Data sheet
Temperature sensor PT100 in 2-, 3-, and 4- wire technology
Type: PT100..., PT103..., PT104...

ENGLER
Steuer- und Messtechnik

Design / connection 30

WAF27

24

L±1

Connection:
plug-type connector M12x1 4-pol, material TPU
Mounting:
thread 1/2" or 3/8", material alu or stainless steel
Operating te*mperature:*
BT01
Pressure:
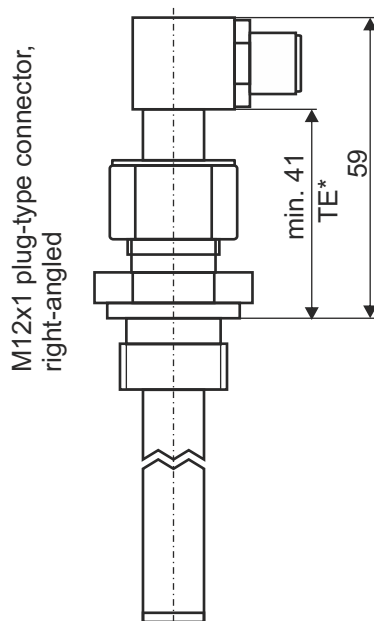with brass / alu 1bar
with stainless steel 35bar

Dimensions in mm

Design / connection 31

Ø20

20

min 41
TE*

L±1

(TE) Depth setting on the screw connection can be selected by the customer
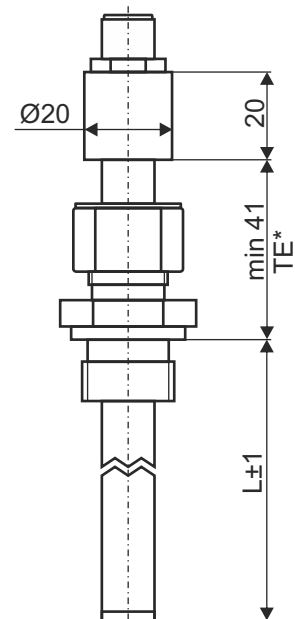
Connection:
plug-type connector M12x1 4-pole, material TPU
Mounting:
depth setting, thread see order key,
material brass or stainless steel
Operating temperature:
BT01 and BT06
Pressure:
with brass 1bar
with stainless steel 35bar

Design / connection 32

M12x1 plug-type connector, right-angled

min. 41
TE*

59

Connection:
plug-type connector M12x1 4-pole right-angled, material TPU
Mounting:
depth setting, thread see order key,
material brass or stainless steel
Operating temperature:
BT01 and BT06
Pressure:
with brass 1bar
with stainless steel 35bar

(TE) Depth setting on the screw connection can be selected by the customer
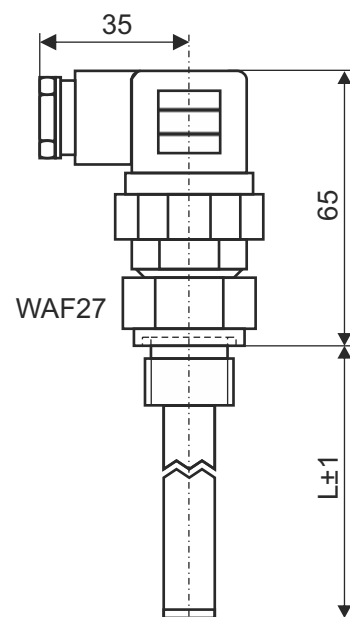
Design / connection 33

35

65

WAF27

L±1

-Further version in plastic see page 5

Connection:
plug-type connector 2-, 3pol+ PE, DIN EN 175301-803, material PA
Mounting:
thread 1/2" or 3/8", material alu or stainless steel
Operating temperature:
BT01 und BT06
Pressure:
with brass / alu 1bar
with stainless steel 35bar

