

REDLINE POWER BOX HYBRID

Standard version



The **REDline Power Box Hybrid** integrates circuit board technology and copper bars for high currents.

This has numerous advantages, including the following:

- Main power lines in the vehicle can be connected and fused
- Battery-proximate loads can be directly switched and fused
- Custom variants with different copper bars and customer-specific configurable printed circuit boards can be realised

Standard version of the product is presented on the first three pages of this document. Customisation of the box content can be realised according to your requirements. Refer to page 4 and contact us for more information.

The advantages of our REDline Power Boxes summarised:

- **Robust & durable:** Thanks to high IP levels and cable harness reduction
- **Fast project processing:** Due to a broad range of standardised housings and a structured and established product development process
- **High economic efficiency:** Resulting from simplified installation and maintenance as well as low tooling and engineering costs
- **Convincing service concept:** We support you from the first idea up to serial production of your tailor-made solution and beyond
- **Compact & modular architecture:** Thanks to the modular building block system, the customer-specific configurable PCB and the efficient use of space

Mechanical data	
Box dimensions	245 x 204 x 60 mm
PCB dimensions	110 x 90 mm
Operating temperature	-40 °C up to +85 °C
IP protection class	IP54: board area IP20: MEGA/MIDI area
Specifics	Compression limiter 3 busbar configurations: intern, straight output, 90° output

Electrical data	
Power inputs	3 x M8 Powerelements 2 x M5 Powerelements
Connector	AMP Timer 42-pin
Components	8 x MINI fuses 2 x ATO fuses 1 x MAXI fuse 2 x Micro relays 2 x Mini relays 1 x Power relay

Mating connectors			
Pins	Coding	Standard	VO Material
42	N/A	1-967281-1	N/A

This item is a standard product, please consider the relevant datasheet notes. The user is responsible for the product's functionality in its purposed system environment. Technical content may be modified and changed by Würth Elektronik ICS GmbH & Co. KG without any notice.

REDLINE POWER BOX HYBRID

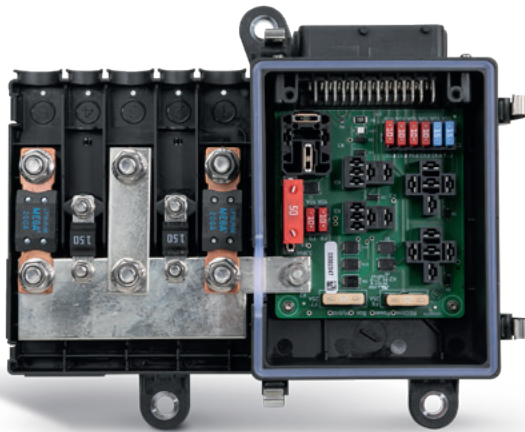
Standard version

Qualification		
Test methods	Qualification norm	Descriptions
IP protection class	ISO-20653	IP54: board area IP20: MEGA/MIDI area
Low & high temperature	ISO 16750-4	Temperature: -40 °C / +85 °C
Temperature cycle	ISO 16750-4	5 cycles / change time < 3 min
Humidity heat, cyclic	ISO 16750-4	Cycle time: 24 h / 6 cycles
Salt spray	DIN EN ISO 9227 NSS	7 days at +40 °C +/-2 °C Relative humidity: 93 % +/-2 %
Corrosive gas	DIN EN 60068-2-60	Mixed gas, test Ke, method 4
Vibration sinus with temperature	ISO 16750-3	Mechanical load: 5 – 1.000 Hz Temperature: profile acc. to DIN EN 60068-2-14 -40 °C to +70 °C
Vibration random with temperature	ISO 16750-3	Mechanical load: 10 – 1000 Hz Temperature: -40 °C to +70 °C
Mechanical shock	ISO 16750-3	Mechanical load: 25 g / 18 ms Temperature: room temperature
Chemical test	ISO 16750-5	CD, CG, CE, CF, DF, DJ, CA, EE, DA, DC, DD, DE, AD, DK

