



The right choice for your application: Temperature sensors from ifm

Process sensors



www.ifm.com/gb/temperature

Systems for temperature monitoring: The optimum solution for every requirement

Temperature sensors in
contact with the medium

Non-contact
temperature sensors



Compact temperature sensors
for industrial applications



Compact temperature sensors
for mobile applications



Compact temperature sensors
for hygienic applications



Temperature sensors –
the modular concept for industrial
and hygienic applications



Accessories
Process adapters, thermowells,
jumper cables and certificates



Infrared temperature sensors
for hot objects

The compact units: Temperature sensors for industrial applications

Temperature sensors in contact with the medium

Communicative:

Temperature sensors with switching outputs or continuous transmission of measured values via IO-Link.

Convenient:

Switch point setting via setting ring (type TK) or via LR DEVICE software and IO-Link (type TV).

Precise:

High accuracy thanks to the adjustment of the PT element and the electronics.

Robust:

Pressure resistance up to 400 bar.

Flexible:

Different process connections and installation depths.

Type TK temperature sensor

Easy adjustment of the switch points via two setting rings allowing optimum read-out.

Mechanical lock to prevent accidental adjustment.

T05 / T09: 1 / 3 s.

Pressure-resistant up to 400 bar.

Accuracy [K]: ± 3 .



Measuring range [°C]	Process connection	Installation depth [mm]	Order no.
Normally open / normally closed complementary			
-20...140	G 1/4	50	TK6110
2 x NO			
-20...140	G 1/4	50	TK7110
1 x NO / 1 x NC			
-20...140	G 1/2	250	TK7460



For industrial applications



**Type TV
temperature
sensor**

*Two solutions:
Continuous
transmission of
measured values
via IO-Link – and
two switching
outputs.*

Tamper free.

T05 / T09: 1 / 3 s.

*Pressure-resistant
up to 400 bar.*

Accuracy [K]: ± 0.3 .



Measuring range [°C]	Process connection	Installation depth [mm]	Order no.
2 switching outputs			
-50...150	G 1/4	25	TV7105
	G 1/2	30	TV7405

**Units with NPT
process connection
and °F scaling at
www.ifm.com**

The compact units: Temperature sensors for industrial applications

Temperature sensors in contact with the medium



Informative:

Temperature transmitter with current output, LED operating status indication and IO-Link.

Simple:

Preset measuring ranges configurable via LR DEVICE and IO-Link.

Precise:

High accuracy thanks to the adjustment of the PT element and the electronics.

Functional:

LED operating status indication signals voltage supply and indicates communication of the current output in 2-wire operation.

Robust:

Fully welded stainless steel housing for extreme installation conditions.

Type TA temperature transmitter

Scalable analogue
output 4...20 mA

IO-Link.

T05 / T09: 1 / 3 s.

Pressure-resistant
up to 400 bar.

Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



Measuring range	Process connection	Installation depth	Factory setting [°C]	
[°C]		[mm]	-50...150 Order no.	0...100 Order no.
Analogue output 4...20 mA				
-50...150	G 1/4	25	TA2105	
		50	TA2115	
		100	TA2135	
		150	TA2145	
	G 1/2	30	TA2405	
		50	TA2415	TA2417
		100	TA2435	TA2437
		150	TA2445	TA2447



*For industrial
applications*



*PT100 / PT1000
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*Accessories
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thermowells
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The compact units: Temperature sensors for industrial applications

Temperature sensors in contact with the medium

Savings potential:

Evaluation electronics and integrated process connections in one unit do not require complex documentation and save storage cost.

Unmistakable:

Clear indication of acceptable ranges. Programmable red / green display.

Simple:

Setting via display and buttons on the unit or via IO-Link.

Visible:

345° rotatability – for optimum readability.

Elaborate:

Fast access to the data sheet via QR code on the device.

Type TN temperature sensor

Selectable colour display.

Operation via 3 buttons.

Scalable analogue output 4...20 mA / 0...10 V.

Freely configurable switching output.

IO-Link.

T05 / T09: 1 / 3 s.

Pressure-resistant up to 300 bar.

Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



Measuring range	Process connection	Installation depth	Factory setting [°C]
[°C]		[mm]	-40...150 Order no.
1 switching and 1 analogue output 4...20 mA or 0...10 V			
-50...150	Internal thread M18 x 1.5	45	TN2511
2 switching outputs			
-50...150	Internal thread M18 x 1.5	45	TN7511



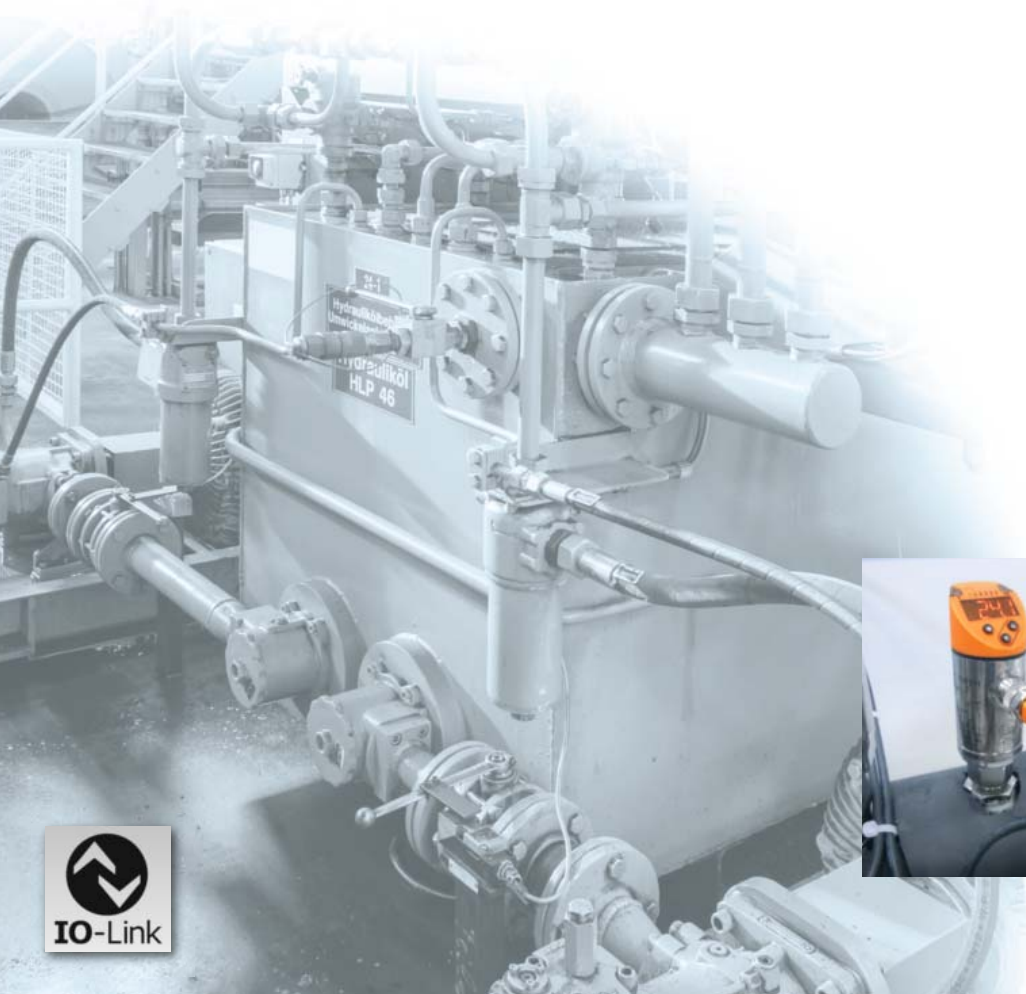
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For industrial applications



