MRF102 Electronic Circuit Breaker

Preliminary

Warning when the current exceed 80%

ADELBus I/O for driverer, monotoring and Configuration. ADELViewSystem for programming and Control the device

Sequential Output Switch start. Reduce Inrush Current

2 Load Output, with adjustable current range 1..10A

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 for trigger switch off output for max Current or min Voltage on the channel

Alarm Output Open Collector

DIN Rail and Wall Mount

General

Electronic Circuit Breaker Fuse, for protections about Overload and Short Circuit, Two channel electronic circuit with active current limitation for output load. It can operate in the field 12 and 24Vdc, for installation in DIN rail and Wall Mount.

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 failsafe 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	**1 …10A**
Type of response value setting	**via Blink code 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

Iout = 1.2 …1.5 x set value	**switch-off after approx. 5 s**
Iout = 1.5 …1.8 x set value	**switch-off after approx. 1 s**
Iout = 1.8 …2 x set value	**switch-off after approx. 0,1 s**
Iout > 2 x set value	**switch-off after approx. 0,03 s**
Iout > 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 (Hover 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	**Three-color LED per output:** **- green LED for "Output switched through"** **- Red LED for "Output switched off manually"** **- Red LED Blink for "Output switched off due to overcurrent"** **- Orange LED: Verify and Config**
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 mm² (24 – 12 AWG); 0.6 - 0.8 Nm**
Input 0V	**1 Screw Type**	
Outputs	**1 Screw Type**	
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 Beck Light after 30 sec)**
Protection class	**III**
Housing material	**Polycarbonate**
Foot latch material	**Plastic POM**
Screw type connection	**0.2 - 2.5 mm² (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 is possible drive the device true this cable true the net ADELBus.