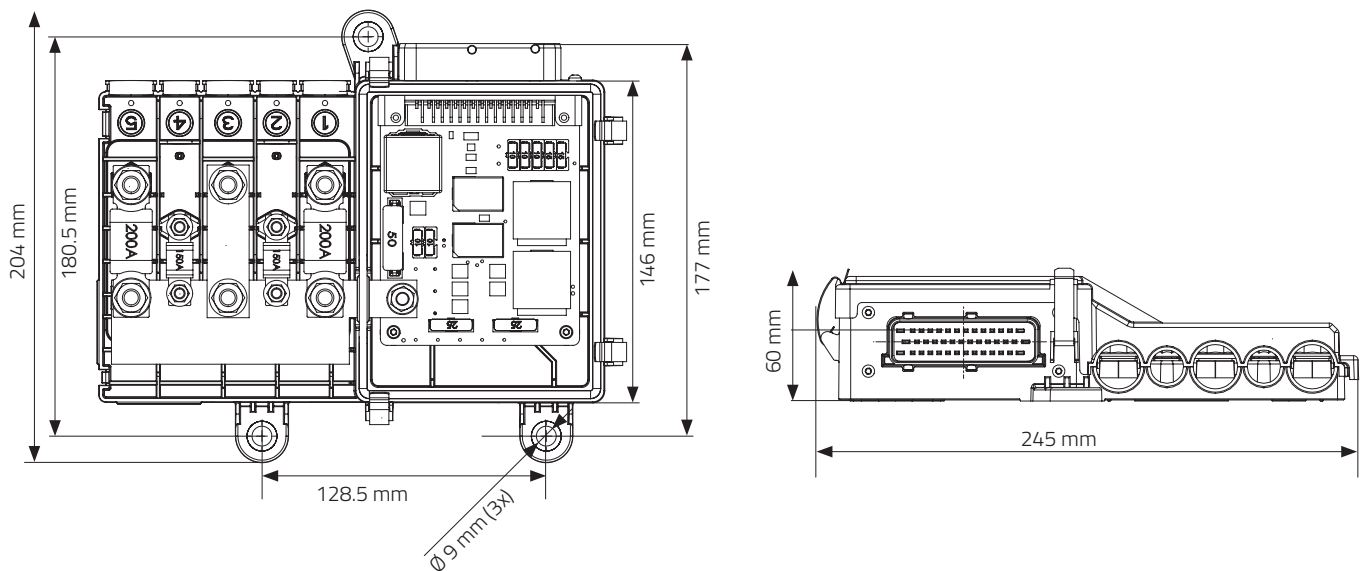
Torque fixing point	
Compatibility	Up to ISO class 8.8 screws

Torque electric connection	
M5	2.2 Nm
M8	9.0 Nm

Order Information	
REDline Power Box Hybrid Standard	
Unequipped (without fuses and relays)	ICS-103037
Equipped with 12 V fuses and relays	ICS-103037-12V
Equipped with 24 V fuses and relays	ICS-103037-24V



