

Type 02050



Temperature sensors Pt to 180°C



- head with well
- head with well and current output
- cable

Characteristics

Shock resistant design.

Sensor 1x or 2x Pt100

Connection 4-wire with the connection option of 3 or 2-wire, (2xPt100 - 2-wire)

Resistance or current output 4 to 20 mA.

Accurate measuring.

Description - use

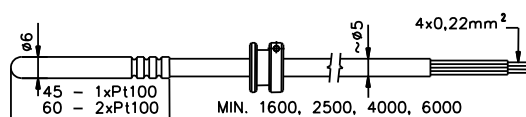
The sensors are designed for temperature measuring. The sensor signal can be evaluated for temperature measuring registration or signalisation. The product is subject to ČSN EN 60751.

Head sensors are connected by means of terminal in the head. They are produced in design with current transmitter 4-20 mA, wells and stems are from stainless steel. Head Al 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, viscose and soft materials in greater depths. Max. temperature up to +180°C.

Dimension drawing

- cable



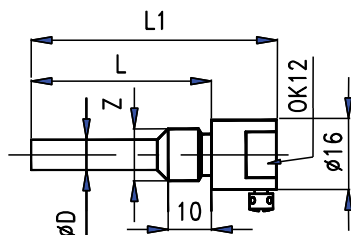
Temperature sensing in greater depths. Combination with silicone bushing up to max temperature +180°C is possible for wall passage.

The outlet connection is 4-wire, sensors 2xPt100 2-wire.

Material: casing - Cu, cable - silicone

Accessories upon order

- wells for cable sensors



- design A

Material:
stainless steel class 17 (DIN 1.4034), PN 63
according to ČSN 13 0010

Technical data

Measuring range: -40 to +180°C

Measuring current: 1 mA

Tolerance class: A, B according to ČSN EN 60751

Protection class: IP 66 - cable design
IP 54 - head design

Temperature reaction time:

no well - water 6 s, air 20 s

with well - water 15 s, air 40 s

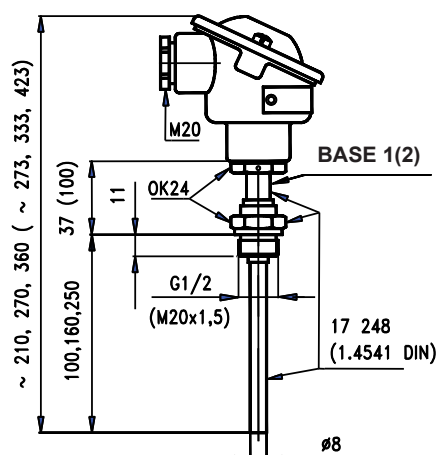
Sensors with transmitter: output signal 4-20 mA

power supply 12-36 V DC

polarity optional

accuracy 1% of the range

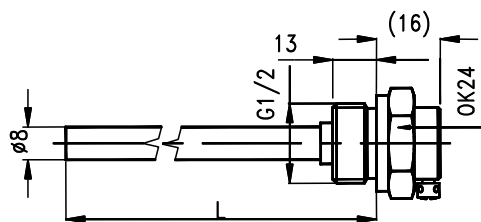
- head with well



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.

Material: well - stainless steel class 17 (DIN 1.4541), head - Al or plastic

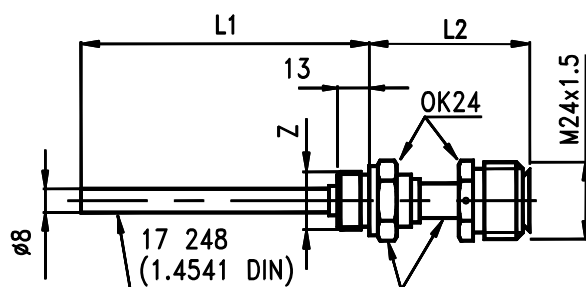
- design B



Material:
stainless steel class 17 (DIN 1.4541), PN 63
according to ČSN 13 0010

- supplied with sealing Cu ring and sealing option

- well for head sensors

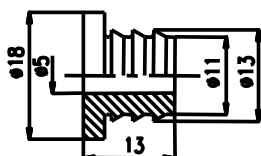


- supplied with sealing Cu ring and sealing option,
Material: stainless steel 17 (DIN 1.4541), PN 40
according to ČSN 13 0010

- wells order numbers for head sensors

Well order No.	Z	L1	L2
405 911 090 016	G1/2	100	52
405 911 090 026		160	
405 911 090 036		250	
405 911 090 046	M20x1,5	100	52
405 911 090 056		160	
405 911 090 066		250	
405 911 090 116	G1/2	100	121
405 911 090 126		160	
405 911 090 136		250	
405 911 090 146	M20x1,5	100	121
405 911 090 156		160	
405 911 090 166		250	

- rubber bushing

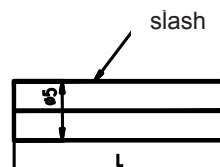


The bushing has a function of wall, sheet metal plug, etc.
Order No.: **405 061 014 516**
Material: silicone (max. 180°C)

- wells order numbers for cable sensors

version	Well order No.	Z	L	L1	ΦD
A	405 911 091 036	G1/4	34,5	49	8
	405 911 091 046	M12x1,5			
A sensors 2xPt	405 911 082 016	G1/4	42	57	7
	405 911 082 116	M12x1,5			
B	405 911 091 096	G1/2	54		
	405 911 091 056		100		
	405 911 091 076		160		
	405 911 091 106	M20x1,5	54		
	405 911 091 066		100		
	405 911 091 086		160		
B sensors 2xPt	405 911 082 216	G1/2	54		
	405 911 082 916		100		
	405 911 083 116		160		
	405 911 082 416	M20x1,5	54		
	405 911 083 016		100		
	405 911 083 216		160		

