

# M1020 SERIES

## TVS DIODES



### PRODUCT HIGHLIGHTS

- 40 KA, 8/20 TVS DIODES
- BIDIRECTIONAL DEVICES
- DESIGNED FOR 320v HIGH ENERGY DC BUS
- VISUAL LED FAILURE INDICATORS

**Applications**

Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial

**Special Features**

- 40 KA, 8/20μSec TVS diodes
- Bidirectional devices
- Designed for 320V high energy DC bus
- Visual indication in case of a TVS failure
- DC bus protection
- Turn on overshoot clamp
- Lightning protection

**Electrical characteristics\***

Parameter	Test Conditions	Min	Type	Max	Unit	Notes
I <sub>D</sub>	V <sub>d</sub> =380V	1	1.5	10	mA	DC leakage
V(BR)	I(BR)=40mA	401	422	442	V	Pulse test
V <sub>c</sub>	I <sub>pulse</sub> =50A		460			Pulse test
V <sub>c</sub>	I <sub>pulse</sub> 10kA		520			*
C	F=10kHz, V <sub>d</sub> =1vrms		5nF			*

\* Guarantee by design

<i>Absolute Maximum Ratings*</i>			
Rating	Symbol	Value	Unit
Repetitive standoff voltage	VWM	380	V
Peak energy rating for complete assembly TA=25°C single pulse	E(J)	200	Joule
Peak current rating per each device 8/20µSec IEC 61000-4-5	Ippm	40	kA
Operation temperature	T(operation)	-40°C to 85°C	°C
Storage temperature	T(storage)	-40°C to 85°C	°C

**General information**

M1020-1 is a protection solution having the parameters described above. The device when mounted on a DIN Rail with 20A serial external circuit breaker provides best in class of bus protection.

**Please consult factory for details.**

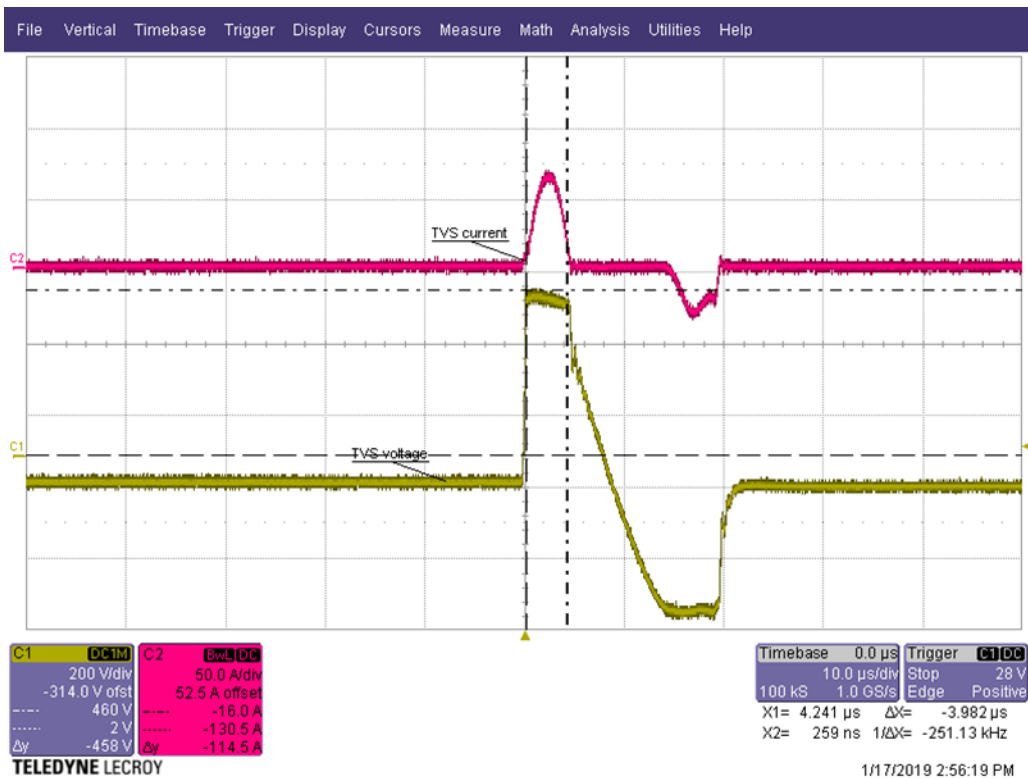
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\* Guarantee by design

**Front Panel LEDs**

A Green LED, indicates that input power is connected.

