kh                |           | +135 °C  |
| Temperature index of sheath TI/20kh                         |           | +130 °C  |
| Max. storage temperature                                    |           | +40 °C   |
| Max. storage temperature ≤ 5000h                            |           | +65 °C   |
| Min. operation, installation and handling temperature       |           | -40 °C   |
| Min. storage temperature                                    |           | -50 °C   |
| Max. tensile load, only for installation                    |           | 50 x A N |
| A = number of conductors cross section mm <sup>2</sup>      |           |          |
| Min. bending radius fixed installation                      | D ≤ 12 mm | 3 x D    |
|                                                             | D > 12 mm | 4 x D    |
| free movement                                               | D ≤ 12 mm | 5 x D    |
|                                                             | D > 12 mm | 6 x D    |

### The cable passes the following fluid tests

|                                                                       |               |                          |
|-----------------------------------------------------------------------|---------------|--------------------------|
| Drilling fluid resistance for SHF mud                                 | Fulfilled     | NEK TS 606, 4.4.1        |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | NEK TS 606, 4.4.1 Cat. b |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Base oil EDC 95-11                                                    | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Drilling fluid resistance                                             | Fulfilled     | IEC 60092-360            |
| Mineral oil type IRM 902                                              | 24 h / 100 °C | IEC 60811-404            |
| Mineral oil type IRM 902                                              | 7 d / 100 °C  | IEC 60092-360, An. C     |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | IEC 60092-360, An. D     |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | IEC 60092-360, An. D     |
| Oil based test fluid (CAS no.: 64742-46-7)                            | 56 d / 70 °C  | IEC 60092-360, An. D     |

### The cable passes the following fire tests

#### Electric cables under fire conditions

|                                         |                        |                             |
|-----------------------------------------|------------------------|-----------------------------|
| Outer Diameter > 20 mm                  | 830°C, 120 min.        | IEC 60331-1                 |
| Outer Diameter ≤ 20 mm                  | 830°C, 120 min.        | IEC 60331-2                 |
| Fire protection in ships                | Fulfilled              | IEC 60092-350 + DNV-CP-0400 |
| Vertical flame spread of a single cable | 50 < L ≤ 540 mm        | IEC 60332-1-2               |
| Vertical flame spread of bunched cables | L ≤ 2.5 m              | IEC 60332-3- 22 Cat. A      |
| Smoke density                           | T ≥ 70 %               | IEC 61034-1,2               |
| Corrosivity of combustion gases         | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754-2                 |
| Amount of halogen acid gas              | HCl+HBr ≤ 0.5%         | IEC 60754-1                 |
| Content of fluorine                     | HF ≤ 0.1 %             | IEC 60684-2, 45.2           |
| Toxicity                                | ITC ≤ 3                | EN 50305, 9.2               |

### Applicable standards

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DNV-CP-0400    | Class programme - Type approval - Lightweight electric cables                                                                     |
| EN 50306       | Railway rolling stock cables having special fire performance - Thin wall                                                          |
| NEK TS 606     | Cables for offshore installation, halogenfree and/or mud resistant                                                                |
| IEC 60092- 350 | General construction and test methods of cables for shipboard and offshore applications                                           |
| IEC 60092- 360 | Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables |
| IEC 60092- 376 | Electrical Installations in ships, cables for control and instrumentation circuits 150/250V (300V)                                |

### Approvals

|     |                        |
|-----|------------------------|
| DNV | Certificate TAE00004KC |
|-----|------------------------|

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**Table 1: Capacitance, Inductance & L/R ratio**

| Cable<br>[mm²] | Family      | Type of measuring<br>Core - Core |                        | L/R Ratio<br>[µH/ Ω] | Resistance at<br>20°C max.<br>[Ω/km] |
|----------------|-------------|----------------------------------|------------------------|----------------------|--------------------------------------|
|                |             | C<br>nom.<br>[nf/km]             | L<br>nom.<br>[mH/km]** |                      |                                      |
| pair 0.75      | OFL FR (ic) | 95                               | 0.71                   | 13.3                 | 26.7                                 |
| triple 0.75    | OFL FR (ic) | 90*                              | 0.81*                  | 15.2*                | 26.7                                 |
| pair 1.0       | OFL FR (ic) | 95                               | 0.71                   | 17.8                 | 20                                   |
| triple 1.0     | OFL FR (ic) | 90                               | 0.75                   | 18.8                 | 20                                   |
| pair 1.5       | OFL FR (ic) | 115                              | 0.65                   | 23.7                 | 13.7                                 |
| triple 1.5     | OFL FR (ic) | 110                              | 0.71                   | 25.9                 | 13.7                                 |
| pair 2.5       | OFL FR (ic) | 130                              | 0.6                    | 36.5                 | 8.21                                 |
| triple 2.5     | OFL FR (ic) | 125*                             | 0.62*                  | 37.8*                | 8.21                                 |

\*calculated values, verification pending

\*\*measurements were carried at 1kHz, all values refer to (1xnxm)mm²

EX attachment: worst case values depend on construction of cables and customer applications, therefore worst case values (inductivity / capacity / LR ratio) are available only on request.

**Table 2: individually and collectively screened (ic)**

| Cable Type<br>[n x mm²] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm²] | Cable     |                            |                          | Sheath colour | H+S part number |
|-------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------|------------------------------------|-----------|----------------------------|--------------------------|---------------|-----------------|
|                         | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                       |                                    | ø [mm]    | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 1X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 4.8                   | 2.2                                | 7.55 ±0.3 | 4.2                        | 10.0                     | BK            | 85158201        |
| 1X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 4.8                   | 2.2                                | 7.55 ±0.3 | 4.2                        | 10.0                     | BU            | 85190074        |
| 1X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 1.11                        | 5.1                   | 2.4                                | 8.00 ±0.3 | 3.8                        | 10.1                     | BK            | 85186185        |
| 1X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 1.11                        | 5.1                   | 2.4                                | 8.00 ±0.3 | 3.8                        | 10.1                     | BU            | 85190084        |
| 2X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 9.0                   | 5.2                                | 11.5±0.4  | 8.4                        | 21.7                     | BK            | 85158604        |
| 2X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 9.0                   | 5.2                                | 11.5±0.4  | 8.4                        | 21.7                     | BU            | 85190075        |
| 2X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 9.0                   | 5.2                                | 11.5±0.4  | 8.4                        | 21.7                     | BU            | 85189584        |
| 2X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 9.0                   | 5.2                                | 11.5±0.4  | 8.4                        | 21.7                     | GY            | 85186522        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 1.11                        | 9.8                   | 5.6                                | 13.1±0.4  | 10.2                       | 26.7                     | BK            | 85186186        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 1.11                        | 9.8                   | 5.6                                | 13.1±0.4  | 10.2                       | 26.7                     | BU            | 85190085        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 1.11                        | 9.8                   | 5.6                                | 13.1±0.4  | 10.2                       | 26.7                     | BU            | 85192236        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 1.11                        | 9.8                   | 5.6                                | 13.1±0.4  | 10.2                       | 26.7                     | GY            | 85192227        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 10.8                  | 6.3                                | 13.2±0.4  | 12.3                       | 30.4                     | BK            | 85186179        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 10.8                  | 6.3                                | 13.2±0.4  | 12.3                       | 30.4                     | BU            | 85190076        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 10.8                  | 6.3                                | 13.2±0.4  | 12.3                       | 30.4                     | BU            | 85189587        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 10.8                  | 6.3                                | 13.2±0.4  | 12.3                       | 30.4                     | GY            | 85186526        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 1.11                        | 11.6                  | 6.7                                | 14.8±0.4  | 15.4                       | 35.3                     | BK            | 85186187        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 1.11                        | 11.6                  | 6.7                                | 14.8±0.4  | 15.4                       | 35.3                     | BU            | 85190086        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 1.11                        | 11.6                  | 6.7                                | 14.8±0.4  | 15.4                       | 35.3                     | BU            | 85192237        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, BU, BN | 1.11                        | 11.6                  | 6.7                                | 14.8±0.4  | 15.4                       | 35.3                     | GY            | 85192228        |
| 5X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 12.3                  | 7.5                                | 16.1±0.5  | 14.9                       | 38.0                     | BK            | 85186180        |
| 5X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 12.3                  | 7.5                                | 16.1±0.5  | 14.9                       | 38.0                     | BU            | 85190077        |
| 5X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 13.9                  | 8.3                                | 17.7±0.5  | 19.1                       | 47.5                     | BK            | 85186188        |

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 5X3X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 13.9                  | 8.3                                             | 17.7±0.5 | 19.1                       | 47.5                     | BU            | 85190087        |
| 6X2X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 13.3                  | 7.9                                             | 17.1±0.5 | 16.6                       | 42.8                     | BK            | 85186181        |
| 6X2X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 13.3                  | 7.9                                             | 17.1±0.5 | 16.6                       | 42.8                     | BU            | 85190078        |
| 6X3X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 15.9                  | 9.5                                             | 19.9±0.5 | 22.3                       | 59.1                     | BK            | 85186189        |
| 6X3X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 15.9                  | 9.5                                             | 19.9±0.5 | 22.3                       | 59.1                     | BU            | 85190088        |
| 8X2X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 13.5                  | 7.7                                             | 16.4±0.5 | 19.2                       | 42.6                     | BU            | 85189590        |
| 8X2X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 13.5                  | 7.7                                             | 16.4±0.5 | 19.2                       | 42.6                     | GY            | 85186527        |
| 8X3X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 16.5                  | 10.1                                            | 20.6±0.5 | 27.1                       | 65.2                     | BU            | 85189596        |
| 8X3X0.75                             | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 16.5                  | 10.1                                            | 20.6±0.5 | 27.1                       | 65.2                     | GY            | 85192229        |
| 10X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 16.3                  | 9.5                                             | 19.7±0.5 | 23.7                       | 54.8                     | BK            | 85186182        |
| 10X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 16.3                  | 9.5                                             | 19.7±0.5 | 23.7                       | 54.8                     | BU            | 85190079        |
| 10X3X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 19.0                  | 11.3                                            | 22.4±0.5 | 32.4                       | 75.1                     | BK            | 85186190        |
| 10X3X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 19.0                  | 11.3                                            | 22.4±0.5 | 32.4                       | 75.1                     | BU            | 85190089        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 16.3                  | 9.5                                             | 19.7±0.5 | 26.5                       | 56.5                     | BK            | 85186005        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 16.3                  | 9.5                                             | 19.7±0.5 | 26.5                       | 56.5                     | BU            | 85190080        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 16.3                  | 9.5                                             | 19.7±0.5 | 26.5                       | 56.5                     | BU            | 85192234        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 16.3                  | 9.5                                             | 19.7±0.5 | 26.5                       | 56.5                     | GY            | 85189594        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 19.9                  | 10.7                                            | 22.4±0.5 | 32.0                       | 72.3                     | BK            | 85185620        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 19.9                  | 10.7                                            | 22.4±0.5 | 32.0                       | 72.3                     | BU            | 85190081        |
| 16X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 19.5                  | 10.7                                            | 22.3±0.5 | 33.4                       | 73.0                     | BU            | 85192226        |
| 16X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 19.5                  | 10.7                                            | 22.3±0.5 | 33.4                       | 73.0                     | GY            | 85189604        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 19.9                  | 11.9                                            | 23.8±0.5 | 40.0                       | 81.8                     | BK            | 85186183        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 19.9                  | 11.9                                            | 23.8±0.5 | 40.0                       | 81.8                     | BU            | 85190082        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 23.7                  | 16.2                                            | 26.9±0.6 | 49.8                       | 104.6                    | BK            | 85186184        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 1.11                        | 23.7                  | 16.2                                            | 26.9±0.6 | 49.8                       | 104.6                    | BU            | 85190083        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 23.7                  | 16.2                                            | 26.9±0.6 | 49.8                       | 104.6                    | BU            | 85192235        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, BU     | 1.11                        | 23.7                  | 16.2                                            | 26.9±0.6 | 49.8                       | 104.6                    | GY            | 85189588        |
| 1X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 5.3                   | 2.5                                             | 8.20±0.3 | 5.1                        | 11.8                     | BK            | 85186191        |
| 1X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 5.3                   | 2.5                                             | 8.20±0.3 | 5.1                        | 11.8                     | BU            | 85190090        |
| 1X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 5.7                   | 2.7                                             | 8.70±0.3 | 6.1                        | 13.4                     | BK            | 85186201        |
| 1X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 5.7                   | 2.7                                             | 8.70±0.3 | 6.1                        | 13.4                     | BU            | 85190100        |
| 2X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 9.9                   | 5.6                                             | 12.9±0.4 | 9.8                        | 25.9                     | BK            | 85186192        |
| 2X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 9.9                   | 5.6                                             | 12.9±0.4 | 9.8                        | 25.9                     | BU            | 85190091        |
| 2X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 10.6                  | 5.6                                             | 14.2±0.4 | 11.5                       | 30.9                     | BK            | 85186202        |
| 2X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 10.6                  | 5.6                                             | 14.2±0.4 | 11.5                       | 30.9                     | BU            | 85190101        |
| 4X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 12.0                  | 7.1                                             | 15.8±0.5 | 14.8                       | 36.9                     | BK            | 85186193        |
| 4X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 12.0                  | 7.1                                             | 15.8±0.5 | 14.8                       | 36.9                     | BU            | 85190092        |
| 4X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 13.5                  | 7.9                                             | 17.4±0.5 | 19.2                       | 47.0                     | BK            | 85186203        |
| 4X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 13.5                  | 7.9                                             | 17.4±0.5 | 19.2                       | 47.0                     | BU            | 85190102        |
| 5X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 12.0                  | 7.1                                             | 15.8±0.5 | 14.8                       | 36.9                     | BK            | 85186194        |
| 5X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 12.0                  | 7.1                                             | 15.8±0.5 | 14.8                       | 36.9                     | BU            | 85190093        |

