

Type 02150



Temperature sensors Pt to 400 or 600°C

- head with well and to well
- head with well and to well with current output
- cable stem, penetration, with grip
- with connector



Characteristics

Sensor 1x or 2x Pt100

Connection 4-wire, (2xPt100 and sensors 2-wire with connector)

Resistance or current output 4 to 20 mA.

Description - use

The sensors are designed for temperature measuring. The sensor signal can be evaluated for temperature measuring registration or signalisation. The product according to ČSN EN 60751.

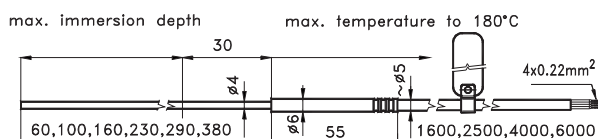
Head sensors with well and to well - are connected by means of terminal block in the head. They are produced in design with transmitter 4-20 mA, wells and stems are from stainless steel. Head AI temperature is -40 to +150°C, plastic head temperature -40 to +130°C, in sensors with transmitter the head temperature can be within range -25 to +75°C.

Cable sensors - connected by means of silicone cable. The option of use for sensing temperature of liquids, powder, viscous and soft materials in greater depths. Max. temperature of unmeasured part and cable up to +180°C.

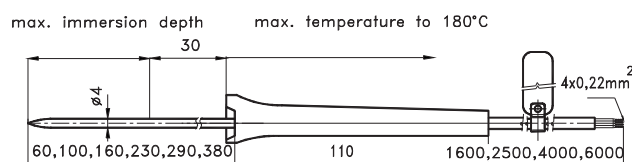
Sensors with connector - only 1xPt100, connection by means of 2-wire connector. Use as in cable sensors. Connector temperature up to +200°C.

Dimension drawing

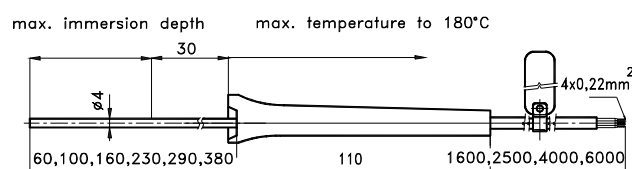
- cable, stem



- cable, penetration with grip



- cable, with grip



Technical data

Measuring range: -60 to +400 or +600°C

Measuring current: 1 mA

Tolerance class: A, B according to ČSN EN 60751

Ingress protection according to ČSN EN 60529:

IP 66 - cable design

IP 54 - head design

IP 40 - design with connector

Time factor: without well - water 6 s, air 20 s
with well - water 15 s, air 40 s

Sensors with convertor: output signal 4-20 mA
power supply 12-36 V DC
polarity optional
accuracy 1% of the range

Variable submersion depth for temperature sensing in liquids, gases, powder, viscous and soft materials. Temperature of stronger part and cable outlet up to +180°C. Combination with silicone bushing up to max temperature +180°C is possible for wall passage.

Connection: 4-wire, 2xPt100 2-wire

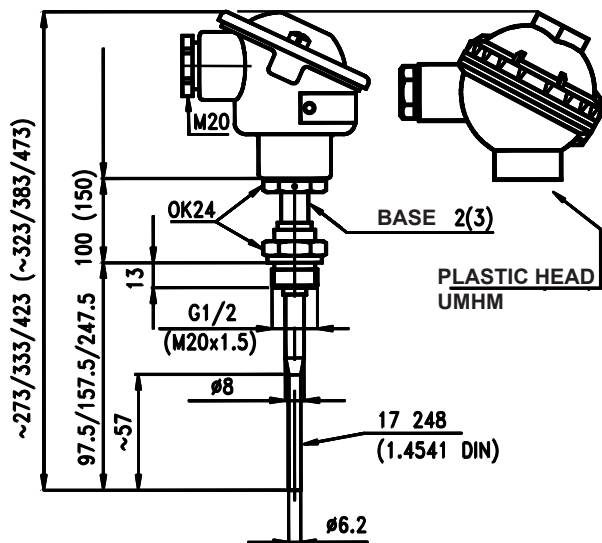
Material: stem - stainless steel class 17 (DIN 1.4301), cable - silicone

Variable submersion depth for temperature sensing in liquids, gases, powder, viscous and soft materials. Temperature of the grip and cable outlet up to +180°C. Combination with silicone bushing up to max temperature +180°C is possible for wall passage.