**Type TN
temperature
sensor**

Selectable colour
display.

Operation via
3 buttons.

2 x NO / NC or
1 x NO / NC and
1 analogue output
4...20 mA / 0...10 V,
scalable.

IO-Link.

T05 / T09: 1 / 3 s.

Pressure-resistant
up to 400 bar.

Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



Measuring range	Process connection	Installation depth	Factory setting [°C]
[°C]		[mm]	-50...150 Order no.
2 switching outputs or 1 switching and 1 analogue output 4...20 mA or 0...10 V			
-50...150	G 1/4	25	TN2105
		50	TN2115
	G 1/2	30	TN2405
		50	TN2415
		100	TN2435
		150	TN2445

Units with NPT
process connection
and °F scaling at
www.ifm.com

The compact units: Temperature sensors for mobile applications

Temperature sensors in contact with the medium



Suitable:

Temperature transmitter with current or voltage output or PT1000.

Versatile:

Connector versions M12, DEUTSCH and AMP selectable.

Economical:

Operating voltage as of 8 V.

Robust:

Fully welded stainless steel housing and high pressure resistance of up to 400 bar.

Simple:

Plug and Play via preset measuring ranges.

Flexible:

Different process connections and installation depths.

Type TA / TU temperature transmitter

Welded stainless
steel housing.

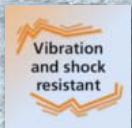
Installation depths
of 25 to 200 mm.

T05 / T09: 1 / 3 s.

Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



Measuring range [°C]	Process connection	Installation depth [mm]	Connector	Order no.	Order no.
Analogue output				4...20 mA	0.5...4.5 V
-50...150	G 1/4	25	M12	TA3105	TU3105
		50	M12	TA3115	
		200	M12	TA3155	
		25	DEUTSCH	TA4105	TU4105
		50	DEUTSCH	TA4115	
		25	AMP	TA5105	TU5105
		50	AMP	TA5115	



PT1000 with process connection type TM

Installation depths of 25 to 50 mm.

T05 / T09: 1 / 3 s.

Accuracy [K]:

$\pm (0.15 + 0.002 \times |t|)$.



Measuring range [°C]	Process connection	Installation depth [mm]	Connector	Order no.
PT1000				
-40...150	G 1/4	25	M12	TM5105
	G 1/2	50	M12	TM5411
	G 1/4	25	DEUTSCH	TM6101



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The compact units: Temperature sensors for hygienic applications

Temperature sensors in contact with the medium



Informative:

Temperature transmitter with current output, LED operating status indication and IO-Link.

Precise:

High accuracy thanks to temperature adjustment at three reference points.

Verified:

Free 3-point factory certificate²⁾ available at www.factory-certificate.ifm.

Extended:

Measuring range from -50 to 200 °C; preset measuring ranges configurable via IO-Link.

Fast:

Response time ≤ 0.5 s.

Flexible:

Adapter system for all common process connections such as Varivent, SMS or DIN11851 pipe fitting.

Type TA temperature transmitter

Operating status
indication via LED.

Scalable analogue
output 4...20 mA.

Hygienic process
connections.

Installation depths
of 25 to 150 mm.

IO-Link.

T05 / T09:
 $\leq 0.5 / \leq 2$ s.

Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



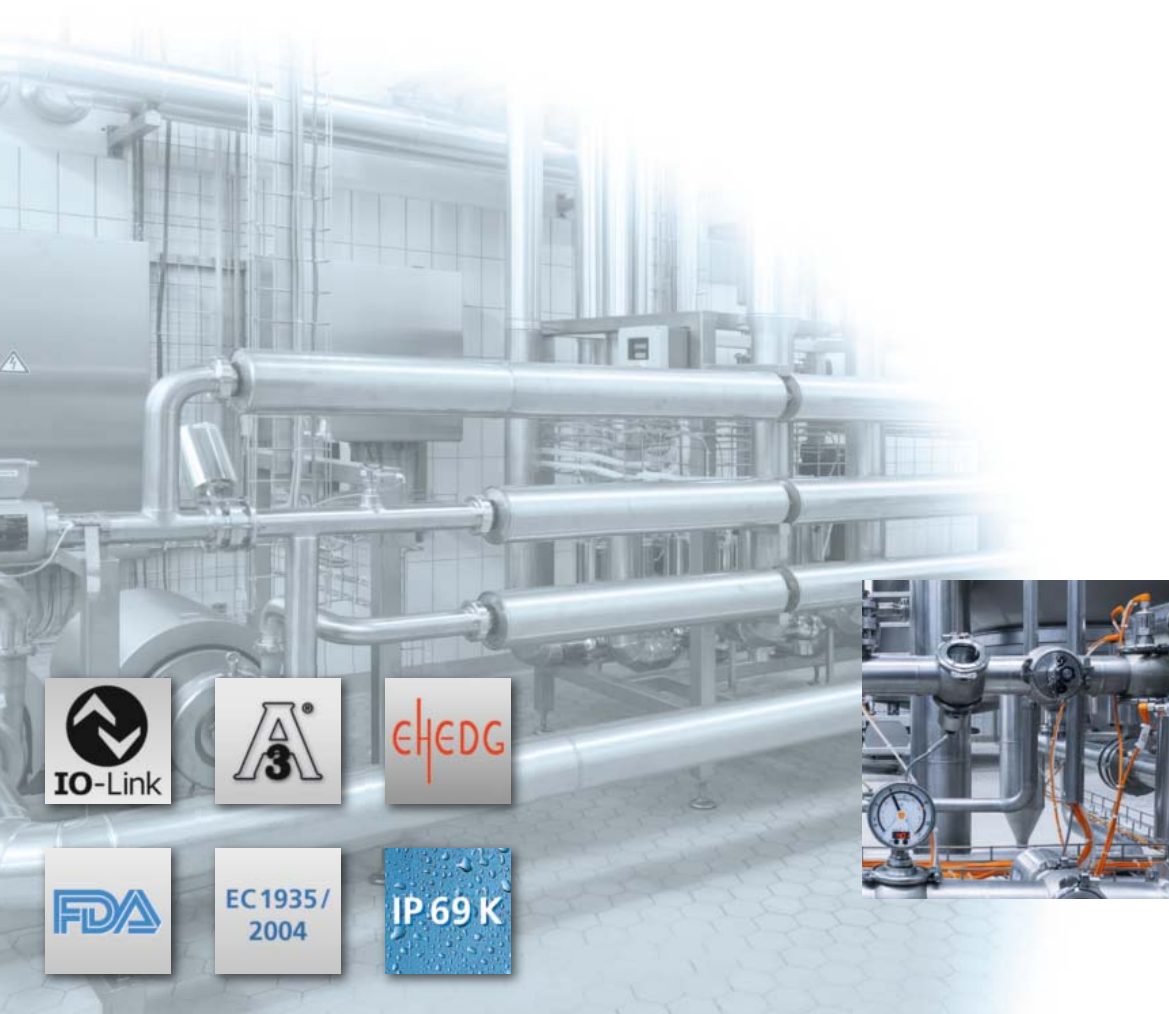
Measuring range [°C]	Process connection	Installation depth [mm]	Factory setting [°C]		
			0...200 Order no.	0...100 Order no.	-10...150 Order no.
Analogue output 4...20 mA, probe Ø 6 mm					
-50...200	Ø 6 mm	50	TA2212		
		100	TA2232		
		150	TA2242	TA2247	TA2241
		250	TA2262		
		350	TA2292		
	G 1/2 with sealing cone	Flush mount		TA3597 ¹⁾	
		30	TA2502		
		50	TA2512	TA2517	TA2511
		100	TA2532	TA2537	TA2531
		150	TA2542		
	Clamp 1/2 - 3/4 "	25	TA2002		
		60	TA2012		
	Clamp 1 - 1.5 "	30	TA2802		
		50	TA2812		
		100	TA2832		
		150	TA2842		

¹⁾ No IO-Link

²⁾ Available as of 4th quarter of 2017



For hygienic areas
and viscous media



Measuring range [°C]	Process connection	Installation depth [mm]	Factory setting [°C]		
			0...200 Order no.	0...100 Order no.	-10...150 Order no.
Analogue output 4...20 mA, probe Ø 3 mm					
-50...200	M12 x 1.5 with sealing cone	17	TA1102	TA1107	TA1101
-50...200	G 3/8 ³⁾	83	TA1322	TA1327	TA1321

³⁾ Suitable for installation in thermowells

Technical data
and prices?
www.ifm.com



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The compact units: Temperature sensors for hygienic applications

Temperature sensors in contact with the medium

Informative:

Temperature transmitter with current output, display and IO-Link.

Helpful:

Adjustment of temperature and controller via display.

Robust:

Fully welded stainless steel housing protects against the ingress of moisture and prevents temperature drift.

Precise:

High accuracy thanks to temperature adjustment at three reference points.

Verified:

Free 3-point factory certificate¹⁾ available at www.factory-certificate.ifm

Flexible:

Further process connections available via a flexible adapter system.

Temperature transmitter with type TD display
4-digit LED display.
Scalable analogue output 4...20 mA.
Hygienic process connections.
Installation depths of 30 to 350 mm.
IO-Link.
T05 / T09: 1 / 3 s.
Accuracy [K]:
± 0.3 + (± 0.1 % Ms).