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 5X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 15.0                  | 8.9                                             | 19.0±0.5 | 22.8                       | 55.1                     | BK            | 85186204        |
| 5X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 15.0                  | 8.9                                             | 19.0±0.5 | 22.8                       | 55.1                     | BU            | 85190103        |
| 6X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 13.5                  | 8.3                                             | 17.3±0.5 | 19.5                       | 44.6                     | BK            | 85186195        |
| 6X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 13.5                  | 8.3                                             | 17.3±0.5 | 19.5                       | 44.6                     | BU            | 85190094        |
| 6X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 15.6                  | 9.5                                             | 19.7±0.5 | 26.0                       | 59.8                     | BK            | 85186205        |
| 6X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 15.6                  | 9.5                                             | 19.7±0.5 | 26.0                       | 59.8                     | BU            | 85190104        |
| 10X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 18.3                  | 10.7                                            | 21.9±0.5 | 29.0                       | 66.4                     | BK            | 85186196        |
| 10X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 18.3                  | 10.7                                            | 21.9±0.5 | 29.0                       | 66.4                     | BU            | 85190095        |
| 10X3X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 21.2                  | 15.3                                            | 25.1±0.6 | 42.3                       | 93.8                     | BK            | 85183133        |
| 10X3X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH, RD | 1.25                        | 21.2                  | 15.3                                            | 25.1±0.6 | 42.3                       | 93.8                     | BU            | 85190105        |
| 12X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 18.3                  | 10.7                                            | 21.9±0.5 | 32.6                       | 67.6                     | BK            | 85186197        |
| 12X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 18.3                  | 10.7                                            | 21.9±0.5 | 32.6                       | 67.6                     | BU            | 85190096        |
| 15X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 22.3                  | 16.2                                            | 26.6±0.6 | 43.2                       | 94.3                     | BK            | 85186198        |
| 15X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 22.3                  | 16.2                                            | 26.6±0.6 | 43.2                       | 94.3                     | BU            | 85190097        |
| 20X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 22.3                  | 16.2                                            | 26.6±0.6 | 52.2                       | 102.7                    | BK            | 85186199        |
| 20X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 22.3                  | 16.2                                            | 26.6±0.6 | 52.2                       | 102.7                    | BU            | 85190098        |
| 24X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 26.5                  | 22.2                                            | 31.2±0.6 | 65.4                       | 132.3                    | BK            | 85186200        |
| 24X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.25                        | 26.5                  | 22.2                                            | 31.2±0.6 | 65.4                       | 132.3                    | BU            | 85190099        |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 5.8                   | 2.7                                             | 8.75±0.3 | 6.1                        | 13.7                     | BK            | 85186206        |
| 1X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 5.8                   | 2.7                                             | 8.75±0.3 | 6.1                        | 13.7                     | BU            | 85190106        |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 6.3                   | 3.0                                             | 9.2±0.3  | 7.8                        | 15.7                     | BK            | 85186213        |
| 1X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 6.3                   | 3.0                                             | 9.2±0.3  | 7.8                        | 15.7                     | BU            | 85190116        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 10.7                  | 5.9                                             | 13.2±0.4 | 12.0                       | 29.3                     | BK            | 85186207        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 10.7                  | 5.9                                             | 13.2±0.4 | 12.0                       | 29.3                     | BU            | 85190107        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 10.7                  | 5.9                                             | 13.2±0.4 | 12.0                       | 29.3                     | BU            | 85192238        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 10.7                  | 5.9                                             | 13.2±0.4 | 12.0                       | 29.3                     | GY            | 85189585        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 11.9                  | 6.7                                             | 14.7±0.5 | 15.4                       | 36.6                     | BK            | 85186214        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 11.9                  | 6.7                                             | 14.7±0.5 | 15.4                       | 36.6                     | BU            | 85190117        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 11.9                  | 6.7                                             | 14.7±0.5 | 15.4                       | 36.6                     | BU            | 85192244        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 11.9                  | 6.7                                             | 14.7±0.5 | 15.4                       | 36.6                     | GY            | 85192230        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 13.2                  | 7.1                                             | 15.9±0.5 | 18.5                       | 42.6                     | BK            | 85158999        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 13.2                  | 7.1                                             | 15.9±0.5 | 18.5                       | 42.6                     | BU            | 85190108        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 13.2                  | 7.1                                             | 15.9±0.5 | 18.5                       | 42.6                     | BU            | 85192239        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 13.2                  | 7.1                                             | 15.9±0.5 | 18.5                       | 42.6                     | GY            | 85189603        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 14.9                  | 8.3                                             | 18.3±0.5 | 25.1                       | 55.6                     | BK            | 85186215        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 14.9                  | 8.3                                             | 18.3±0.5 | 25.1                       | 55.6                     | BU            | 85190118        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 14.9                  | 8.3                                             | 18.3±0.5 | 25.1                       | 55.6                     | BU            | 85192245        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 14.9                  | 8.3                                             | 18.3±0.5 | 25.1                       | 55.6                     | GY            | 85192231        |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 14.7                  | 8.9                                             | 18.6±0.5 | 18.5                       | 48.1                     | BK            | 85186208        |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 14.7                  | 8.9                                             | 18.6±0.5 | 18.5                       | 48.1                     | BU            | 85190109        |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 16.5                  | 9.5                                             | 20.6±0.5 | 30.5                       | 67.1                     | BK            | 85186216        |

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→ **RADOX® OFL® SFR 150/250V (c) Fire & Mud Resistant Instrumentation cable**  
586 898 I (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 16.5                  | 9.5                                             | 20.6±0.5 | 30.5                       | 67.1                     | BU            | 85190119        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 16.3                  | 9.5                                             | 20.3±0.5 | 26.3                       | 61.7                     | BK            | 85186209        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 16.3                  | 9.5                                             | 20.3±0.5 | 26.3                       | 61.7                     | BU            | 85190110        |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 19.6                  | 10.7                                            | 21.3±0.5 | 35.5                       | 73.6                     | BK            | 85186217        |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 19.6                  | 10.7                                            | 21.3±0.5 | 35.5                       | 73.6                     | BU            | 85190120        |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 16.5                  | 9.5                                             | 19.4±0.5 | 31.7                       | 62.8                     | BU            | 85192240        |
| 8X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 16.5                  | 9.5                                             | 19.4±0.5 | 31.7                       | 62.8                     | GY            | 85189595        |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 20.1                  | 11.9                                            | 24.4±0.5 | 44.9                       | 95.3                     | BU            | 85192246        |
| 8X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 20.1                  | 11.9                                            | 24.4±0.5 | 44.9                       | 95.3                     | GY            | 85189591        |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 20.3                  | 11.9                                            | 23.6±0.5 | 39.4                       | 81.7                     | BK            | 85186210        |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 20.3                  | 11.9                                            | 23.6±0.5 | 39.4                       | 81.7                     | BU            | 85190111        |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 23.2                  | 16.2                                            | 27.0±0.6 | 57.2                       | 114.4                    | BK            | 85186218        |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.25                        | 23.2                  | 16.2                                            | 27.0±0.6 | 57.2                       | 114.4                    | BU            | 85190121        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 19.9                  | 11.9                                            | 23.4±0.5 | 44.9                       | 84.2                     | BK            | 85158606        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 19.9                  | 11.9                                            | 23.4±0.5 | 44.9                       | 84.2                     | BU            | 85190112        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 19.9                  | 11.9                                            | 23.4±0.5 | 44.9                       | 84.2                     | BU            | 85192241        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 19.9                  | 11.9                                            | 23.4±0.5 | 44.9                       | 84.2                     | GY            | 85189605        |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 23.7                  | 17.8                                            | 27.8±0.6 | 67.0                       | 125.0                    | BU            | 85192247        |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 23.7                  | 17.8                                            | 27.8±0.6 | 67.0                       | 125.0                    | GY            | 85192232        |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 24.0                  | 17.1                                            | 28.3±0.6 | 58.1                       | 113.4                    | BK            | 85186211        |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 24.0                  | 17.1                                            | 28.3±0.6 | 58.1                       | 113.4                    | BU            | 85190113        |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 24.0                  | 16.0                                            | 26.8±0.6 | 59.9                       | 112.7                    | BU            | 85192242        |
| 16X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 24.0                  | 16.0                                            | 26.8±0.6 | 59.9                       | 112.7                    | GY            | 85189589        |
| 16X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 27.8                  | 22.2                                            | 32.3±0.6 | 88.5                       | 165.5                    | BU            | 85192248        |
| 16X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU, BN | 1.25                        | 27.8                  | 22.2                                            | 32.3±0.6 | 88.5                       | 165.5                    | GY            | 85189592        |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 24.2                  | 18.0                                            | 28.6±0.6 | 72.5                       | 127.2                    | BK            | 85186212        |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 24.2                  | 18.0                                            | 28.6±0.6 | 72.5                       | 127.2                    | BU            | 85190114        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 28.9                  | 22.2                                            | 32.5±0.6 | 88.8                       | 161.0                    | BK            | 85158607        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.25                        | 28.9                  | 22.2                                            | 32.5±0.6 | 88.8                       | 161.0                    | BU            | 85190115        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 28.9                  | 22.2                                            | 32.5±0.6 | 88.8                       | 161.0                    | BU            | 85192243        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, BU     | 1.25                        | 28.9                  | 22.2                                            | 32.5±0.6 | 88.8                       | 161.0                    | GY            | 85189597        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH     | 1.55                        | 6.8                   | 3.0                                             | 8.5      | 9.80±0.3                   | 17.9                     | BK            | 85186219        |
| 1X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH     | 1.55                        | 6.8                   | 3.0                                             | 8.5      | 9.80±0.3                   | 17.9                     | BU            | 85190122        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH, RD | 1.55                        | 7.3                   | 3.5                                             | 11.1     | 10.5±0.4                   | 21.4                     | BK            | 85186221        |
| 1X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH, RD | 1.55                        | 7.3                   | 3.5                                             | 11.1     | 10.5±0.4                   | 21.4                     | BU            | 85190124        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH     | 1.55                        | 12.9                  | 7.1                                             | 16.8     | 16.0±0.5                   | 41.3                     | BK            | 85183136        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH     | 1.55                        | 12.9                  | 7.1                                             | 16.8     | 16.0±0.5                   | 41.3                     | BU            | 85190123        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU     | 1.55                        | 12.9                  | 7.1                                             | 16.8     | 16.0±0.5                   | 41.3                     | BU            | 85189593        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU     | 1.55                        | 12.9                  | 7.1                                             | 16.8     | 16.0±0.5                   | 41.3                     | GY            | 85192233        |
| 2X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH, RD | 1.55                        | 13.9                  | 7.9                                             | 21.7     | 17.1±0.5                   | 50.0                     | BK            | 85186222        |
| 2X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH, RD | 1.55                        | 13.9                  | 7.9                                             | 21.7     | 17.1±0.5                   | 50.0                     | BU            | 85190125        |