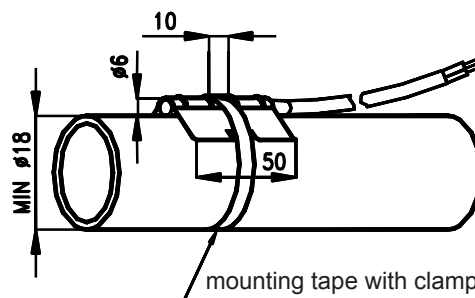
- distance pipe



L dist. pipes	L water tanks	Order No.	version
17	54	405 911 091 006	1 x Pt100
62	100	405 911 091 016	
122	160	405 911 091 026	
47	100	405 911 083 316	2 x Pt100
107	160	405 911 083 416	

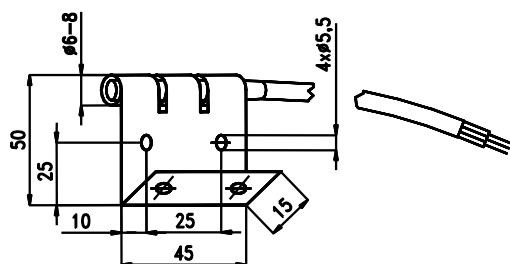
It is used for securing the sensor position in the well.
Material: Teflon

- holder P (attachable)



Order No.: **40 05120 804001(Ø6)**
Material: copper

- holder V (outdoor)



Order No.: 405 011 073 216

Material: steel class 11 (DIN 1.0320) with PÚ

- sealing rings Cu (package 10 pcs)

- for wells and weld-on-pieces

Order No.	Dimension
405 911 082 616	13 x 17
405 911 082 716	21 x 25
405 911 082 816	20 x 24

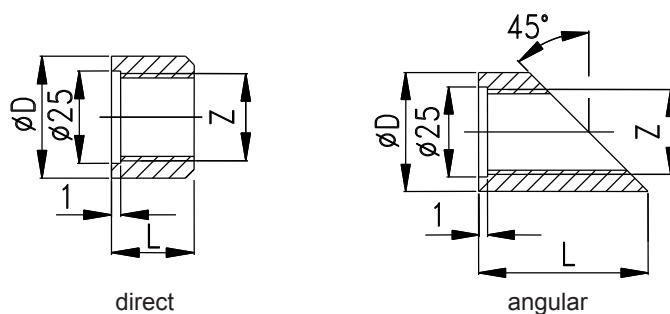
Rated values of measuring resistance Pt for information purposes depending on temperature (ČSN EN 60 751)

t [°C]	Pt100 [Ω]	t [°C]	Pt100 [Ω]	t [°C]	Pt100 [Ω]
-40	84,27	40	115,54	120	146,07
-30	88,22	50	119,40	130	149,83
-20	92,16	60	123,24	140	153,58
-10	96,09	70	127,08	150	157,33
0	100,00	80	130,90	160	161,05
10	103,90	90	134,71	170	164,77
20	107,79	100	138,51	180	168,48
30	111,67	110	142,29	190	172,17

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

Tolerance class	Tolerance $\Delta T/K$ temperature 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

- weld-on-pieces



Order No. weld-on-piece	Type	Z	L	Ø D
405 911 081 416	direct	G1/2	19	28
405 911 081 016		G1/4	26	20
405 911 081 616	angular	G1/2	40	28
405 911 081 816			46	
405 911 081 216		G1/4	33	20
405 911 081 516	direct	M20x1,5	19	28
405 911 081 116		M12x1,5	26	20
405 911 081 716	angular	M20x1,5	40	28
405 911 081 916			46	
405 911 081 316		M12x1,5	33	20

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)

Warranty

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

Ordering devices

Code		Name					
30 02050 9		Cable temperature sensor, head					
		Code	Measuring resistance				
		1	1xPt100				
		2	2xPt100				
			Sensor type				
		0	Cable				
		1	Head with base 1 (37mm), Al head				
		2	Head with base 2 (100mm), Al head				
		3	Head with base 1 (37mm), plastic head				
		4	Head with base 2 (100mm), plastic head				
			Code	Tolerance class, transmitter			
			1	According to ČSN EN 60751 (except for 2xPt100)			
			2	B according to ČSN EN 60751			
			4	head with transmitter, range -40 to +60°C			
			5	head with transmitter, range 0 to +100°C			
			6	head with transmitter, range 0 to +180°C			
				Design specification, cable length			
			0	Head design			
			1	cable length 1,6m			
			2	cable length 2.5m			
			3	cable length 4m			
			4	cable length 6m			
			5	cable length 1,6m - screened			
			6	cable length 2.5m - screened			
			7	cable length 4m - screened			
			8	cable length 6m - screened			
				Code	Well length, thread		
			0	Cable design			
			1	rated length L=100mm, M20x1,5			
			2	rated length L=160mm, M20x1,5			
			3	rated length L=250mm, M20x1,5			
			4	rated length L=100mm, G1/2			
			5	rated length L=160mm, G1/2			
			6	rated length L=250mm, G1/2			
30 02050 9		1	1	2	0	1	Ordered No.

Order example: 1 temperature sensor, type 02050, 1xPt100, head with base 1 (37mm), Al head, tolerance class B, length of well 100mm, thread M20x1,5