



RPR-2 relay is the perfect solution for metering and Protection on traction rectifier. Used in combination with TIM Measuring Transducer guarantees the complete rectifier protection making also available Voltage, Current and Power (optional) measurements both locally (on the two 4 digits Led displays) and remotely via RS485 serial connection bus.

Following Protective Functions are available:

F32 Reverse current protection

F80 Undervoltage protection

F45 Overvoltage protection

HMI consists of 2 Four digits LED displays, 1 four buttons keyboard and 4 Signalisation Leds; it allows a very userfriendly programming of the relay which is anyhow also possible by Laptop through the back serial communication port.

Connection to TIM Measurements transducer is by means of multimode fibre optic cable on which current, voltage and Temperature (optional) sampled signals are sent to the relay.

Besides the displays for local measurements, two analogue outputs - one for current and one for voltage - configurable as (0-20)mA or (4-20)mA are available for measuring instruments or SCADA system connection.

An RS485 back serial port is also available, communication protocol is Modbus RTU.

The device is equipped with:

- N°2 output relays, each with 2 C/O contacts, programmable as normally energized or normally de-energized; these relays can be associated to whichever protective functions.
- N°1 diagnostic output relay, normally energized, with 1 C/O contact.

Reference Standards

- CE Directives
 - EN60255-5
 - EN60068-2
 - EN61000-6-2
 - EN61000-6-4
 - EN50124
 - EN50121-5
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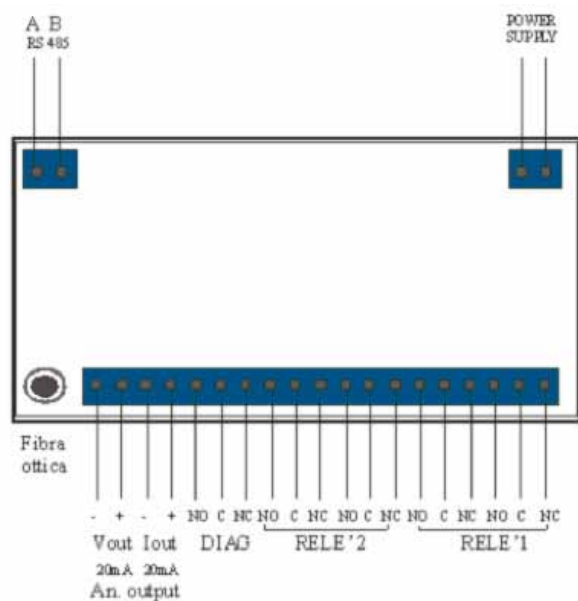
RPR-2 also includes a complete self diagnostic test which automatically checks the relay operation and gives an alarm in case of Internal Relay Failure through a dedicated normally energised output contact.

RPR-2 is in compliance with the most severe International Standards; it has been fully tested by independent laboratories for EMC compatibility and it is suitable to be used in all the Traction systems like tramways, trolley bus, Metro and Railways Power Supply Substations.

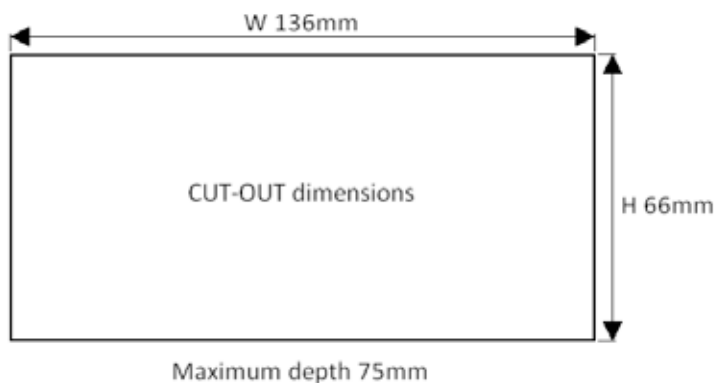
ELECTRICAL CHARACTERISTICS

Power Supply	<ul style="list-style-type: none"> 110Vdc \pm 15%
Measuring Input	<ul style="list-style-type: none"> Fibre optic multimode cable
Voltage Output	<ul style="list-style-type: none"> Analogue output (0 \div 20)mA or (4 \div 20)mA
Current Output	<ul style="list-style-type: none"> Analogue output (-20 \div 20)mA or (-12 \div 20)mA
Analogue Output Accuracy	<ul style="list-style-type: none"> 0,2% from -10°C to +50°C temperature range
Measurement Accuracy	<ul style="list-style-type: none"> +/-1 digit
Measurement Visualization	<ul style="list-style-type: none"> 2 four digits displays
Dynamic	<ul style="list-style-type: none"> Voltage: 0 \div 9999 V Current: -9.99 kA \div 9999A
Output Relays	<ul style="list-style-type: none"> 2 relays each with 2 C/O contacts - rating: 5A@230Vac; 5A@30Vdc - breaking capacity 0,3A@110Vdc L/R=40ms
Diagnostic Output	<ul style="list-style-type: none"> 1 relay with 1 C/O contact - rating: 5A@230Vac; 5A@30Vdc - breaking capacity 0,3A@110Vdc L/R=40ms
Protective Function	<ul style="list-style-type: none"> 2 Reverse Current levels (F32) 1 Minimum Voltage level (F80) 2 Maximum Voltage level (F45)
Leds	<ul style="list-style-type: none"> 3 for function signalisation 1 for diagnostic
Operation ambient Temperature	<ul style="list-style-type: none"> -10 \div 60°C
Storage Temperature	<ul style="list-style-type: none"> -40 \div 85°C

WIRING DIAGRAM



OVERALL DIMENSIONS



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The performances and the characteristics reported in this manual are not binding and can be modified at any moment without notice.