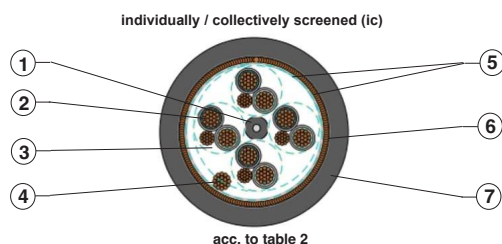
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→ **RADOX® OFL® SFR 150/250V (c) Fire & Mud Resistant Instrumentation cable**  
586 898 I (e)

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable  |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------|-------------------------------------------------|--------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                       |                                                 | ø [mm] | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 2X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU, BN | 1.55                        | 13.9                  | 7.9                                             | 21.7   | 17.1±0.5                   | 50.0                     | BU            | 85189586        |
| 2X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, BU, BN | 1.55                        | 13.9                  | 7.9                                             | 21.7   | 17.1±0.5                   | 50.0                     | GY            | 85186528        |

## Instrumentation cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX OFL SFR 150/250V (ic) Fire &amp; Mud Resistant Instrumentation cable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Description  | <p>Mud, diesel fuel, oil, ozone, hydrolysis resistant, excellent flexibility, light weight, halogen free, flame retardant and FIRE RESISTANT, easily strippable, free of hygroscopic material, instrumentation cable following BFOU(ic).</p> <p>Highly flexible cable for fixed and free installations for electrical instrument, control alarm and communication systems, applications where harsh environments can generate a potential risk on life and equipment in areas exposed to mud, oil and drilling fluids and/or safety areas.</p> |

| General data |                                      |                |                                                                            |
|--------------|--------------------------------------|----------------|----------------------------------------------------------------------------|
| 1.           | <b>Center and Fillers (optional)</b> | Characteristic | Non-hygroscopic                                                            |
| 2.           | <b>Cores RADOX</b>                   | Conductor      | Stranded tin-plated copper                                                 |
|              | <b>Type OFL FR</b>                   | Insulation     | RADOX TI301 (thin wall)<br>Dual layer high performance polymer (thin wall) |
|              |                                      | Colours        | see table 2                                                                |
| 3.           | <b>Element</b>                       | Cores          | 2 or 3 cores                                                               |
|              |                                      | Drain wire     | Flexible tin-plated copper                                                 |
|              |                                      | Alu tape       | Wrapping                                                                   |
|              |                                      | Tape           | Wrapping                                                                   |
| 4.           | <b>Conductor</b>                     | Drain wire     | Flexible tin-plated copper                                                 |
| 5.           | <b>First layer</b>                   | Alu tape       | Wrapping                                                                   |
| 5.           | <b>Second layer</b>                  | Tape           | Wrapping                                                                   |
| 6.           | <b>Shielding</b>                     | Screen         | Tin-plated copper braid, coverage density: ≥ 90%                           |
| 7.           | <b>Outer layer</b>                   | Sheath         | RADOX Elastomer S FH                                                       |
|              |                                      |                | Type SHF2 acc. to IEC 60092- 360 and NEK TS 606                            |
|              |                                      | Colour         | Grey or Blue acc. NEK TS 606: 2016                                         |

## Printing on sheath

|                       |                          |                                                                                                      |
|-----------------------|--------------------------|------------------------------------------------------------------------------------------------------|
| Outer Diameter > 20mm |                          | [a] HUBER+SUHNER RADOX OFL SFR 150/250V [b] SHF2 M 90°C IEC 60332-1-1 IEC 60332-3-22 [c]-[d] [e] [f] |
| Outer Diameter ≤ 20mm |                          | [a] HUBER+SUHNER RADOX OFL SFR 150/250V [b] SHF2 M 90°C IEC 60332-1-2 IEC 60332-3-22 [c]-[d] [e] [f] |
| [a]                   | Meter marking (in m)     | = 123456 = m                                                                                         |
| [b]                   | Construction (in mm²)    | 2x2x0.75(i)                                                                                          |
| [c]                   | Part number              | 12345678                                                                                             |
| [d]                   | Batch number             | 1234567                                                                                              |
| [e]                   | Production week and year | 01-2025                                                                                              |
| [f]                   | Production place         | CH                                                                                                   |

## Technical data

|                                      |               |                    |
|--------------------------------------|---------------|--------------------|
| acc. to EN 50306 and IEC 60092 - 350 |               |                    |
| Rated voltage                        | $U_o/U (U_m)$ | 150/250 (300) V AC |
| Test voltage                         |               | 2000 V AC          |
| Max. voltage conductor to earth      |               | 250 V DC           |
| Max. voltage conductor to conductor  |               | 500 V DC           |
| Test voltage                         |               | 4800 V DC          |



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### Storage, Installation and Operation recommendation

|                                                             |           |          |
|-------------------------------------------------------------|-----------|----------|
| Max. rated conductor temperature normal operation IEC 60092 |           | +90 °C   |
| Temperature index of core insulation TI/20kh                |           | +135 °C  |
| Temperature index of sheath TI/20kh                         |           | +130 °C  |
| Max. storage temperature                                    |           | +40 °C   |
| Max. storage temperature ≤ 5000h                            |           | +65 °C   |
| Min. operation, installation and handling temperature       |           | -40 °C   |
| Min. storage temperature                                    |           | -50 °C   |
| Max. tensile load, only for installation                    |           | 50 x A N |
| A = number of conductors cross section mm <sup>2</sup>      |           |          |
| Min. bending radius fixed installation                      | D ≤ 12 mm | 3 x D    |
|                                                             | D > 12 mm | 4 x D    |
| free movement                                               | D ≤ 12 mm | 5 x D    |
|                                                             | D > 12 mm | 6 x D    |

### The cable sheath passes the following fluid tests

|                                                                       |               |                          |
|-----------------------------------------------------------------------|---------------|--------------------------|
| Drilling fluid resistance for SHF mud                                 | Fulfilled     | NEK TS 606, 4.4.1        |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | NEK TS 606, 4.4.1 Cat. b |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Base oil EDC 95-11                                                    | 56 d / 70 °C  | NEK TS 606, 4.4.1 Cat. c |
| Drilling fluid resistance                                             | Fulfilled     | IEC 60092-360            |
| Mineral oil type IRM 902                                              | 24 h / 100 °C | IEC 60811-404            |
| Mineral oil type IRM 902                                              | 7 d / 100 °C  | IEC 60092-360, An. C     |
| Mineral oil type IRM 903                                              | 7 d / 100 °C  | IEC 60092-360, An. D     |
| Calcium bromide brine (45 % w/w CaBr <sub>2</sub> / H <sub>2</sub> O) | 56 d / 70 °C  | IEC 60092-360, An. D     |
| Oil based test fluid (CAS no.: 64742-46-7)                            | 56 d / 70 °C  | IEC 60092-360, An. D     |

### The cable passes the following fire tests

#### Electric cables under fire conditions

|                                         |                        |                             |
|-----------------------------------------|------------------------|-----------------------------|
| Outer Diameter > 20 mm                  | 830°C, 120 min.        | IEC 60331-1                 |
| Outer Diameter ≤ 20 mm                  | 830°C, 120 min.        | IEC 60331-2                 |
| Fire protection in ships                | Fulfilled              | IEC 60092-350 + DNV-CP-0400 |
| Vertical flame spread of a single cable | 50 < L ≤ 540 mm        | IEC 60332-1-2               |
| Vertical flame spread of bunched cables | L ≤ 2.5 m              | IEC 60332-3- 22 Cat. A      |
| Smoke density                           | T ≥ 70 %               | IEC 61034-1,2               |
| Corrosivity of combustion gases         | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754-2                 |
| Amount of halogen acid gas              | HCl+HBr ≤ 0.5%         | IEC 60754-1                 |
| Content of fluorine                     | HF ≤ 0.1 %             | IEC 60684-2, 45.2           |
| Toxicity                                | ITC ≤ 3                | EN 50305, 9.2               |

### Applicable standards

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DNV-CP-0400    | Class programme - Type approval - Lightweight electric cables                                                                     |
| EN 50306       | Railway rolling stock cables having special fire performance - Thin wall                                                          |
| NEK TS 606     | Cables for offshore installation, halogenfree and/or mud resistant                                                                |
| IEC 60092- 350 | General construction and test methods of cables for shipboard and offshore applications                                           |
| IEC 60092- 360 | Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables |
| IEC 60092- 376 | Electrical installations in ships, cables for control and instrumentation circuits 150/250V (300V)                                |

### Approvals

|     |                        |
|-----|------------------------|
| DNV | Certificate TAE00004T0 |
|-----|------------------------|

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**Table 1: Capacitance, Inductance & L/R ratio**

| Cable<br>[mm²] | Family      | Type of measuring<br>Core - Core |                        | L/R Ratio<br>[µH/ Ω] | Resistance at<br>20°C max.<br>[Ω/km] |
|----------------|-------------|----------------------------------|------------------------|----------------------|--------------------------------------|
|                |             | C<br>nom.<br>[nf/km]             | L<br>nom.<br>[mH/km]** |                      |                                      |
| pair 0.5       | OFL FR (ic) | 85                               | 0.78                   | 9.7                  | 40.1                                 |
| triple 0.5     | OFL FR (ic) | 80                               | 0.81                   | 10.1                 | 40.1                                 |
| pair 0.75      | OFL FR (ic) | 95                               | 0.71                   | 13.3                 | 26.7                                 |
| triple 0.75    | OFL FR (ic) | 90*                              | 0.81*                  | 15.2*                | 26.7                                 |
| pair 1.0       | OFL FR (ic) | 95                               | 0.71                   | 17.8                 | 20                                   |
| triple 1.0     | OFL FR (ic) | 90                               | 0.75                   | 18.8                 | 20                                   |
| pair 1.5       | OFL FR (ic) | 115                              | 0.65                   | 23.7                 | 13.7                                 |
| triple 1.5     | OFL FR (ic) | 110                              | 0.71                   | 25.9                 | 13.7                                 |
| pair 2.5       | OFL FR (ic) | 130                              | 0.6                    | 36.5                 | 8.21                                 |
| triple 2.5     | OFL FR (ic) | 125*                             | 0.62*                  | 37.8*                | 8.21                                 |

\*calculated values, verification pending

\*\*measurements were carried at 1kHz, all values refer to (1xnxm)mm²

EX attachment: worst case values depend on construction of cables and customer applications, therefore worst case values (inductivity / capacity / LR ratio) are available only on request.

