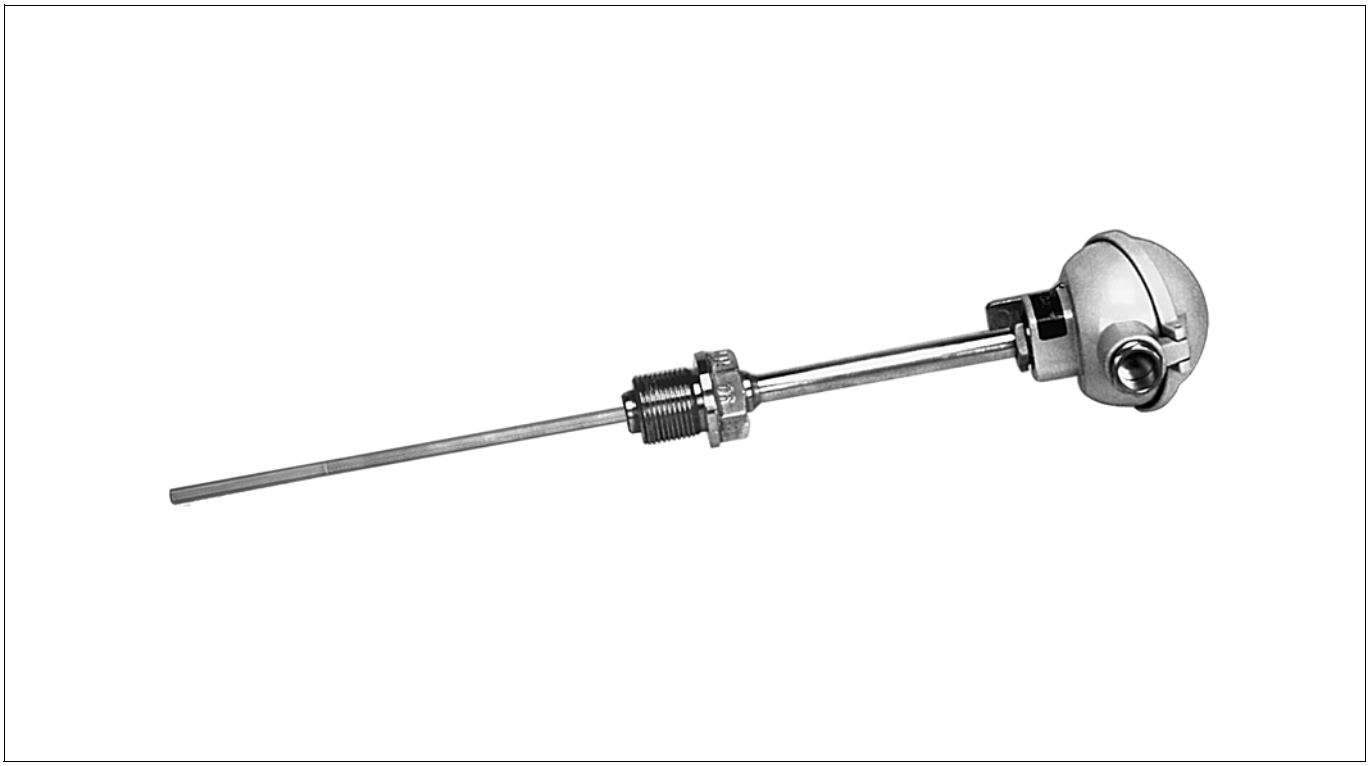
TSET (SensyTemp ET R)

Resistance thermometers for installation in a thermowell, with measuring inset

10/10-3.24 EN



■ **Essential components**
- Modular system consisting of measuring inset with connection head, with extension tube as an option
- Head mounted transmitter can be integrated in the connection head

■ **Technical features**
- Spring-loaded measuring inset for reliable contact closure
- Installation of a transmitter in the connection head obviates the need for multi-wire circuit
- Interfaces to all current process control systems

■ **Applications**
- Vessel construction/apparatus engineering
- Process plants in all branches of industry
- Machinery
- Heating, air-conditioning and ventilation systems
- Chemical process engineering

Description

New plants are often fitted with temperature sensors in two stages:
- Installation of thermometer thermowells in connection with the vessel/pipeline construction
- Addition of a measuring element during a later instrumentation phase

