

Negele Temperature Sensor Specifications

SENSOR AND HOUSING MATERIALS

Wetted Parts: 316 L Stainless Steel or FDA approved PEEK (Flush mount only)
 Surface Finish: 25 microinch (.6 microns) or better
 Non-wetted Parts: 303 Stainless steel
 Protection Class: IP69K (water-proof and corrosion resistant)
 Pressure Limits: 150 psig (90 psig for Flush mount)

SENSOR PERFORMANCE

RTD Accuracy:

| Pt100 | Class A | Class 1/3B | Class 1/10B |
|------------------------|----------------------|----------------------|----------------------|
| 0°C(32°F) 100Ω | ± 0.15 K ± 0.06 Ω | ± 0.10 K ± 0.04 Ω | ± 0.03 K ± 0.01 Ω |
| 100°C(212°F) 138.5Ω | ± 0.35 K ± 0.13 Ω | ± 0.27 K ± 0.10 Ω | ± 0.08 K ± 0.03 Ω |

Response Time (90% of change when immersed in boiling water):
 6mm tip (std): less than or equal to 8 sec.
 4mm tip: less than or equal to 6.5 sec.
 3mm tip: less than or equal to 1.5 sec.
 Flush mount: less than or equal to 33.2 sec.

Upper Range Limit: PEEK: 150°C(302°F)
 Other RTDS: 250°C(482°F)




TRANSMITTER (MPU-4, -10, -HART)

Temperature Ranges (standard): -10°-40°C(14°-104°F), 0°-50°C(32°-122°F)
 0°-100°/150°/200°C(32°-212°/302°/392°F)
 Accuracy: < ± 0.1 % (full scale)
 Temperature Drift (zero, span): <0.01%/K (full scale)
 Power Supply: 8-35 VDC
 Output: 4-20mA
 Temperature Limits: Ambient -40°-85°C(-40°-185°F)
 Storage -40°-120°C(-40°-248°F)
 Humidity(non-condensing): 0-98%

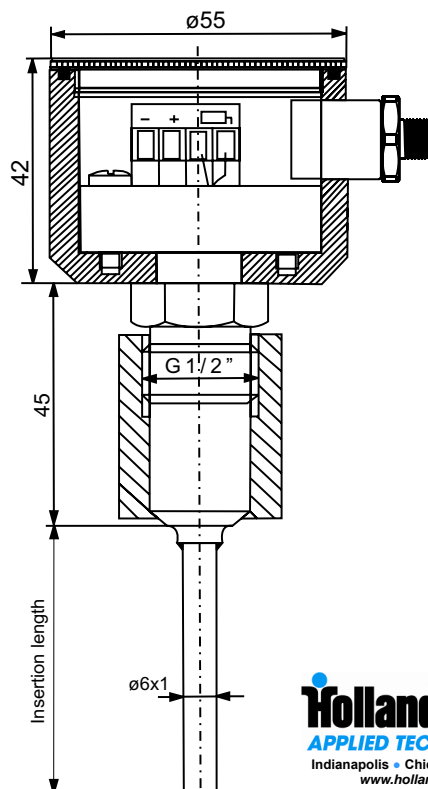
TRANSMITTER (MPU-M)

Temperature Ranges (standard): -10°-40°C(14°-104°F), 0°-50°C(32°-122°F)
 0°-100°/150°/200°C(32°-212°/302°/392°F)
 Accuracy: < ± 0.2 % (full scale)
 Temperature Drift (zero, span): <0.02% full scale/K
 Power Supply: 12-36 VDC
 Output: 4-20mA
 Temperature Limits(ambient & storage): -50°-80°C(-58°-176°F)

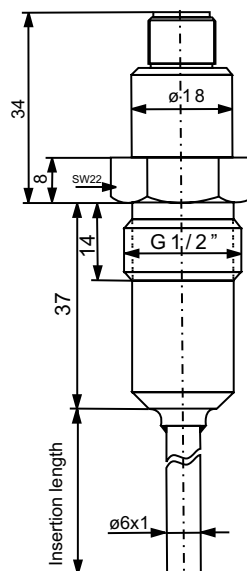
ADAPTORS

| Part # | Description | Product Photo | Part # | Description | Product Photo |
|---------------|------------------------------|---|---------|---|--|
| AMC-132/DIN15 | 3/4" Tri-Clamp® Adaptor |  | EMZ-132 | Standard weld-in fitting without leak-detect | |
| AMC-132/DIN25 | 1" / 1.5" Tri-Clamp® Adaptor | | EMZ-131 | Standard weld-in fitting with leak-detect ports (4) |  |
| AMC-132/DIN50 | 2" Tri-Clamp® Adaptor | | EMK-132 | Weld-in sleeve with collar for heavy-walled tanks | |
| 45644A0001 | CPM Adaptor |  | | | |