**Table 2: individually and collectively screened (ic)**

| Cable Type<br>[n x mm²] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Drain wire c<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm²] | Cable    |                            |                          | Sheath colour | H+S part number |
|-------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------------|-----------------------|------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                         | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                             |                       |                                    | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 2x2x0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 10.0                  | 5.9                                | 12.9±0.4 | 10.3                       | 25.4                     | BK            | 85209574        |
| 2x2x0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 10.0                  | 5.9                                | 12.9±0.4 | 10.3                       | 25.4                     | BU            | 85190140        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 11.0                  | 6.3                                | 14.6±0.4 | 11.2                       | 30.6                     | BK            | 85186253        |
| 2X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 11.0                  | 6.3                                | 14.6±0.4 | 11.2                       | 30.6                     | BU            | 85190149        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 12.2                  | 7.1                                | 15.6±0.5 | 14.2                       | 35.4                     | BK            | 85186245        |
| 4X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 12.2                  | 7.1                                | 15.6±0.5 | 14.2                       | 35.4                     | BU            | 85190141        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 13.4                  | 7.5                                | 17.3±0.5 | 17.6                       | 43.7                     | BK            | 85186254        |
| 4X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 13.4                  | 7.5                                | 17.3±0.5 | 17.6                       | 43.7                     | BU            | 85190150        |
| 5X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 12.7                  | 7.1                                | 16.9±0.5 | 16.4                       | 40.4                     | BK            | 85186246        |
| 5X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 12.7                  | 7.1                                | 16.9±0.5 | 16.4                       | 40.4                     | BU            | 85190142        |
| 5X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 15.0                  | 7.9                                | 18.6±0.5 | 20.9                       | 50.7                     | BK            | 85186255        |
| 5X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 15.0                  | 7.9                                | 18.6±0.5 | 20.9                       | 50.7                     | BU            | 85190151        |
| 6X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 14.2                  | 7.9                                | 18.2±0.5 | 19.2                       | 47.2                     | BK            | 85186247        |
| 6X2X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 14.2                  | 7.9                                | 18.2±0.5 | 19.2                       | 47.2                     | BU            | 85190143        |
| 6X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 16.6                  | 9.5                                | 20.3±0.5 | 24.4                       | 60.0                     | BK            | 85186256        |
| 6X3X0.75                | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 16.6                  | 9.5                                | 20.3±0.5 | 24.4                       | 60.0                     | BU            | 85190152        |
| 10X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 18.1                  | 10.7                               | 20.9±0.5 | 28.8                       | 64.4                     | BK            | 85186248        |
| 10X2X0.75               | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 18.1                  | 10.7                               | 20.9±0.5 | 28.8                       | 64.4                     | BU            | 85190144        |
| 10X3X0.75               | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 20.0                  | 11.9                               | 23.9±0.5 | 37.2                       | 82.4                     | BK            | 85186257        |
| 10X3X0.75               | 19X0.23   | 1.11        | 2.38        | BK, WH, RD | 0.9                         | 1.11                        | 20.0                  | 11.9                               | 23.9±0.5 | 37.2                       | 82.4                     | BU            | 85190153        |

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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Drain wire c<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 12X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 19.1                  | 10.7                                            | 22.0±0.5 | 32.6                       | 68.7                     | BK            | 85186249        |
| 12X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 19.1                  | 10.7                                            | 22.0±0.5 | 32.6                       | 68.7                     | BU            | 85190145        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 21.6                  | 11.9                                            | 25.7±0.6 | 40.0                       | 88.6                     | BK            | 85186250        |
| 15X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 21.6                  | 11.9                                            | 25.7±0.6 | 40.0                       | 88.6                     | BU            | 85190146        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 23.0                  | 16.1                                            | 27.3±0.6 | 53.2                       | 104.5                    | BK            | 85186251        |
| 20X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 23.0                  | 16.1                                            | 27.3±0.6 | 53.2                       | 104.5                    | BU            | 85190147        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 26.8                  | 22.2                                            | 31.7±0.6 | 66.8                       | 136.5                    | BK            | 85186252        |
| 24X2X0.75                            | 19X0.23   | 1.11        | 2.38        | BK, WH     | 0.9                         | 1.11                        | 26.8                  | 22.2                                            | 31.7±0.6 | 66.8                       | 136.5                    | BU            | 85190148        |
| 2X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 11.2                  | 5.9                                             | 13.4±0.4 | 10.6                       | 29.0                     | BK            | 85209577        |
| 2X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 11.2                  | 5.9                                             | 13.4±0.4 | 10.6                       | 29.0                     | BU            | 85190154        |
| 2X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 12.2                  | 7.1                                             | 15.8±0.5 | 13.5                       | 36.5                     | BK            | 85186267        |
| 2X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 12.2                  | 7.1                                             | 15.8±0.5 | 13.5                       | 36.5                     | BU            | 85190163        |
| 4X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 13.6                  | 7.5                                             | 16.7±0.5 | 17.2                       | 41.4                     | BK            | 85186259        |
| 4X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 13.6                  | 7.5                                             | 16.7±0.5 | 17.2                       | 41.4                     | BU            | 85190155        |
| 4X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 15.0                  | 8.9                                             | 19.0±0.5 | 22.0                       | 52.2                     | BK            | 85186268        |
| 4X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 15.0                  | 8.9                                             | 19.0±0.5 | 22.0                       | 52.2                     | BU            | 85190164        |
| 5X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 15.1                  | 8.3                                             | 18.2±0.5 | 20.5                       | 48.4                     | BK            | 85186260        |
| 5X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 15.1                  | 8.3                                             | 18.2±0.5 | 20.5                       | 48.4                     | BU            | 85190156        |
| 5X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 16.7                  | 10.1                                            | 20.8±0.5 | 26.5                       | 62.4                     | BK            | 85186269        |
| 5X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 16.7                  | 10.1                                            | 20.8±0.5 | 26.5                       | 62.4                     | BU            | 85190165        |
| 6X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 15.4                  | 8.9                                             | 18.3±0.5 | 23.4                       | 51.3                     | BK            | 85186261        |
| 6X2X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 15.4                  | 8.9                                             | 18.3±0.5 | 23.4                       | 51.3                     | BU            | 85190157        |
| 6X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 18.5                  | 11.3                                            | 22.7±0.5 | 31.1                       | 73.8                     | BK            | 85186270        |
| 6X3X1                                | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 18.5                  | 11.3                                            | 22.7±0.5 | 31.1                       | 73.8                     | BU            | 85190166        |
| 10X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 20.0                  | 11.3                                            | 22.9±0.5 | 35.9                       | 73.6                     | BK            | 85186262        |
| 10X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 20.0                  | 11.3                                            | 22.9±0.5 | 35.9                       | 73.6                     | BU            | 85190158        |
| 10X3X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 22.4                  | 15.3                                            | 25.7±0.6 | 48.5                       | 98.4                     | BK            | 85186271        |
| 10X3X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 22.4                  | 15.3                                            | 25.7±0.6 | 48.5                       | 98.4                     | BU            | 85190167        |
| 12X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 20.8                  | 14.4                                            | 24.0±0.5 | 43.8                       | 85.1                     | BK            | 85186263        |
| 12X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 20.8                  | 14.4                                            | 24.0±0.5 | 43.8                       | 85.1                     | BU            | 85190159        |
| 15X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 24.1                  | 17.1                                            | 27.3±0.6 | 53.9                       | 109.6                    | BK            | 85186264        |
| 15X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 24.1                  | 17.1                                            | 27.3±0.6 | 53.9                       | 109.6                    | BU            | 85190160        |
| 20X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 25.5                  | 18.0                                            | 28.8±0.6 | 67.4                       | 124.1                    | BK            | 85186265        |
| 20X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 25.5                  | 18.0                                            | 28.8±0.6 | 67.4                       | 124.1                    | BU            | 85190161        |
| 24X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 30.1                  | 22.2                                            | 33.7±0.6 | 83.9                       | 160.4                    | BK            | 85186266        |
| 24X2X1                               | 19X0.26   | 1.25        | 2.66        | BK, WH     | 1.11                        | 1.25                        | 30.1                  | 22.2                                            | 33.7±0.6 | 83.9                       | 160.4                    | BU            | 85190162        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 12.0                  | 6.7                                             | 15.0±0.5 | 13.2                       | 34.4                     | BK            | 85186272        |
| 2X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 12.0                  | 6.7                                             | 15.0±0.5 | 13.2                       | 34.4                     | BU            | 85190168        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 13.2                  | 7.5                                             | 17.1±0.5 | 16.8                       | 42.6                     | BK            | 85186281        |
| 2X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 13.2                  | 7.5                                             | 17.1±0.5 | 16.8                       | 42.6                     | BU            | 85190177        |

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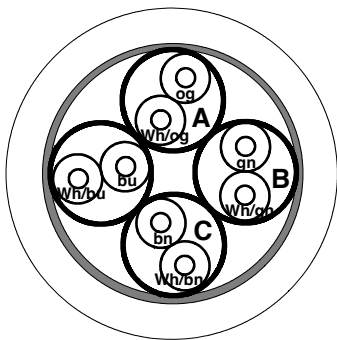
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| Cable Type<br>[n x mm <sup>2</sup> ] | Conductor |             | Core        |            | Drain wire i<br>ø max. [mm] | Drain wire c<br>ø max. [mm] | Bundle<br>ø nom. [mm] | Screen cross<br>section nom. [mm <sup>2</sup> ] | Cable    |                            |                          | Sheath colour | H+S part number |
|--------------------------------------|-----------|-------------|-------------|------------|-----------------------------|-----------------------------|-----------------------|-------------------------------------------------|----------|----------------------------|--------------------------|---------------|-----------------|
|                                      | [n x mm]  | ø max. [mm] | ø nom. [mm] | Colours    |                             |                             |                       |                                                 | ø [mm]   | Cu weight<br>nom [kg/100m] | Weight<br>nom. [kg/100m] |               |                 |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 14.5                  | 8.3                                             | 17.9±0.5 | 21.6                       | 48.1                     | BK            | 85186273        |
| 4X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 14.5                  | 8.3                                             | 17.9±0.5 | 21.6                       | 48.1                     | BU            | 85190169        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 16.2                  | 8.9                                             | 19.9±0.5 | 27.8                       | 60.4                     | BK            | 85186282        |
| 4X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 16.2                  | 8.9                                             | 19.9±0.5 | 27.8                       | 60.4                     | BU            | 85190178        |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 15.7                  | 8.9                                             | 19.5±0.5 | 25.6                       | 52.9                     | BK            | 85186274        |
| 5X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 15.7                  | 8.9                                             | 19.5±0.5 | 25.6                       | 52.9                     | BU            | 85190170        |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 18.2                  | 9.5                                             | 21.6±0.5 | 33.9                       | 72.9                     | BK            | 85186283        |
| 5X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 18.2                  | 9.5                                             | 21.6±0.5 | 33.9                       | 72.9                     | BU            | 85190179        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 18.0                  | 10.1                                            | 21.8±0.5 | 30.3                       | 68.5                     | BK            | 85186275        |
| 6X2X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 18.0                  | 10.1                                            | 21.8±0.5 | 30.3                       | 68.5                     | BU            | 85190171        |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 20.3                  | 11.9                                            | 24.7±0.5 | 40.5                       | 89.6                     | BK            | 85186284        |
| 6X3X1.5                              | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 20.3                  | 11.9                                            | 24.7±0.5 | 40.5                       | 89.6                     | BU            | 85190180        |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 21.8                  | 15.2                                            | 26.5±0.6 | 49.3                       | 98.9                     | BK            | 85186276        |
| 10X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 21.8                  | 15.2                                            | 26.5±0.6 | 49.3                       | 98.9                     | BU            | 85190172        |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 24.1                  | 17.1                                            | 28.1±0.6 | 64.2                       | 121.9                    | BK            | 85186285        |
| 10X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 24.1                  | 17.1                                            | 28.1±0.6 | 64.2                       | 121.9                    | BU            | 85190181        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 22.6                  | 16.1                                            | 26.5±0.6 | 56.5                       | 104.7                    | BK            | 85186277        |
| 12X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 22.6                  | 16.1                                            | 26.5±0.6 | 56.5                       | 104.7                    | BU            | 85190173        |
| 12X3X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH, RD | 1.11                        | 1.25                        | 25.5                  | 18.0                                            | 29.4±0.6 | 76                         | 134.4                    | BK            | 85284490        |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 26.3                  | 18.0                                            | 30.4±0.6 | 69.0                       | 132.7                    | BK            | 85186278        |
| 15X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 26.3                  | 18.0                                            | 30.4±0.6 | 69.0                       | 132.7                    | BU            | 85190174        |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 27.7                  | 20.0                                            | 32.5±0.7 | 91.0                       | 156.8                    | BK            | 85186279        |
| 20X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 27.7                  | 20.0                                            | 32.5±0.7 | 91.0                       | 156.8                    | BU            | 85190175        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 32.4                  | 22.2                                            | 35.0±0.7 | 106.6                      | 192.0                    | BK            | 85186280        |
| 24X2X1.5                             | 37X0.23   | 1.55        | 2.9         | BK, WH     | 1.11                        | 1.25                        | 32.4                  | 22.2                                            | 35.0±0.7 | 106.6                      | 192.0                    | BU            | 85190176        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH     | 1.25                        | 1.55                        | 14.0                  | 7.9                                             | 17.5±0.5 | 18.0                       | 45.7                     | BK            | 85186286        |
| 2X2X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH     | 1.25                        | 1.55                        | 14.0                  | 7.9                                             | 17.5±0.5 | 18.0                       | 45.7                     | BU            | 85190182        |
| 2X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH, RD | 1.25                        | 1.55                        | 15.4                  | 8.9                                             | 19.2±0.5 | 23.1                       | 54.7                     | BK            | 85186287        |
| 2X3X2.5                              | 37X0.29   | 1.94        | 3.4         | BK, WH, RD | 1.25                        | 1.55                        | 15.4                  | 8.9                                             | 19.2±0.5 | 23.1                       | 54.7                     | BU            | 85190183        |

