FlexiTEMP® 60

Flexible Sheath Resistance and Thermocouple Temperature Sensors

- **Measuring resistor 1x / 2x Pt100, thermocouple 1x / 2x “J“, “K“, “N“**
- **Measuring range -200 to +700 °C (Pt100), -200 to +800 °C (“J“), -200 to +1300 °C (“K“, “N“)**
- **Accuracy class A, B according EN 60751, 1, 2 according EN 60584-1**
- **Sheath material stainless steel 1.4541, 1.4404, Inconel 600, Nicrobell/Pyrosil**
- **Sheath diameter from 1 to 6 mm**
- **Optional nominal length L: 0.1 to 50 m**
- **Fast response to temperature changes**
- **Flexible stem**
- **Optional version of cold junction, with flying leads, connected compensating cable, flat connector, flange and MA head**
- **Intrinsically safe version**
  Ex II 1/2G Ex ia IIC T6...Tx°C Ga/Gb,
  Ex II 1/2D Ex ia IIIC T85°C...Tx°C Da/Db

Application

Resistance and thermocouple temperature sensors FlexiTEMP® 60 without the protective fitting are intended for applications, where their advantages such as fast response to temperature changes, flexible stem, small dimensions and sheath resistance to corrosion become apparent.
High accuracy and stability of output signal are strong sides of resistance sensors. Thermoelectric sensors are very resistant to high pressure, usable in vacuum and have higher stability of output signal in comparison to wire thermocouples.
Standard thermocouple sensors with isolated measuring end are due to its electromagnetic shielding suitable for work together with measuring centers and control systems.
Resistance and thermocouple sensors can be used with or without fastening elements as for example fixing shift pipe unions etc. Version of sensor with flange is suitable as a part of sensor without protective fitting, into thermowell and with thermowell (e.g. ModuTEMP® 70).

Description

Flexible sheath resistance and thermocouple temperature sensors FlexiTEMP® 60 without protective tubes and thermowells are supplied in length from 100 mm up to several tens of meters with an outer diameter of the sheath 3 / 4.5 / 6 mm (Pt100) and 0.5 / 0.8 / 1 / 1.5 / 2 / 3 / 4.5 / 6 mm (TC “J“, “K“, “N“). These thermocouples are as standard supplied with the sheath made of stainless steel 1.4404 for resistance sensors, 1.4541 for thermocouple “J“ or Inconel 600 (2.4816), Nicrobell/ Pyrosil for thermocouple “K“ and “N“. Resistance sensors are supplied with single or double sensor Pt100.
Measuring ends of thermocouple sensors are manufactured in insulated singe or dual sensor. After agreement the grounded or opened version or triple version can be supplied.

Cold ends of sheath resistance sensors and thermocouples are supplied with flying leads, with connected connection wires (for or compensation wires for TC) with optional isolation material, with flat standard connector or mini connector (only for TC), small head MA (with or without connecting thread) or with 42 mm diameter flange with option to mount ceramic terminal block or transmitter (exchangeable measuring insert). Sheath resistance and thermocouple sensors with mineral isolation may be freely bent (resistance sensors cannot be bent in length 40 mm from measuring end) while observing the minimal radius of the bend (5x outer diameter of the sheath).

Technical specifications

Resistance sensors type T1060

Measuring resistor (RTD):

1xPt100, accuracy class A, B according to EN 60751 inside wiring: two-wire, four-wire, outer diameter of stem 3 and 6 mm

2xPt100, accuracy class A, B according to EN 60751, inside wiring: two-wire, three-wire, four-wire, outer diameter of stem 3 and 6 mm

Measuring range:

-200 to +700 °C (accuracy class B)
-100 to +450 °C (accuracy class A)

Measuring current:

recommended	0.1 to 1.0 mA
maximal	3 mA

Output signal:

resistance

Electrical insulation resistance:

min. 100 MΩ according to EN 60751,
at temperature (20 ±15)°C, max. 80 % relative humidity

Thermocouple sensors type T1560

Thermocouple (TC):
1x / 2x “J“, “K“, “N“,
accuracy class 1 (not for type N with code KV), 2
according to EN 60584-1, EN 60584-3

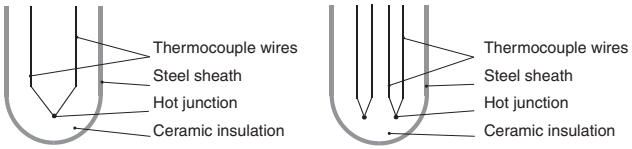
Measuring range:
-200 to +800 °C (“J“)
-200 to +1300 °C (“K“, “N“)

Output signal:
voltage

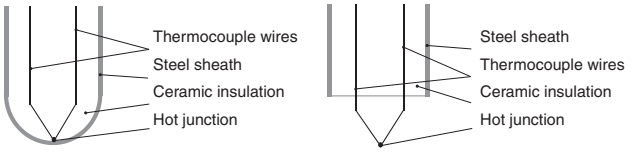
Electrical insulation resistance:*
min. 1000 MΩ according to EN 61515,
at temperature (20 ±15)°C, max. 80 % relative humidity

