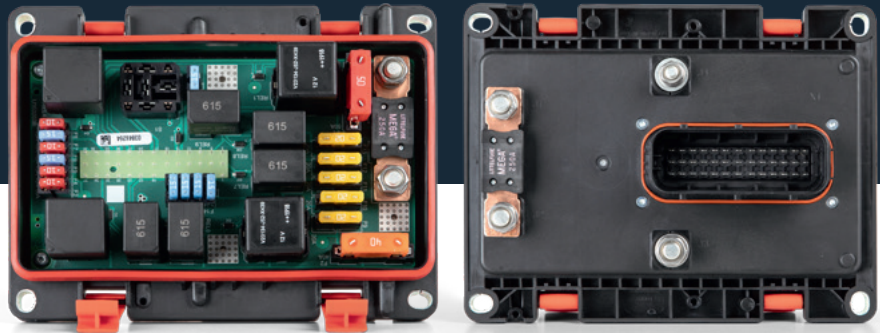| 12 V | 24 V |
|------|------|

# REDLINE POWER BOX M PLUS

Standard version



The **REDline Power Box M Plus** is the ideal solution for decentralised power distribution modules that have to be located in the motor area or on the chassis. It provides up to four high power inputs (up to 200 A) and a large PCB surface that can be customised to your needs.

**It is equipped with:**

- A 174 x 100 mm PCB area
- Up to four power inputs
- A 31 / 39-pin or 62-pin LeavySeal connector

**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 | 193 x 148.8 x 97.3 mm |
| PCB dimensions | 174 x 100 mm |
| Operating temperature | -40 °C up to +85 °C |
| IP protection class | IP66 / IP69K (dust proof / protected against powerful water jets under pressure) |
| Specifics | Integrated compression limiter MEGA fuse on the outside of the box Possible MEGA fuse integration on the outside of the box |

| Electrical data | |
|---|---|
| Power inputs | 1 x M6 Powerelement 3 x M8 Powerelements |
| Connector | 1 x LeavySeal 39-pin |
| Components | 11 x MINI fuses 5 x ATO fuses 2 x MAXI fuses 1 x MEGA fuse 5 x Micro relays 2 x Mini relays 2 x Power relays 1 x Micro ICCS relay |

| Mating connectors | | | |
|---|---|---|---|
| Pins | Coding | Standard | V0 Material |
| 39 | E | 5-1718321-3 | 5-2208684-3 |

| Qualification | | |
|---|---|---|
| Test methods | Qualification norm | Descriptions |
| IP protection class | ISO 20653: 2013-02 | IP66 / IP69K |
| Low & high temperature | ISO 16750-4: 2010-04 | Temperature: -40 °C / +85 °C |
| Low temperature operation | ISO 16750-4 | Duration: 24 h<br>Temperature: -30 °C |
| High temperature operation | ISO 16750-4 | Duration: 48 h / 96 h<br>Temperature: +85 °C |
| Temperature cycling with specified change rate | ISO 16750-4 | Number of cycles: 30<br>Cycle duration: 240 h<br>Temperature: -40 °C / +85 °C |
| Damp heat cyclic | ISO 16750-4 IEC 60068-2-30 | Number of cycles: 6<br>Cycle duration: 144 h<br>Temperature: +55 °C |
| Rapid change of temperature with specified transition duration | ISO 16750-4 IEC 60068-2-14 | Number of cycles: 100<br>Cycle duration: 100 h<br>Temperature: -40 °C / +85 °C |
| Dewing test | ISO 16750-4 | Number of cycles: 5<br>Cycle duration: 25 h<br>Temperature: +80 °C |
| Mechanical shock | ISO 16750-3 | Pulse shape: half-sinusoidal<br>Acceleration: 500 m/s²<br>Duration: 6 mn<br>Number of shocks: 10 per direction |
| Vibration test | ISO 16750-3 | RMS: 57.9 m/s²<br>Duration: 32 h per axis<br>Temperature: -40 °C / +85 °C |
| Free fall | ISO 16750-3 | Number of DUT: 3<br>Falls per DUT: 2<br>Drop height: 1 m |

| Torque fixing point | |
|---|---|
| Compatibility | Up to ISO class 8.8 screws |

| Torque electric connection | |
|---|---|
| M6 | 3.9 Nm (1 x on M Plus) |
| M8 | 9.0 Nm (3 x on M Plus) |

