Product Information TFP-42, -52, -62, -162, -182 **FOOD**

Temperature Sensor with M12 hygienic

CLEANadapt

Application / Specified Usage

- Temperature Measurement in pipes DN15...DN80
- Temperature measurement in thin-walled pipes and vessels

Application Examples

- Process monitoring
- Monitoring of CIP- / SIP-process
- Temperature measurement in UHT-plants

Hygienic Design / Process Conwnection

- Flow optimized, hygienic and easy sterilizable installation by using Negele weld-in sleeve, e.g. EMK-032 or build-in system, e.g. EHG-... / M12
- Additional process connections: adapters for TriClamp, dairy flange (DIN 11851), Varivent, DRD, APV et al
- Sealing system free of elastomers, the connection will be without gaps and crevices
- Product contacting materials compliant to FDA
- Sensor completely made of stainless steel

Features / Advantages

- Integrated transmitter optional
- Different electrical connections available

Options / Accessories

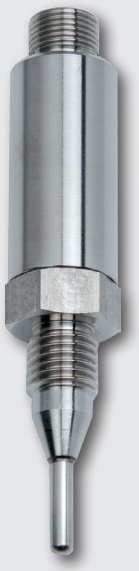
- 2 x Pt100 (not retrofittable)
- 2 x Pt100 with two transmitters (not retrofittable)
- Programmable transmitters MPU-4 as well as MPU-M with output 4...20 mA, 2-wire
- Integrated transmitters for Profibus PA and HART-protocol
- Integrated transmitter MPU-LCD with display in connecting head
- Programming adapter MPU-P 9701
- Pt100 chip with other classes of accuracy (1/3B, 1/10B)
- Sensor tips with diameter 3 mm and 4 mm
- Spacer for high temperature up to 250 °C
  permanent temperature up to 450 °C (on request)
- Pre-assembled connecting cable for M12-plug
- Fixed cable in other lengths and other material available
- Calibration certificate (optional with order)

Authorizations

FDA

Temperature Sensor TFP-42

Temperature Sensor TFP-162 with transmitter MPU-M



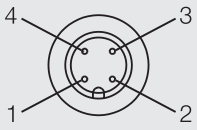
Temperature sensor		
Process connection	thread	M12 CLEANadapt; combined with Negele weld-in sleeves, build-in-systems, adapter sleeves
Tightening torque		10 Nm
Insertion length	standard	20...500 mm
Materialis	connecting head thermowell	stainless steel 1.4305 stainless steel 1.4404
Operating pressure		50 bar maximum
Temperature ranges	ambient sensor tip	-50...+80 °C -50...+250 °C
Sensing resistor	acc. to DIN EN 60751	Pt100
Electrical connection	cable gland cabel connection fixed cable 2,5 m fixed cable 2,5 m (>90 °C)	M16 x 1,5 M12-plug 1.4305, 4-pins LIYY 4 x 0,25 mm² PTFE 4 x 0,14 mm²
Protection class		IP 69 K (with electrical connection M12-plug)

Transmitter MPU-4, MPU-10, MPU-H, MPU-M		
Temperature ranges	ambient storage	-40...+85 °C -55...+90 °C
Measuring ranges	MPU-4, MPU-H, MPU-M MPU-10	standard: -10...40 °C, 0...50 / 100 / 150 / 200 °C special ranges free programable standard: -200...850 °C configuration occurs with Profibus
Accuracy	input	< ±0.25 °C
Temperature drift	zero, span	< 0.01 % / K
Supply	MPU-M, MPU-4 MPU-10 accuracy	8...35 V DC 9...32 V DC 0.01 % / V (reference: 12 V DC)
Output	signal accuracy burden	analog 4...20 mA (not for MPU-10) < ±0.1 % of measurement range < 600 Ω (at U_B = 24 V)
Humidity	without condensation	0...98 %

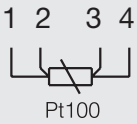
Accuracy classes of temperature sensors | Tolerances for Pt100 acc. to DIN EN 60751			
Pt100	**A**	**1/3 B**	**1/10 B**
0 °C / 100 Ω	±0.15 K / ±0.06 Ω	±0.10 K / ±0.04 Ω	±0.03 K / ±0.01 Ω
100 °C / 138.5 Ω	±0.35 K / ±0.13 Ω	±0.27 K / ±0.10 Ω	±0.08 K / ±0.03 Ω

Electrical connection without transmitter

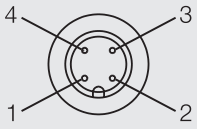
With 1 x M12 plug



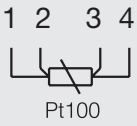
Configuration 1st M12 plug



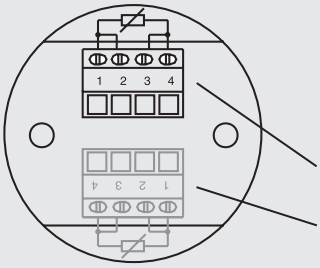
With 2 x M12 plug



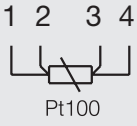
Configuration 2nd M12 plug



With cable gland



Configuration strip terminal



clamps for 1st Pt100

clamps for 2nd Pt100
(at version 2 x Pt100)