Version of measuring junction:

Grounded and opened version



Grounded and opened version



General

Response time:

Time response of resistance temperature sensors [s] (reference values)				
RTD Sheath diameter [mm]	in water v = 0.4 m/s		in air v = 2 m/s	
	$T_{0.5}$	$T_{0.9}$	$T_{0.5}$	$T_{0.9}$
6	5.5	15	90	295
4.5	4.2	12	78	247
3	1.4	4.5	32	98

Time response of thermocouple temperature sensors [s] (reference values for version with insulated measuring end)				
TC Sheath diameter [mm]	in water v = 0.4 m/s		in air v = 2 m/s	
	$T_{0.5}$	$T_{0.9}$	$T_{0.5}$	$T_{0.9}$
6	3	9	55	170
4.5	2.5	6.5	34	113
3	1	2.8	22	64
2	0.8	2.6	13	34
1.5	0.4	0.9	10	25
1	0.2	0.6	7.5	17

Dielectric strength:*
250 V eff (outer stem diameter 1.5 to 2 mm)
250 V eff (outer stem diameter 3 mm / four-wire)
500 V eff (outer stem diameter 4.5 to 6 mm)
500 V eff (outer stem diameter 3 mm / two-wire)
at temperature (20 ±15)°C

Materials:
sheath of resistance sensor:
stainless steel 1.4404
inside wiring of resistance sensor: Cu, Ni
sheath of thermocouple:
stainless steel 1.4541 (“J“)
alloy Inconel 600 (2.4816), Nicrobell/Pyrosil (“K“, “N“)

Connection wires (RTD):
2x0.22 mm², 4x0.22 mm² stranded wire
silicone outer insulation and teflon inner insulation, shield
teflon outer and inner insulation, shield
optional length AL from 0.5 to 50 m (2.5 m standard)

Compensation wires (TC):
2x0.22 mm², 4x0.22 mm² stranded wire
silicone outer and inner insulation
fibreglass insulation with steel wire braiding
teflon outer and inner insulation
optional length AL from 0.5 to 50 m (2.5 m standard)

Flat connector (code KS, KM):
black (“J“)
green (“K“)
pink (“N“)
temperature resistance of connector -60 to +200 °C

Connecting thread (code H1...):
G3/8“
G1/2“

Housing (according to EN 60529):
IP 67 (versions VV, KV)
IP 50 (versions KS, KM)
IP 64 (versions H1, H1G..)

Operation conditions

Maximal temperature at the end of sheath cable:
Ambient temperature at the area of flying leads outcome, connection of connection or compensating wires, connection of connector or sensor head cannot exceed 100 °C (120 °C short-term).

Technical features

Flexible construction, variable dimensions and materials of flexible temperature sensor FlexiTEMP® 60 simplify its ordering and application. FlexiTEMP® 60 sensors also easily adapt to the individual demands of the customer..

Versions for aggressive environment
Base price of the product includes version of stem from stainless steel 1.4541 for thermocouples “J“ and 2.4816 for thermocouples “K“ and “N“. In version with connected compensation wires it is possible after agreement to offer materials suitable for specific application.

Quality
Quality of FlexiTEMP® 60 sensors is ensured by multiple tests (verification of insulation resistance, electrical strength, metrological characteristics and quality of welding) performed on every manufactured sensor. The tests ensure, with reserve, meeting the limits of EN 61515, EN 60751 and EN 60584 standards.

* if TC, only for insulation version of measuring end

Calibration
FlexiTEMP® 60 sensors can be supplied with calibration at several temperature points in temperature range of -40 to +1100 °C according to customer requirements. Sensor to the transmitter can be also supplied with calibration including transmitter with current output signal of 4 to 20 mA. Every sensor is verified in one temperature point as standard.

Output 1x/2x 4 to 20 mA, HART, Profibus, Fieldbus
JSP sensors can be supplied with transmitter for a DIN rail or for wall mounting with output 4 to 20 mA, HART, Profibus, Fieldbus.

Business advantages

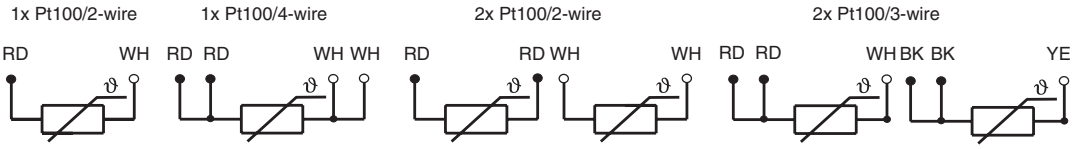
Easy ordering
Instead of searching for appropriate version in large number of catalogues, there is available general diagram of FlexiTEMP® 60 sensors and one ordering table with codes. The sensors may be ordered even by free word description.

