

# Head transmitters for thermocouples

Head transmitters transform the measured unit of a sensor (eg. temperature) into a normed analog, mostly electrical signal.

Ludwig Schneider offers two special head transmitters for thermocouples: an economic version with fixed settings (type 3) and the free programmable type 2.

Furthermore the product program covers head transmitters with Hart® protocol, Foundation™-Fieldbus communication and Profibus®-PA-Technology.

## Technical data of head transmitters for thermocouples



Head transmitter		Type 3	Type 2
Characteristics		economical	free programmable
<b>General specifications</b>			
Supply voltage		6.5 V to 32 V (DC)	7.2 V to 35 V (DC)
Electrical insulation		—	1500 V (AC)
Linearity error		± 0.1%	≤ 0.05%
Response time		≤ 0.2 s	1 s to 60 s (programmable)
EEProm error check		—	< 3.5 s (≤ 3.5 mA)
Conductor cross section (max.)		1.5 mm <sup>2</sup>	
Weight		40 g	50 g
Dimensions		Ø 44 x H 17 mm	Ø 44 x H 20.2 mm
Operating temperature		-40 °C to 85 °C	
Relative air humidity		0 to 95%	
Suitable connection heads		Form B or larger size	
<b>Input specifications</b>			
Temperature range	Type B	—	400 °C to 1820 °C
	Type E	—	-100 °C to 1000 °C
	Type J	186 °C to 870 °C	-100 °C to 1200 °C
	Type K	246 °C to 1232 °C	-180 °C to 1372 °C
	Type L	183 °C to 855 °C	-100 °C to 900 °C
	Type N	319 °C to 1300 °C	-180 °C to 1300 °C
	Type R	—	-50 °C to 1760 °C
	Type S	—	-50 °C to 1760 °C
	Type T	213 °C to 400 °C	-200 °C to 400 °C
	Type U	—	-200 °C to 600 °C
	Type W3	—	0 °C to 2300 °C
	Type W5	—	0 °C to 2300 °C
	Measuring range (min.)	Type E, J, K, L, T	100 °C
Type U		—	75 °C
Type N		—	100 °C
Type B, R, S, W3, W5		—	200 °C
Lead resistance (max.)		5 Ω	
Accuracy	Type E, J, K, L, N, T, U	—	≤ 1 °C
	Type B, R, S, W3, W5	—	≤ 2 °C
Cold junction		internal	internal, external
Cold junction compensation (CJC)		1.25 °C	< 1 °C
<b>Output specification</b>			
Current signal		4 to 20 mA	4 to 20 mA/20 to 4 mA