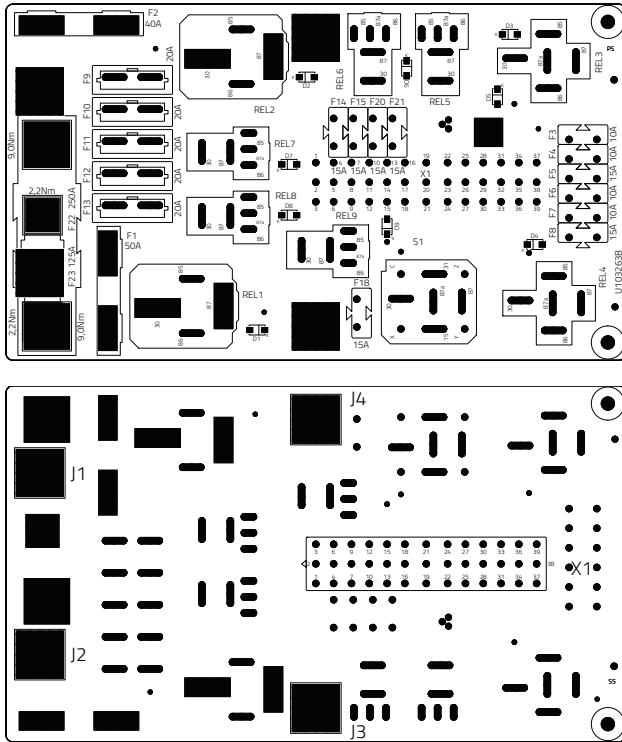| Order Information | |
|---|---|
| REDline Power Box M Plus Standard | |
| Unequipped (without fuses and relays) | ICS-103263 |
| Equipped with 12 V fuses and relays | ICS-103263-12V |
| Equipped with 24 V fuses and relays | ICS-103263-24V |



## Box dimensions
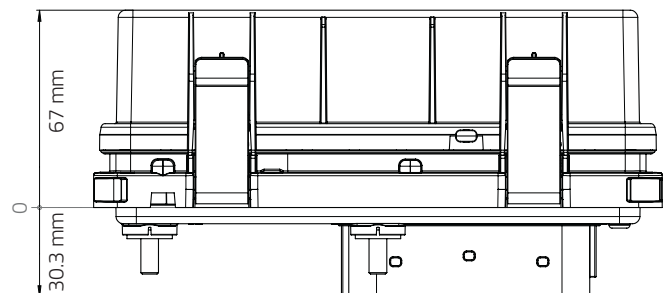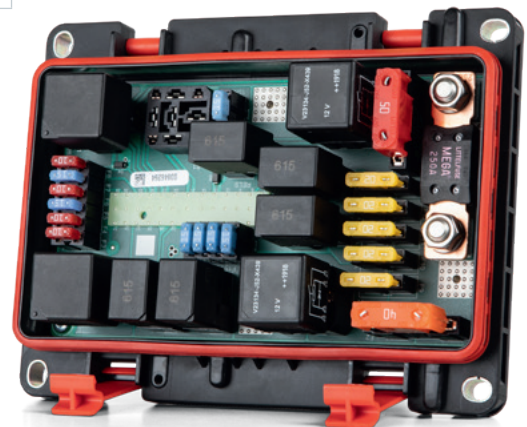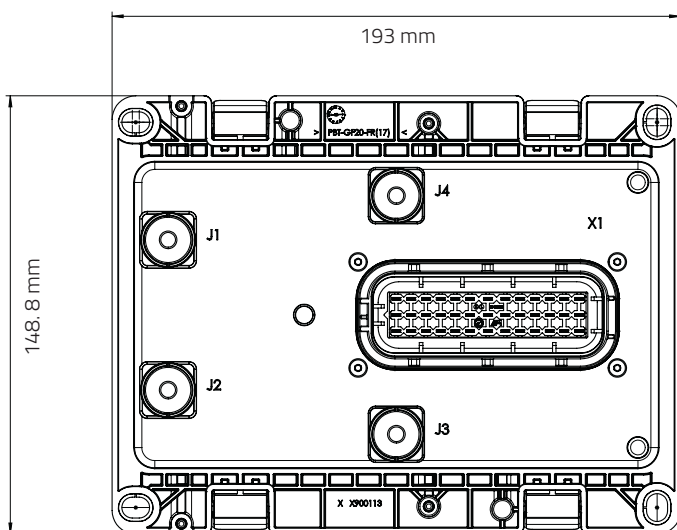
## PCB silkscreen



## Pin assignment

### X1 connector

| Pin | Description |
| --- | --- |
| 1 | 20A/REL7.87a |
| 2 | 20A/REL7.87 |
| 3 | 20A/REL8.87 |
| 4 | 15A/F14 |
| 5 | 2A/REL7.86 |
| 6 | 20A/REL8.87a |
| 7 | 15A/F15 |
| 8 | 2A/REL8.86 |
| 9 | 20A/REL9.87 |
| 10 | 15A/F20.1 |
| 11 | 3A/REL2.86 |
| 12 | 20A/REL9.87a |
| 13 | 15A/F21.1 |
| 14 | 2A/REL9.86 |
| 15 | 10A/GND |
| 16 | 15A/F20.2 |
| 17 | 5A/Status |
| 18 | 15A/S1.87a |
| 19 | 15A/F21.2 |
| 20 | 2A/REL5.86 |
| 21 | 1A/S1.Z |
| 22 | 2A/REL6.86 |
| 23 | 5A/S1.15 |