Data sheet
Temperature sensor PT100 in 2-, 3-, and 4- wire technology
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Design / connection 34

35

74

L±1

Connection:
  plug-type connector 6pol+ PE, DIN EN 175201-804
  material PA or DIN EN 175201-804 (DIN 43651), material PET
Mounting:
  thread 1/2" or 3/8", material alu or stainless steel
Operating temperature:
  BT01
Pressure:
  with brass / alu 1bar
  with stainless steel 35bar
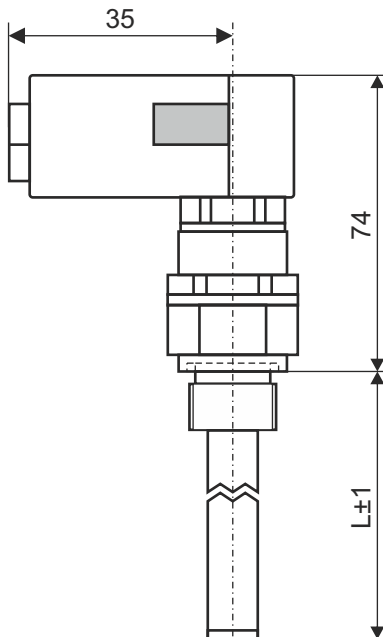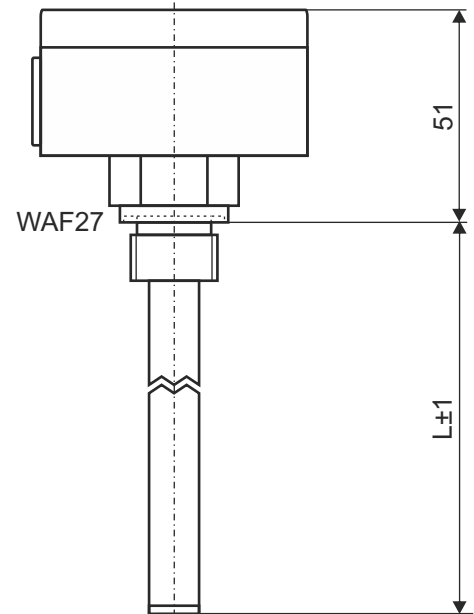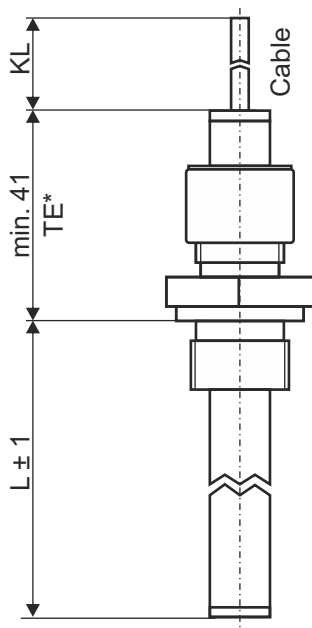
Design / connection 35

51

WAF27

L±1

Connection:
  terminal connection 1,5mm² in the housing 64x58x35mm (hxwxd)
  cable entry over M16x1,5 screwed cable glands
Mounting:
  thread 1/2" or 3/8", material alu or stainless steel
Operating temperature:
  BT01 und BT06
Pressure:
  with brass / alu 1bar
  with stainless steel 35 bar

Design / connection 36

KL

Cable

min. 41

TE*

L ± 1

(TE) Depth setting on the screw connection can be selected by the customer

Connection:
  oil-resistant FDCP-cable, shielded
  without cable strain relief, length according to specification
Mounting:
  depth setting, thread see order key,
  material brass or stainless steel
Operating temperature:
  BT01
Pressure:
  with brass 1bar
  with stainless steel 35 bar