Extended guarantee
There is especially low occurrence of operating failures at all JSP products. Thanks to this it is provided the extended guarantee for FlexiTEMP® 60.

Electrical connection

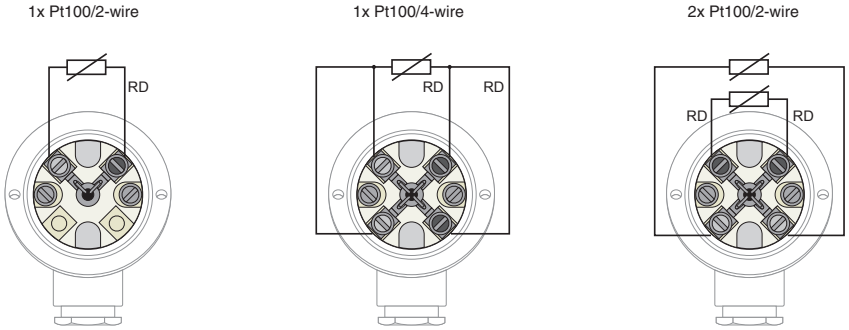
RTD cable sensors

RD - red
WH - white
BK - black
YE - yellow



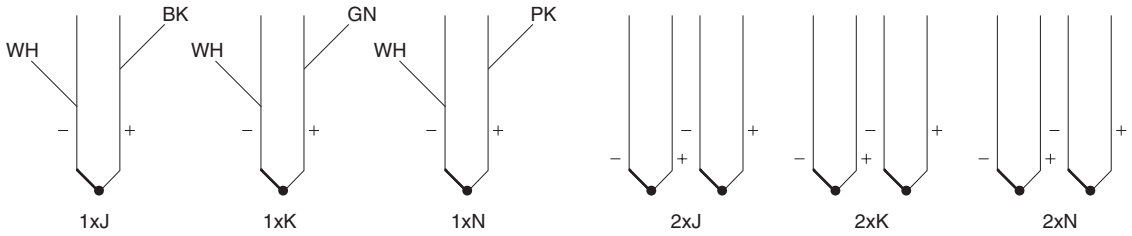
RTD with head MA

RD - red



