

18

HAND HELD RESISTANCE THERMOMETERS

We offer a wide range of general purpose hand held RTDs. All sensors are supplied with a 1,5 metre coiled lead and a fixed miniature pin plug which makes them suitable for most of hand held indicators and other instrumentation by using extension cable and the appropriate connectors. Depending on the thermocouple length and its construction (eg. sheath type), operating range is up to 600 °C

- available types: Pt100, Pt500 lub Pt1000
- accuracy class A or B (other classes on request)
- 2,3 or 4-wire version
- mineral insulated cable or steel protective tube available (table 4)
- several tips available: flat, needlelike etc.,
- ending with a 1,5 metre extension coiled lead and a miniature pin plug (table 4)
- plastic handle rated up to 120 °C or stainless steel handle

18	sensor type	accuracy class	wiring configuration	sheath material	measuring tip type	sheath diameter	length L	handle material	max. operating temp.
	Pt100, Pt500 or Pt1000								
	Give accuracy class								
	Give wiring configuration, table 2								
	Give steel grade, table 3								
	Give sensor termination type, table 4								
	Give sheath diameter Ø, table 4								
	Give length L [mm], table 4								
	Give hand material: TS – plastic or SN – stainless steel								
	Give max. operating temp. [°C]								

TAB. ORDERING CODE:

18	Pt100	B	3	321	RS	5,0	150	SN	200 °C
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18 – Pt100 – B – 3 – 321 – RS – 5,0 – 150 – SN – 200 °C

Temp. sensor type 18 (hand held resistance thermometer), type Pt100, class B, 3-wire, sheath material: heat-proof steel 321 (1H18N9T), tube version with the conical tip, sheath diameter 5.0mm, length 150mm, plastic hand, max. operating temp. 200 °C.



TAB. 1 RESISTOR TOLERANCE CLASS AND OPERATING TEMPERATURES *)

TOLERANCE CLASS	FOR WIRE WOUND RESISTORS	FOR THIN FILM RESISTORS	TOLERANCE VALUE **)
AA	-50 ÷ +250	0 ÷ +150	± (0.1+0.0017 t)
A	-100 ÷ +450	-30 ÷ +300	± (0.15+0.002 t)
B	-196 ÷ +660	-50 ÷ +500	± (0.3+0.005 t)
C	-196 ÷ +660	-50 ÷ +600	± (0.6+0.01 t)

*) to PN-EN60751:2009 **)|t| = temperature in °C no matter what unit (absolute value)

TAB. 2 WIRING CONFIGURATION AND COLOUR MARKING

SINGLE (ONE RESISTOR)		
2-WIRE DESIGN	3-WIRE DESIGN	4-WIRE DESIGN

TAB. 3 STEEL SHEATH MATERIAL*)

TYPE	DESCRIPTION
304 (1.4301; 0H18N9)	Austenitic stainless steel 18%Cr-8%Ni. Corrosion resistant (with no excess oxidation and no resistance lost) up to 800 °C. It is the most popular acidproof material, easy for metalworking and welding.
321 (1.4541; 1H18N9T)	Steel similar to grade 304 (18% Cr, 10% Ni) but with titanium as a stabilizer.
316 (1.4401; H17N13M2T)	Steel similar to 304 (17% Cr, 9% Ni) with 3% of molybdenum. Because this steel grade is more corrosion resistant than 321 and 304, it is good for humid environment and for application in places threatened by corrosion (sea water).

*) other steel grades on request

TAB. 4 MEASURING TIP TYPES **)

TYPE	CONSTRUCTION	DIAMETER Ø	MAX. OPERATING TEMP.	DRAWING
PK *	MI sensor with round tip	3.0 mm, 4.5 mm 6.0 mm (***)	depends on length and dia. max. 600 °C	
PS	MI sensor with the conical tip	3.0 mm, 4.5 mm 6.0 mm	depends on length and dia. max. 600 °C	
RK *	Tube, round tip	3.0 mm, 4.0 mm, 5.0 mm, 6.0 mm	Max. 400 °C	
RS	Tube, conical tip	3.0 mm, 4.0 mm, 5.0 mm, 6.0 mm	Max. 400 °C	
RI	Tube, needlelike tip	4.0 mm, 5.0 mm, 6.0 mm	Max. 400 °C	

*) flat tip on request **) other tip on request ***) other dia. on request, eg. Ø 1,5 mm and Ø 2,0 mm