### **RADOX® OFL® CAT cables**

- CAT5e or CAT7 (both can be used as CAT6)
- PE foamed cores
- SHF2 sheath with extreme oil, mud & chemical resistance
- For fixed and moving applications
- -40....+85°C



**CAT cables**

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® CAT5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Product ID   | <b>4x (2x24AWG) BK</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Description  | <p>Limited fire hazard databus cable, zero halogen, flame retardant; high temperature, low temperature and ozone resistance, solder iron resistant, easily strippable, flexible, excellent screening properties. Cable for symmetrical data transmission with impedance of 100 Ω with very good transmission properties at high frequencies.</p> <p>For permanent installation as category 5 communication cable on: ships, oil&amp;gas platforms, refineries and other harsh environment.</p> <p>The cable can also be used as a CAT6 or CAT7 cable, depending on the installation parameters and cable length.</p> |

| General data                 |                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>H+S part no</b>           | <b>85188410</b>                                                                                                                 |
| <b>Construction</b>          |                                                                                                                                 |
| Conductor                    | Tin-plated copper, stranded 7x32AWG (7x0.20mm)                                                                                  |
| Core insulation              | RADOX®Foam                                                                                                                      |
| Core diameter                | 1.35 mm                                                                                                                         |
| Core colour, numbering, pair | og- wh/og, gn- wh/gn, bn- wh/bn, bu- wh/bu                                                                                      |
| Wrapping over pair           | Aluminium tape                                                                                                                  |
| Filler                       | -                                                                                                                               |
| EMC- screen                  | Braid, tin-plated copper                                                                                                        |
| Screen diameter              | 6.0 mm                                                                                                                          |
| Wrapping                     | Tape                                                                                                                            |
| Cable sheath                 | RADOX®Elastomer S FH (SHF2, SHF mud)                                                                                            |
| Sheath colour                | black                                                                                                                           |
| <b>Cable diameter</b>        | 8.1 ± 0.5mm                                                                                                                     |
| <b>Type of installation</b>  | fixed                                                                                                                           |
| <b>Cable weight nom.</b>     | 8.8 kg/100m                                                                                                                     |
| <b>Pulling force</b>         | max. 50 N                                                                                                                       |
| <b>Printing on sheath</b>    | HUBER+SUHNER RADOX® OFL® CAT5e 4X(2X24AWG) SHF2 MUD<br>IEC 60332- 1- 2 85188410- [batch no] [date of manufacture] [prod- place] |

| Technical data                             |                    |               |
|--------------------------------------------|--------------------|---------------|
| Voltage rating                             |                    | 125 VAC       |
| Test voltage, 50 Hz, 5 min.                |                    | 1000 VAC      |
| Temperature index of sheath TI/20kh        |                    | > 130 °C      |
| Max. Operating temperature                 | fixed installation | 85* °C        |
| Min. operating temperature                 | fixed installation | - 40 °C       |
| Min. installation and handling temperature |                    | - 20 °C       |
| Max. storage temperature                   |                    | 40 °C         |
| Min. storage temperature                   |                    | - 40 °C       |
| Min. bending radius                        | fixed installation | 8 x cable dia |
| Characteristic Impedance                   | f = 100MHz         | 100 ± 5 Ω     |
| Resistance at 20 °C                        |                    | ≤ 95 Ω / km   |
| Capacitance                                | core / core        | ≤ 65 pF / m   |
|                                            | core / screen      | ≤ 100 pF / m  |
| Transfer impedance                         | f ≤ 30 MHz         | ≤ 30 mΩ/m     |



| Frequency (MHz) | Attenuation (dB/100m) Max. | PS NEXT (dB) Min. | PS ACR- F (dB) Min. | Return loss (dB) Min. |
|-----------------|----------------------------|-------------------|---------------------|-----------------------|
| 1**             | 2.1                        | -                 | -                   | -                     |
| 4               | 4.1                        | 53.3              | 79                  | 23.0                  |
| 10              | 6.5                        | 47.3              | 71                  | 25.0                  |
| 31.25           | 12.0                       | 39.9              | 61.1                | 23.6                  |
| 62.5            | 17.1                       | 35.4              | 55.1                | 21.5                  |
| 100             | 22.1                       | 32.3              | 51                  | 20.1                  |
| 300****         | 50                         | 62.3              | 43.0                | 15.6                  |
| 600****         | 73.3                       | 57.8              | 35.4                | 15.6                  |

Applications according to the following standards are possible

| EN61156-5<br>Horizontal floor wiring |      |      | EN61156-6<br>Work area wiring<br>Flexible-application |      |          |
|--------------------------------------|------|------|-------------------------------------------------------|------|----------|
| CAT5***                              | CAT6 | CAT7 | CAT5                                                  | CAT6 | CAT7**** |
| x                                    | -    | -    | x                                                     | x    | x        |

\* According IEC60092- 379 the max. operating temperature is +80 °C

\*\* The cable performance between 1 MHz and 4 MHz is achieved by design only and it is therefore not necessary to test for this performance below 4 Mhz.

\*\*\* 5% deviations of attenuation are possible

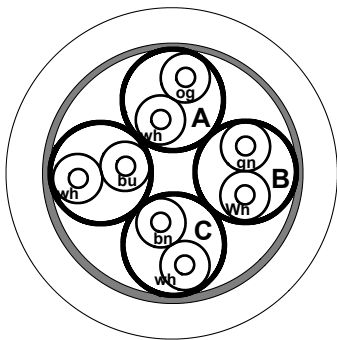
\*\*\*\* Data for frequencies above 100 Mhz reference the properties for CAT7 cable

| The cable sheath passes the following fluid tests                 |              |                             |
|-------------------------------------------------------------------|--------------|-----------------------------|
| Enhanced oil resistance                                           | Fulfilled    | NEK TS 606                  |
| Mineral oil type IRM 902                                          | 7 d / 100 °C | NEK TS 606, table 1, cat. c |
| Mineral oil type IRM 903                                          | 7 d / 100 °C | NEK TS 606, table 1, cat. c |
| Mud resistance                                                    | Fulfilled    | NEK TS 606                  |
| Calcium bromide brine (45 % CaBr <sub>2</sub> / H <sub>2</sub> O) | 56d/ 70 °C   | NEK TS 606, table 1, cat. c |
| Base oil EDC 95- 11                                               | 56 d / 70 °C | NEK TS 606, table 1, cat. c |
| Enhanced oil resistance                                           | Fulfilled    | IEC 60092- 360              |
| Mineral oil type IRM 902                                          | 7 d / 100 °C | IEC 60092- 360, An. C       |
| Drilling fluid resistance                                         | Fulfilled    | IEC 60092- 360              |
| Mineral oil type IRM 903                                          | 7 d / 100 °C | IEC 60092- 360, An. C       |
| Calcium bromide brine (45 % CaBr <sub>2</sub> / H <sub>2</sub> O) | 56d/ 70 °C   | IEC 60092- 360, An. D       |

| The cable passes the following fire tests |                        |                    |
|-------------------------------------------|------------------------|--------------------|
| Fire protection in ships                  | Fulfilled              | DNV-CP-0403        |
| Vertical flame spread of a single cable   | 50 < L ≤ 540 mm        | IEC 60332- 1- 2    |
| Smoke density                             | T ≥ 60 %               | IEC 61034- 2       |
| Corrosivity of combustion gases           | pH ≥ 4.3, C ≤ 10 µS/mm | IEC 60754- 2       |
| Amount of halogen acid gas                | HCl+HBr ≤ 0.5%         | IEC 60754- 1       |
| Content of fluorine                       | HF ≤ 0.1 %             | IEC 60684- 2, 45.2 |

| Applicable standards |                                                                                                                                                                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DNV CP- 0403         | Type approval - Data communication cables- category cables                                                                                                                    |
| IEC 61156- 5         | Multicore and symmetrical pair/quad cables for digital communications - Symmetrical pair/quad cables with transmission characteristics up to 600Mhz - Horizontal floor wiring |
| NEK TS 606           | Cables for offshore installation, halogenfree and/or mud resistant                                                                                                            |

| Approvals |            |
|-----------|------------|
| DNV       | TAE00004V1 |

**CAT cables**

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® CAT7</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Product ID   | <b>4x(2x23AWG) BK</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description  | <p>Limited fire hazard databus cable, zero halogen, flame retardant; high temperature, low temperature and ozone resistance, solder iron resistant, easily strippable, flexible, excellent screening properties. Cable for symmetrical data transmission with impedance of 100 Ω with very good transmission properties at high frequencies.</p> <p>For permanent installation as category 7 communication cable on: ships, oil &amp; gas platforms, refineries and other harsh environment.</p> <p>The cable can also be used as a CAT5 or CAT6 cable, depending on the installation parameters and cable length.</p> |

| General data                 |                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>H+S part no</b>           | <b>85188411</b>                                                                                                                 |
| <b>Construction</b>          |                                                                                                                                 |
| Conductor                    | bare copper, stranded 7x31AWG (7x0.23mm)                                                                                        |
| Core insulation              | RADOX®Foam                                                                                                                      |
| Core diameter                | 1.6 mm                                                                                                                          |
| Core colour, numbering, pair | og -wh, gn -wh, bn -wh, bu -wh                                                                                                  |
| Wrapping over pair           | Aluminium tape                                                                                                                  |
| Filler                       | -                                                                                                                               |
| EMC- screen                  | Braid, tin-plated copper                                                                                                        |
| Screen diameter              | 7.5 mm                                                                                                                          |
| Wrapping                     | Tape                                                                                                                            |
| Cable sheath                 | RADOX®Elastomer S FH (SHF2, SHF mud)                                                                                            |
| Sheath colour                | black                                                                                                                           |
| <b>Cable diameter</b>        | 9.8 ± 0.5mm                                                                                                                     |
| <b>Type of installation</b>  | fixed                                                                                                                           |
| <b>Cable weight nom.</b>     | 10.3 kg/100m                                                                                                                    |
| <b>Pulling force</b>         | max. 50 N                                                                                                                       |
| <b>Printing on sheath</b>    | HUBER+SUHNER RADOX® OFL® CAT7 4X(2X23AWG) SHF2 MUD<br>IEC 60332--1--2 85188411--[batch no] [date of manufacture] [prod-- place] |

| Technical data                             |                    |               |
|--------------------------------------------|--------------------|---------------|
| Voltage rating                             |                    | 125 VAC       |
| Test voltage, 50 Hz, 5 min.                |                    | 1000 VAC      |
| Temperature index of sheath TI/20kh        |                    | > 130 °C      |
| Max. Operating temperature                 | fixed installation | 85* °C        |
| Min. operating temperature                 | fixed installation | -40 °C        |
| Min. installation and handling temperature |                    | -20 °C        |
| Max. storage temperature                   |                    | 40 °C         |
| Min. storage temperature                   |                    | -40 °C        |
| Min. bending radius                        | fixed installation | 8 x cable dia |
| Characteristic Impedance                   | f = 100MHz         | 100 ± 5 Ω     |
| Resistance at 20 °C                        |                    | ≤ 95 Ω / km   |
| Capacitance                                | core / core        | ≤ 65 pF / m   |
|                                            | core / screen      | ≤ 100 pF / m  |
| Transfer impedance                         | f ≤ 30 MHz         | ≤ 30 mΩ/m     |



| Frequency (MHz) | Attenuation (dB/100m) Max. | PS NEXT (dB) Min. | PS ACR- F (dB) Min. | Return loss (dB) Min. |
|-----------------|----------------------------|-------------------|---------------------|-----------------------|
| 1**             | 2.0                        | -                 | -                   | -                     |
| 4               | 3.7                        | 75                | 79                  | 23.0                  |
| 10              | 5.9                        | 75                | 71                  | 25.0                  |
| 31.25           | 10.4                       | 75                | 60.8                | 23.5                  |
| 62.5            | 14.9                       | 72.5              | 55.1                | 21.5                  |
| 100             | 19                         | 69.4              | 51.0                | 20.1                  |
| 300             | 34.2                       | 62.2              | 41.5                | 17.3                  |
| 600             | 50.1                       | 57.7              | 35.4                | 17.3                  |