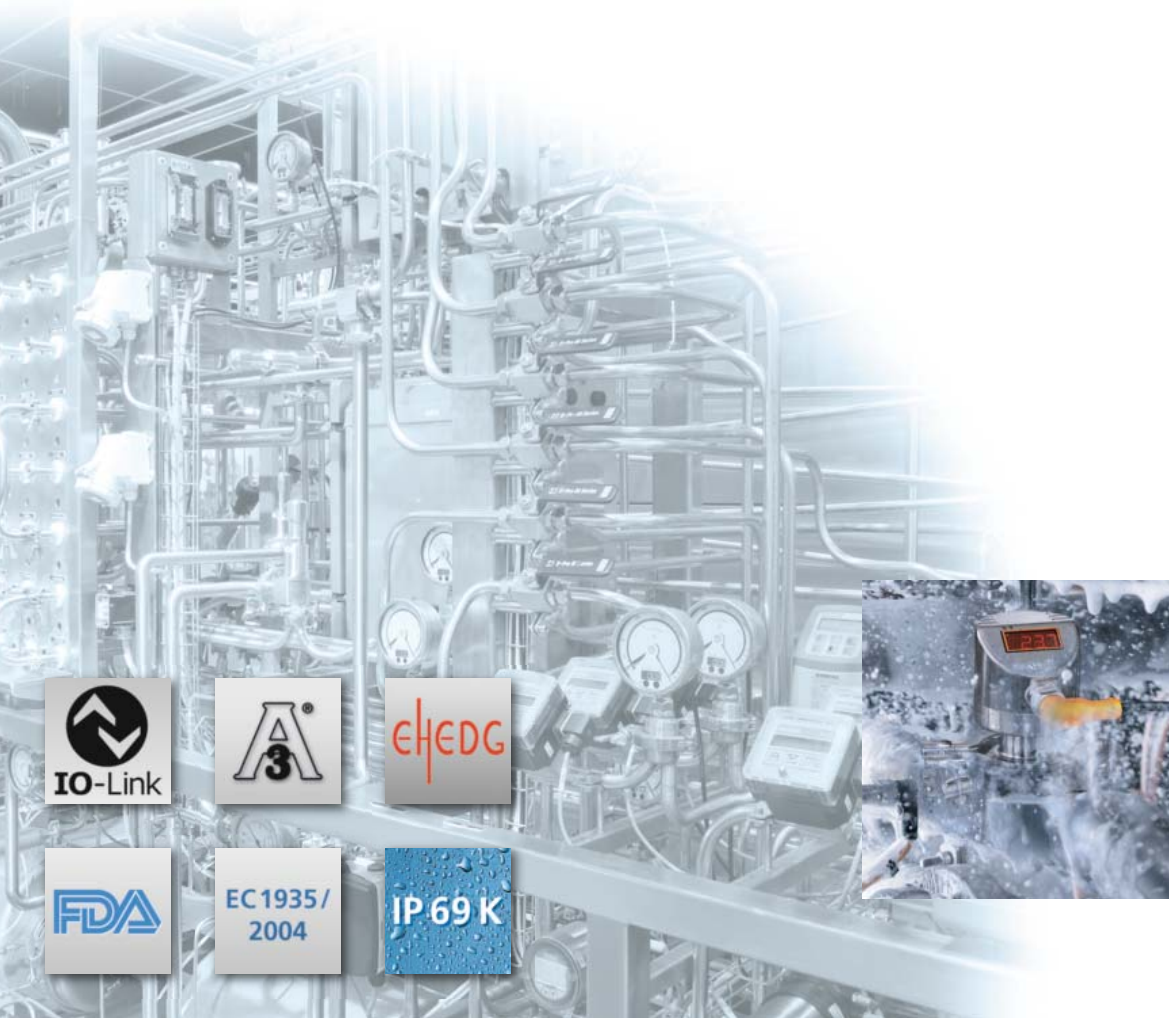


Measuring range	Process connection	Installation depth	Factory setting [°C]	
			-10...150 Order no.	0...100 Order no.
[°C]		[mm]		
Analogue output 4...20 mA				
-50...150	Ø 6 mm	50	TD2211	TD2217
		100	TD2231	TD2237
		150	TD2241	TD2247
		200	TD2251	TD2257
		250	TD2261	TD2267
		300	TD2271	TD2277
		350	TD2291	TD2297
	G 1/2 with sealing cone	30	TD2501	TD2507
		50	TD2511	TD2517
		100	TD2531	TD2537
		150	TD2541	TD2547

¹⁾ Available as of 4th quarter of 2017



For hygienic areas
and viscous media



Process connection	Installation depth [mm]	Factory setting [°C]	
		-10...150 Order no.	0...100 Order no.
Analogue output 4...20 mA			
Clamp 1 - 1.5 "	30	TD2801	TD2807
	50	TD2811	TD2817
	100	TD2831	TD2837
	150	TD2841	TD2847
Clamp 2 "	30	TD2901	TD2907
	50	TD2911	TD2917
	100	TD2931	TD2937
	150	TD2941	TD2947



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The compact units: Temperature sensors for hygienic applications

Temperature sensors in contact with the medium



Unrivalled:

Integrated drift monitoring with two different resistance elements (PT and NTC: different characteristics for reliable drift detection).

Reliable:

Permanent drift monitoring between the calibration intervals increases machine uptime and process safety.

Documented:

All three process values (mean value, PT element, NTC element) can be logged via IO-Link (data logging). This ensures permanent transparency for quality management and calibration intervals can be adapted or be dispensed with.

Good to know:

Developed for standard as well as critical temperature processes (CCPs = critical control points).

Self-monitoring temperature transmitter type TAD

Free 5-point calibration certificate.

Diagnostic and backup function.

Scalable analogue output 4...20 mA.

IO-Link.

T05 / T09: 3 / 6 s.

Accuracy [K]:

0.2 (at -10...130 °C).



Measuring range	Process connection	Installation depth	Factory setting [°C]
[°C]		[mm]	0...150 Order no.
Analogue output 4...20 mA			
-25...160	G 1/2 with sealing cone	33	TAD991
		50	TAD091
		87.5	TAD191
	G1 male Aseptoflex Vario	33	TAD981
		50	TAD081
		87.5	TAD181



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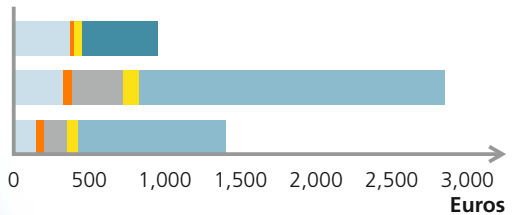


**For hygienic areas
and viscous media**



Total operating costs (case study)²⁾

1 sensor TAD with drift monitoring
incl. 5-year warranty¹⁾
2 temperature transmitters
1 temperature transmitter



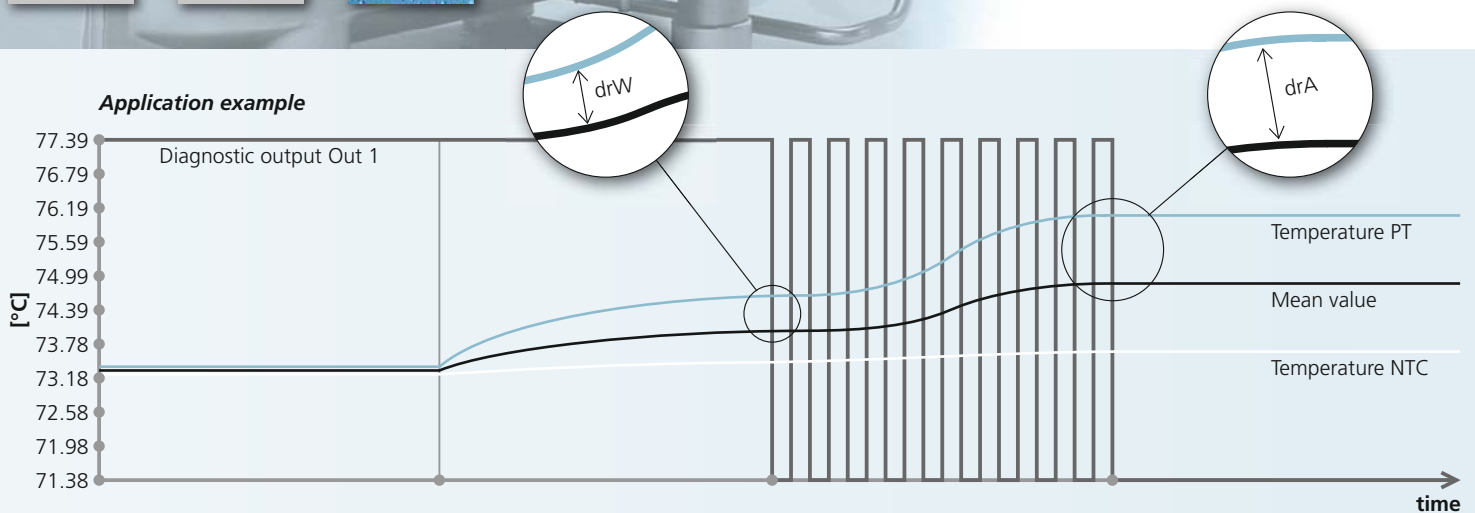
- Sensor cost
- Adapter cost
- Initial calibration 180 euros/sensor
- Installation (welding adapter – sensor)
- Calibration cycle 4x/year (250 euros/sensor)
- Calibration cycle 2x/year (250 euros/sensor)

