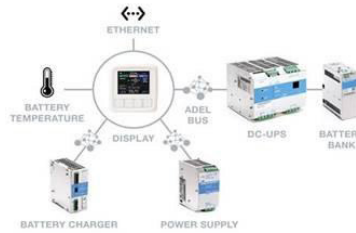


MRF102 Two Channel Electronic Circuit Breaker



Warning when the current exceeds 80%
2 Channels with adjustable current range 1A...10A
Sequential output switch startup. Reduced Inrush Current
Power Boost 150%
Two output switchable in Parallel (max 15A)
Power limitation of the output to 100 VA, in according to NEC Class 2
Monitoring the trigger shutdown output for maximum current or minimum voltage on the channel
Alarm Output Open Collector
ADELBus I/O for driver, monitoring and configuration
DIN Rail and Wall Mount

General

The MRF102 2-channel electronic circuit breaker with Din Rail and Wall mounting is designed for current distribution and protection of 12V or 24V load circuits.

Technical Data

Input Data

Supply voltage / at DC / Rated value	12 – 24 V
DC Input Voltage range (Vdc)	8 – 32 V
Overvoltage overload capability	35 V
Input current / at rated input voltage 12 - 24 V / Rated Value	20 A max (30A peak max 10 sec)
Maximum current consumption	10mA A (12 VDC) – 10mA (24 VDC)
Required Back Up Fuse	Not required. Integrated fail-safe element (internal fuse)
Input Voltage Reset Output	7 ...32 Vdc

Output Data

Voltage curve / at output	Controlled DC voltage
Drop Out	0.2 V
Number of outputs	2
Output current / up to 60 °C / per output / rated value	10 A
Adjustable switch Off out current	1A ...10A
Type of response value setting	via code blinks Led
Parallel switching of outputs	Yes
Bridging of equipment's	No
Start Up	< 0.5 sec.
Surge voltage shutdown load circuit	>32 Vdc
Max Capacitive Load	50.000 uF
Rated Surge Voltage	0.5 KV

Efficiency

Efficiency	97%
Power loss [W] (typ)	1.5 W (Nominal Operation)
Power dissipation	0.9 W (No Load operation)

Switching - off per output

I _{out} = 1.2 ...1.5 x set value	switch-off after approx. 5 s
I _{out} = 1.5 ...1.8 x set value	switch-off after approx. 1 s
I _{out} = 1.8 ...2 x set value	switch-off after approx. 0,1 s
I _{out} > 2 x set value	switch-off after approx. 0,03 s
I _{out} > set value and Vin < 15% (24V); (12V)	switch-off after approx. 0,03 s
Turn On Output after Switch Off	- Manual Reset - By Press Button
Waiting time after switch off Out	- 5 sec (Over load / Short Circuit)

Protection and Monitoring

Internal Fuse protection type	16A per output (not replaceable)
Dielectric strength	Max 32 Vdc (on Load Circuit)
Display version	- GREEN Led for "Output switched through" - RED Led for "Output switched off manually" - RED Led Blink for "Output switched off due to protection" - ORANGE Led: Verify and Configure

Connection for monitoring device:	AUX1: connection 2 pin AMP
Configuration Aux1	1: as ADELBus for Driving, Monitoring, Configuring 2: Out Alarm for switch Off Output
Diagnosis	- Common Signaling for disconnection Last Output - Single Channel: Current, set current threshold, Status On/Off - Reason for Output disconnection

Connection

Input 12 or 24V	1 Screw Type:	0.2 - 2.5 mm ²
Input 0V	1 Screw Type	(24 – 12 AWG);
Outputs	1 Screw Type	0.6 - 0.8 Nm
Signal Output:	AUX1: connection 2 pin AMP	

Ambient Conditions

Nominal Temperature operation	-25 up to +60°C (>60°derating 2.5%°C)
Ambient Temperature operation	-25 up to +70 °C
Ambient Temperature storage	-40 up to +85 °C
Humidity at 25 °C, no condensation	95 % to 25 °C (acc. to IEC 60721)
Vibration (operation) IEC 60068-2-6	<15 Hz, amplitude 2.5mm <15Hz-150Hz, 2.3G 90 min.
Altitude: 0 to 2 000m - 6560 to 20 000ft	No restrictions

General Data

Protection Class (EN/IEC 60529)	IP20
Reliability: MTBF IEC 61709	> 700.000 h (Automatically Switch Off Back Light after 30 sec)
Protection class	III
Housing material	Polycarbonate
Foot latch material	Plastic POM
Screw type connection	0.2 - 2.5 mm ² (24 – 12 AWG) 0.6 - 0.8 Nm
Dimension (w-h-d) mm	18 x 90 x 61
Weight	0.1 kg approx.

Immunity and Emission

The CE mark in conformity to EMC 2014/30/EU: Electromagnetic Compatibility Directive; 2014/35/EU: Low Voltage Directive; ROHS 2011/65/EU: Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS), as amended by 2015/863/EU

- EMC Immunity: EN61000-6-2
- EMC Emission: EN61000-6-3, EN 55022 Class B

Electrical Safety for mounting

According to:

- Electrical Equipment for Machinery EN 60204
- Electrical safety (of information technology equipment) IEC/EN EN62368-1.
- Safety requirements for electrical equipment for measurement, control and Laboratory use IEC/EN 61010

Accessory

- RTConn: connector cable for the connection to AUX1. It drives the MRF102 through ADELbus network.