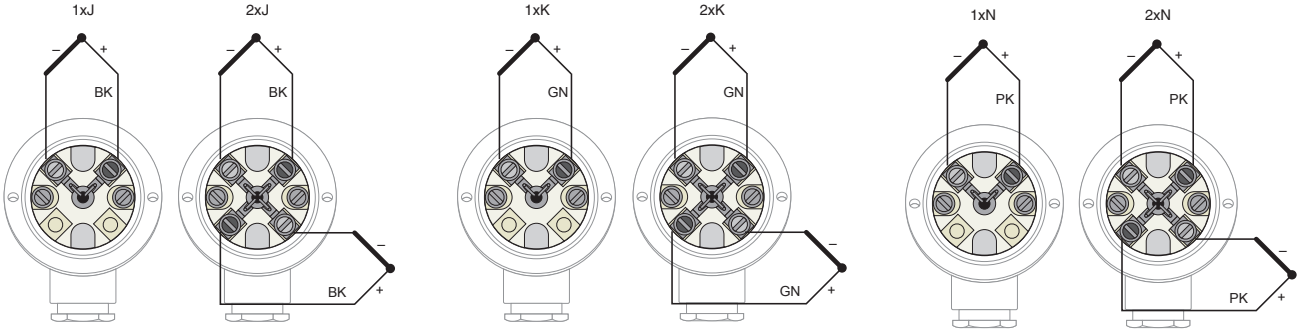
TC cable sensors

WH - white
BK - black
GN - green
PK - pink



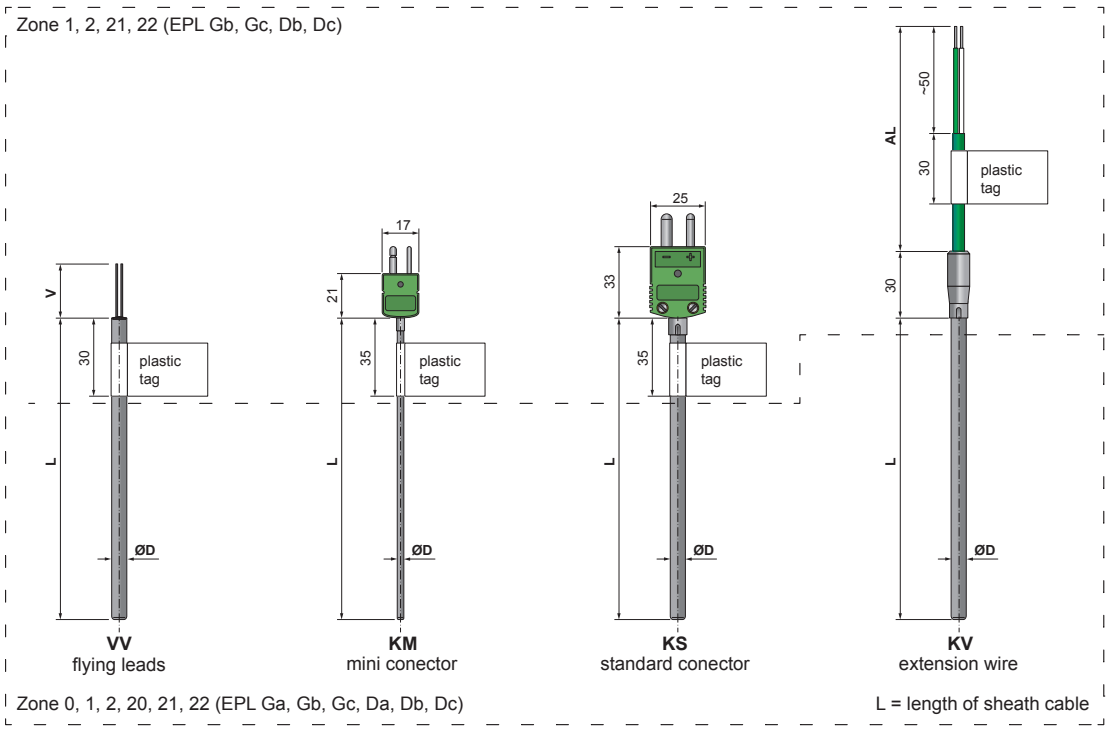
TC with head MA

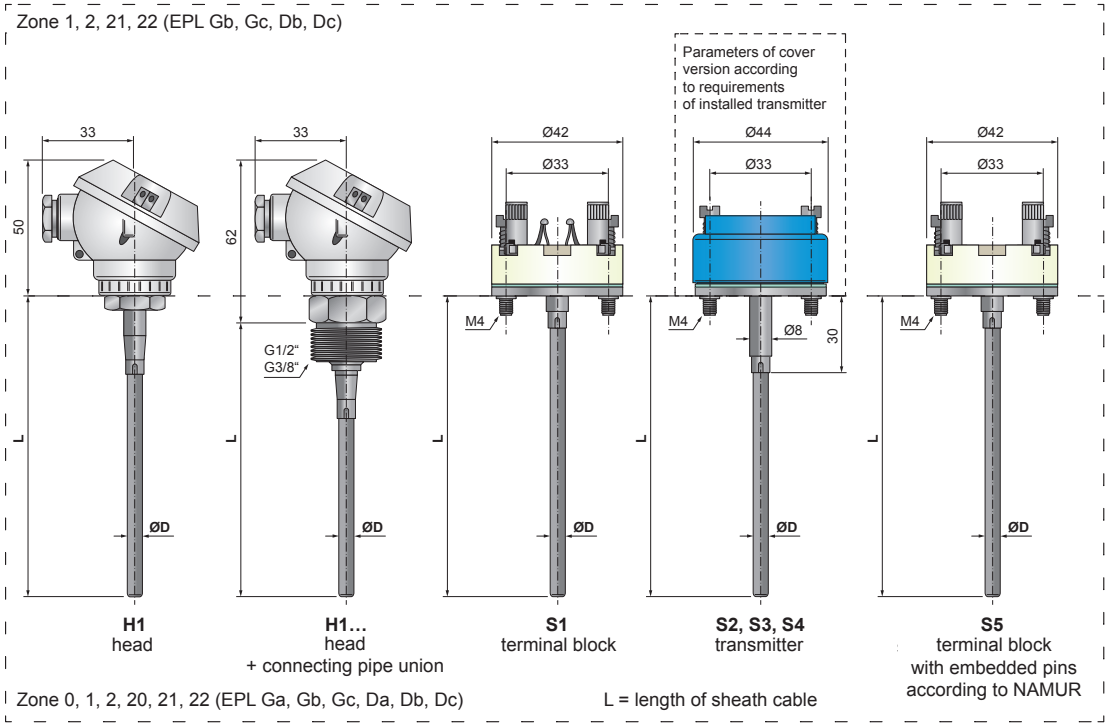
BK - black
GN - green
PK - pink

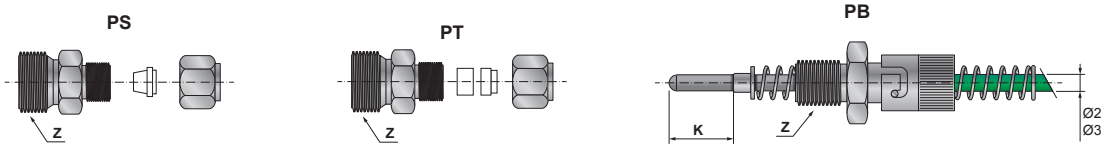


Dimensional drawings

Note: Marking of zones for potentially explosive atmosphere (applies for EI version)