¹⁾ No initial calibration required, free 5-point calibration certificate. Hourly data storage of all process values via IO-Link, enabling the elimination of two or more calibration cycles.

²⁾ Cleaning and standstill costs due to calibrations are not taken into account.



Application example



Measured values
stable.
Diagnostic output
Out 1 has a high
signal.

PT element drifts
below the defined
drift warning
threshold (drW)³⁾.
Diagnostic output
Out 1 has a high
signal.

Distance between
the PT element
and the mean
value exceeds the
drift warning
threshold (drA)³⁾.
Diagnostic output
Out 1 switches
to a 2 Hz clock
frequency.

Distance between
the PT element
and the mean
value exceeds the
drift alarm thresh-
old (drA)³⁾.
Diagnostic output
has a low signal.

³⁾ drW and drA can be adapted according to the application

Temperature sensors – the modular concept for industrial and hygienic applications

Temperature sensors in contact with the medium

Individual:

Configure your measurement system according to your requirements.

Suitable:

Broad range of combination options.

Visual:

Evaluation units with or without colour display.

Flexible:

Different process connections and installation depths.

Far reaching:

Measuring ranges from -100 to 600 °C.

Convenient:

Thermowells allow replacement of the sensors in the running process.

Want to find a suitable
sensor online?
www.ifm.com

*PT100 / PT1000
cable sensors
type TS*



*Accessories
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For industrial applications



For hygienic areas and viscous media



Evaluation unit type TR

Selectable colour display.
Scalable analogue output 4...20 mA / 0...10 V.
Freely configurable switching output.
Automatic detection of the temperature probe.
Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



Type TP measured signal converter

Operating status indication via LED.
Scalable analogue output 4...20 mA
Minimised installation and error sources.
High vibration resistance.
Accuracy [K]:
 $\pm 0.3 + (\pm 0.1 \% Ms)$.



Mounting set

Connection cable

Direct connection

Direct connection

PT100 / PT1000 probe sensors type TT

For industrial and hygienic applications.
Different installation depths up to 560 mm.
Measuring probes $\varnothing 6$ and 10 mm.
Protection rating IP 67.
T05 / T09: 1 / 3 s.
Accuracy [K]:
 $\pm (0.15 + 0.002 \times |t|)$.



PT100 / PT1000 cable sensors type TS

Measuring probes $\varnothing 5, 6$ and 10 mm.
Screw-in sensors in M5 and M6 sizes.
Bolt-on sensor for M6 and M10 screws.
Temperature probes for the ATEX zone.
Different cable materials.
Protection rating IP 67.
T05 / T09: 3 / 10 s.
Accuracy [K]:
 $\pm (0.15 + 0.002 \times |t|)$.



PT100 / PT1000 with process connection type TM

Industrial and hygienic process connections.
Different installation depths up to 250 mm.
Measuring probe $\varnothing 6$ mm.
Accuracy class A.
Pressure resistance up to 160 bar.
High protection IP68 / IP 69K.
T05 / T09: 1 / 3 s.
Accuracy [K]:
 $\pm (0.15 + 0.002 \times |t|)$.



PT100 / PT1000 probe sensors type TT



Temperature sensors – the modular concept for industrial and hygienic applications

Temperature sensors in contact with the medium

Evaluation electronics
type TR



Measuring
range
[°C]

1 switching a

-100...600

-100...600

TR evaluation with
E30017 mounting set on
PT100 / PT1000 probe
sensors type TT



Direct connection
TR evaluation on
PT100 / PT1000 cable
sensors type TS

TR or TP evaluation
with connection cable
on PT100 / PT1000
sensors type TM,
TT or TS

PT100 / PT1000
probe sensors
type TT
Cable sensors
high temperature
type TS



PT100 / PT1000
cable sensors
type TS



Even more choice?
More articles at
www.ifm.com

Measuring range [°C]	Ø probe / installation depth [mm]	Order no.	Order no.
Applications		Industry	Hygienic
-40...150	6 / 50	TT9281	TT9291
	6 / 70	TT7281	
	6 / 100	TT0281	TT0291
	6 / 150	TT1281	TT1291
	6 / 200	TT4281	
	6 / 250	TT2281	TT2291
	6 / 300	TT6281	
-40...150	6 / 350	TT3281	TT3291
	10 / 160	TT1081	
	10 / 260	TT2081	
	10 / 360	TT3081	
-40...150	10 / 560	TT5081	
	6 / 160	TT1250 ¹⁾	
	6 / 260	TT2250 ¹⁾	
-40...150	6 / 360	TT3250 ¹⁾	
	10 / 160	TT1050 ¹⁾	
	10 / 260	TT2050 ¹⁾	
	10 / 360	TT3050 ¹⁾	
-40...150	10 / 560	TT5050 ¹⁾	
Industrial applications			
-100...600	6 / 100	TS2451	
	6 / 150	TS2452	
	6 / 200	TS2453	
	6 / 250	TS2454	

¹⁾ PT1000 sensor element



For industrial applications



For hygienic areas and viscous media



Factory setting [°C]	Process connection	Order no.
and 1 analogue output 4...20 mA or 0...10 V		
-40...300	G 1/2	TR2439
2 switching outputs		
-40...300	G 1/2	TR7439

Measured signal converter type TP



Measuring range [°C]	Factory setting [°C]	Connection	Order no.
Analogue output 4...20 mA			
	-50...150		TP3231
-50...300	-50...300	M12 connector	TP3232
	0...100		TP3237
Analogue output 0...10 V			
-50...300	0...100	M12 connector	TP9237