With fixed cable

Fixed cable connection with 1 x Pt100

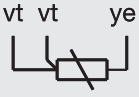
wh ye	bn gn	standard
rd rd	wh wh	PTFE

Fixed cable connection with 2 x Pt100 (LIYY)

wh ye	bn gn	1st Pt100
rd bu	pk gy	2nd Pt100

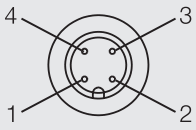
Fixed cable connection with 2 x Pt100 (PTFE)

rd rd	wh	1st Pt100
vt vt	ye	2nd Pt100



Electrical connection with transmitter

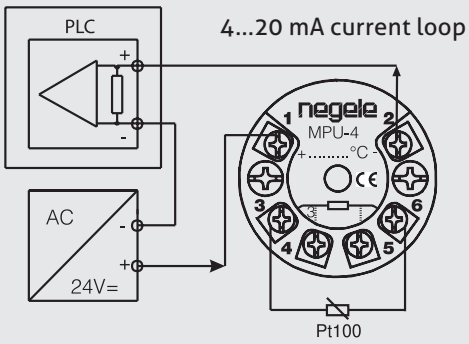
With M12 plug



Configuration M12 plug

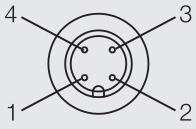
1: + supply
2: - supply 4...20 mA
3: not connected
4: not connected

With cable gland



Electrical connection with two transmitter (TFP-62)

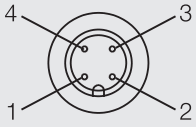
With 1 x M12-plug (sensor 1 + sensor 2)



Configuration M12-plug

1: + supply (sensor 1)
2: - supply 4...20 mA (sensor 1)
3: - supply 4...20 mA (sensor 2)
4: + supply (sensor 2)

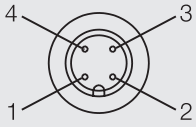
With 2 x M12-plug (sensor 1)



Configuration M12-plug

1: + supply (sensor 1)
2: - supply 4...20 mA (sensor 1)
3: not connected
4: not connected

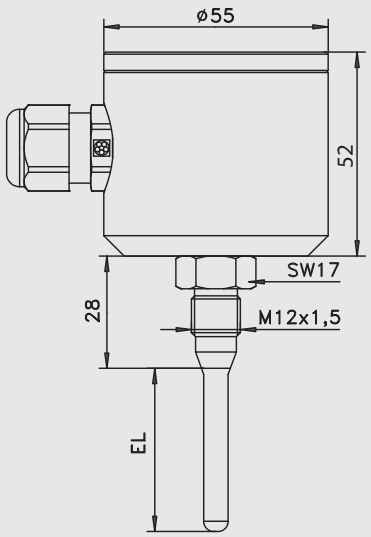
With 2 x M12-plug (sensor 2)



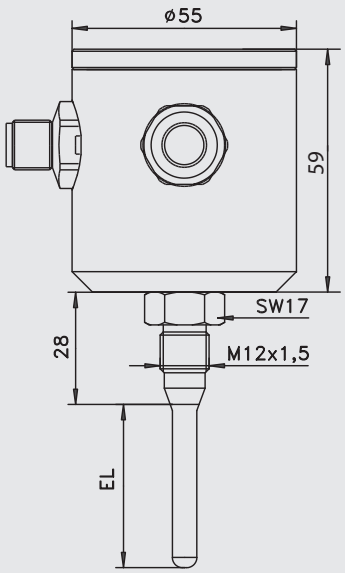
Configuration M12-plug

1: + supply (sensor 2)
2: - supply 4...20 mA (sensor 2)
3: not connected
4: not connected