	Type	Description			
○	**T1060**	**Sheath resistance temperature sensor**			
○	**T1560**	**Sheath thermocouple temperature sensor**			
	Code	**Temperature sensor**			
		Resistance (RTD)	*Sheath material*	*Max. temperature of use*	
○	**04**	**1xPt100, two-wire inside wiring**	**1.4404**	**up to 500 °C**	
○	**06**	**1xPt100, four-wire inside wiring**	**1.4404**	**up to 600 °C**	
	06HT	1xPt100, four-wire inside wiring	Inconel 600	up to 700 °C	- only for code F7
○	**07**	**2xPt100, three-wire inside wiring**	**1.4404**	**up to 600 °C**	
	08	2xPt100, two-wire inside wiring	1.4404	up to 500 °C	
	09	2xPt100, four-wire inside wiring	1.4404	up to 600 °C	
	…VR	Increased resistance to vibration and shock		up to 500 °C	- only for code 06 F2 … S5
		Thermocouple (TC)	*Sheath material*	*Measuring range*	
○	**21**	**1x"J" (Fe-CuNi), insulated**	**1.4541**	**-200 to +800 °C**	
○	**61**	**2x"J" (Fe-CuNi), insulated, isolated junctions**	**1.4541**	**-200 to +800 °C**	
○	**22**	**1x"K" (NiCr-NiAl), insulated**	**Inconel 600**	**-200 to +1100 °C**	
○	**62**	**2x"K" (NiCr-NiAl), insulated, isolated junctions**	**Inconel 600**	**-200 to +1100 °C**	
	23	1x"N" (NiCr-NiAl), insulated	Inconel 600	-200 to +1100 °C	
	63	2x"N" (NiCr-NiAl), insulated, isolated junctions	Inconel 600	-200 to +1100 °C	
	22HT	1x"K" (NiCr-NiAl), insulated	Nicrobell/Pyrosil	-200 to +1300 °C	
	62HT	2x"K" (NiCr-NiAl), insulated, isolated junctions	Nicrobell/Pyrosil	-200 to +1300 °C	
	23HT	1x"N" (NiCrSi-NiSi), insulated	Nicrobell/Pyrosil	-200 to +1300 °C	
	63HT	2x"N" (NiCrSi-NiSi), insulated, isolated junctions	Nicrobell/Pyrosil	-200 to +1300 °C	
	…U	Grounded version of junction TC			
	99	Other			
	Code	**Accuracy class**	**Inside wiring material**	**Measuring range**	
		Resistance (RTD) according to EN 60751			
○	**F1**	**B**	**Cu**	**-50 to +300 °C**	**- not for code 06HT**
○	**F2**	**B**	**Cu**	**-70 to +500 °C**	**- not for code 06HT**
○	**F3**	**B**	**Ni** [1]	**-200 to +600 °C**	**- only for codes 06, 07 and 09**
○	**F7**	**B**	**Ni** [1]	**-200 to +700 °C**	**- only for code 06HT**
○	**F4**	**A**	**Cu**	**-30 to +300 °C**	**- only for codes 06, 07 and 09**
○	**F5**	**A**	**Cu**	**-100 to +450 °C**	**- only for codes 06, 07 and 09**
	F9	Other			
		Thermocouple (TC) according to EN 60584-1			
○	**T7**	**2**			
○	**T6**	**1**			**- not for TC "N" with code KV**
	T9	Other			
			Maximal reference temperature for continuous operation		
		Sheath	**RTD**	**TC "J"**	**TC "K", "N"**	**TC "K", "N"**
	Code	**Outer diameter of stem D [mm]**			**Inconel 600**	**Nicrobell/Pyrosil**
	S01	0.5 - only for single TC		-	-	-
	S11	0.8 - only for single TC		-	-	-
	S21	1 - only for single TC		+260 °C	+700 °C	-
○	**S31**	**1.5 - only for single TC**		**+440 °C**	**+920 °C**	-
○	**S41**	**2 - only for single TC**		**+440 °C**	**+920 °C**	-
○	**S51**	**3**	**+400 °C**	**+520 °C**	**+1020 °C**	**+1100 °C**
○	**S61**	**4.5 - only for TC**	-	**+620 °C**	**+1100 °C**	-
○	**S71**	**6**	**+600 °C**	**+720 °C**	**+1100 °C**	**+1200 °C**
	S99	Other				
	Code	**Nominal length of stem L [mm]**				
○	**L....**	***Fill length in mm (min. length 100 mm)***				
	Code	**Cold-end version of stem** [2]				
○	**VV**	**Flying leads (standard length V=10 mm for stem diameter 1 to 2 mm and V=25 mm for stem diameter 3 to 6 mm)**				
○	**KS1**	**Flat single connector (plug), standard version**			**- only for TC with stem diameter 3 to 6 mm**	
○	**KS2**	**Flat double connector (plug), standard version**			**- only for TC with stem diameter 3 to 6 mm**	
○	**KM**	**Flat single connector (plug), mini version**			**- only for TC with stem diameter 1 to 3 mm**	
○	**KV**	**Connected connecting cable (for RTD) or compensating cable (for TC)** [3]			**- not for TC 2x"N"**	
○	**H1**	**Aluminium head type MA with ceramic terminal block, housing IP 64** [4]				
	H1G3/8	Aluminium head type MA with ceramic terminal block, process connection G3/8", PN16, IP 64 [4]			- only for stem diameter 3 to 6 mm	
	H1G1/2	Aluminium head type MA with ceramic terminal block, process connection G1/2", PN16, IP 64 [4]			- only for stem diameter 3 to 6 mm	
○	**S1**	**Flange, diameter 42 mm with ceramic terminal block**			**- only for stem diameter 6 mm**	
○	**S2**	**Flange, diameter 42 mm with set for mounting of transmitter on flange**			**- only for stem diameter 3 to 6 mm**	
○	**S3**	**Flange, diameter 42 mm with mounting of selected transmitter (necessary specifications of transmitter)**			**- only for stem diameter 3 to 6 mm**	
○	**S4**	**Flange, diameter 42 mm without terminal block, cable leads**			**- only for double temperature sensor**	
○	**S5**	**Flange, diameter 42 mm without terminal block, embedded pins (acc. to NAMUR)**				
	K9	Other				
		Connection or compensation cable		**- compulsory for code KV, optional for codes KS, KM and H1** [5]		
	Code	**Length of cable AL [mm]**				
○	**200**	**200**				
○	**1000**	**1000**				
○	**2500**	**2500**				
○	**5000**	**5000**				
	....	Other - fill length (step 100 mm)				