**Direct connection
TP evaluation on
PT100 / PT1000 probe
sensors type TT,
TS or TM**

Process connection	Measuring range [°C]	Cable / connector / length [m]	Order no.
Industrial applications			
Ø 5 mm ATEX	-20...80	silicone / - / 3	TS325A
Ø 6 mm	-40...90	PUR / M12 / 2	TS2289
	-40...90	PUR / M12 / 2	TS2269¹⁾
	-40...90	PUR / M12 / 2.5	TS9289
	-40...90	PUR / M12 / 5	TS5289
	-50...250	PTFE / M12 / 0.15	TS9256¹⁾
Ø 10 mm	-50...250	PTFE / M12 / 2	TS2256
	-40...90	PUR / M12 / 2	TS2089
	-40...90	PUR / M12 / 2	TS2069¹⁾
	-40...90	PUR / M12 / 5	TS5089
	-50...250	PTFE / M12 / 2	TS2056
Bolt-on sensor 12 x 8.7 x 51 mm	-40...90	PUR / M12 / 2	TS2229
Bolt-on sensor 12.5 x 8.7 x 47 mm	-40...90	PUR / - / 2	TS2239
Bolt-on sensor ATEX 10 x 18 x 48 mm	-20...115	silicone / - / 5	TS502A¹⁾
Bolt-on sensor ATEX 10 x 10 x 42 mm	-20...115	silicone / - / 5	TS522A
M5 screw-in sensor	-40...90	PUR / M12 / 2	TS2789
	-40...90	PUR / M12 / 0.5	TS9789
	-30...180	silicone / M12 / 2	TS2759
	-30...180	silicone / - / 4	TS4759
	-30...180	silicone / M12 / 10	TS0759
M6 screw-in sensor	-40...90	PUR / M12 / 2	TS2689
	-30...180	silicone / M12 / 2	TS2659
M8 screw-in sensor	-20...115	silicone / - / 2	TS285A

PT100 with process connection type TM



Process connection	Measuring range [°C]	Installation depth [mm]	Order no.
Industrial applications			
G 1/4	-40...150	25	TM4101
	-40...150	25	TM5101¹⁾
G 1/2	-40...150	50	TM4411
	-40...150	50	TM5411¹⁾
	-40...150	100	TM4431
	-40...150	150	TM4441
	-40...150	250	TM4461
Internal thread M18 x 1.5	-40...125	60	TM9950
Hygienic applications			
G 1/2 with sealing cone	-50...140	Flush mount	TM4599
	-40...150	20	TM4591
G 1/2 with sealing cone	-40...150	30	TM4501
	-40...150	50	TM4511
	-40...150	100	TM4531
	-40...150	150	TM4541
	-40...150	30	TM4801
Clamp 1 - 1.5"	-40...150	50	TM4811
	-40...150	100	TM4831
	-40...150	150	TM4841
Clamp 2"	-40...150	30	TM4901
	-40...150	50	TM4911
	-40...150	100	TM4931
	-40...150	150	TM4941

¹⁾ PT1000 sensor element

¹⁾ PT1000 sensor element

Accessories

Process adapters and thermowells for temperature sensors

Even more choice?
More articles at
www.ifm.com



Progressive ring fitting



Clamp fitting



Clamp adapter

No.	Device connection	Process connection	Installation depth [mm]	Order no.	For sensor type			
Industrial applications								
④	G 1/4	G 1/4	27	E37700	TA2115	TN2115	TKx110	TT0281 ¹⁾
			74	E37710	TA2135			TT1281 ¹⁾
			124	E37720	TA2145			TT3281 ¹⁾
④	G 1/2	G 1/2	27	E37600	TA241x	TN2415	TM4411	TT0281 ¹⁾
			74	E37610	TA243x	TN2435	TM4431	TT1281 ¹⁾
			82	E35010				TT1081 ⁴⁾
			124	E37620	TA244x	TN2445	TM4441	TT2281 ¹⁾
			174	E37630				TT2281 ¹⁾
			182	E35020				TT2081 ⁴⁾
			224	E37640			TM4461	TT3281 ¹⁾
			274	E37650				TT3281 ¹⁾
			282	E35030				TT3081 ⁴⁾
			482	E35050				TT5081 ⁴⁾
⑤	Ø 6 mm	G 1/2	33	E37603	TA2212	TD221x		TT9281
			83	E37613	TA2232	TD223x		TT0281
			128	E37623	TA2242	TD224x		TT1281
			233	E37643		TD226x		TT2281
			333	E37663		TD229x		TT3281
Industrial applications / hygienic applications								
⑥	1/2 NPS ³⁾	Ø 38.1 mm	191	E37430		TD227x ¹⁾		TT3281 ¹⁾
			267	E37450		TD229x ¹⁾		TT3281 ¹⁾

④

Screw-in thermowell up to 16 bar

⑤

Screw-in thermowell up to 16 bar

⑥

Welding thermowell up to 400 bar

⑧

Welding thermowell up to 300 bar



**For industrial
applications**



**For hygienic areas
and viscous media**



No.	Type	Device connection	Process connection	Order no.	For sensor type		
Industrial applications							
①	Progressive ring fitting	Ø 6 mm	G 1/4	E33431	TA	TD	TT
			M12 x 1.0	E33433	TA	TD	TT
			G 1/2	E30047	TA	TD	TT
①	Progressive ring fitting	Ø 10 mm	G 1/2	E30016	TT		
			1/2" NPT	E30024	TT		
②	Clamp fitting	6 / 8 / 10 mm	G 1/2	E30018	TA	TD	TS TT
			1/2" NPT	E30025	TA	TD	TS TT
Hygienic applications							
③	Clamp adapter	Ø 6 mm	G 1/2 with sealing cone	E30144	TA	TD	TT