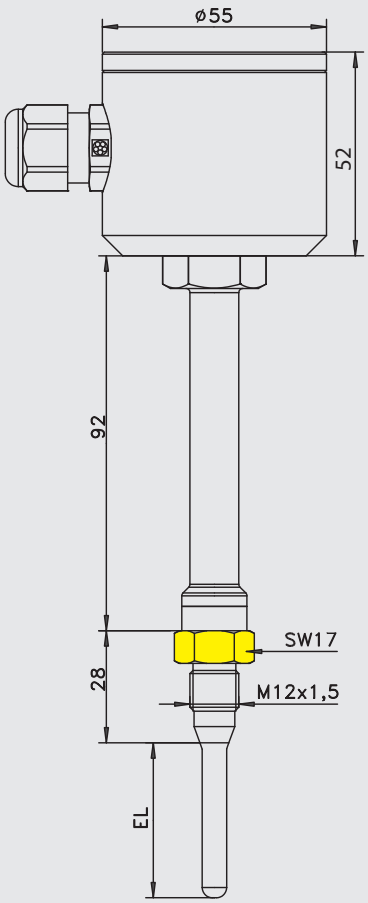
TFP-42 | TFP-42.2



TFP-62



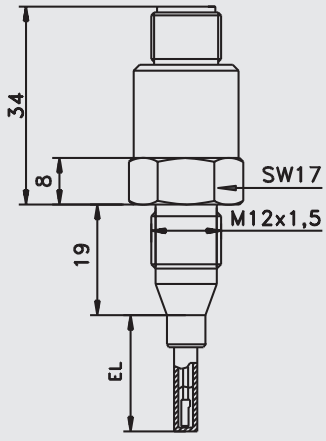
TFP-52 | TFP-52.2



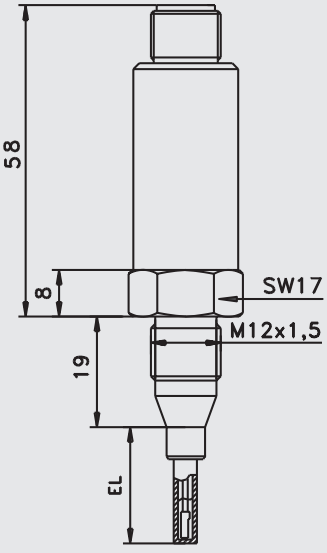
Important advice for TFP-52 und -52.2

Tighten the sensor only at the lower, marked in yellow spanner flat (BE = 17 mm)!

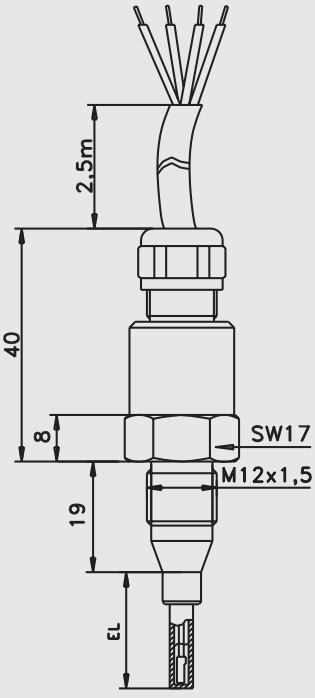
TFP-162



TFP-162 / ... / MPU-M



TFP-182 | TFP-182.2

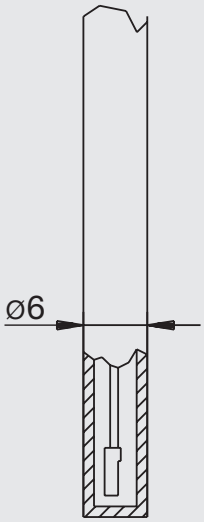


Sensor tip diameter and response time

All temperature sensors are available with smaller sensor tips, to ensure a shorter response time. The below-mentioned times were measured by emersing a temperature sensor from room temperature into boiling water.

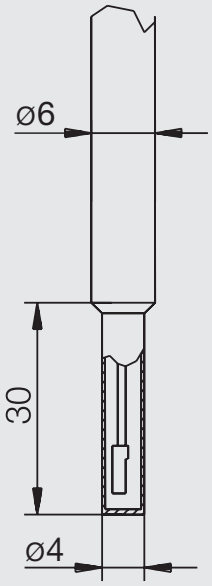
Sensor tipe Ø 6 mm

50 %-time: $t_{50} \leq 3{,}0$ s
90 %-time: $t_{90} \leq 8{,}0$ s



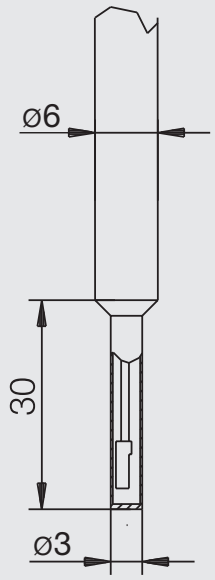
Sensor tip Ø 4 mm

50 %-time: $t_{50} \leq 2{,}4$ s
90 %-time: $t_{90} \leq 6{,}5$ s



Sensor tip Ø 3 mm

50 %-time: $t_{50} \leq 0{,}5$ s
90 %-time: $t_{90} \leq 1{,}5$ s



Mechanical Connection / Installation

- Use only Negele CLEANadapt system for safe operation of measuring point!

Conventional Usage

- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipments (SIL).

Transport / Storage

- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -55...+90 °C
- Relative humidity maximum 98 %

Reshipment

- Sensors shall be clean and free of media or heat-conductive paste and must not be contaminated with dangerous media!
- Use suitable transport packaging only to avoid damage of the equipment!

Cleaning / Maintenance

- In case of using pressure washers, dont't point nozzle directly to electrical connections!

Standards and Guidelines

- You have to comply with applicable regulations and directives.

Disposal

- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

Note on CE

- Applicable directives:
  Electromagnetic Compatibility Directive 2014/30/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

Temperature Transmitter MPU-LCD with Display

Application / Specified Usage

- 4...20mA transmitter with LCD for Pt100 temperature sensor
- For installation in temperature sensor
- Sensor monitoring

Features

- 4-digit display with green backlight
- Temperature measurement in °C and °F
- Easy range select by one button
- Lower costs for wiring because of 2-wire technology

Note

See product information „MPU-LCD“ for details.