### X1 connector

| Pin | Description |
| --- | --- |
| 24 | 15A/S1.87 |
| 25 | 20A/REL6.87 |
| 26 | 3A/REL1.86 |
| 27 | 1A/S1.Y |
| 28 | 20A/REL6.87a |
| 29 | 3A/REL3.86 |
| 30 | 1A/S1.X |
| 31 | 20A/REL5.87 |
| 32 | 3A/REL4.86 |
| 33 | 15A/F8 |
| 34 | 20A/REL5.87a |
| 35 | 10A/F4 |
| 36 | 10A/F7 |
| 37 | 10A/F3 |
| 38 | 15A/F5 |
| 39 | 10A/F6 |

### J connector

| Pin | Description |
| --- | --- |
| J1.1 | 250A/J1 |
| J2.1 | 250A/KL30 |
| J3.1 | 40A/REL2 |
| J4.1 | 50A/REL1 |

## Electrical schematic
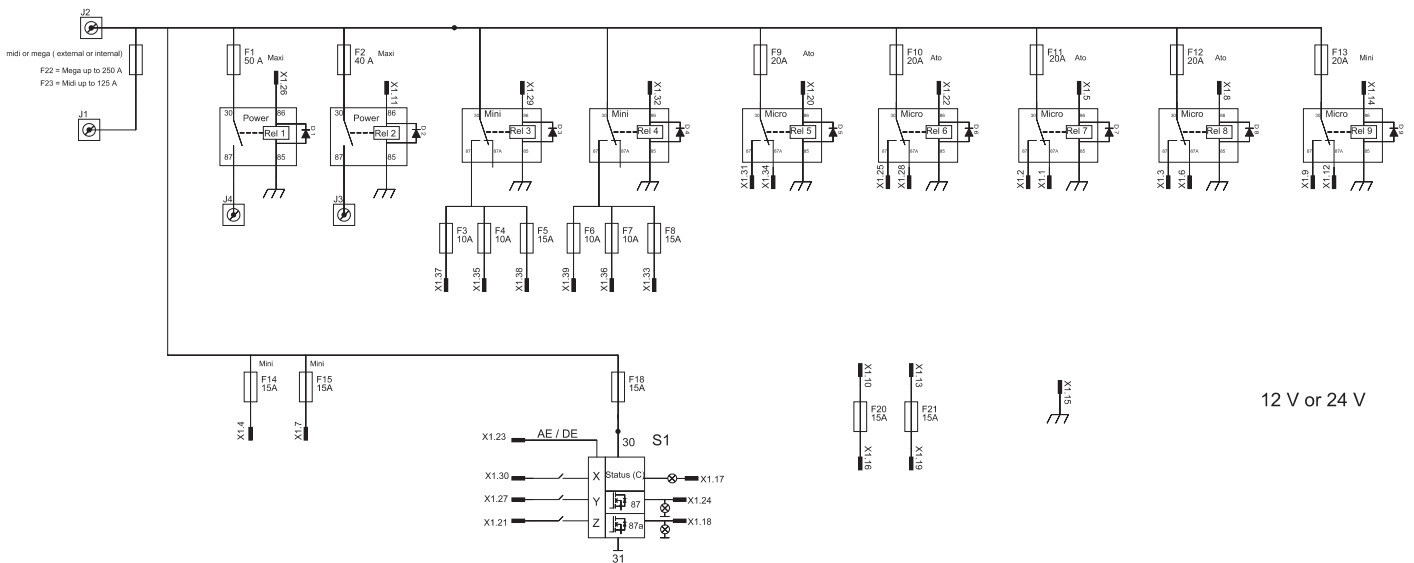
# REDLINE POWER BOX M PLUS
Customisation possibilities

**Do you want to customise the REDline Power Box M Plus 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

## 2 Select the components to be integrated and get the PCB designed according to your electrical schematic
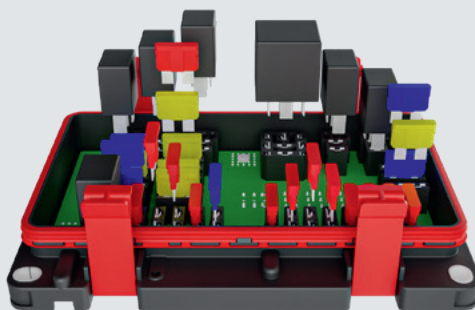
## 3 Choose your additional component options



| Inputs / Outputs |
|---|
| Threaded: M5, M6 or M8 |
| Radlok™: 3.6, 5.7 or 8 |
| SurLok Plus™: 3.6, 5.7 or 8 |
| LED indicator |
| Closed input |

### Compatible connectors

| Pins | Coding | Standard | V0 Material |
|---|---|---|---|
| 31 | E | 1-1564297-6 | 1-2208685-6 |
| 39 | E | 5-1718321-3 | 5-2208684-3 |
| 39 | F | 6-1718321-3 | 6-2208684-3 |
| 62 | A | 1-1418883-1 | 1-1823498-1 |
| 62 | B | 2-1418883-1 | 2-1823498-1 |

| Component options |
|---|
| Cover leash |
| Fuse tester |
| Fuse puller |
| Customer logo on lid |
| Components sticker |
| Optional pass-through seal for installation |
| Optional pass-through seal for firewall installation |

**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**