No.	Device connection	Process connection	Installation depth [mm]	Order no.	For sensor type			
Hygienic applications								
⑦	G 1/2 with sealing cone	G 1/2 with sealing cone	53	E30393	TAD191			
			68	E37511	TA253x	TD253x	TM4531	TT1291 ²⁾
			118	E37521	TA2542	TD254x	TM4541	TT2291 ²⁾
⑧	G 1/2 with sealing cone	Ø 34 mm	49	E37411	TA2512	TD251x	TM4511	TT0291 ²⁾
			86	E30403	TAD191			
			99	E37421	TA253x	TD253x	TM4531	TT1291 ²⁾
			149	E37431	TA2542	TD254x	TM4541	TT2291 ²⁾
⑨	1/2 " NPS ³⁾	Clamp 1 - 1.5"	64	E37810	TA243x TA2333	TD224x ¹⁾	TM4431 TM4331	TT1291 ¹⁾
			115	E37820	TA244x TA2343	TD225x ¹⁾	TM4441 TM4341	TT2291 ¹⁾
			191	E37830	TD227x ¹⁾		TT3291 ¹⁾	
			267	E37850	TD229x ¹⁾		TT3291 ¹⁾	
⑨	1/2 " NPS ³⁾	Clamp 2"	64	E37910	TA2435 TA2333	TD224x ¹⁾	TM4431 TM4331	TT1291 ¹⁾
			115	E37920	TA2445 TA2343	TD225x ¹⁾	TM4441 TM4341	TT2291 ¹⁾
			191	E37930	TD227x ¹⁾		TT3291 ¹⁾	
			267	E37950	TD229x ¹⁾		TT3291 ¹⁾	

In combination with ¹⁾adapter E30018 / E30047 / E33431, ²⁾adapter E30144; ³⁾suitable for G 1/2 and 1/2" NPT
In combination with ⁴⁾fitting E30016 / E30018

Accessories

Process adapters, jumper cables and certificates for temperature sensors

No.	Type	Device connection	Process connection	Order no.	For sensor type
(10)	Stainless steel adapter	M18 x 1.5	G 1/2	E30073	TM TN
	Titanium adapter	M18 x 1.5	G 1/2	E40114	TM TN
	Hastelloy adapter	M18 x 1.5	G 1/2	E40175	TM TN
	Brass adapter	M18 x 1.5	G 1/2	E40097	TM TN
	Plastic adapter	M18 x 1.5	Ø 23 mm	E40138	TM TN
(11)	Ball 24.7 mm	Ø 6 mm	Clamp adapter	E30108	TA TD TT
	Ball 25 mm	Ø 6 mm	Clamp adapter	E30407	TA TD TT



Adapter



Welding adapter

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Jumper cable type EVC
with M12 plug / socket
(selection)



Connection cable type EVF
with M12 socket
(selection)



Plug / socket	Cable length [m]	Order no.
Industrial applications		
straight / angled	1	EVC017
	5	EVC019
angled / straight	1	EVC027
	5	EVC029
angled / angled	1	EVC032
	5	EVC034
straight / straight	1	EVC012
	5	EVC014
Hygienic applications		
straight	5	EVF001
	10	EVF002
angled	5	EVF004
	10	EVF005



**For industrial
applications**



**For hygienic areas
and viscous media**



(12)

Process adapter

No.	Type	Device connection	Process connection	Order no.	For sensor type
(12)	Metal-to-metal seal	G1 Aseptoflex Vario	Clamp 1 - 1.5"	E33701	TAD
			DIN 11851 DN32	E33711	TAD
			Varivent DN25	E33721	TAD
			SMS DN40	E33731	TAD
(12)	Sealing by O-ring	G1 Aseptoflex Vario	Clamp 1 - 1.5"	E33201	TAD
			DIN 11851 DN32	E33211	TAD
			Varivent DN25	E33221	TAD
			DN/OD 33.7	E33304	TAD
(12)	Metal-to-metal seal	G1/2 with sealing cone	DRD flange	E33242	TAD
			Clamp 1 - 1.5"	E33401	TA TAD TD TM
			DIN 11851 DN25	E43304	TA TAD TD TM
			Varivent DN25	E43306	TA TAD TD TM
			SMS DN25	E33430	TA TAD TD TM
			G 3/4	E43302	TA TAD TD TM
(11)	Metal-to-metal seal	G1/2 with sealing cone	G1	E43303	TA TAD TD TM
			Ø 35	E30055	TA TAD TD TM TT ²⁾
			Ø 45	E30056	TA TAD TD TM TT ²⁾

In connection with: ²⁾adapter E30144



Calibration and material certificates Type	Order no.
Declaration of compliance EN10204-2.1	ZC0001
Inspection certificate material EN10204-3.1	ZC0003⁵⁾
3-point DAkkS calibration temperature sensors	ZC0013
5-point DAkkS calibration temperature sensors	ZC0014
n-point DAkkS calibration temperature sensors	ZC0015
3-point ISO calibration temperature sensors	ZC0016
5-point ISO calibration temperature sensors	ZC0017
n-point ISO calibration temperature sensors	ZC0018

⁵⁾Only available for selected article numbers

Infrared temperature sensors for hot objects

Non-contact temperature sensors



Without contact:

Exact temperature measurement of particularly hot objects or objects which are difficult to access.

Hot:

For object temperatures of 0...2.500 °C.

Informative:

Display of the current object temperature (type TW20xx).

Precise:

LED pilot light for alignment and control.

Accurate:

Scratch-resistant precision lenses for minimum sensitivity to ambient light.

Practical:

Simulation function, activated on the sensor or remotely.

Type TW70xx temperature sensor

2 switching outputs.

Easy switch-point setting via display.

3-pushbutton operating concept.

Accuracy [K]: see data sheet.

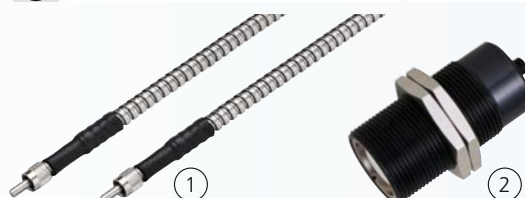


Measuring range [°C]	Wave length range [µm]	Order no.
Detecting system		
2 binary switching outputs		
50...500	8...14	TW7000 ²⁾
250...1250	1...1.7	TW7001 ²⁾
350...1350	1...1.7	TW7011 ¹⁾²⁾

¹⁾Sensor for fibre-optics and measuring head

²⁾No IO-Link

No.	Type	Order no.
①	Fibre optic 2 m	E35061
	Fibre optic 5 m	E35062
②	Measuring head	E35060



Type TW20xx temperature sensor

Scalable analogue output 4...20 mA.

Freely configurable switching output.

Easy emissivity setting via display.

3-pushbutton operating concept.