Option MPU-LCD (display in the connection head)

Order code for version with 1 x Pt100

TFP-42 (connecting head Ø 55 mm)
TFP-52 (connecting head Ø 55 with spacer)
TFP-162 (connecting head Ø 18 mm, electrical connection via M12-plug)
TFP-182 (connecting head Ø 18 mm,electrical connection via 2,5 m PVC-cable; other lengths: see accessories; no transmitter possible!)

Sensor length EL in mm
020...500 (in steps of 5 mm)
xxx (special length)

Diameter thermowell in mm (only selectable at sensor length > 30 mm)
4 (only with sensor tip 4 mm)
6

Diameter sensor tip in mm
3 (only with thermowell 6 mm)
4 (only with thermowell 6 mm, standard when sensor length ≤ 30 mm)
6 (only with thermowell 6 mm)

Accuracy class Pt100
A
1/3B
1/10B

Electrical connection (not selectable at TFP-162 and -182)
PG (cable gland M16x1,5)
M12 (M12 plug, standard with MPU-LCD)

Transmitter

X (without)

for TFP-42 and -52
MPU-4 (programmable)
MPU-10 (Profibus PA)
MPU-H (HART-protocol)
MPU-LCD (with display)

only for TFP-162 (not for TFP-182)

MPU-M (programmable)

Measuring range MPU (only for types with transmitter; not for MPU-LCD)
-10...40 (range -10...40 °C)
0...50 (range 0...50 °C)
0...100 (range 0...100 °C)
0...150 (range 0...150 °C)
0...200 (range 0...200 °C)
xx...yy (special range)

TFP-42 /	**050 /**	**6 /**	**4 /**	**A /**	**PG /**	**MPU-4 /**	**0...100**

Accessories

PVC-cable with M12-connection made of 1.4305, IP 69 K, unshielded

M12-PVC / 4-5 m	PVC-cable 4-pin, length 5 m
M12-PVC / 4-10 m	PVC-cable 4-pin, length 10 m
M12-PVC / 4-25 m	PVC-cable 4-pin, length 25 m

PVC-cable with M12-connection, brass nickel-plated, IP 67, shielded

M12-PVC / 4G-5 m	PVC-cable 4-pin, length 5 m
M12-PVC / 4G-10 m	PVC-cable 4-pin, length 10 m
M12-PVC / 4G-25 m	PVC-cable 4-pin, length 25 m

PVC-cable with M12-connection

Order code for version with 2 x Pt100

TFP-42.2 (connecting head Ø 55 mm, 2 x Pt100, no transmitter possible!)
TFP-52.2 (connecting head Ø 55 mm, 2 x Pt100, with spacer, no transmitter possible!)
TFP-62 (higher connecting head Ø 55 mm, 2 x Pt100, prepared for 2 x transmitter)
TFP-62-H (like TFP-62, but with spacer)
TFP-182.2 (connecting head Ø 18 mm, electrical connection 2,5 m PTFE-cable; other lengths: see at accessories)

Sensor Length in mm
020...500 (in steps of 5 mm)
xxx (special length)

Diameter thermowell in mm (only selectable at sensor length > 30 mm)
4 (only with sensor tip 4 mm)
6

Diameter sensor tip in mm
3 (only with thermowell 6 mm)
4 (only with thermowell 6 mm, standard when sensor length ≤ 30 mm)
6 (only with thermowell 6)

Accuracy class Pt100
A
1/3B
1/10B

Electrical connection (only for TFP-42.2 and TFP-52.2)
PG (cable gland M16x1,5)
2PG (2 x cable gland M16x1,5)
2M12 (2 x M12-plug)

Electrical connection (only for TFP-62 and TFP-62-H)
M12 (M12-plug)
2M12 (2 x M12-plug)

Continue if TFP-62 or TFP-62-H is selected!
No further options for TFP-42.2, -52.2, -182.2!

1. Transmitter
MPU-4 (programmable)

Measuring Range 1. MPU
-10...40 (measuring range -10...40 °C)
0...50 (measuring range 0...+50 °C)
0...100 (measuring range 0...+100 °C)
0...150 (measuring range 0...+150 °C)
0...200 (measuring range 0...+200 °C)
xx...yy (special range)

2. Transmitter
MPU-4 (programmable)

Measuring Range 2. MPU
-10...40 (-10...40 °C)
0...50 (0...+50 °C)
0...100 (0...+100 °C)
0...150 (0...+150 °C)
0...200 (0...+200 °C)
xx...yy (special)

TFP-62 /	100 /	6 /	X /	A /	M12 /	MPU-4 /	0...50 /	MPU-4 /	0...50

50007 / 6.2 / 2018-09-13 / AR / EU

NEGELE MESSTECHNIK GMBH
Raiffeisenweg 7
87743 Egg an der Guenz

Phone +49 (0) 83 33 . 92 04 - 0
Fax +49 (0) 83 33 . 92 04 - 49
sales@anderson-negele.com