Applications according to the following standards are possible

| EN61156-5<br>Horizontal floor wiring |      |      | EN61156-6<br>Work area wiring<br>Flexible-application |      |      |
|--------------------------------------|------|------|-------------------------------------------------------|------|------|
| CAT5                                 | CAT6 | CAT7 | CAT5                                                  | CAT6 | CAT7 |
| x                                    | x    | x    | x                                                     | x    | x    |

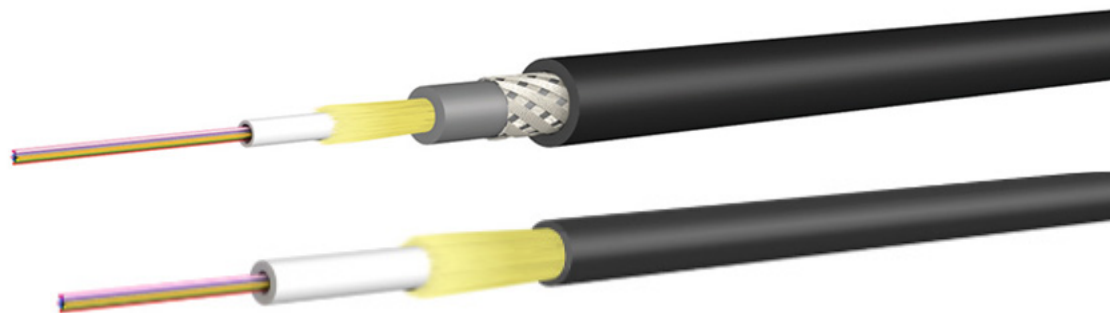
\* According IEC60092- 379 the max. operating temperature is +80 °C

\*\* The cable performance between 1 MHz and 4 MHz is achieved by design only and it is therefore not necessary to test for this performance below 4 Mhz.

| The cable sheath passes the following fluid tests                 |                                                                                                                                                                               |                            |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Enhanced oil resistance                                           | Fulfilled                                                                                                                                                                     | NEK TS 606                 |
| Mineral oil type IRM 902                                          | 7 d / 100 °C                                                                                                                                                                  | NEK TS 606, table 1 cat. c |
| Mineral oil type IRM 903                                          | 7 d / 100 °C                                                                                                                                                                  | NEK TS 606, table 1 cat. c |
| Mud resistance                                                    | Fulfilled                                                                                                                                                                     | NEK TS 606                 |
| Calcium bromide brine (45 % CaBr <sub>2</sub> / H <sub>2</sub> O) | 56d/ 70 °C                                                                                                                                                                    | NEK TS 606, table 1 cat. c |
| Base oil EDC 95- 11                                               | 56 d / 70 °C                                                                                                                                                                  | NEK TS 606, table 1 cat. c |
| Enhanced oil resistance                                           | Fulfilled                                                                                                                                                                     | IEC 60092- 360             |
| Mineral oil type IRM 902                                          | 7 d / 100 °C                                                                                                                                                                  | IEC 60092- 360, An. C      |
| Drilling fluid resistance                                         | Fulfilled                                                                                                                                                                     | IEC 60092- 360             |
| Mineral oil type IRM 903                                          | 7 d / 100 °C                                                                                                                                                                  | IEC 60092- 360, An. C      |
| Calcium bromide brine (45 % CaBr <sub>2</sub> / H <sub>2</sub> O) | 56d/ 70 °C                                                                                                                                                                    | IEC 60092- 360, An. D      |
| The cable passes the following fire tests                         |                                                                                                                                                                               |                            |
| Fire protection in ships                                          | Fulfilled                                                                                                                                                                     | DNV GL- CP- 0403           |
| Vertical flame spread of a single cable                           | 50 < L ≤ 540 mm                                                                                                                                                               | IEC 60332- 1- 2            |
| Smoke density                                                     | T ≥ 60 %                                                                                                                                                                      | IEC 61034- 2               |
| Corrosivity of combustion gases                                   | pH ≥ 4.3, C ≤ 10 μS/mm                                                                                                                                                        | IEC 60754- 2               |
| Amount of halogen acid gas                                        | HCl+HBr ≤ 0.5%                                                                                                                                                                | IEC 60754- 1               |
| Content of fluorine                                               | HF ≤ 0.1 %                                                                                                                                                                    | IEC 60684- 2, 45.2         |
| Applicable standards                                              |                                                                                                                                                                               |                            |
| DNV CP- 0403                                                      | Type approval - Data communication cables- category cables                                                                                                                    |                            |
| IEC 61156- 5                                                      | Multicore and symmetrical pair/quad cables for digital communications - Symmetrical pair/quad cables with transmission characteristics up to 600Mhz - Horizontal floor wiring |                            |
| NEK TS 606                                                        | Cables for offshore installation, halogenfree and/or mud resistant                                                                                                            |                            |
| Approvals                                                         |                                                                                                                                                                               |                            |
| DNV                                                               | TAE00004V1                                                                                                                                                                    |                            |

## **RADOX® OFL® Fiber Optics cables**

- Up to 24 fibers
- SHF2 sheath with extreme oil, mud & chemical resistance
- SWB or glass-armoured
- Flame retardant and fire resistant
- -50....+85°C



## Fiber Optics cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>Multi-fiber Loose Tube Cable RADOX®</b>                                                                                                                                                                                                                                                                                                                                                                                          |
| Product ID   | <b>24-.../W(ZNG)R-...85-DNV</b>                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description  | <ul style="list-style-type: none"> <li>• Metal-free rodent-protected indoor and outdoor cable</li> <li>• High flexibility and form stability</li> <li>• UV and Ozone resistance</li> <li>• High abrasion and soldering iron resistance</li> <li>• Halogen free cable with improved behavior in case of fire</li> <li>• Meets requirements for circuit integrity in case of fire</li> <li>• Best oil and fluid resistance</li> </ul> |

## Available Types

## Type of Fiber

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| E9/125      | according to IEC 60793-2-50 Typ B1.3 + ITU G.652.D                |
| E9/125.A1   | according to IEC 60793-2-50 Typ B1.3 + ITU G.652.D + ITU G.657.A1 |
| E9/125A2    | according to IEC 60793-2-50 Typ B6_a2 + ITU G.657.A2              |
| G50/125-OM2 | according to IEC 60793-2-10 A1b-OM2 + ITU G.651 BendOptimized     |
| G50/125-OM3 | according to IEC 60793-2-10 A1b-OM3 + ITU G.651 BendOptimized     |
| G50/125-OM4 | according to IEC 60793-2-10 A1b-OM4 + ITU G.651 BendOptimized     |
| G50/125-OM5 | according to IEC 60793-2-10 A1b-OM5 + ITU G.651 BendOptimized     |

## Standard Colours

|                 |                          |
|-----------------|--------------------------|
| Fiber:          | According to colour code |
| Tube:           | White or natural         |
| Jacket (outer): | Customer specific        |

## Construction

| Description / Material                         | Size   | Options / Notice     |
|------------------------------------------------|--------|----------------------|
| Up to 24 Optical fiber                         | 250 µm | Fiber type, colour   |
| 1 Multi-fiber loose tube, up to 24 fibers each | 2.8 mm | Colour, jelly-filled |
| Reinforcement / glass-roving                   |        | Swellable            |
| Outer jacket / RADOX                           | 8.5 mm | Colour, inscription  |

## Mechanical data

| Characteristics        | Conditions                        | Tested acc. to      | Values                   |
|------------------------|-----------------------------------|---------------------|--------------------------|
| Weight                 |                                   |                     | 90 kg/km                 |
| Tensile strength       | During installation<br>In service | IEC 60794-1-21 E1   | 3000 N<br>1500 N         |
| Minimal bending radius | During installation<br>In service | IEC 60794-1-21 E11  | 130 mm<br>80 mm          |
| Cold bend              | Radius = 120mm                    | IEC 60794-1-21 E11A | 3 cycles -20°C           |
| Repeated bending       | Radius = 80mm                     | IEC 60794-1-21 E6   | 3 cycles                 |
| Crush resistance       | During installation<br>In service | IEC 60794-1-21 E3   | 1'000 N/dm<br>2'500 N/dm |
| Impact resistance      | Wp = 5 J                          | IEC 60794-1-21 E4   | 3 impacts                |
| Kink resistance        | Radius = 40mm                     | IEC 60794-1-21 E10  | Passed                   |
| Torsion                | Angle = ±180°<br>Length = 1000mm  | IEC 60794-1-21 E7   | 500 cycles               |



→ **Multi-fiber Loose Tube Cable RADOX®**  
24-.../W(ZNG)R-...85-DNV

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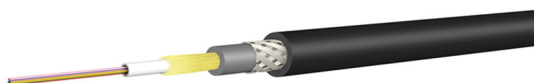
| Environmental data                    |                                                          |                                 |                                                                |
|---------------------------------------|----------------------------------------------------------|---------------------------------|----------------------------------------------------------------|
| Characteristics                       | Conditions                                               | Tested acc. To                  | Values                                                         |
| Temperature range                     | During installation<br>In service<br>In storage          | IEC 60794-1-22 F1               | -20 °C up to +70°C<br>-40 °C up to +85°C<br>-60 °C up to +85°C |
| Fire load                             |                                                          |                                 | 1 MJ/m                                                         |
| Fire propagation                      | On a vertical single cable<br>On a vertical cable bundle | IEC 60332-1-2<br>IEC 60332-3-25 | Passed<br>Passed                                               |
| Fire test with circuit integrity (CI) | 90 min                                                   | IEC 60331-25                    | Passed                                                         |
| Fire resistance with shock            | 180 min                                                  | IEC 60331-2                     | Passed                                                         |
| Fire Test: smoke density              | Jacket material                                          | IEC 61034-2                     | Passed                                                         |
| Fire Test: halogen acid gas           | Jacket material                                          | IEC 60754-1                     | Halogen free                                                   |
| Fire Test: degree of acidity          | Jacket material                                          | IEC 60754-2                     | Passed                                                         |
| Water penetration                     | h = 1 m, 24 h, p <3 m                                    | IEC 60794-1-2 F5B               | Passed                                                         |
| Ozone resistance                      |                                                          | IEC 60811-403                   | Passed                                                         |
| (EU) No 305/2011 (CPR)                |                                                          | EN50575                         | Cca-s1a, d0,a1                                                 |
| 2011/65/EC (RoHS)                     |                                                          |                                 | Compliant                                                      |

Specification for singlemode at 1550nm, for multimode at 1300nm

Smaller bending radius are possible with E9/125 LowBend (ITU G.657) and G50/125-OM3/OM4/OM5 BendOptimized.

| Certifications                                                                          |
|-----------------------------------------------------------------------------------------|
| Meets LSFH properties                                                                   |
| Fulfills the flame, fire, oil and drilling fluid resistance acc. NEK 606                |
| NEK 606 standard for offshore oil and gas, ship and marine applications                 |
| Application acc. NEK 606: outdoor cable for emergency systems – operational during fire |
| Compliant to EN 45545 / hazard level 3                                                  |
| DNV Type approved                                                                       |
| DNV Certificate no.: ...                                                                |