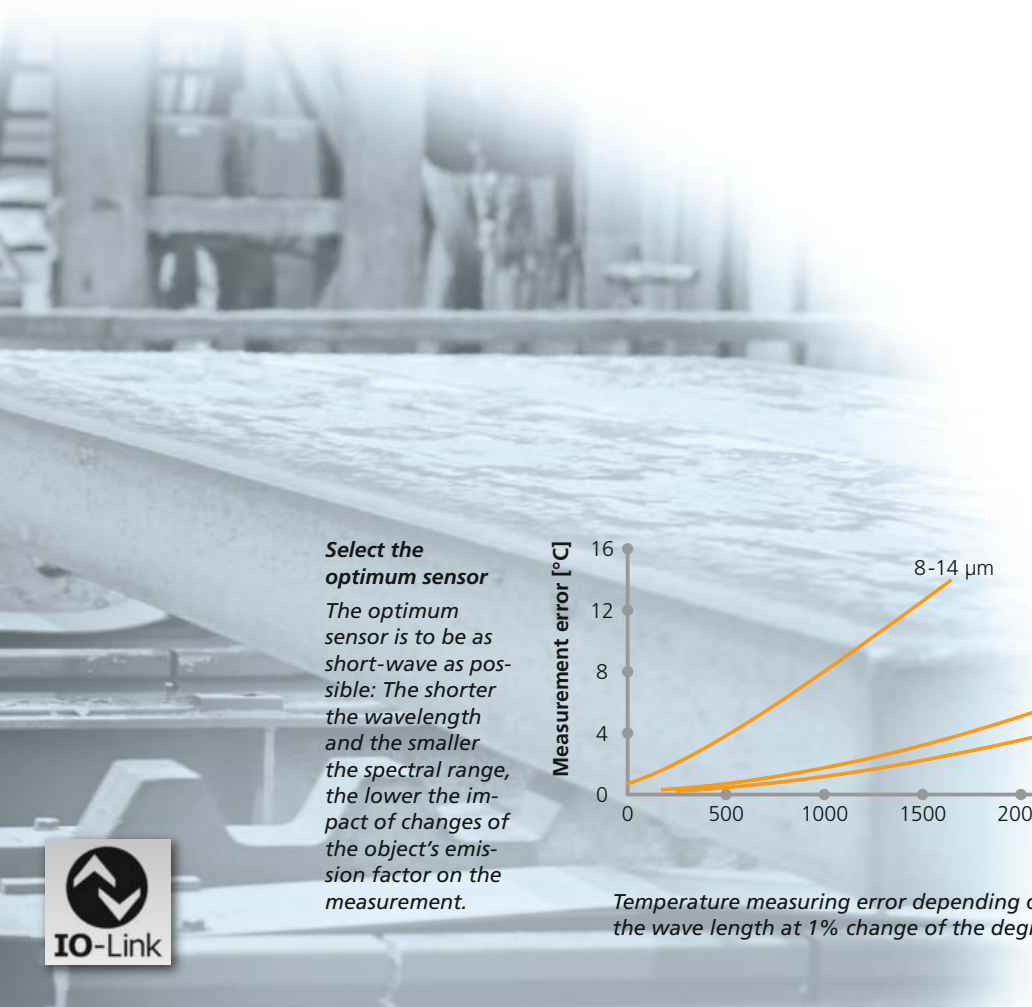
Local temperature indication.

Accuracy [K]: see data sheet.

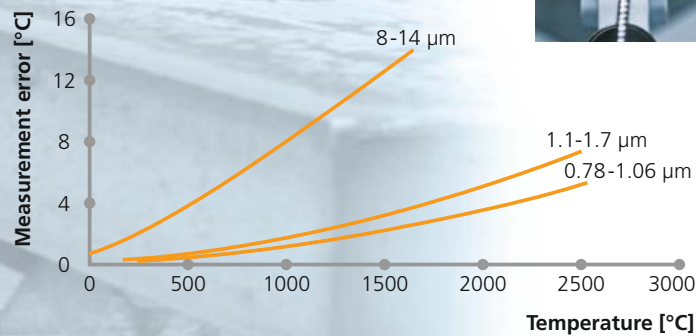




For industrial applications



Select the optimum sensor
The optimum sensor is to be as short-wave as possible: The shorter the wavelength and the smaller the spectral range, the lower the impact of changes of the object's emission factor on the measurement.



Temperature measuring error depending on the temperature and the wave length at 1% change of the degree of emission

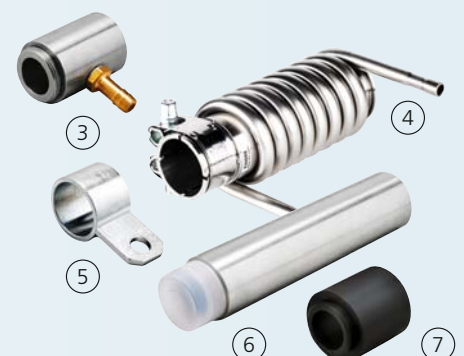


Measuring range [°C]	Wave length range [µm]	Order no. without LED pilot light	Order no. with LED pilot light
Measuring system			
Analogue output 4...20 mA and switching output			
0...1000	8...14	TW2000	TW2100
250...1600	1...1.7	TW2001	TW2101
500...2500	0.78...1.06	TW2002	
300...1600	1...1.7	TW2011³⁾	

³⁾ Sensor incl. fibre-optics and measuring head

**Accessories
Calibration
certificates**

No.	Type	Order no.
③	Air purge	E35063
④	Cooling jacket	E35068
⑤	Mounting bracket	E35065
⑥	Protective tube	E35066
⑦	Insulating tube	E35067
	Factory calibration sheet for infrared temperature sensors	ZC0061
	Recalibration for TW20xx infrared temperature sensor	ZC0062
	Recalibration for TW2002 infrared temperature sensor	ZC0063





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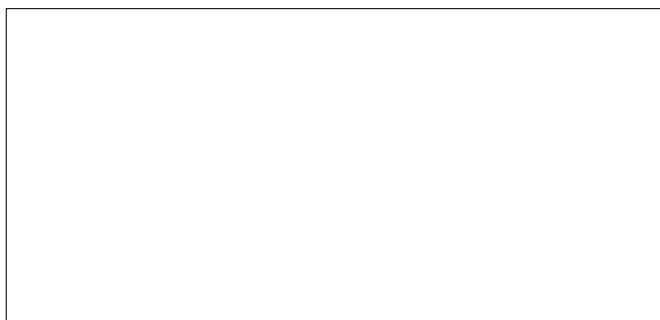
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Power supplies



Accessories



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