Measuring transducers

VR 400 for resistance

VR 400 are transducers converting measured quantities of resistance into a proportional load independent DC signal.

Versiones for potentiometer 3-wire (2-wire) or for temperature Pt 100 3-wire.

The output signal can be connected to one or several receiving instruments such as panel indicators, recorders, controllers etc.

The transducers have galvanic separation between in- and output and auxiliary supply.

The transducers in plastic case are mounted directly on profiled bar 35 EN 50022. Connection to selfopening clamps for max 6 mm² wires. Transducers for mounting in 19" racks can be delivered in different applicaiton types (see special leaflet). The rack modules are 8TE wide and in a 19" rack is place for 10 modules.

The transducers are manufactured according to IEC688.

Order facts:

Enclosed for mounting on profiled bar 35 EN 50022	*19" rack modul (wide 8 TE)*	
Type	**Type**	
VR 400L-15x	**VR 400R-15x**	
Replace x with last digit for output according to table below		
Output	*External resistance load*	*Last digit x*
0 - 5 ± 5 mA	0-3000 Ω	**1**
0 -10 ± 10 mA	0-1500 Ω	**2**
0 -20 ± 20 mA	0- 750 Ω	**3**
4 -20 mA	0- 750 Ω	**4**
0 -10 ± 10 V	> 700 Ω	**5**

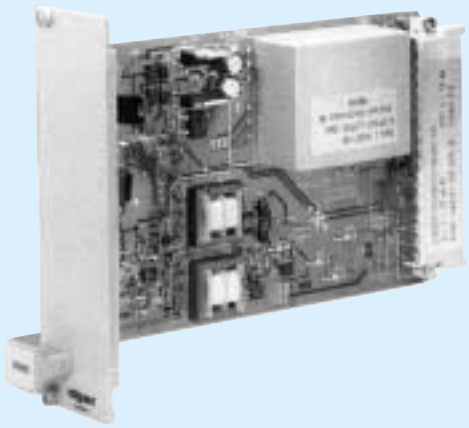
Order form:

Measuring transducer for resistance

Type	**VR 400L-154**
Measuring range	0-2200 Ω
Output	4-20 mA
Power supply	230 V, 50 Hz
Mounting on DIN-rail	

VR400-FA

VR400-FB



Technical data

Input	
Range	0-25 to 0-5000 Ω
Current	2-3 mA
3 wire connection	
Output	
Current output signal	min 0-1 mA, max 0-20 mA
Range	0...5/10/20 mA; 4-20 mA
Load	max 15 V
Current limitation	< 30 mA
Voltage	0-10 V
Burden	> 700 Ω
Ripple	< 1% p.p.

General data

Accuracy	< ± 0,2%
Linearity error	< 0,1%
Response time 0-90%	< 80 ms
Temperature influence	< 0,1% / 10°C
Temperature range	–25...+60°C operation –40...+70°C storage
Test voltage	3,7 kV, 50 Hz, 1 min
Power supply	24, 110, 230 VAC ± 15%, 47-70 Hz, ca 2 VA 24-130 VDC ± 20%, ca 2,5 W
Weight	0,4 kg

Options on request

Standards

General standards for measuring transducers EN 60688, IEC 688

EMC	emission EN 50081-2 immunity EN 50082-2 *
Safety	EN 61010-1, IEC 1010-1
Inputs	overvoltage cat III
Outputs	overvoltage cat II
Pollution degree	2

*) At certain frequences can minor deviations from class accuracy occur during the disturbance

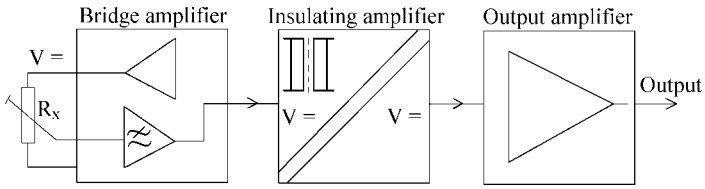
Design

A constant current is driven from the bridge amplifier to the measuring object. The voltage over Rx is amplified to a standard value which is galvanically separated from input in the insulating amplifier.