Design / connection 37

KL

Cable

40

min. 41

TE*

WAF22

WAF27

L ± 1

(TE) Depth setting on the screw connection can be selected by the customer
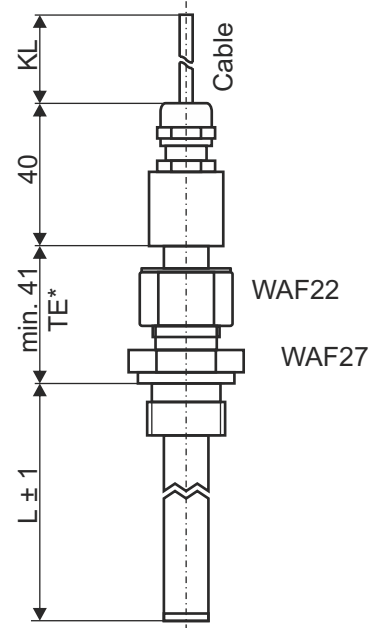
Connection:
  oil-resistant FDCP-cable, shielded
  with cable strain relief, length according to specification
Mounting:
  depth setting, thread see order key,
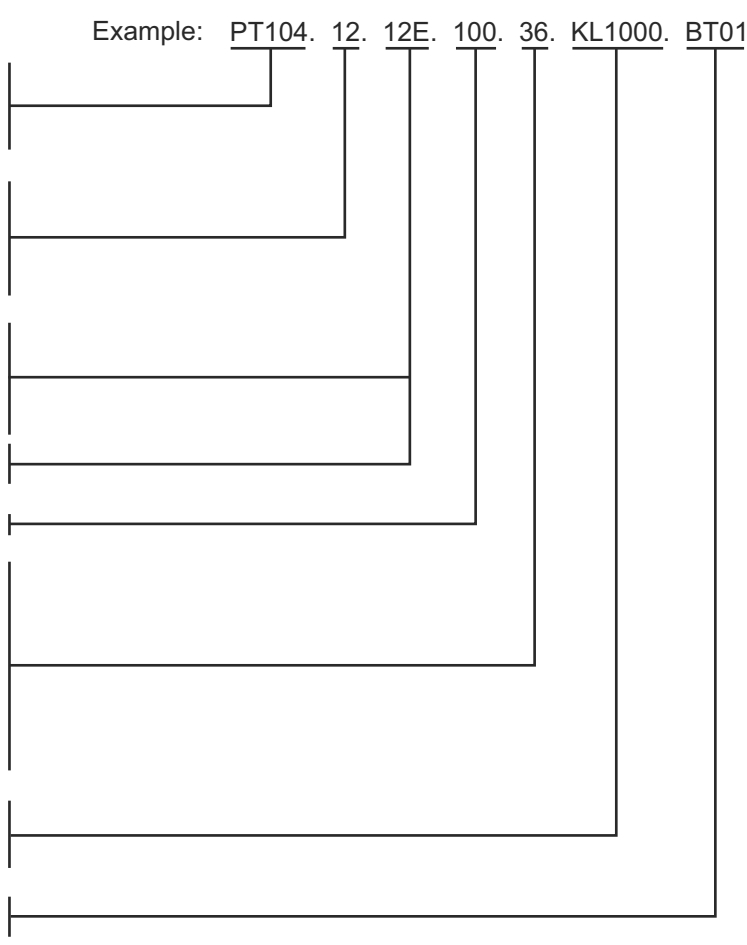 material brass or stainless steel
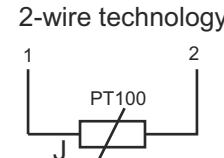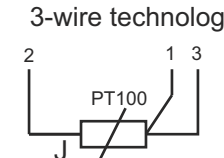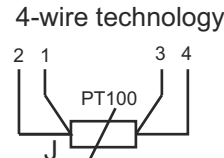*Operating temperature:*
  BT01
Pressure:
  with brass 1bar
  with stainless steel 35 bar
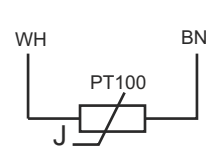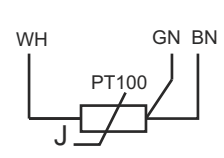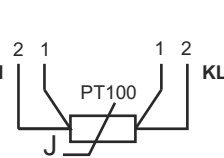
Data sheet
Temperature sensor PT100 in 2-, 3-, and 4- wire technology
Type: PT100..., PT103..., PT104...