*Typical test results*



Connector

**CH1 yellow trace = TVS voltage during surge test**  
**CH2 pink trace = TVS current**  
**V clamp = 460V@60A spike**

### *Description of Operation*

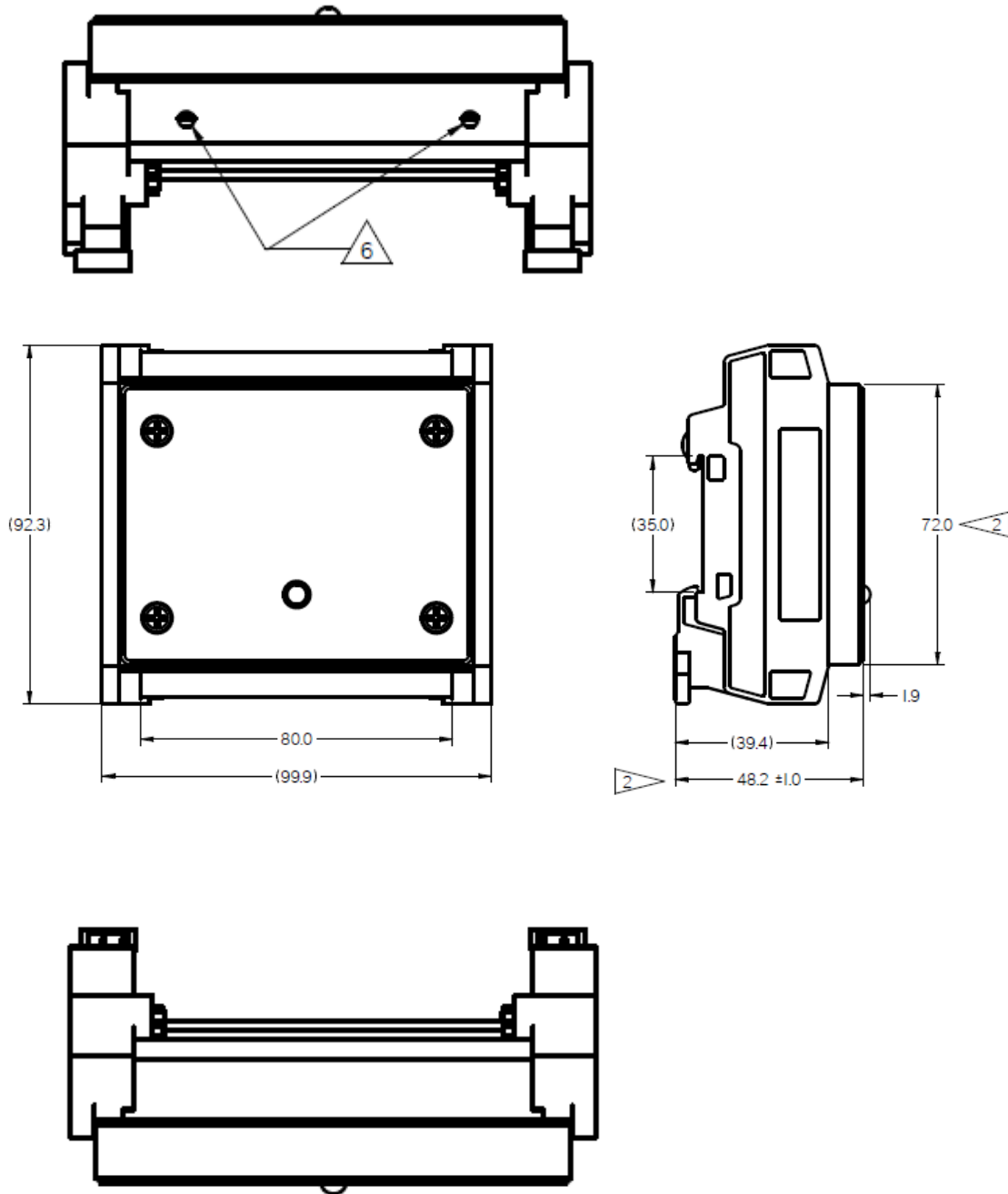
Unit contains TVS diodes. All connected in parallel with external circuit breaker.

