

Measuring transducers

VR 402 for tap changer (resistance)

VR 402 are transducers converting measured quantities of resistance into a proportional load independent DC signal.

The transducers are designed for tap changer and therefore adjustable.

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.

The transducers are manufactured according to IEC 688.

Order facts:

Type	Output	External resistance load
VR 402L-151	0 - 5 mA	0-3000 Ω
VR 402L-152	0 -10 mA	0-1500 Ω
VR 402L-153	0 -20 mA	0- 750 Ω
VR 402L-154	4 -20 mA	0- 750 Ω
VR 402L-155	0 -10 V	> 700 Ω

Order form:

Measuring transducer for tap changer

Type	VR 402L-154
Input	0 - 160 Ω, 1-17 step (step 1= 0 Ω, 10 Ω /step)
Output	4-20 mA
Power supply	230 VAC

VR402-FA



Technical data

Input

Range	0 - 25 to 0 - 5000 Ω
Adjustable	±1,5 steps
Current	2-3 mA

3-wire connection

Output

Current output signal (span)	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	<input type="checkbox"/> 25...+60°C operation <input type="checkbox"/> 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 frequencies can minor deviations from class accuracy occur during the disturbance

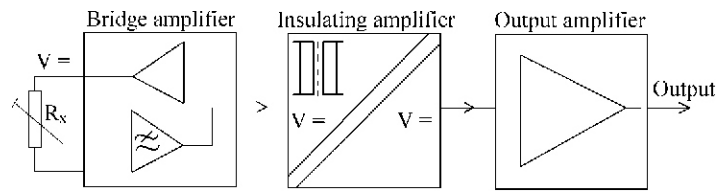
Design

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.

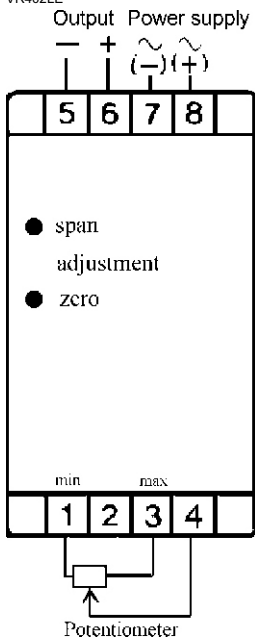
VR400BE



Connecting diagram

VR 402L

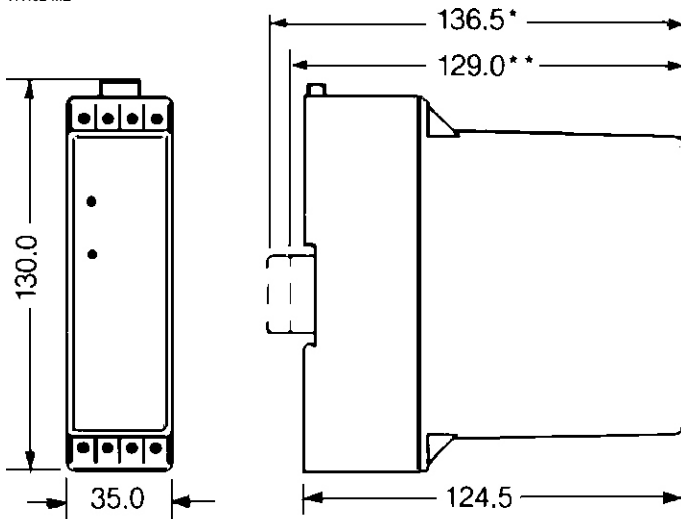
VR402LE



Dimensions (mm)

VR 402L

VR402-ME



*) Profile bar 35 EN 50022, hight 15 mm

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