Tech. Support:
support@anderson-negele.com
Phone +49 (0) 83 33 . 92 04 - 720

Product Information TFP-42P, -52P, -62P, -162P, -182P **PHARMA**

Pharma-Temperature Sensor M12 hygienic

CLEANadapt

Application/Specified usage

- Temperature measurement in pipes DN15...DN80
- Temperature measurement in thin-walled pipes and vessels

Application examples

- Process monitoring
- Monitoring of CIP-/SIP-process
- Temperature measurement in hot steam pipes

Hygienic design/Process connection

- Flow optimized, hygienic and easy sterilizable installation by sleeve, e.g. EMZ-032, or build-in system EHG-.../M12.
- Additional process connections:
  adapter for Tri-Clamp, dairy flange (DIN 11851), Varivent, DRD, APV et al.
- Sealing system free of elastomers, the connection will be without gaps and crevices
- CIP-/SIP-cleaning up to 140 °C
- Product contacting materials compliant to FDA
- Sensor completely made of stainless steel

Features/Advantages

- Short reaction time, very compact measurement point
- Material 1.4435, inspection certificate 3.1 included in delivery (for procuct contacting components)
- Sensor e-polished R_a < 0,8 µm (standard)
- Integrated transmitter (optional)
- Different electrical connections available
- R_a < 0,4 µm or 0,6 µm (on request)

Options/Accessories

- 2 x Pt100 (not retrofittable)
- 2 x Pt100 with two transmitters (not retrofittable)
- Programmable transmitters MPU-4 and MPU-M with output 4...20 mA, 2-wire
- Integrated transmitters for Profibus PA and HART-protocol
- Programming adapter MPU-P 9701
- Integrated transmitter MPU-LCD with display in connecting head
- Pt100 chip with other classes of accuracy (1/3B, 1/10B)
- Material certificate according to EN10204-3.1 for build-in systems, e.g. EHG
- Spacer for permanent temperatures up to 250 °C
  Resistance on permanent temperature up to 450 °C (on request)
- Pre-assembled connecting cable for M12 plug
- Fixed cable in other lengths and other material available
- Calibration certificate (optional with order)

Authorizations

FDA

Temperature sensor TFP-42P

Temperature sensor TFP-162P with transmitter MPU-M

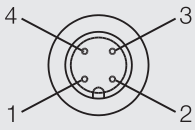
Temperature sensor		
Process connection	thread	M12 CLEANadapt; combined with Negele weld-in sleeves, build-in-systems, adapter sleeves
Tightening torque		10 Nm
Insertion length	standard	17 mm (special length up to 40 mm possible)
Materials	connecting head thermowell	stainless steel 1.4305 stainless steel 1.4435
Operating pressure		50 bar maximum
Temperature ranges	ambient sensor tip	-50...+80 °C -50...+250 °C
Sensing resistor	acc. to DIN EN 60751	Pt100
Electrical connection	cable gland cable connection fixed cable 2.5 m fixed cable 2.5 m (≥ 90 °C)	M16 x 1.5 M12-plug 1.4305, 4-pins LIYY 4 x 0.25 mm² PTFE 4 x 0.14 mm²
Protection class		IP 69 K (with electrical connection M12-plug)

Transmitter MPU-4, MPU-10, MPU-H, MPU-M		
Temperature ranges	ambient storage	-40...+85 °C -55...+90 °C
Measuring ranges	MPU-4, MPU-H, MPU-M MPU-10	standard: -10...40 °C, 0...50 / 100 / 150 / 200 °C special ranges free programable standard: -200...850 °C configuration occurs with Profibus
Accuracy	input	< ±0.25 °C
Temperature drift	zero, span	< 0.01 % / K
Supply	MPU-M, MPU-4 MPU-10 accuracy	8...35 V DC 9...32 V DC 0.01 % / V (reference: 12 V DC)
Output	signal accuracy burden	analog 4...20 mA (not for MPU-10) < ±0.1 % of measurement range < 600 Ω (at U_B = 24 V)
Humidity	without condensation	0...98 %

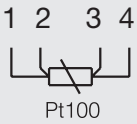
Accuracy classes of temperature sensors | Tolerances for Pt100 acc. to DIN EN 60751			
Pt100	**A**	**1/3 B**	**1/10 B**
0 °C / 100 Ω	±0.15 K / ±0.06 Ω	±0.10 K / ±0.04 Ω	±0.03 K / ±0.01 Ω
100 °C / 138.5 Ω	±0.35 K / ±0.13 Ω	±0.27 K / ±0.10 Ω	±0.08 K / ±0.03 Ω