° ... Marked version can be dispatched up to 5 working days (with calibration up to two weeks)

[1] … Not allowable to use two-wire connection because of nickel inner wiring.

[2] … Ambient temperature at the end of cable sheath (at flying leads outcome, connection of connection or compensation cables, connection of connector or sensor head) cannot exceed 100 °C (120 °C short-term).

[3] … Tolerance of stem length and connection or compensation cables length is equal to the greater value of ±2 % of length or ±20 mm; accuracy class for TC wires according to EN 60584-3.

[4] … Not for double RTD, code 07.

[5] … In option with code KS or KM, the beginning of compensation wires is with flat connector (female) of specified type, specified connector has to be added in ordering code (see optional accessories – code Z2, Z3 or Z4).

	Code	Cable insulation - wire insulation / shield / outer insulation / braiding	Ambient temperature of cable [2]	
○	**I1010**	**Silicone / - / silicone / -**	**-50 to +200 °C**	**- only for TC (not for "N")**
○	**I2010**	**FEP / - / silicone / -**	**-50 to +200 °C**	**- only for RTD and TC 1x"N" acc. cl. 2**
○	**I2C10**	**FEP / copper wire braiding / silicone / -**	**-50 to +200 °C**	**- only for RTD**
○	**I2C20**	**FEP / copper wire braiding / FEP / -**	**-50 to +200 °C**	**- only for RTD**
	I204N	FEP / - / glass fibres / - / stainless steel wire braiding	-50 to +200 °C	- only for RTD 2- and 4-wire
○	**I3030**	**PFA / - / PFA / -**	**-200 to +260 °C**	**- only for TC**
○	**I3C30**	**PFA / copper wire braiding / PFA / -**	**-200 to +260 °C**	**- only for RTD 2- and 4-wire and TC"K"**
○	**I404Z**	**Glass fibres / - / glass fibres / galvanized steel wire braiding**	**-20 to +350 °C**	**- only for TC (not for "N")**
○	**I808N**	**Ceramic fibres / - / ceramic fibres / stainless steel wire braiding**	**-20 to +800 °C**	**- only for TC 1x"K"**
	I9999	Other		
	Code	**Wire termination**		
○	**00**	**Flying leads (standard)**		
○	**01**	**Insulated pressing tube according to DIN 46228**		
○	**02**	**Flat connector standard (plug) for single sensor, up to 220 °C**	**- only for TC**	
○	**03**	**Flat connector standard (plug) for double sensor, up to 220 °C**	**- only for TC**	
○	**04**	**Flat connector mini (plug) for single sensor, up to 220 °C**	**- only for TC**	
○	**22**	**Flat connector standard (plug) for single sensor, ceramic up to 650 °C**	**- only for TC 1x"K"**	
○	**24**	**Flat connector mini (plug) for single sensor, ceramic up to 650 °C**	**- only for TC 1x"K"**	
	09	Other		
	Code	**OPTIONAL ACCESSORIES** **Versions for explosive atmosphere of gasses or dusts**		
		Intrinsically safe version "Ex i"		
○	**EI**	**(Ex) II 1/2G Ex ia IIC T6...Tx°C Ga/Gb** **(Ex) II 1/2D Ex ia IIIC T85°C...Tx°C Da/Db**		
	Code	**Calibration in customer defined points, including certificate of calibration**		
○	**KTE31A**	**Resistance temperature sensor calibration in three points in range -40 to +600 °C**		
○	**KTE41A**	**Resistance temperature sensor calibration in four points in range -40 to +600 °C**		
○	**KTE51A**	**Resistance temperature sensor calibration in five points in range -40 to +600 °C**		
○	**KTE32AA**	**Thermocouple temperature sensor calibration in three points in range -40 to +660 °C**		
○	**KTE42AA**	**Thermocouple temperature sensor calibration in four points in range -40 to +660 °C**		
○	**KTE52AA**	**Thermocouple temperature sensor calibration in five points in range -40 to +660 °C**		
○	**KTE32AB**	**Thermocouple temperature sensor calibration in three points in range -40 to +1100 °C**		
○	**KTE42AB**	**Thermocouple temperature sensor calibration in four points in range -40 to +1100 °C**		
○	**KTE52AB**	**Thermocouple temperature sensor calibration in five points in range -40 to +1100 °C**		
	KTE9	Other		
	Code	**Connectors, fuses of connectors and cables**	**- only for TC**	
•	**Z2**	**Counterpart of connector (plug), standard version, for single sensor, up to 180 °C** [6]		
•	**Z3**	**Counterpart of connector (plug), standard version, for double sensor, up to 180 °C**		