Connection: 4-wire, 2xPt100 2-wire

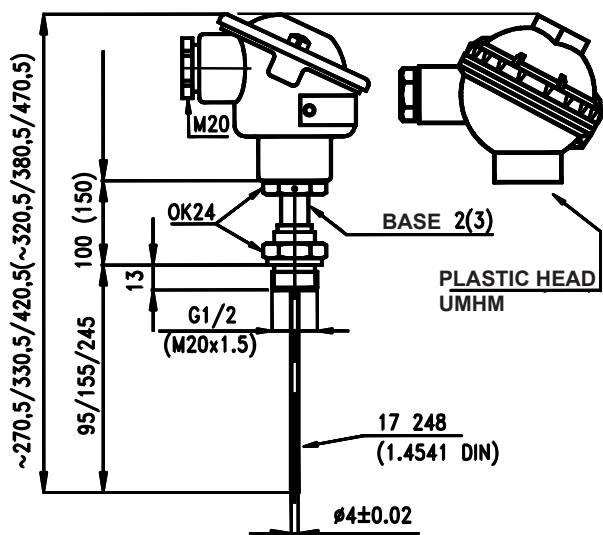
Material: stem - stainless steel class 17 (DIN 1.4301), grip - PA6, cable - silicone

- head with well



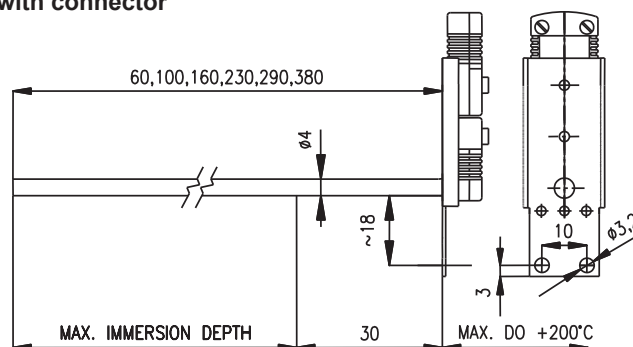
Covered connection into terminal block placed in the head. Can be ordered upon customer request with plastic head for aggressive environment. Supplied also with transmitter 4 to 20 mA. Mounting in the weld-on piece.
Material: well - stainless steel class 17 (DIN 1.4541), head - Al or plastic

- head to well



Covered connection into terminal block placed in the head. Can be ordered upon customer request with plastic head for aggressive environment. Supplied also with transmitter 4 to 20 mA. Mounting: into well with internal thread (no well with internal thread produced)
Material: stem - stainless steel class 17 (DIN 1.4301) head - Al or plastic

- with connector



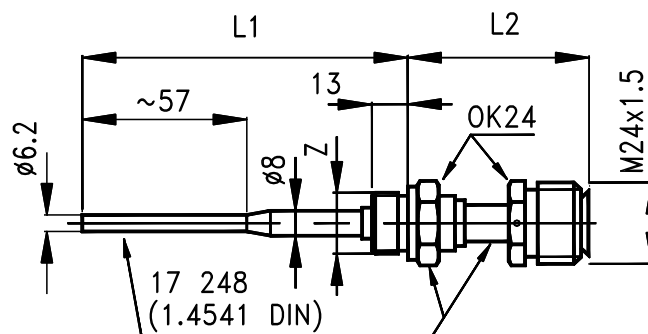
Variable submersion depth for temperature sensing in liquids, gases, powder, viscose and soft materials. Connector temperature up to +200°C. Combination with silicone bushing up to max temperature +180°C is possible for wall passage.

Connection: 2-wire

Material: stem - stainless steel class 17 (DIN 1.4301)

Accessories upon order

- wells for head sensors

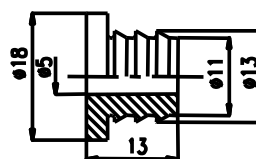


- supplied with sealing Cu ring and sealing option,

Material: stainless steel 17 (DIN 1.4541), PN 40 according to ČSN 13 0010

Well order No.	Z	L1	L2
31 02150 601001	G1/2	100	121
31 02150 602001		160	
31 02150 603001		250	
31 02150 611001	M20x1,5	100	171
31 02150 612001		160	
31 02150 613001		250	
31 02150 601011	G1/2	100	171
31 02150 602011		160	
31 02150 603011		250	
31 02150 611011	M20x1,5	100	171
31 02150 612011		160	
31 02150 613011		250	

- rubber bushing



The bushing has a function of wall, sheet metal plug, etc.

Order No.: 405 061 014 516

Material: silicone (max. 180°C)

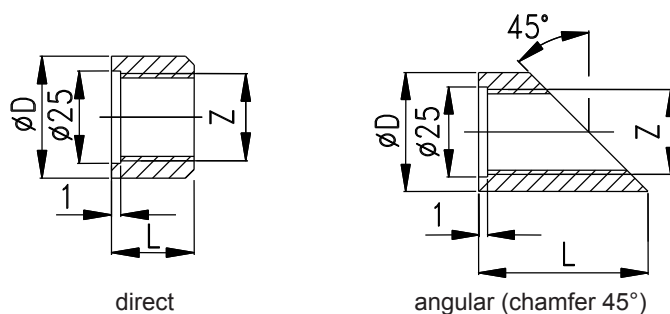
- sealing rings Cu (package 10 pcs) - for wells and weld-on pieces