Order key

Example: PT104. 12. 12E. 100. 36. KL1000. BT01

Sensor element
PT100 = 2-wire technology
PT103 = 3-wire technology
PT104 = 4-wire technology

Mounting
14 = thread 1/4" (only in connection
with sensor tube Ø6 and Ø8mm)
38 = thread 3/8"
12 = thread 1/2"

Sensor tube:
outer diameter: 06 = ø6mm
08 = ø8mm
10 = ø10mm
12 = ø12mm
material: M = brass
E = stainless steel

sensor tube length L in mm

Design / connection
30 = M12 plug-type connector 4-pole
31 = M12 plug-type connector 4-pole, adjustable
32 = M12 plug-type connector right-angled
33 = plug-type connector 2-, 3 pole
34 = plug-type connector 6-pole
35 = terminal connection in the housing
36 = cable connection
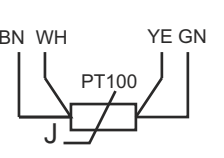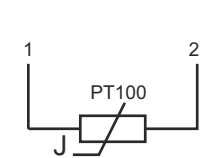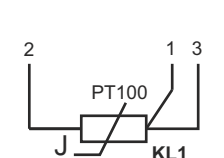37 = cable connection, cable strain relief

Cable length
KL= L in mm (Specification only for design 36
and 37 required)

Operating temperature
BT...

Note: Material brass and stainless steel are not combinable

Terminal diagrams

	2-wire technology	3-wire technology	4-wire technology
Plug connector			
Cable connector			
Housing connector			

Technical data

Connection:	see respective design / connection, further connections on request
Mounting:	see respective design / connection, further mountings on request
Sensor tube:	ø6mm, ø8mm, ø10mm or ø12mm, length L±1mm according to specification, material brass or stainless steel, other materials available on request
Temperature sensor:	platinum resistor PT100 in 2-, 3- and 4-wire technology
Tolerance class:	DIN EN 60751, class B
Nominal resistance:	100 Ohm at 0°C
Temperature coefficient:	3850ppm/K
Inductance of the measuring element:	0,03 µH
Self-heating:	0,4K/mW
Long-term stability after 1000h at 150°C:	R_0-Drift < 0,06 %
Pressure:	see design / connection
Operating temperature:	see design / connection
	BT01: -15°C to 100°C in medium, -20°C to 70°C above mounting
	BT06: -30°C to 180°C in medium, -20°C to 70°C above mounting (only in connection with stainless steel)
	BT08: -30°C to 150°C in medium, -20°C to 70°C above mounting (only in connection with stainless steel)
	higher temperatures on request
Protection rating:	IP 65