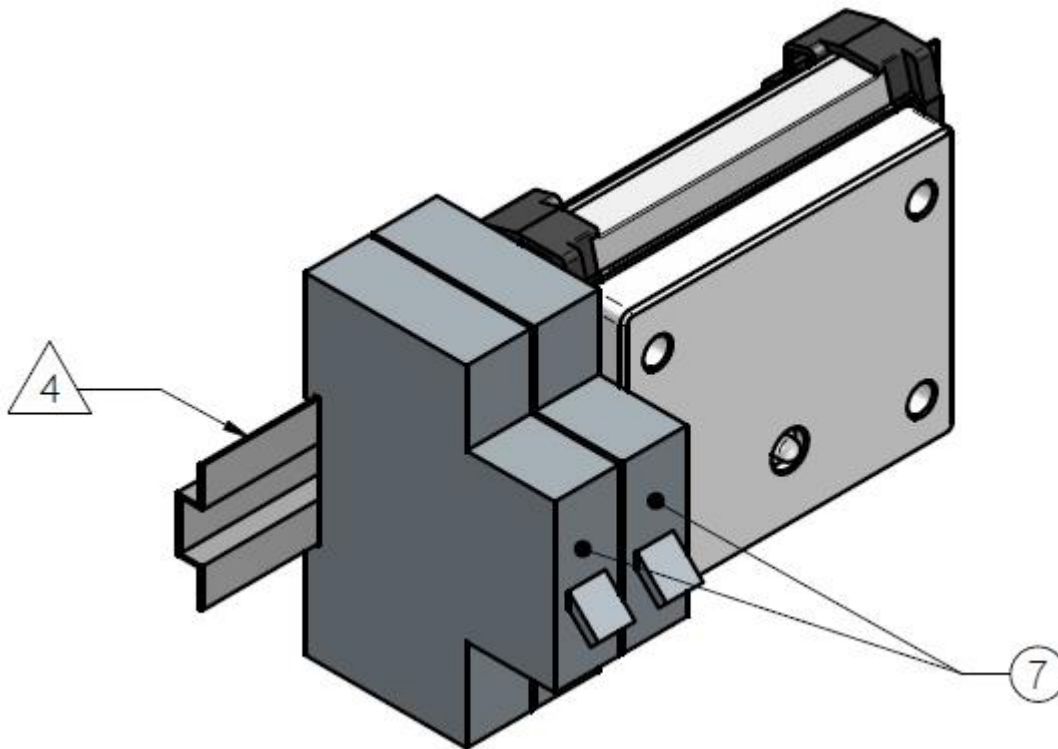
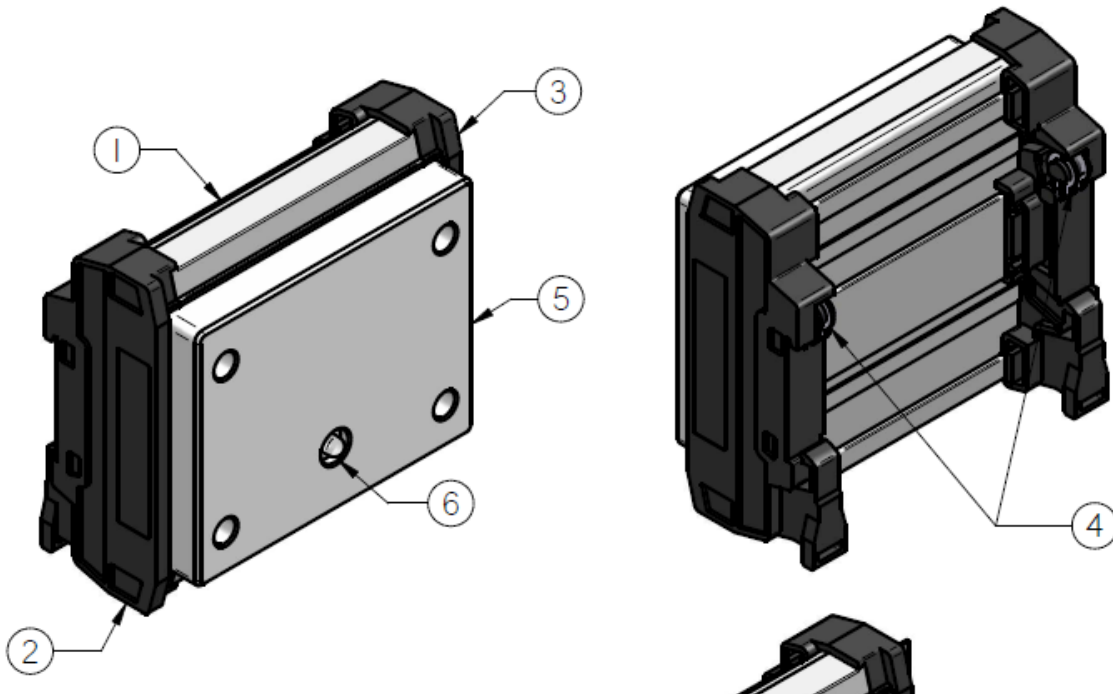
In case of a failure circuit breaker will be disconnected.

The Unit connected with two CB S200MTC-2P-K-20 IAW outline drawing.

In case of reverse polarity connection device will not be damage.

*Outline Drawing*





**BILL OF MATERIALS**

ITEM	Manufacturer	Manufacturer Part Number	Description	QTY.
1	PHOENIX CONTACT	2200148/UM72/8.00/GY7035	UM-PRO PROFILE 8.0CM GRAY	1
2	PHOENIX CONTACT	UM-PRO 72 COVER-L BK - 2200151	LEFT ELEMENT FOR DIN RAILS FOR UM-PRO PROFILES	1
3	PHOENIX CONTACT	UM-PRO 72 COVER-R BK - 2200152	RIGHT ELEMENT FOR DIN RAILS FOR UM-PRO PROFILES	1
4	PHOENIX CONTACT	UM-PRO PE CONTACT L3 - 2200163	GROUND CONTACT FOR UM-PRO PANEL MOUNTING BASE	2
5	ENERCON	22-0102-1020-00	COVER	1
6	BIVAR	PLP5-375	INDICATOR LED	1
7	ABB	UC-K 20 282	CIRCUIT BREAKER	2

*Note: Specifications are subject to change without prior notice by the*