Order No.	Dimension
405 911 082 716	21 x 25
405 911 082 816	20 x 24

Rated values of measuring resistance Pt for information purposes depending on temperature (ČSN EN 60751)

t [°C]	Pt100 [Ω]	t [°C]	Pt100 [Ω]	t [°C]	Pt100 [Ω]
-60	76,33	170	164,77	400	247,09
-50	80,31	180	168,48	410	250,53
-40	84,27	190	172,17	420	253,96
-30	88,22	200	175,86	430	257,38
-20	92,16	210	179,53	440	260,78
-10	96,09	220	183,19	450	264,18
0	100,00	230	186,84	460	267,56
10	103,90	240	190,47	470	270,93
20	107,79	250	194,10	480	274,29
30	111,67	260	197,71	490	277,64
40	115,54	270	201,31	500	280,98
50	119,40	280	204,90	510	284,30
60	123,24	290	208,48	520	287,62
70	127,08	300	212,05	530	290,92
80	130,90	310	215,61	540	294,21
90	134,71	320	219,15	550	297,49
100	138,51	330	222,68	560	300,75
110	142,29	340	226,21	570	304,01
120	146,07	350	229,72	580	307,25
130	149,83	360	233,21	590	310,49
140	153,58	370	236,70	600	313,71
150	157,33	380	240,18	610	316,92
160	161,05	390	243,64	620	320,12

- weld- on pieces



Order No. weld-on piece	Type	Z	L	ØD
405 911 081 416	direct	G1/2	19	28
405 911 081 616	angular	G1/2	40	28
405 911 081 816			46	
405 911 081 516	direct	M20x1,5	19	28
405 911 081 716	angular	M20x1,5	40	28
405 911 081 916			46	

The weld-on pieces are supplied with sealing Cu rings and have aperture for sealing option.
Material: welding steel class 11 (DIN 1.0308, DIN 2391)

Permitted resistance deviations of Pt sensors from rated values for tolerance classes specified in °C

Tolerance class	Tolerance $\Delta T/K$ temperature t in °C	tolerance at t = 0 °C	
		$\Delta T/K$	Pt 100 [Ω]
A ČSN EN 60751	$\pm 0,15 + 0,002 t $	$\pm 0,15$	99,94 to 100,06
B ČSN EN 60751	$\pm 0,30 + 0,005 t $	$\pm 0,30$	99,88 to 100,12

Warranty

24 months warranty is provided from the delivery date unless specified otherwise in the purchase contract.

Ordering devices

Code	Name				
30 02150 9	Head temperature sensor, cable, with connector				
	Code	Measuring resistance			
	1	1 x Pt100 to 600°C			
	2	2 x Pt100 to 600°C			
	3	1 x Pt100 to 400°C			
	4	2 x Pt100 to 400°C			
	Code	Sensor type			
	1	Al head, base (extension) 2 (100 mm)			
	2	Al head, base (extension) 3 (150 mm)			
	3	Plastic head, base (extension) 2 (100 mm)			
	4	Plastic head, base (extension) 3 (150 mm)			
	5	with connector			
	6	stem			
	7	with grip			
	8	penetration			
	Code	Tolerance class, transmitter			
	1	According to ČSN EN 60751 only up to 400°C and except for 2xPt100 and design with connector			
	2				
	5	B according to ČSN EN 60751			
	7	head with transmitter, range -40 to +60°C			
	8	head with transmitter, range 0 to +180°C			
	9	head with transmitter, range 0 to +400°C			
	Code	Design specification, cable length			
	1	head with well PN40			
	3	head to well			
	4	Cable with cable length L = 1,6 m			
	5	Cable with cable length L = 2.5 m			
	6	Cable with cable length L = 4 m			
	7	Cable with cable length L = 6 m			
	8	stem with connector			
	Code	Well (stem) length, thread			
		Head with well - well thread M 20 x 1,5			
	1	well length L= 100 mm			
	2	well length L= 160 mm			
	3	well length L= 250 mm			
		Head with well - well thread G 1/2			
	4	well length L= 100 mm			
	5	well length L= 160 mm			
	6	well length L= 250 mm			
		Head to well - well thread M 20 x 1,5			
	1	stem length L= 95 mm			
	2	stem length L= 155 mm			
	3	stem length L= 250 mm			
		Head to well - well thread G 1/2			
	4	stem length L= 95 mm			
	5	stem length L= 155 mm			
	6	stem length L= 250 mm			
		stem length in cable sensors and with connector			
	1	60 mm (only up to 400°C)			
	2	100 mm			
	3	160 mm			
	4	230 mm			
	5	290 mm			
	6	380 mm			
30 02150 9	1	2	2	1	4
					Ordered No.

Order example: 1 temperature sensor, type 02150, 1xPt100 to 600°C, Al head with base 3, tolerance class B, well length 100 mm, thread G 1/2

Catalogue sheet **KLA 19/33/09-11**

Due to continual technical development the manufacturer reserves the right to change parameters without prior notification.