## Fiber Optics cables



|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>Steel-Armoured Multi-fiber Loose Tube Cable RADOX®</b>                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product ID   | <b>24-.../W(ZN)HAR-...82-DNV</b>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Description  | <ul style="list-style-type: none"> <li>Outer jacket according to SHF2 class</li> <li>Fulfil the flame, fire, oil and drilling fluid resistance acc. NEK 606</li> <li>NEK 606 standard for offshore oil and gas, ship and marine applications</li> <li>Rodent protected, steel armoured</li> <li>For high mechanical and thermal stability</li> <li>Low smoke, halogen free and self-extinguishing</li> <li>Low fire load for high safety requirements</li> </ul> |

## Available Types

## Type of Fiber

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| E9/125      | according to IEC 60793-2-50 Typ B1.3 + ITU G.652.D                |
| E9/125.A1   | according to IEC 60793-2-50 Typ B1.3 + ITU G.652.D + ITU G.657.A1 |
| E9/125A2    | according to IEC 60793-2-50 Typ B6_a2 + ITU G.657.A2              |
| G50/125-OM2 | according to IEC 60793-2-10 A1b-OM2 + ITU G.651 BendOptimized     |
| G50/125-OM3 | according to IEC 60793-2-10 A1b-OM3 + ITU G.651 BendOptimized     |
| G50/125-OM4 | according to IEC 60793-2-10 A1b-OM4 + ITU G.651 BendOptimized     |
| G50/125-OM5 | according to IEC 60793-2-10 A1b-OM5 + ITU G.651 BendOptimized     |

## Standard Colours

|                 |                          |
|-----------------|--------------------------|
| Fiber:          | According to colour code |
| Tube:           | White or natural         |
| Jacket (outer): | Customer specific        |

## Construction

| Description / Material                         | Size    | Options / Notice     |
|------------------------------------------------|---------|----------------------|
| Up to 24 Optical fiber                         | 250 µm  | Fiber type, colour   |
| 1 Multi-fiber loose tube, up to 24 fibers each | 2.8 mm  | Colour, jelly-filled |
| Reinforcement / aramide yarn                   |         |                      |
| Jacket / PE flame retardant                    | 5.0 mm  | Colour               |
| Steel armouring                                | braided |                      |
| Outer jacket / RADOX                           | 8.2 mm  | Colour, inscription  |

## Mechanical data

| Characteristics        | Conditions                        | Tested acc. to      | Values                   |
|------------------------|-----------------------------------|---------------------|--------------------------|
| Weight                 |                                   |                     | 114 kg/km                |
| Tensile strength       | During installation<br>In service | IEC 60794-1-21 E1   | 1800 N<br>500 N          |
| Minimal bending radius | During installation<br>In service | IEC 60794-1-21 E11  | 120 mm<br>80 mm          |
| Cold bend              | Radius = 120mm                    | IEC 60794-1-21 E11A | 3 cycles -20°C           |
| Repeated bending       | Radius = 100mm                    | IEC 60794-1-21 E6   | 3 cycles                 |
| Crush resistance       | During installation<br>In service | IEC 60794-1-21 E3   | 2'000 N/dm<br>8'000 N/dm |
| Impact resistance      | Wp = 5 J                          | IEC 60794-1-21 E4   | 3 impact                 |
| Kink resistance        | Radius = 20mm                     | IEC 60794-1-21 E10  | Passed                   |
| Torsion                | Angle = ±180°<br>Length = 1000mm  | IEC 60794-1-21 E7   | 500 cycles               |



→ **Steel-Armoured Multi-fiber Loose Tube Cable RADOX®**  
24-.../W(ZN)HAR-...82-DNV

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| Environmental data           |                                                          |                                 |                                                                |
|------------------------------|----------------------------------------------------------|---------------------------------|----------------------------------------------------------------|
| Characteristics              | Conditions                                               | Tested acc. To                  | Values                                                         |
| Temperature range            | During installation<br>In service<br>In storage          | IEC 60794-1-22 F1               | -20 °C up to +70°C<br>-50 °C up to +85°C<br>-60 °C up to +85°C |
| Fire load                    |                                                          |                                 | 1.7 MJ/m                                                       |
| Fire propagation             | On a vertical single cable<br>On a vertical cable bundle | IEC 60332-1-2<br>IEC 60332-3-25 | IEC 60332-1-2<br>IEC 60332-3-22                                |
| Fire Test: smoke density     | Jacket material                                          | IEC 61034-2                     | Passed                                                         |
| Fire Test: halogen acid gas  | Jacket material                                          | IEC 60754-1                     | Halogen free                                                   |
| Fire Test: degree of acidity | Jacket material                                          | IEC 60754-2                     | Passed                                                         |
| Fire resistance with shock   | 180min                                                   | IEC 60331-2                     | Passed                                                         |
| Ozone resistance             |                                                          | IEC 60811-2-1                   | Passed                                                         |
| Oil resistance               | IRM 902                                                  | IEC 60092-360                   | 168h; 100°C                                                    |
| Drilling fluid resistance    | IRM 903                                                  | IEC 60092-360                   | 168h; 100°C                                                    |
| Drilling fluid resistance    | CaBr2                                                    | IEC 60092-360                   | 56d; 70°C                                                      |
| 2011/65/EC (RoHS)            |                                                          |                                 | Compliant                                                      |

Specification for singlemode at 1550nm, for multimode at 1300nm

Smaller bending radius are possible with E9/125 LowBend (ITU G.657) and G50/125-OM3/OM4/OM5 BendOptimized.

| Certifications                                                                          |
|-----------------------------------------------------------------------------------------|
| Meets LSFH properties                                                                   |
| Fulfills the flame, fire, oil and drilling fluid resistance acc. NEK 606                |
| NEK 606 standard for offshore oil and gas, ship and marine applications                 |
| Application acc. NEK 606: outdoor cable for emergency systems – operational during fire |
| Compliant to EN 45545 / hazard level 3                                                  |
| DNV Type approved                                                                       |
| DNV Certificate no.: ...                                                                |

## **RADOX® OFL® RF/Coax cables**

- Up to 6-8GHz bandwidth with lowest loss factor
- Double braided for optimum signal immunity
- SHF2 sheath with extreme oil, mud & chemical resistance
- -40....+105°C
- Wide range of connectors, adapters and ESP



## RF/Coax cables



|              |                                                                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® - RG142 LSFH, 50 Ohm, 8 GHz, 105°C, ø5.34 mm, RADOX® jacket</b>                                                                                                                                                                                                    |
| Product ID   | <b>RADOX® OFL® RF 142</b>                                                                                                                                                                                                                                                         |
| Description  | <ul style="list-style-type: none"> <li>• Flexible and lightweight</li> <li>• Suitable for use in applications up to 8 GHz</li> <li>• Flame retardant</li> <li>• Oil and mud resistance</li> <li>• Oil and gas qualified</li> <li>• HUBER+SUHNER RADOX® jacket material</li> </ul> |

| Construction     |                          |               |                   |
|------------------|--------------------------|---------------|-------------------|
| Component        | Material                 | Detail        | Diameter          |
| Centre conductor | Copper, Silver plated    | Wire          | 0.95 mm           |
| Dielectric       | SPEX (Crosslink Foam PE) |               | 2.98 mm           |
| Outer conductor  | Copper, Silver plated    | Braid, 97%    | 3.58 mm           |
| Outer conductor  | Copper, Silver plated    | Braid, 95%    | 4.18 mm           |
| Jacket           | RADOX®EM104              | RAL 9005 - bk | 5.34 mm ± 0.06 mm |

| Electrical data                  |                                        |
|----------------------------------|----------------------------------------|
| Impedance                        | 50 Ω ±25                               |
| Operating frequency              | ≤ 8 GHz                                |
| Capacitance                      | 94.5 pF/m                              |
| Velocity of signal propagation   | 70.9 %                                 |
| Signal delay                     | 4.7 ns/m                               |
| Screening effectiveness          | ≥ 75 dB at frequency 0.01 GHz ... 5GHz |
| Insulation resistance            | 10,000,000 MΩ*m                        |
| Operating Voltage (at sea level) | ≤ 2.5 kVrms                            |
| Test voltage (50 Hz/1 min)       | ≤ 5 kVrms                              |

| Mechanical data         |                |
|-------------------------|----------------|
| Weight                  | approx. 57 g/m |
| Static bending radius   | ≥ 30 mm        |
| Repeated bending radius | 50 mm          |

| Environmental data         |                                                                         |
|----------------------------|-------------------------------------------------------------------------|
| Operation temperature      | -40 °C ... 105 °C                                                       |
| Installation temperature   | -20 °C ... 60 °C                                                        |
| Oil and mud resistance     | IEC 60092-360<br>NEK TS 606: 2016 (cat. a/b/c, cat. d on request)*      |
| Flame propagation standard | (acc. construction) EN 60332-1-2<br>(acc. construction) EN 50305, 9.1.2 |
| Fire characteristics       | free of halogens, acc. standard IEC 60754                               |
| Smoke test                 | (acc. construction) EN 61034-2                                          |
| UV resistance              | ISO 4892-2A                                                             |

| Certifications      |                               |
|---------------------|-------------------------------|
| RoHS                | <a href="#">cert_ROHS</a>     |
| REACH               | <a href="#">cert_REACH</a>    |
| Flammability rating | <a href="#">ul-rating</a>     |
| UV resistance       | <a href="#">resistance-uv</a> |



→ **RADOX® OFL® - RG142 LSFH, 50 Ohm, 8 GHz, 105°C, ø5.34 mm,**  
**RADOX® jacket**  
RADOX® OFL® RF 142

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### Additional Information

\* Tested with BASEC (UK).

Flame propagation tested according to IEC 60079-1:2014 (Equipment protection by flameproof enclosures "d") with CCG A2F, gland size 0, part no. 054100, passed IIB/IIC gas test.

### Suitable connectors

|             |    |
|-------------|----|
| Cable group | U9 |
|-------------|----|

### Ordering information

| Item number | Item description   | Available as assembly only |
|-------------|--------------------|----------------------------|
| 85182100    | RADOX® OFL® RF 142 | No                         |

### Power Matrix

Calculation: typical Attenuation [ formula:  $(a \cdot f^{0.5} + b \cdot f)$  ] and maximum Power CW [ formula:  $(p/f^{0.5})$  ]

| a coefficient typical = | <b>0.365</b>                       | b coefficient typical =            | <b>0.142</b>                       |
|-------------------------|------------------------------------|------------------------------------|------------------------------------|
| fmax =                  | <b>8</b>                           | P at 1 GHz =                       | <b>225</b>                         |
| Frequency (GHz)         | Nom. attenuation (dB/m)            | Nom. attenuation (dB/ft)           | CW power (W)                       |
|                         | sea level 25°C ambient temperature | sea level 25°C ambient temperature | sea level 40°C ambient temperature |
| 0.10                    | 0.130                              | 0.040                              | 712                                |
| 0.20                    | 0.192                              | 0.058                              | 503                                |
| 0.30                    | 0.243                              | 0.074                              | 411                                |
| 0.40                    | 0.288                              | 0.088                              | 356                                |
| 0.60                    | 0.368                              | 0.112                              | 290                                |
| 0.80                    | 0.440                              | 0.134                              | 252                                |
| 1.00                    | 0.507                              | 0.155                              | 225                                |
| 1.20                    | 0.570                              | 0.174                              | 205                                |
| 1.40                    | 0.631                              | 0.192                              | 190                                |
| 1.60                    | 0.689                              | 0.210                              | 178                                |
| 1.80                    | 0.745                              | 0.227                              | 168                                |
| 2.00                    | 0.800                              | 0.244                              | 159                                |
| 2.50                    | 0.932                              | 0.284                              | 142                                |
| 3.00                    | 1.058                              | 0.323                              | 130                                |
| 3.50                    | 1.180                              | 0.360                              | 120                                |
| 4.00                    | 1.298                              | 0.396                              | 112                                |
| 5.00                    | 1.526                              | 0.465                              | 101                                |
| 6.00                    | 1.746                              | 0.532                              | 92                                 |
| 7.00                    | 1.960                              | 0.597                              | 85                                 |
| 8.00                    | 2.168                              | 0.661                              | 80                                 |