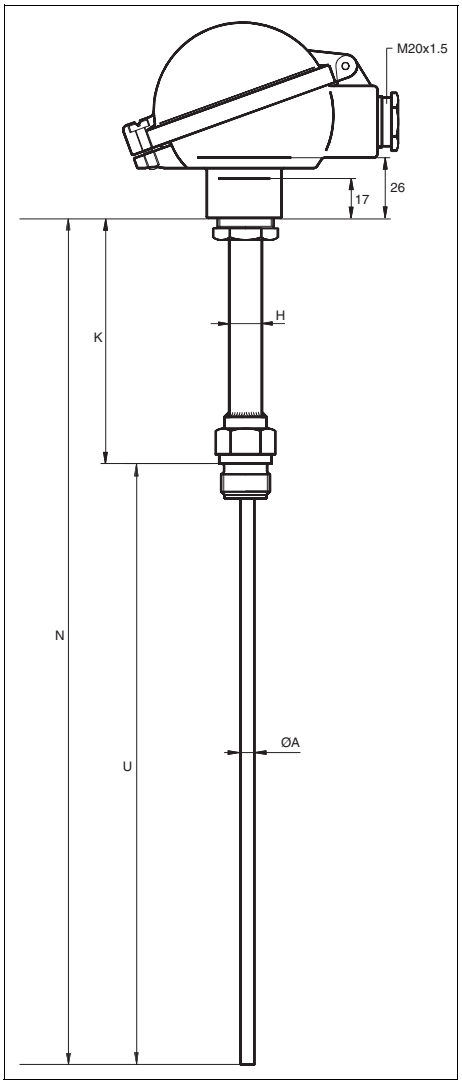
This procedure makes it possible to realise a uniform instrumentation concept in large plants.

The data sheet contains temperature sensors which are suitable for retrofitting in existing thermowells.

Suitable thermowells	Data sheet 10-3.91 EN
Complete resistance thermometers	
with welded protection tube in	Data sheet 10-3.22 EN
with drilled thermowell in	Data sheet 10-3.23 EN

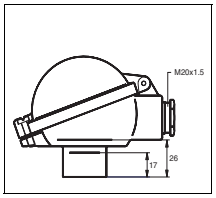
Sensor design

Example

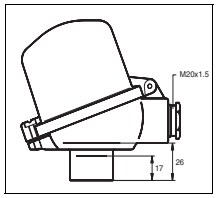


Connection heads

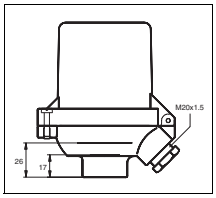
Type **BUZ** aluminium



Type **BUZH** aluminium for install. of transmitter



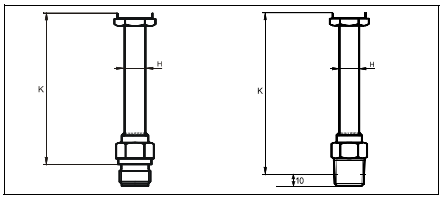
Type **BUKH** polyamide for install. of transmitter



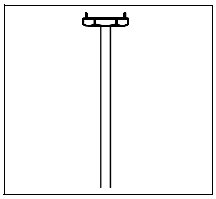
Extension tube

Welded mounting thread cylindrical (M, G)

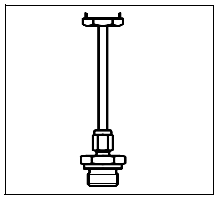
conical (NPT)



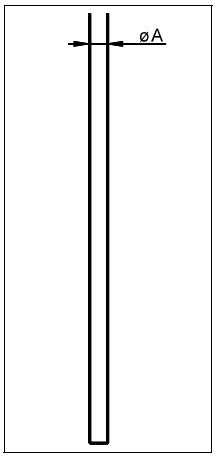
Without extension tube with sealing screw



Without extension tube with compression fitting



Sensor tip



Captions

N = Nominal length
K = Extension tube length
H = Extension tube diameter
U = Insertion length
A = Inset diameter