•	**Z4**	**Counterpart of connector (plug), mini version, for single sensor, up to 180 °C**		
○	**Z32**	**Counterpart of connector (plug), standard version, for single sensor, ceramic up to 650 °C**		
○	**Z34**	**Counterpart of connector (plug), mini version, for single sensor, ceramic up to 650 °C**		
○	**PZ2**	**Counterpart of connector (rectangular panel plug), standard version, for single sensor, up to 180 °C**		
○	**PZ4**	**Counterpart of connector (rectangular panel plug), mini version, for single sensor, up to 180 °C**		
•	**PS**	**Lock of connection connectors standard, for single sensor**		
•	**PM**	**Lock of connection connectors mini, for single sensor**		
•	**PK1**	**Lock anti pull-up cable, for standard connectors for single sensor**		
•	**PK2**	**Lock anti pull-up cable, for standard connectors for double sensor**		
•	**PK3**	**Lock anti pull-up cable, for mini connectors for single sensor**		
	Code	**Fixing shift pipe unions, holders and distance sleeve**		
•	**UPS3M12** [7]	**Fixing shift pipe union for diameter 3 mm, connecting thread M12x1.5 (see data sheet No. 0126)**		
•	**UPS4,5M12** [7]	**Fixing shift pipe union for diameter 4.5 mm, connecting thread M12x1.5 (see data sheet No. 0126)**		
•	**UPS6M20** [7]	**Fixing shift pipe union for diameter 6 mm, connecting thread M20x1.5 (see data sheet No. 0126)**		
○	**D3**	**Thermometer holder for wallmounting, material stainless steel (for head MA)**		
○	**PV1**	**Distance sleeve diameter 8 mm, length 60 mm (only for code S71 - stem diameter 6 mm)**		
	Code	**Transmitters for mounting on flange**		
•	**P5310 H10**	**Transmitter with LHP protocol (see data sheet No. 0824)**		
○	**P5310EN2 H10**	**Transmitter with LHP protocol, (Ex) II 3G Ex nA IIC T4 Gc (see data sheet No. 0824)**		
•	**P5311 H10**	**Transmitter with LHP protocol with galvanic isolation (see data sheet No. 0824)**		
○	**P5311EN2 H10**	**Transmitter with LHP protocol with galvanic isolation, (Ex) II 3G Ex nA IIC T4 Gc (see data sheet No. 0824)**		
○	**P5311EI1 H10**	**Transmitter with LHP protocol with galvanic isolation, (Ex) II 1G Ex ia IIC T4-T6 Ga, (Ex) II 1D Ex ia IIIC T106°C Da (see data sheet No. 0824)**		
•	**P5315 H10**	**Precision transmitter with LHP protocol with galvanic isolation (see data sheet No. 2098)**		
	P5315EN2 H10	Precision transmitter with LHP protocol with galvanic isolation, (Ex) II 3G Ex nA [ic] IIC T4 Gc (see data sheet No. 2098)		
•	**P5320 H10**	**Precision transmitter with HART protocol with galvanic isolation (see data sheet No. 0825)**		
•	**P5320EN2 H10**	**Precision transmitter with HART protocol with galvanic isolation, (Ex) II 3G Ex nA [ic] IIC T4 Gc (see data sheet No. 0825)**		
	P5320EI1 H10	Precision transmitter with HART protocol with galvanic isolation, (Ex) II 1G Ex ia IIC T4-T6 Ga, (Ex) II 1D Ex ia IIIC Txx°C Da (see data sheet No. 0825)		
	Code	**Transmitters for mounting for rail**		
•	**P5310 L10**	**Transmitter with LHP protocol (see data sheet No. 0824)**		
○	**P5310EN2 L10**	**Transmitter with LHP protocol, (Ex) II 3G Ex nA IIC T4 Gc (see data sheet No. 0824)**		
•	**P5311 L10**	**Transmitter with LHP protocol with galvanic isolation (see data sheet No. 0824)**		
○	**P5311EN2 L10**	**Transmitter with LHP protocol with galvanic isolation, (Ex) II 3G Ex nA IIC T4 Gc (see data sheet No. 0824)**		
•	**P5315 L10**	**Precision transmitter with LHP protocol with galvanic isolation (see data sheet No. 2098)**		
	P5315EN2 L10	Precision transmitter with LHP protocol with galvanic isolation, (Ex) II 3G Ex nA [ic] IIC T4 Gc (see data sheet No. 2098)		
•	**P5320 L10**	**Precision transmitter with HART protocol with galvanic isolation (see data sheet No. 0825)**		
•	**P5320EN2 L10**	**Precision transmitter with HART protocol with galvanic isolation, (Ex) II 3G Ex nA [ic] IIC T4 Gc (see data sheet No. 0825)**		
	P5320EI3 L10	Precision transmitter with HART protocol with galvanic isolation, (Ex) II 1G Ex ia IIC T4-T6 Ga, (Ex) II 1D Ex ia IIIC Txx°C Da (see data sheet No. 0825)		

