

# APPLICATION NOTE

**HUBER+SUHNER**

HUBER+SUHNER AG

LF Product Management Automotive

HVDU Product Portfolio

Malte Froberg

Senior Product Manager

Phone +41 44 952 2102

www.hubersuhner.com

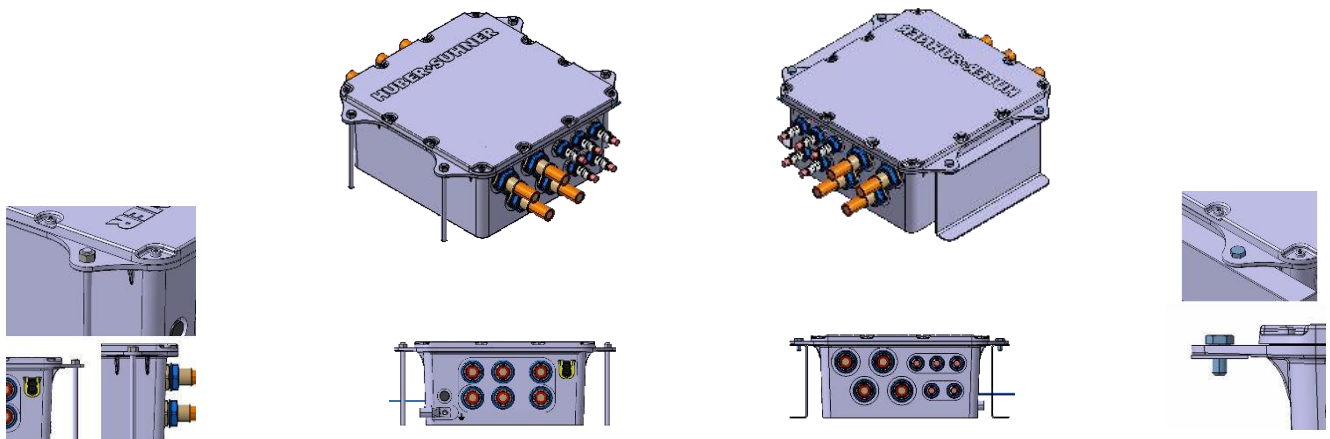
## Standard mHVDU

### Application

HUBER+SUHNER has been developing high quality solutions for distributing high voltage in electric vehicles for far more than a decade, having a special focus on commercial vehicles. The solution withstands the roughest and harshest environments. It is a configurable solution with standardised components. The standard modular High Voltage Distribution Unit (mHVDU) is designed with an innovative concept to achieve space and weight saving through a simple and compact housing. The standard mHVDU is a harmonised system because it is designed and equipped with a wide range of standardised components. Thus, it can shorten the lead time from receiving the customers configuration to shipping.

Whatever requirements related to distributing the power in an electrical vehicle, HUBER+SUHNER has a solution for it – no matter what mission the vehicle undertakes: transporting people, goods or simply working under harsh environments.

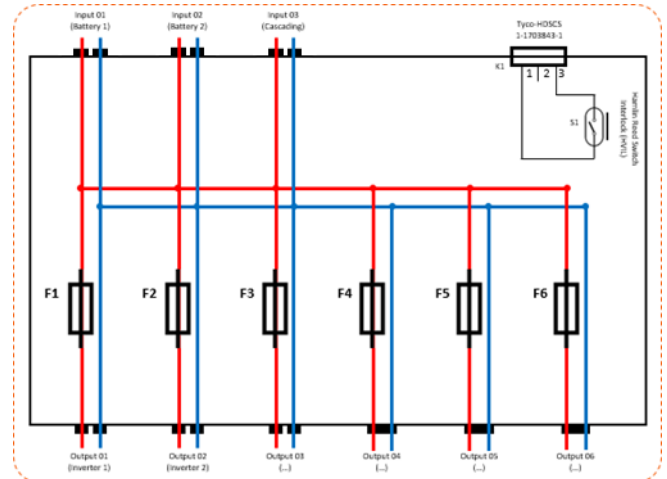
Feature	Benefit	USP
Simplified design of housing and inlay	Scalability of in- & outputs	Standalone feature
Standard process + SAP Variant Config.	Short lead times	Reduced lead time from 12 to 4 weeks
Designed for commercial- & special EVs	Ideal use in harsh environment	Optimised and robust specification
Designed with standardised components	Cost saving	Reducing vehicle BOM item up to -60%
Designed for several mounting variants	Variable mounting options	Standalone feature
Harmonised with H+S HV portfolio	Plug and play product solution	Delivery of complete cable system
Validation to international Automotive Standards and norms	Ready-to-use product solution	



## Specification:

Electrical specification	Standard modular HVDU
Voltage rating	800 V DC
Current rating– standard configuration	up to 650 A
Test voltage	2,15 kV DC
Screen resistance	< 9 mΩ
Insulation resistance (1000 Vdc, 60 sec., 85°C)	> 50 MΩ
Altitude	4.000 m above sea level
EMC protection	LV123 and LV215
Channels (Outputs fused only)	Input 2+1 / Output 6
HVIL	(passive) HV-Interlock
Degree of customization	-
Mechanical Data	Standard modular HVDU
Vibration and shock resistance	ISO 16750-3
Housing material	Aluminium die-cast
Max. dimensions (length, width, height)	352 mm x 325 mm x 144 mm
Cable connection position	in line from side-to-side
Waterproof pressure equalizing membrane	yes
Environmental Data	Standard modular HVDU
Temperature range (ambient)	-40°C to +85°C
Ingress Protection	IP6K9K / IP67
Corrosion resistance	ISO 16750-4
Available for	Standard modular HVDU
H+S Cable cross section	4 mm <sup>2</sup> to 95 mm <sup>2</sup>
Application (multifunctional)	Commercial-, special- and industrial electric vehicles (incl. passenger cars)
recommended APQP process step	A-, B-, C-, (D-) sample

Configuration Summary Scheme



500 V DC					
Fuse (line)	cable cross section (mm <sup>2</sup> )	RADOX EV-C Input	RADOX EV-C Output	Current Output (A)	Fuse size (A)
F1, F2	35, 50, 70, 95, 120	M25, M32	M25, M32	200-400	200, 300, 400
F3	16, 25, 35	M25, M32	M25, M20	50-150	50, 100, 150
F4, F5, F6	2x2,5, 2x4, 2x6	M25, M32	M20	10-50	20, 30, 40, 50

800 V DC*					
Fuse (line)	cable cross section (mm <sup>2</sup> )	RADOX EV-C Input	RADOX EV-C Output	Current Output (A)	Fuse size (A)
F1, F2	35, 50, 70, 95, 120	M25, M32	M25, M32	175-600	200, 300, 400, 500, 600
F3	16, 25, 35	M25, M32	M25, M20	60-150	60, 100, 150
F4, F5, F6	2x2,5, 2x4, 2x6	M25, M32	M20	10-50	20, 30, 40, 50

\*Q1 2020

