

## Measuring transducers

### VR 400 for resistance

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

Versions 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 mm<sup>2</sup> wires. Transducers for mounting in 19" racks can be delivered in different application 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

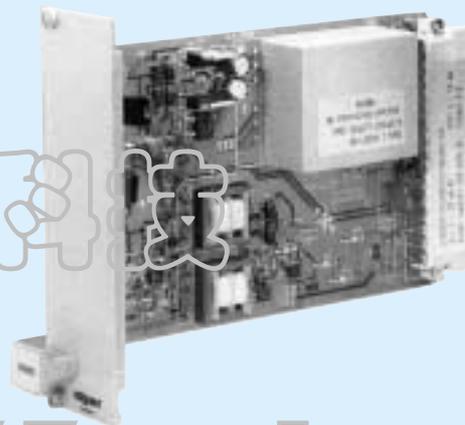
Power supply 250 V, 50 Hz

Mounting on D N-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

1

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

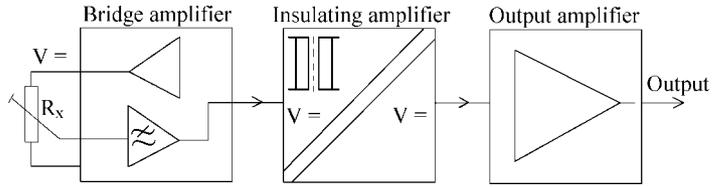
## Design

A constant current is driven from the bridge amplifier to the measuring object. The voltage over  $R_x$  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.

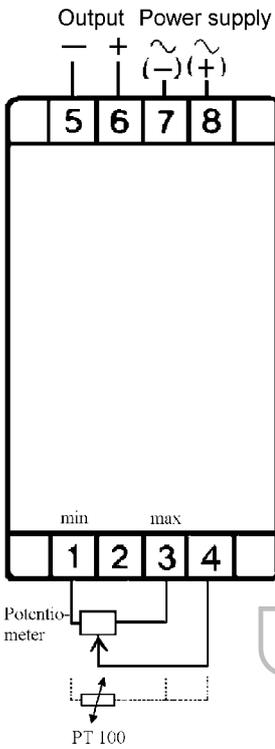
V3400BE



## Connecting diagrams

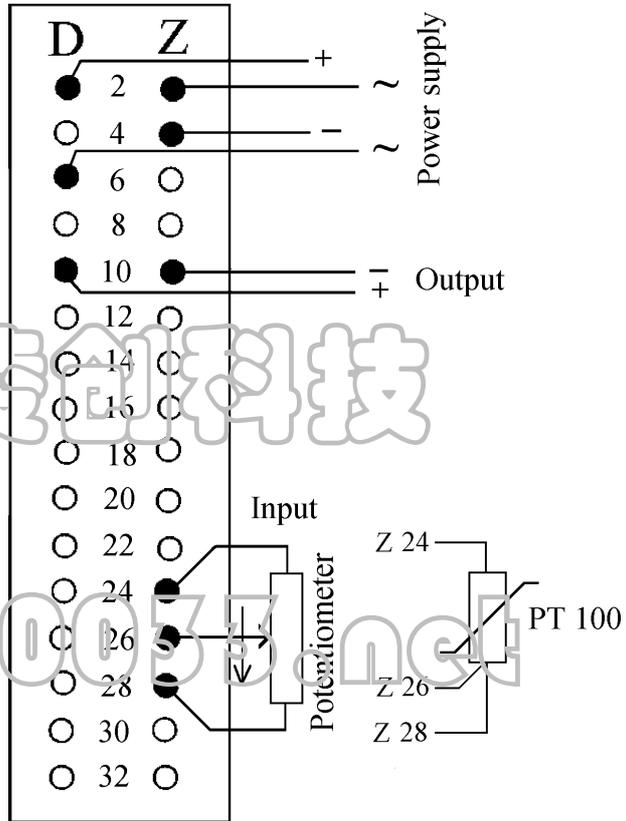
### VR 400L

VR400LE



### VR 400R

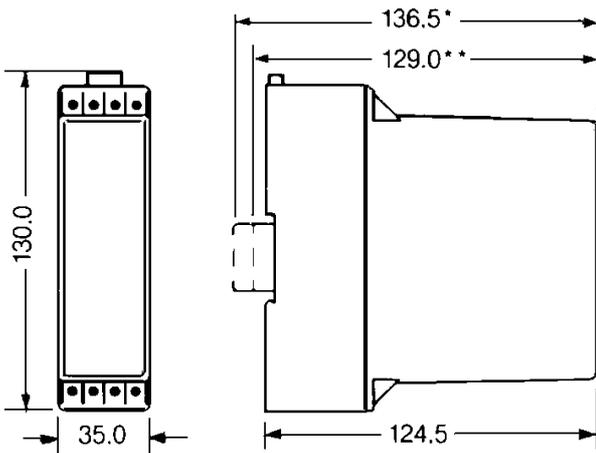
VR400RE



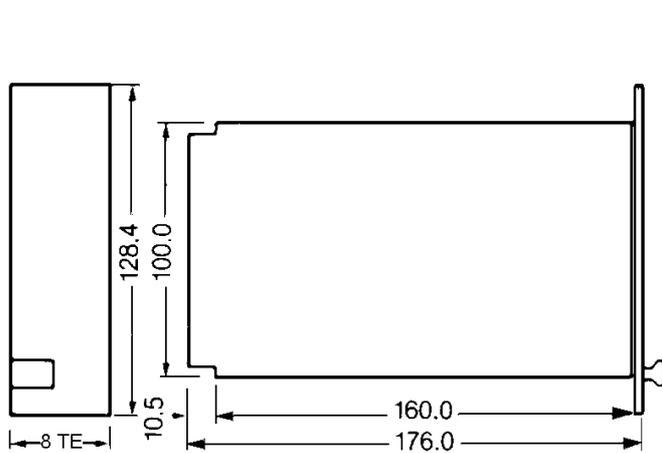
## Dimensions (mm)

### VR 400L

MATOMVME



### VR 400R



\*) Profile bar 35 EN 50022, height 15 mm

\*\*\*) Profile bar 35 EN 50022, height 7,5 mm