



Measuring transducer for temperature

(resistance thermometer)

Type:
Pt-MU



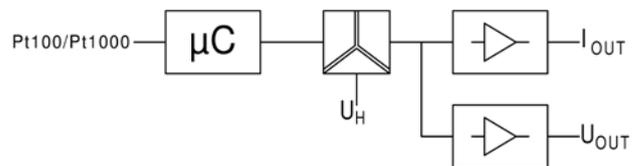
Application

The measuring transducer Pt-MU is used for the transformation and isolation of a change in resistance due to the temperature into an impressed direct current and direct voltage signal. The calibrated double outputs are switchable between 0-20 mA and 0-10 V or 4-20 mA and 2-10 V.

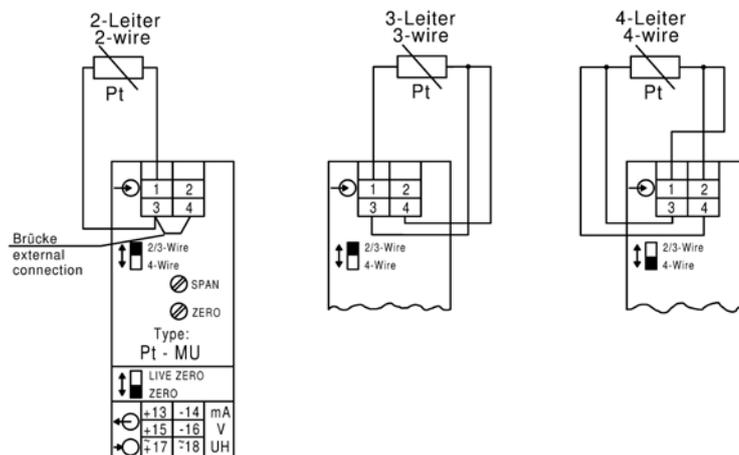


Function

The resistance thermometer Pt 100 is a resistance depending on the temperature. A constant measurement current flows via the resistance thermometer to a sensor resistor which is part of a bridge circuit. The direct voltage generated there is linearized and amplified. It is then transformed into an impressed direct current and in an impressed direct voltage in a subsequent circuit. The galvanic isolation is realized using an optocoupler. Both outputs are no-load proof and short-circuit proof. Connecting the two outputs is not permissible. An auxiliary voltage is required.



Connection



Types and variants

Input	arbitrary temperature range between -200 ... +850 °C (please specify when ordering, minimum range 40K)
Output	0-20 mA and 0-10 V as well as 4-20 mA and 2-10 V switchable on front side
Surcharges	for Pt 1000 sensor Auxiliary voltage other than 230 V AC: 24 V DC 6-30 V AC + DC 36-265 V AC + DC 110 V AC
Frequency module	Type FM (frequency output 0-5 Hz up to 0-10 kHz) - (description page 10)
Relay module	for limit monitoring Type GWM - (description page 11)



Technical data

Input	Input variables	resistance Pt 100
	Option	● resistance Pt 1000
	Rated values	-200 ... +850 °C, arbitrary temperature range (please specify when ordering, minimum range 40K), other values on request the constant current through the sensor is max. 1 mA
	Circuit type	two-wire, three-wire or four-wire circuit
	Input lead	two-wire: adjustment 0-10 Ω, using an installed spindle potentiometer three-wire: no adjustment necessary, max. 100 Ω symmetrical four-wire: no adjustment necessary
Output	Output variables	double output
	Rated output values	0-20 mA / 500 Ω load and 0-10 V / max. load 10 mA as well as 4-20 mA / 500 Ω load and 2-10 V / max. load 10 mA switchable on front side
Transfer behavior	Accuracy	± 0,5 %
	Temperature range	-15 °C to +20 °C to +30 °C to +55 °C
	Temperature influence	< 0,2 % at 10 K
	Auxiliary voltage influence	no
	Load influence	no
	External magnetic field influence	no (400 A/m)
	Residual ripple	< 30 mV _{SS}
	Response time	< 300 ms
	Open circuit voltage	max. 24 V
	Current limiting	max. 2-fold in case of overload
	Test voltage	4 kV between input, output, auxiliary voltage
Auxiliary voltage		230 V AC ± 20 %, 45-65 Hz, 2,5 VA
	Options	<ul style="list-style-type: none"> ● 110 V AC ± 20 %, 45-65 Hz, 2,5 VA ● 24 V DC - 15 % to + 25 %, 2 W ● 6-30 V AC + DC, 2 VA ● 36-265 V AC + DC, 2 VA
Dimensions	Housing	Housing A, (22,5 mm wide) page A1
Weight		150 g
Installation	Fastening	Snap-on fastening on top hat rail 35 mm acc. to DIN EN 60 715
	Electrical connection	Screw terminal max. 4 mm ²