Electrical connection without transmitter

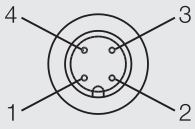
With 1 x M12 plug



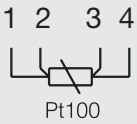
Configuration 1st M12 plug



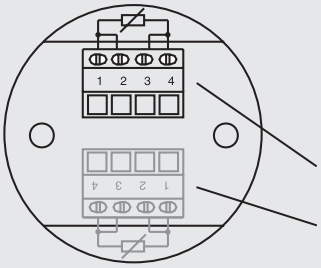
With 2 x M12 plug



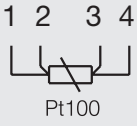
Configuration 2nd M12 plug



With cable gland



Configuration strip terminal



clamps for 1st Pt100

clamps for 2nd Pt100
(at version 2 x Pt100)

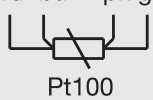
With fixed cable

Fixed cable connection with 1 x Pt100

wh ye bn gn standard
rd rd wh wh PTFE

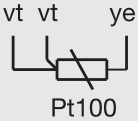
Fixed cable connection with 2 x Pt100 (LIYY)

wh ye bn gn 1st Pt100
rd bu pk gy 2nd Pt100



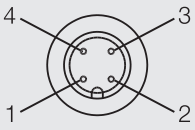
Fixed cable connection with 2 x Pt100 (PTFE)

rd rd wh 1st Pt100
vt vt ye 2nd Pt100



Electrical connection with transmitter

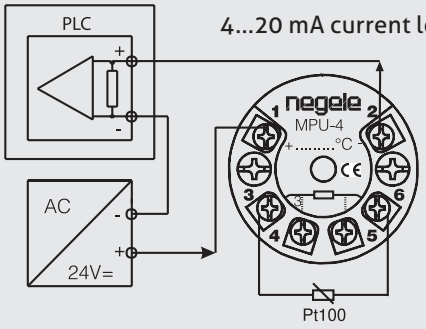
With M12 plug



Configuration M12 plug

1: + supply
2: - supply 4...20 mA
3: not connected
4: not connected

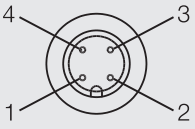
With cable gland



4...20 mA current loop

Electrical connection with two transmitter (TFP-62P)

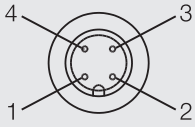
With 1 x M12-plug (sensor 1 + sensor 2)



Configuration M12-plug

1: + supply (sensor 1)
2: - supply 4...20 mA (sensor 1)
3: - supply 4...20 mA (sensor 2)
4: + supply (sensor 2)

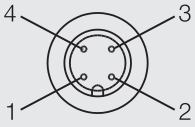
With 2 x M12-plug (sensor 1)



Configuration M12-plug

1: + supply (sensor 1)
2: - supply 4...20 mA (sensor 1)
3: not connected
4: not connected

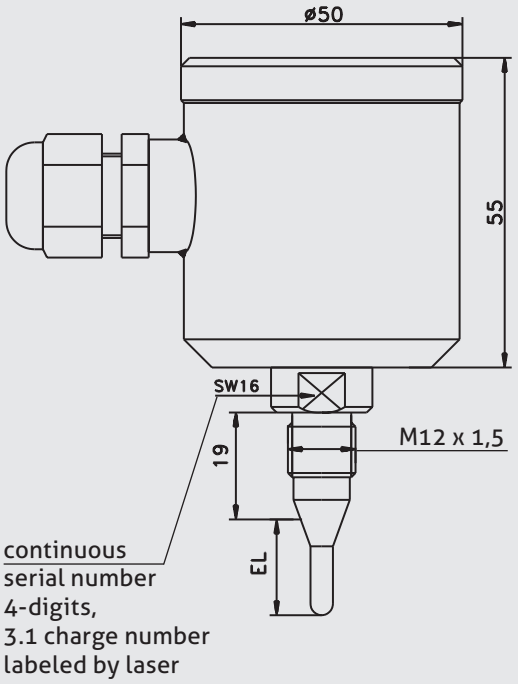
With 2 x M12-plug (sensor 2)



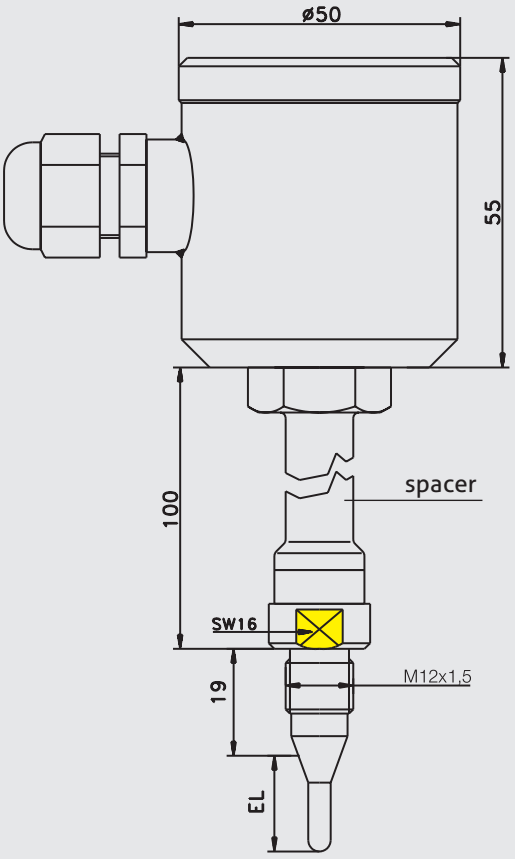
Configuration M12-plug

1: + supply (sensor 2)
2: - supply 4...20 mA (sensor 2)
3: not connected
4: not connected