Comment: *For further protection, a thermowell can be used, see additional data sheet THE..., select sensor tube 16mm longer than protective tube of thermowell.*
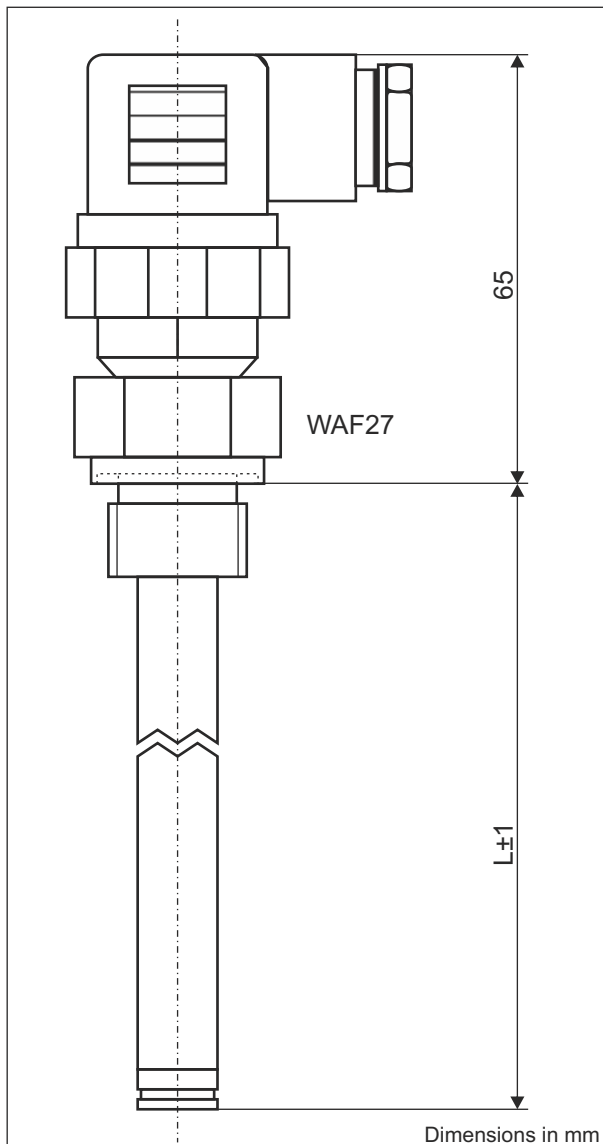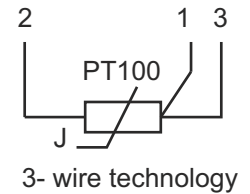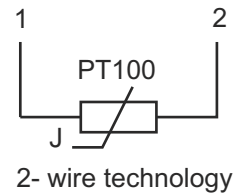
Data sheet
Temperature sensor PT100 in 2-, 3-, and 4- wire technology
Type: PT100..., PT103..., PT104...

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65

L±1

Dimensions in mm

Terminal diagram

1   2

PT100

J

2- wire technology

2   1   3

PT100

J

3- wire technology

Order key

Example: **PT103. 12. 12PP. 100. 33. BT01**

Sensor element
PT100 = 2-wire technology
PT103 = 3-wire technology

Mounting
38 = thread 3/8"*
12 = thread 1/2"

Sensor tube
outer diameter 12 = Ø12mm
16 = Ø16mm

Material PP = polypropylene
PVDF = polyvinyliden fluoride

Sensor tube length L in mm

Design - 33

Operating temperature - BT...
- see techn. data

* 3/8" only in connection with PP tube

Technical data

Connection: plug-type connection 2-, 3-pole + PE DIN EN 175301-803, material PA
Mounting: thread 1/2" material PP or PVDF
                                                               thread 3/8", material PP
Seal: material NBR
Sensor tube: ø12mm, length L±1mm acc. to customer specification, material PP
                                                               ø16mm, length L±1mm acc. to customer specification, material PVDF
Temperature sensor: platinum measuring resistor PT100 in 2-, 3- wire technology
Tolerance class: DIN EN 60751, class B
Nominal resistance: 100Ohm at 0°C
Temperature coefficient: 38850ppm/K
Inductance of the measuring element: 0,03µH
Self-heating: 0,4K/mW
Long-term stability after 1000h at 150°C: R_0-Drift < 0,06 %
Pressure: max. 5bar
Operating temperature: BT03: -15°C to 80°C in medium, -20°C to 70°C above mounting
                                                               (only in connection with PP)
                                                               BT01: -15°C to 100°C in medium, -20°C to 70°C above mounting
                                                               (only in connection with PVDF)
Protection rating: IP65

Subject to change