Ordering information

Description	Note	Catalog No.								Code		
Resistance thermometer TSET (SensyTemp ET R)		**V10515-**										
Measuring inset												
Ø A = 6 mm			2									
Ø A = 3 mm			1									
Extension tube (cylindric thread type A DIN 3852)												
Thread / Diameter / Length / Material												
M18 x 1.5 / H = 11 mm / K = 150 mm / 1.4571 (AISI 316-Ti)				Y								
M18 x 1.5 / H = 14 mm / K = 150 mm / 1.4571 (AISI 316-Ti)				D								
M14 x 1.5 / H = 11 mm / K = 150 mm / 1.4571 (AISI 316-Ti)				A								
½" NPT / H = 14 mm / K = 150 mm / 1.4571 (AISI 316-Ti)				I								
G½" / H = 14 mm / K = 150 mm / 1.4571 (AISI 316-Ti)				9								
without extension tube / with sealing screw M24 x 1.5				5								
Insertion length												
U = 115 mm	1)				1							
U = 140 mm	1)				2							
U = 200 mm	1)				3							
U = 260 mm	1)				4							
U = ... mm to be specified (max. 850 mm)	1)				X							
N = ... mm to be specified (max. 1000 mm)	2)				T							
Connection head												
Type / Material / Cable entry / Surface / prot. degr./-class												
BUZ / aluminium / M20 x 1.5 / painted / IP 66 / NEMA 4 X						1						
BUZH / aluminium / M20 x 1.5 / painted / IP 66 / NEMA 4 X						5						
BUKH / polyamide / M20 x 1.5 / black / IP 66 / NEMA 4 X						F						
Measuring inset												
1 x Pt 100, 2-wire / Non-explosion protected							1					
1 x Pt 100, 3-wire / Non-explosion protected							2					
1 x Pt 100, 4-wire / Non-explosion protected							3					
2 x Pt 100, 2-wire / Non-explosion protected							4					
2 x Pt 100, 3-wire / Non-explosion protected	1)						5					
1 x Pt 100, 2-wire / II 1 G EEx ia IIC T6 PTB 01 ATEX 2200 X							6					
1 x Pt 100, 3-wire / II 1 G EEx ia IIC T6 PTB 01 ATEX 2200 X							7					
1 x Pt 100, 4-wire / II 1 G EEx ia IIC T6 PTB 01 ATEX 2200 X							8					
2 x Pt 100, 2-wire / II 1 G EEx ia IIC T6 PTB 01 ATEX 2200 X	1)						9					
2 x Pt 100, 3-wire / II 1 G EEx ia IIC T6 PTB 01 ATEX 2200 X	1)						0					
Error limit												
Class B / EN 60751 (IEC 60751)								A				
Class A (from -30...350 °C) / EN 60751 (IEC 60751)	3)							F				

Continued on next page

1) only for version with extension tube
2) only for version without extension tube
3) not for 2-wire

Other options:
- other extension tube
- other cable entry
- other head painting
- Tests (see Data Sheet 10/10-3.81 EN)

Ordering information (continued)							
			Catalog No.		Code		
Resistance thermometer TSET (SensyTemp ET R)			**V10515-**				
Head mounted transmitter			1)				
without				0			
TR04	fixed measuring range	Standard: 2 or 3-wire circuit	2) 3)	1			
TS02	programmable		2)	6			
TH02	programmable, HART protocol		2)	9			
TF12	PROFIBUS-PA		2)	K			
TR04-Ex	fixed measuring range	Standard: 2 or 3-wire circuit	3) 4)	A			
TS02-Ex	programmable		4)	F			
TH02-Ex	programmable, HART protocol		4)	J			
TF12-Ex	PROFIBUS-PA		4)	L			
Options							
Measruing range = (start value...final value °C)					680		
Compression fitting G¼“, Mat. 1.4571 (A 316-Ti), compression ring stainless steel			5) 6)		4C4		
TAG-No. on stainless steel label					490		
4-wire circuit TR04 / TR04-Ex					TMP		

1) Transmitter TS02/TS02-Ex, TH02/TH02-Ex, TF12/TF12-Ex incl. parameterization (measuring range in clear text)
Transmitter TR04/TR04-Ex incl. standard measuring range (clear text) as standard in connection head BUZH and BUKH only
2) only for measuring inset in non-explosion protected version
3) standard measuring ranges in °C: -30/60, 0/60, 0/100 0/120, 0/150, 0/200, 0/250, 0/300, 0/400, 0/600
4) only for measuring inset with (PTB) EEx ia IIC T6
5) only for version without extension tube
6) not for measuring inset Ø = 3 mm

Other versions on request

Other options:
- other extension tube
- other cable entry
- other head painting
- Tests (see Data Sheet 10/10-3.81 EN)

Basic values, deviations of platinum resistance elements acc. to EN 60751 (IEC 60751)								
Temperature		0 °C	100 °C	200 °C	300 °C	400 °C	500 °C	600 °C
Basic value (Ω)		100.00	138.51	175.86	212.05	247.09	280.98	313.71
Tolerance (K)	Class B	0.30	0.80	1.30	1.80	2.30	2.80	3.30
	Class A	0.15	0.35	0.55	0.75	0.95	1.15	–

Accessories, components

Many of the components of the models listed in the catalog may be ordered as separate components or as modules. In this respect you should refer to Data Sheet 10-3.45 EN (Exchangeable resistance thermometer measuring insets) and 10-3.91 EN (Components for temperature sensors with exchangeable measuring inset).

Other models

This Data Sheet contains only a small selection of our range of resistance thermometers for installing in a thermowell, with measuring inset. See Data Sheet 10-3.03 EN for technical data. Other models can be supplied on request.

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