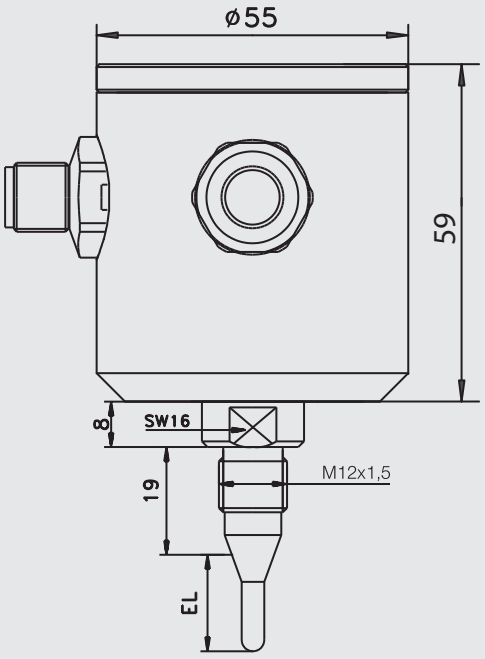
TFP-42P | TFP-42P.2



TFP-52P | TFP-52P.2



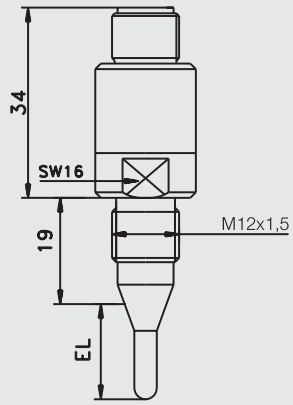
TFP-62P / ... / 2 x M12



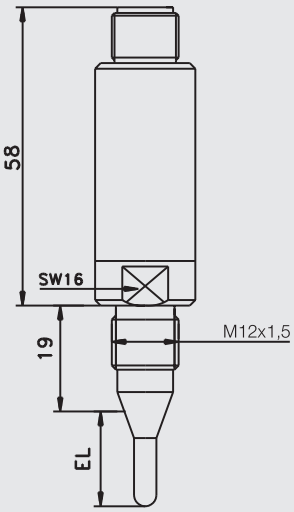
Important installation advice

Tighten the sensor only at the lower spanner flat (WW16)!

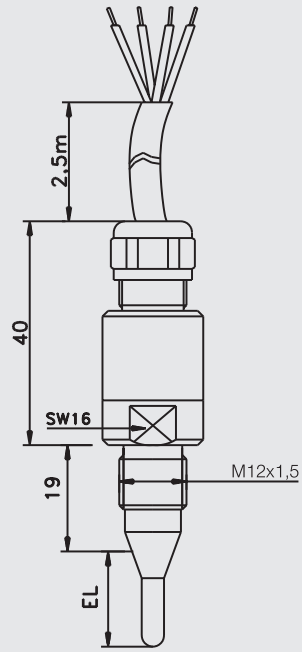
TFP-162P



TFP-162P / ... / MPU-M



TFP-182P

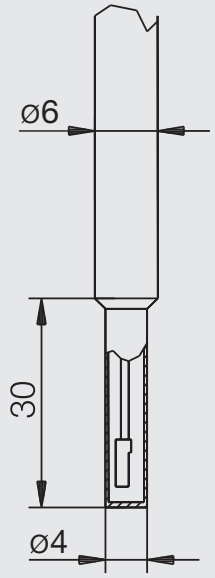


Sensor tip diameter and response time

The below-mentioned times were measured by emersing a temperature sensor from room temperature into boiling water.

Sensor tip Ø 4 mm

50 %-time: $t_{50} \leq 2,4$ s
90 %-time: $t_{90} \leq 6,5$ s



Mechanical Connection / Installation

- Use only Negele CLEANadapt system for safe operation of measuring point!

Conventional Usage

- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipments (SIL).

Transport / Storage

- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -55...+90 °C
- Relative humidity maximum 98 %

Reshipment

- Sensors shall be clean and free of media or heat-conductive paste and must not be contaminated with dangerous media!
- Use suitable transport packaging only to avoid damage of the equipment!

Cleaning / Maintenance

- In case of using pressure washers, dont't point nozzle directly to electrical connections!

Standards and Guidelines

- You have to comply with applicable regulations and directives.

Disposal

- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

Note on CE

- Applicable directives:
  Electromagnetic Compatibility Directive 2014/30/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

Temperature Transmitter MPU-LCD with Display

Application / Specified Usage

- 4...20mA transmitter with LCD for Pt100 temperature sensor
- For installation in temperature sensor
- Sensor monitoring

Features

- 4-digit display with green backlight
- Temperature measurement in °C and °F
- Easy range select by one button
- Lower costs for wiring because of 2-wire technology

Note

See product information „MPU-LCD" for details.