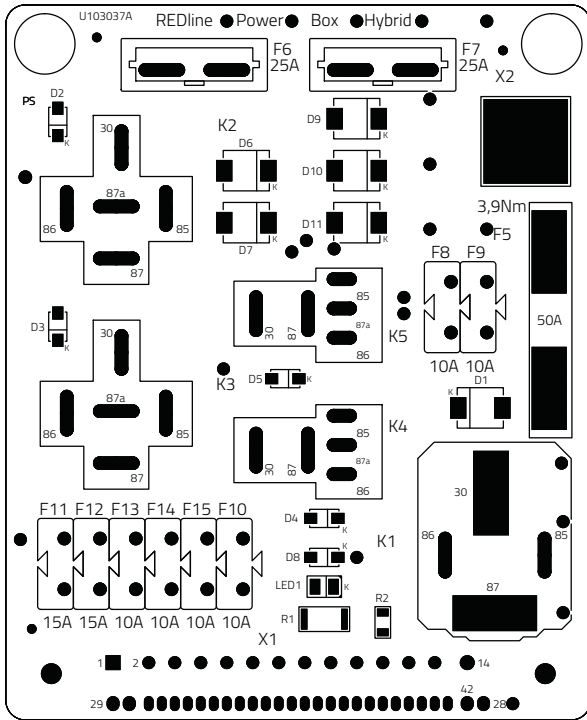
Box dimensions



REDLINE POWER BOX HYBRID

Standard version

PCB silkscreen

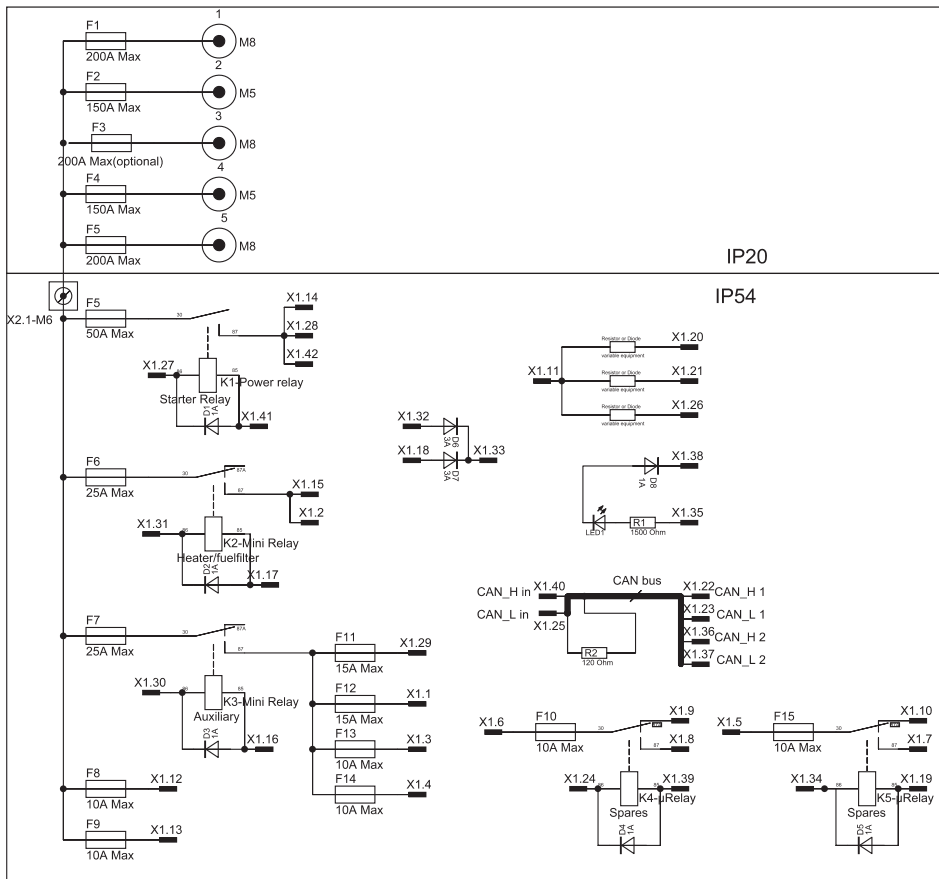


Pin assignment

X1 connector	
Pin	Description
1	15A/F12
2	25A/K2.87
3	10A/F13
4	10A/F14
5	10A/F15
6	10A/F10
7	10A/K5.87
8	10A/K4.87
9	10A/K4.87a
10	10A/K5.87a
11	10A/D9-D11.K
12	10A/F8
13	10A/F9
14	50A/K1
15	25A/K2.87
16	3A/K3.85
17	3A/K2.85
18	3A/D7.A
19	3A/K5.85
20	3A/D9.A
21	3A/D10.A

X1 connector	
Pin	Description
22	1A/CAN_H in
23	1A/CAN_L in
24	3A/K4.86
25	1A/CAN_L in
26	3A/D11.A
27	3A/K1.86
28	50A/K1
29	15A/F11
30	3A/K3.86
31	3A/K2.86
32	3A/D6.A
33	6A/D6-D7.K
34	3A/K5.86
35	1A/R1
36	1A/CAN_H in
37	1A/CAN_L in
38	1A/D8.K
39	3A/K4.85
40	1A/CAN_H in
41	1A/CAN_H in
42	1A/CAN_L in

Electrical schematic



REDLINE POWER BOX HYBRID

Customisation possibilities

Do you want to customise the REDline Power Box Hybrid content according to your needs? With the following three steps, we help you to get your tailor-made solution.

1

Choose desired inputs and outputs according to your electrical schematic

Inputs / Outputs

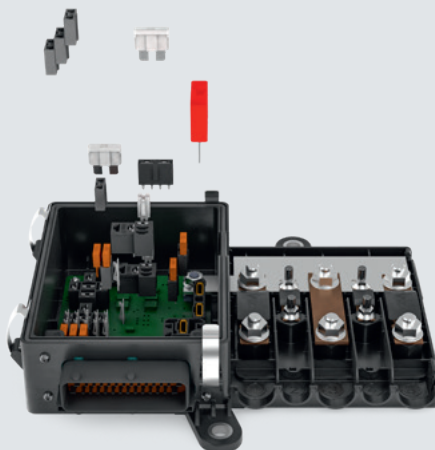
2 MIDI fuse positions up to 150 A
3 MEGA fuse positions up to 250 A
All MEGA positions are compatible with the use of a busbar for unprotected input or output.

Busbar options

3 busbar configurations: intern, straight output, 90° output

2

Select the components to be integrated and get the PCB designed according to your electrical schematic



3

Choose your additional component options

Component options

Fuse tester
Fuse puller
Component sticker

Profit from different standard box variants and component options for advanced functions and requirements.

Box variants			
Description	Part number WE ICS		
	Unequipped (without fuses and relays)	Equipped with 12 V fuses and relays	Equipped with 24 V fuses and relays
REDline Twin Standard	ICS-103040	ICS-103040-12V	ICS-103040-24V
REDline Hybrid Standard	ICS-103037	ICS-103037-12V	ICS-103037-24V
REDline M Plus Standard	ICS-103263	ICS-103263-12V	ICS-103263-24V
REDline Medium Standard	ICS-103038	ICS-103038-12V	ICS-103038-24V
REDline Mini Standard	ICS-103039	ICS-103039-12V	ICS-103039-24V
REDline 6F Standard	ICS-104012	ICS-104010	ICS-104011

Are you looking for a box with special requirements? No problem, just contact us! We develop your customer-specific product according to the motto: more than you expect. From the idea through to the start of serial production.



Twin



Hybrid



M Plus



Medium



Mini



6F

For more information write us an e-mail ics@we-online.com, call +49 7940 9810-0 or visit us at www.we-online.com/ics

Würth Elektronik ICS GmbH & Co. KG
Intelligent Power & Control Systems
Gewerbepark Waldzimmern · Würthstraße 1
74676 Niedernhall · Germany
Tel.: +49 7940 9810-0 · Fax +49 7940 9810-1099
ics@we-online.com · www.we-online.com/ics