## RF/Coax cables



|              |                                                                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® - RG214 LSFH, 50 Ohm, 6 GHz, 105°C, ø11.1 mm, RADOX® jacket</b>                                                                                                                                                                                                    |
| Product ID   | <b>RADOX® OFL® RF 214</b>                                                                                                                                                                                                                                                         |
| Description  | <ul style="list-style-type: none"> <li>• Flexible and lightweight</li> <li>• Suitable for use in applications up to 6 GHz</li> <li>• Flame retardant</li> <li>• Oil and mud resistance</li> <li>• Oil and gas qualified</li> <li>• HUBER+SUHNER RADOX® jacket material</li> </ul> |

| Construction     |                          |               |                  |
|------------------|--------------------------|---------------|------------------|
| Component        | Material                 | Detail        | Diameter         |
| Centre conductor | Copper, Silver plated    | Strand-07     | 2.25 mm          |
| Dielectric       | SPEX (Crosslink Foam PE) |               | 7.28 mm          |
| Outer conductor  | Copper, Silver plated    | Braid, 93%    | 8 mm             |
| Outer conductor  | Copper, Silver plated    | Braid, 95%    | 8.6 mm           |
| Jacket           | RADOX®EM104              | RAL 9005 - bk | 11.1 mm ± 0.1 mm |

| Electrical data                  |                                      |
|----------------------------------|--------------------------------------|
| Impedance                        | 50 Ω ±24                             |
| Operating frequency              | ≤ 6 GHz                              |
| Capacitance                      | 101.4 pF/m                           |
| Velocity of signal propagation   | 66 %                                 |
| Signal delay                     | 5.03 ns/m                            |
| Screening effectiveness          | 81 dB at frequency 0.01 GHz ... 6GHz |
| Insulation resistance            | 10,000,000 MΩ*ms                     |
| Operating Voltage (at sea level) | ≤ 5 kVrms                            |
| Test voltage (50 Hz/1 min)       | ≤ 10 kVrms                           |

| Mechanical data         |                             |
|-------------------------|-----------------------------|
| Weight                  | approx. 203 g/m             |
| Static bending radius   | ≥ 50 mm                     |
| Repeated bending radius | 110 mm (bendings, up to 50) |

| Environmental data         |                                                                         |
|----------------------------|-------------------------------------------------------------------------|
| Operation temperature      | -40 °C ... 105 °C                                                       |
| Installation temperature   | -20 °C ... 60 °C                                                        |
| Oil and mud resistance     | IEC 60092-360<br>NEK TS 606: 2016 (cat. a/b/c, cat. d on request)*      |
| Flame propagation standard | (acc. construction) EN 60332-1-2<br>(acc. construction) EN 50305, 9.1.2 |
| Fire characteristics       | free of halogens, acc. standard IEC 60754                               |
| Smoke test                 | (acc. construction) EN 61034-2                                          |
| UV resistance              | ISO 4892-2A                                                             |

| Certifications      |                               |
|---------------------|-------------------------------|
| RoHS                | <a href="#">cert_ROHS</a>     |
| REACH               | <a href="#">cert_REACH</a>    |
| Flammability rating | <a href="#">ul-rating</a>     |
| UV resistance       | <a href="#">resistance-uv</a> |



→ **RADOX® OFL® - RG214 LSFH, 50 Ohm, 6 GHz, 105°C, ø11.1 mm, RADOX® jacket**  
**RADOX® OFL® RF 214**

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### Additional Information

\* Tested with BASEC (UK).

Flame propagation tested according to IEC 60079-1:2014 (Equipment protection by flameproof enclosures "d") with CCG A2F, gland size 0, part no. 054100, passed IIB/IIC gas test

### Suitable connectors

|             |     |
|-------------|-----|
| Cable group | U43 |
|-------------|-----|

### Ordering information

| Item number | Item description   | Available as assembly only |
|-------------|--------------------|----------------------------|
| 85182102    | RADOX® OFL® RF 214 | No                         |

### Power Matrix

Calculation: typical Attenuation [ formula:  $(a \cdot f^{0.5} + b \cdot f)$  ] and maximum Power CW [ formula:  $(p/f^{0.5})$  ]

| a coefficient typical = | <b>0.2203</b>                      | b coefficient typical =            | <b>0.0874</b>                      |
|-------------------------|------------------------------------|------------------------------------|------------------------------------|
| fmax =                  | <b>6</b>                           | P at 1 GHz =                       | <b>560</b>                         |
| Frequency (GHz)         | Nom. attenuation (dB/m)            | Nom. attenuation (dB/ft)           | CW power (W)                       |
|                         | sea level 25°C ambient temperature | sea level 25°C ambient temperature | sea level 40°C ambient temperature |
| 0.10                    | 0.078                              | 0.024                              | 1771                               |
| 0.20                    | 0.116                              | 0.035                              | 1252                               |
| 0.30                    | 0.147                              | 0.045                              | 1022                               |
| 0.40                    | 0.174                              | 0.053                              | 885                                |
| 0.60                    | 0.223                              | 0.068                              | 723                                |
| 0.80                    | 0.267                              | 0.081                              | 626                                |
| 1.00                    | 0.308                              | 0.094                              | 560                                |
| 1.20                    | 0.346                              | 0.106                              | 511                                |
| 1.40                    | 0.383                              | 0.117                              | 473                                |
| 1.60                    | 0.418                              | 0.128                              | 443                                |
| 1.80                    | 0.453                              | 0.138                              | 417                                |
| 2.00                    | 0.486                              | 0.148                              | 396                                |
| 2.50                    | 0.567                              | 0.173                              | 354                                |
| 3.00                    | 0.644                              | 0.196                              | 323                                |
| 3.50                    | 0.718                              | 0.219                              | 299                                |
| 4.00                    | 0.790                              | 0.241                              | 280                                |
| 5.00                    | 0.930                              | 0.283                              | 250                                |
| 6.00                    | 1.064                              | 0.324                              | 229                                |

## RF/Coax cables



|              |                                                                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name | <b>RADOX® OFL® - RG316D/<br/>RD316 LSFH, 50 Ohm, 8<br/>GHz, 105°C, Ø3.2 mm,<br/>RADOX® jacket</b>                                                                                                                                                                                 |
| Product ID   | <b>RADOX® OFL® RF 316 D</b>                                                                                                                                                                                                                                                       |
| Description  | <ul style="list-style-type: none"> <li>• Flexible and lightweight</li> <li>• Suitable for use in applications up to 8 GHz</li> <li>• Flame retardant</li> <li>• Oil and mud resistance</li> <li>• Oil and gas qualified</li> <li>• HUBER+SUHNER RADOX® jacket material</li> </ul> |

## Construction

| Component        | Material                      | Detail        | Diameter        |
|------------------|-------------------------------|---------------|-----------------|
| Centre conductor | Steel, Copper + Silver plated | Strand-07     | 0.54 mm         |
| Dielectric       | SPEX (Crosslink Foam PE)      |               | 1.53 mm         |
| Outer conductor  | Copper, Silver plated         | Braid, 96%    | 1.99 mm         |
| Outer conductor  | Copper, Silver plated         | Braid, 90%    | 2.44 mm         |
| Jacket           | RADOX®EM104                   | RAL 9005 - bk | 3.2 mm ± 0.1 mm |

## Electrical data

|                                  |                                        |
|----------------------------------|----------------------------------------|
| Impedance                        | 50 Ω ±23                               |
| Operating frequency              | ≤ 8 GHz                                |
| Capacitance                      | 94.5 pF/m                              |
| Velocity of signal propagation   | 70.1 %                                 |
| Signal delay                     | 4.72 ns/m                              |
| Screening effectiveness          | ≥ 70 dB at frequency 0.01 GHz ... 6GHz |
| Insulation resistance            | 10,000,000 MΩ*m                        |
| Operating Voltage (at sea level) | ≤ 1.5 kVrms                            |
| Voltage Rating UL                | 300 V                                  |
| Test voltage (50 Hz/1 min)       | ≤ 3 kVrms                              |

## Mechanical data

|                         |                            |
|-------------------------|----------------------------|
| Weight                  | approx. 20 g/m             |
| Static bending radius   | ≥ 5 mm                     |
| Repeated bending radius | 30 mm (bendings, up to 50) |

## Environmental data

|                            |                                                                         |
|----------------------------|-------------------------------------------------------------------------|
| Operation temperature      | -40 °C ... 105 °C                                                       |
| Installation temperature   | -20 °C ... 60 °C                                                        |
| Oil and mud resistance     | IEC 60092-360<br>NEK TS 606: 2016 (cat. a/b/c, cat. d on request)*      |
| Flame propagation standard | (acc. construction) EN 60332-1-2<br>(acc. construction) EN 50305, 9.1.2 |
| Fire characteristics       | free of halogens, acc. standard IEC 60754                               |
| Smoke test                 | (acc. construction) EN 61034-2                                          |
| UV resistance              | ISO 4892-2A                                                             |

## Certifications

|                     |                               |
|---------------------|-------------------------------|
| RoHS                | <a href="#">cert_ROHS</a>     |
| REACH               | <a href="#">cert_REACH</a>    |
| Flammability rating | <a href="#">ul-rating</a>     |
| UV resistance       | <a href="#">resistance-uv</a> |



→ **RADOX® OFL® - RG316D/RD316 LSFH, 50 Ohm, 8 GHz, 105°C, ø3.2 mm,**  
**RADOX® jacket**  
RADOX® OFL® RF 316 D

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### Additional Information

\* Tested with BASEC (UK).

Flame propagation tested according to IEC 60079-1:2014 (Equipment protection by flameproof enclosures "d") with CCG A2F, gland size 0, part no. 054100, passed IIB/IIC gas test.

### Suitable connectors

|             |    |
|-------------|----|
| Cable group | U4 |
|-------------|----|

### Ordering information

| Item number | Item description     | Available as assembly only |
|-------------|----------------------|----------------------------|
| 85182099    | RADOX® OFL® RF 316 D | No                         |

### Power Matrix

Calculation: typical Attenuation [ formula:  $(a \cdot f^{0.5} + b \cdot f)$  ] and maximum Power CW [ formula:  $(p/f^{0.5})$  ]

| a coefficient typical = | <b>0.7648</b>                      | b coefficient typical =            | <b>0.1301</b>                      |
|-------------------------|------------------------------------|------------------------------------|------------------------------------|
| fmax =                  | <b>8</b>                           | P at 1 GHz =                       | <b>110</b>                         |
| Frequency (GHz)         | Nom. attenuation (dB/m)            | Nom. attenuation (dB/ft)           | CW power (W)                       |
|                         | sea level 25°C ambient temperature | sea level 25°C ambient temperature | sea level 40°C ambient temperature |
| 0.10                    | 0.255                              | 0.078                              | 348                                |
| 0.20                    | 0.368                              | 0.112                              | 246                                |
| 0.30                    | 0.458                              | 0.140                              | 201                                |
| 0.40                    | 0.536                              | 0.163                              | 174                                |
| 0.60                    | 0.670                              | 0.204                              | 142                                |
| 0.80                    | 0.788                              | 0.240                              | 123                                |
| 1.00                    | 0.895                              | 0.273                              | 110                                |
| 1.20                    | 0.994                              | 0.303                              | 100                                |
| 1.40                    | 1.087                              | 0.331                              | 93                                 |
| 1.60                    | 1.176                              | 0.358                              | 87                                 |
| 1.80                    | 1.260                              | 0.384                              | 82                                 |
| 2.00                    | 1.342                              | 0.409                              | 78                                 |
| 2.50                    | 1.535                              | 0.468                              | 70                                 |
| 3.00                    | 1.715                              | 0.523                              | 64                                 |
| 3.50                    | 1.886                              | 0.575                              | 59                                 |
| 4.00                    | 2.050                              | 0.625                              | 55                                 |
| 5.00                    | 2.361                              | 0.720                              | 49                                 |
| 6.00                    | 2.654                              | 0.809                              | 45                                 |
| 7.00                    | 2.934                              | 0.894                              | 42                                 |
| 8.00                    | 3.204                              | 0.977                              | 39                                 |

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HUBER+SUHNER is certified according to ISO 9001, ISO 14001, OHSAS 18001,  
EN(AS) 9100, IATF 16949 and ISO/TS 22163 – IRIS.

**Waiver**

Fact and figures herein are for information only and do not represent any warranty of any kind.