Option MPU-LCD
(display in the connection head)

Order code for version with 1 x Pt100; inclusive 3.1 certificate

TFP-42P (sensor with connecting head Ø 50 mm, non-sensitive design to vibrations)
TFP-52P sensor with connecting head Ø 50 mm, non-sensitive design to vibrations, with spacer)
TFP-162P (sensor with connecting head Ø 18 mm, electrical connection M12 plug)
TFP-182P (sensor with connecting head Ø 18 mm, electrical connection 2,5 m PTFE-cable, other lengths: see at accessories)

Sensor length EL in mm
017
xxx special length (up to 40 mm maximal)

Diameter sensor tip in mm
4
6 (on request)

Accuracy class Pt100
A
1/3B
1/10B

Electrical connection (not selectable at TFP-162P and -182P)
PG (cable gland M16x1,5)
M12 (M12-plug, standard with MPU-LCD)

Transmitter

X (without)

for TFP-42P and -52P
MPU-4 (programmable)
MPU-10 (Profibus PA)
MPU-H (HART-protocol)
MPU-LCD (with display)

only for TFP-162P

MPU-M (programmable)

Measuring range MPU (only for types with transmitter; not for MPU-LCD)
-10...40 (measurement range -10...40 °C)
0...50 (measurement range 0...50 °C)
0...100 (measurement range 0...100 °C)
0...150 (measurement range 0...150 °C)
0...200 (measurement range 0...200 °C)
xx...yy (special range)

TFP-42P /	017 /	6 /	A /	PG /	MPU-4 /	0...100

Accessories

PVC-cable with M12-connection made of 1.4305, IP 69 K, unshielded

M12-PVC / 4-5 m	PVC-cable 4-pin, length 5 m
M12-PVC / 4-10 m	PVC-cable 4-pin, length 10 m
M12-PVC / 4-25 m	PVC-cable 4-pin, length 25 m

PVC-cable with M12-connection, brass nickel-plated, IP 67, shielded

M12-PVC / 4G-5 m	PVC-cable 4-pin, length 5 m
M12-PVC / 4G-10 m	PVC-cable 4-pin, length 10 m
M12-PVC / 4G-25 m	PVC-cable 4-pin, length 25 m

Programming adapter

MPU-P 9701	Programming adapter for MPU-4, MPU-H and MPU-M

PVC-cable with M12-connection

Programming adapter MPU-P 9701

Order code for version with 2 x Pt100; inclusive 3.1 certificate

TFP-42P.2 (connecting head Ø 50 mm, 2 x Pt100, non-sensitive design to vibrations)
TFP-52P.2 (connecting head Ø 50 mm, 2 x Pt100, non-sensitive design to vibrations, with spacer)
TFP-62P (higher connecting head Ø 55 mm, 2 x Pt100, prepared for 2 x transmitter)
TFP-62P-H (like TFP-62P, but with spacer)
TFP-182P.2 (connecting head Ø 18 mm, electrical connection 2,5 m PTFE-cable; other lengths: see at accessories)

Sensor length EL in mm
017
xxx special length (up to 40 mm maximal)

Diameter sensor tip in mm
4
6 (on request)

Accuracy class Pt100
A
1/3B
1/10B

Electrical connection only for TFP-42P.2 and TFP-52P.2
PG (cable gland M16x1,5)
2PG (2 x cable gland M16x1,5)
2M12 (2 x M12-plug 1.4305)

Electrical connection only for TFP-62P and TFP-62P-H
M12 (M12-plug 1.4305)
2M12 (2 x M12-plug 1.4305)

Continue if TFP-62P or TFP-62P-H is selected!
No further options for TFP-42P.2, -52P.2 and -182P.2!

1st Transmitter
MPU-4 (programmable)

Measuring range 1st transmitter
-10...40 (measurement range -10...40 °C)
0...50 (measurement range 0...+50 °C)
0...100 (measurement range 0...+100 °C)
0...150 (measurement range 0...+150 °C)
0...200 (measurement range 0...+200 °C)
xx...yy (special range)

2nd Transmitter

MPU-4 (programmable)

Measuring range 2nd transmitter
-10...40 (range -10...40 °C)
0...50 (range 0...+50 °C)
0...100 (range 0...+100 °C)
0...150 (range 0...+150 °C)
0...200 (range 0...+200 °C)
xx...yy (special range)

TFP-62P /	**017 /**	**4 /**	**A /**	**M12 /**	**MPU-4 /**	**0...50 /**	**MPU-4 /**	**0...50**

NEGELE MESSTECHNIK GMBH
Raiffeisenweg 7
87743 Egg an der Guenz

Phone +49 (0) 83 33 . 92 04 - 0
Fax +49 (0) 83 33 . 92 04 - 49
sales@anderson-negele.com

Tech. Support:
support@anderson-negele.com
Phone +49 (0) 83 33 . 92 04 - 720