Example of order: T1560 22 T7 S51 L100 KV 1000 I1 02 Z2 KTE32AB (-40, 500, 1000 °C) PS P1

• ... Ex stock version ° ... Marked version can be dispatched up to 5 working days (with calibration up to two weeks)

[6] … Plug connector is possible to connect to standard or mini male connector.

[7] … It is suitable only for non-flowing gas medium, free of mechanical stress including impacts and vibrations, where adjustable nominal length is required and is impossible to use fixing pipe unions PT because of high temperature.

		OPTIONAL ACCESSORIES			
	Type	**Description**			
•	**P**	**Fixing shift pipe union for sheath temperature sensor**			
	Code	**Version**		**T_{MAX}**	**p_{MAX}**
•	**S** [8]	**With stainless steel cutting ring, pipe union of stainless steel material**		**600 °C / 0.1 MPa**	**4 MPa / 100 °C**
•	**T** [9]	**With PTFE sealing ring, pipe union of stainless steel material**		**200 °C / 0.1 MPa**	**0.6 MPa / 100 °C**
	B [10]	With bayonet adaptor, supporting cap and spring, material nickeled brass - only for sensor with outer diameter 2 mm (spring length 150 mm) and 3 mm (spring length 60 mm) with thread M12 or G1/4"			
	Code	**Connection thread Z**			
•	**M01**	**M8x1**	**- only for sensors with diameter sheath 1 to 3 mm**		
•	**M02**	**M12x1.5**	**- only for sensors with diameter sheath 3 to 6 mm (not for shift pipe union PB)**		
	M03	M16x1.5	- only for sensors with diameter sheath 3 to 6 mm		
•	**M04**	**M20x1.5**	**- only for sensors with diameter sheath 3 to 6 mm**		
	M05	M12	- only for sensors with diameter sheath 3 to 6 mm (only for shift pipe union PB)		
•	**G01**	**G1/8"**	**- only for sensors with diameter sheath 1 to 3 mm**		
•	**G02**	**G1/4"**	**- only for sensors with diameter sheath 3 to 6 mm**		
•	**G03**	**G3/8"**	**- only for sensors with diameter sheath 3 to 6 mm**		
•	**G04**	**G1/2"**	**- only for sensors with diameter sheath 3 to 6 mm**		
	N01	1/8" NPT	- only for sensors with diameter sheath 1 to 3 mm		
	N02	1/4" NPT	- only for sensors with diameter sheath 3 to 6 mm		
	N03	3/8" NPT	- only for sensors with diameter sheath 3 to 6 mm		
	N04	1/2" NPT	- only for sensors with diameter sheath 3 to 6 mm		
	Code	**Outer diameter of stem sensor**			
	D15	1.5 mm			
	D20	2 mm			
•	**D30**	**3 mm**			
	D45	4.5 mm			
•	**D60**	**6 mm**			
	Example of order:	**PS M04 D60**			

• ... Ex stock version

[8] … Adjustable nominal length only for first time of mounting.

[9] … Always adjustable nominal length.

[10] … If bayonet connection including sensor is ordered, dimension K [mm] has to be specified.

For other accessories see data sheet No. 0126.