The galvanically insulated measuring signal is converted to a load independent DC current or voltage in the output amplifier.

The AC power supply comes from a transformer that gives a galvanic separation. Those parts that need separate power get it via a rectifying stage. The DC power comes from a switched unit that gives galvanic separation and covers the span from 24 to 130 VDC.

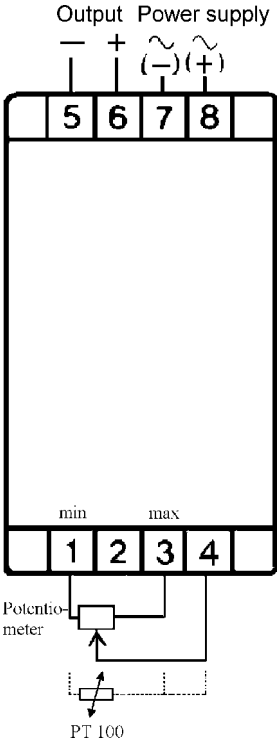
V3400BE



Connecting diagrams

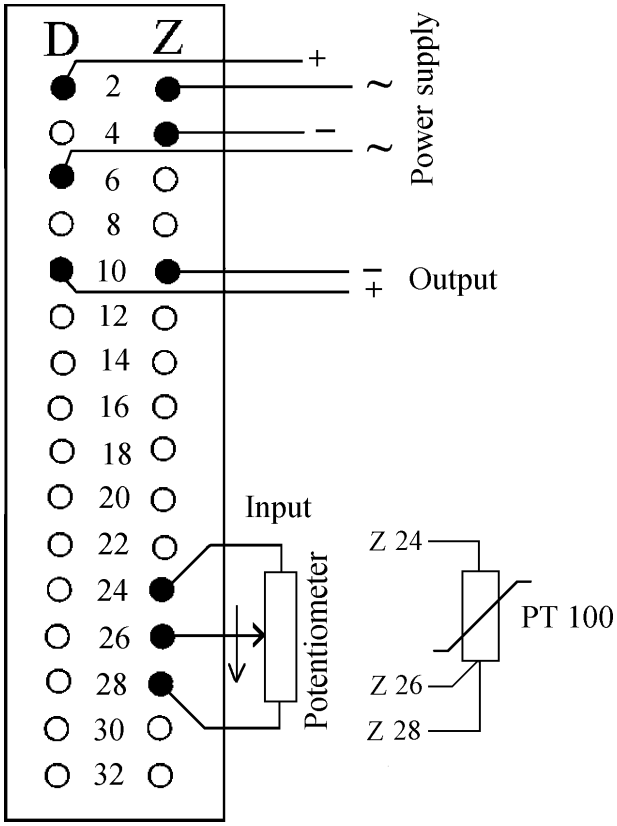
VR 400L

VR400LE



VR 400R

VR400RE



Dimensions (mm)

VR 400L

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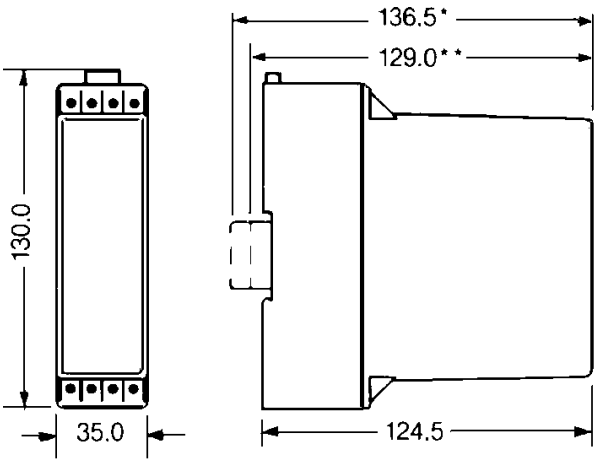

*) Profile bar 35 EN 50022, hight 15 mm
**) Profile bar 35 EN 50022, hight 7,5 mm

VR 400R