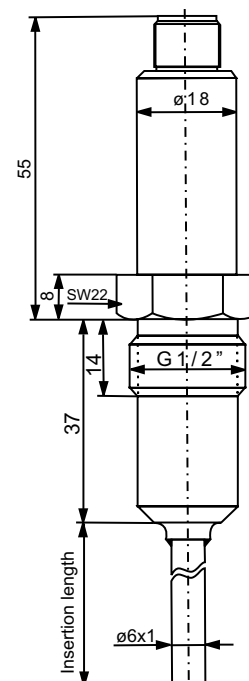
TFP-41



TFP-161



TFP-161 with MPU-M



Note: All measurements in mm

Insertion Style Ordering Matrix

TFP - [] - [] - [] - [] - [] - [] - [] - []

CONNECTING HEAD

41 Connecting head d=55mm (approx. 2.2")
 161 Head d=18mm, electrical connection via M12-plug (approx. 0.7")

SENSOR LENGTH (in mm)*

Specify length in mm. (020-250mm)
 Use 3 digits to express length. (example 040 = 40mm)

PROBE DIAMETER

6mm 6mm (approx. 0.25")
 8mm 8mm (approx. 0.31")
 10mm 10mm (approx. 0.40")
 12mm 12mm (approx. .047")

SENSOR TIP DIAMETER

X If no reduction, repeat probe diameter from above
 3mm 3mm tip, available only w/6mm probe
 4mm 4mm tip, available only w/6mm & 8mm probes
 6mm 6mm tip, available only w/8mm & 10mm probes
 8mm 8mm tip, available only w/12mm probe

ACCURACY CLASS (at ice point)

A ± 0.15 Deg C
 1/3B ± 0.10 Deg C
 1/10B ± 0.03 Deg C

ELECTRICAL CONNECTION

M12 M-12 plug 1.4305

TRANSMITTER

X None

For Connection Head TFP-41

MPU-4 Programmable
 MPU-10 Profibus PA
 MPU-H HART-protocol
 MPU-LCD With Display

For Connection Head TFP-161

MPU-M (fixed range)

MEASURING RANGE MPU †

(only for types with transmitter; not including MPU-LCD, which provides selectable ranges shown)

-10-40C (14-104F)
 0-50C (32-122F)
 0-100C (32-212F)
 0-150C (32-302F)
 0-200C (32-392F)
 xx-yy Special Range
 xx-yy Special Range MPU-M

NOTE: These sensors require a separate adaptor to convert to a sanitary connection. (See the G1/2" Sanitary Adaptors price page)

* Converting inches (in.) to millimeters (mm)

For probe lengths, multiply the length in inches by 25.4 and round down to the nearest whole mm. Express as a three digit code.

Ex: For a 3.25" probe
 3.25 X 25.4 = 82.55 mm
 Order length 082

† Converting °F to °C

Subtract 32 from the temp in °F and then multiply by .555 to get °C.

Ex: 30 °F = (30-32) x .555 = (-2) x .555 = -1.1 °C

230 °F = (230-32) x .555 = (198) x .555 = 109.9 °C

So a close equivalent to a 30-230 °F range is 0-110 °C.

ORDERING EXAMPLE:

Direct Insertion RTD with G 1/2" Hygenic fitting, 200mm insertion, 6mm probe, no reduced tip, with programmable 4-20 mA output, 0-100°C, no display, standard accuracy RTD.

TFP-41-200-6mm-6mm-A-M12-MPU-4-0-100C

Flush Style Ordering Matrix

TFP - [] - [] - [] - [] - []

CONNECTING HEAD

- 44 Connecting head d=55mm (approx. 2.2")
- 164 Head d=18mm, electrical connection via M12-plug (approx. 0.7")

ACCURACY CLASS (at ice point)

- A ± 0.15 Deg C
- 1/3B ± 0.10 Deg C

ELECTRICAL CONNECTION

- M12 M-12 plug 1.4305

TRANSMITTER

- X None

For Connection Head TFP-44

- MPU-4 Programmable
- MPU-10 Profibus PA
- MPU-H HART-protocol
- MPU-LCD With Display

For Connection Head TFP-164

- MPU-M (fixed range)

MEASURING RANGE MPU

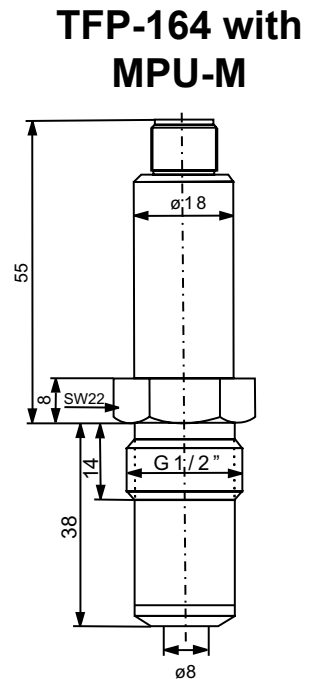
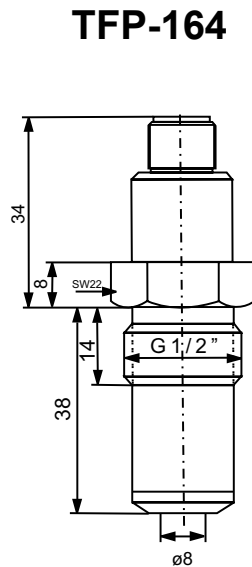
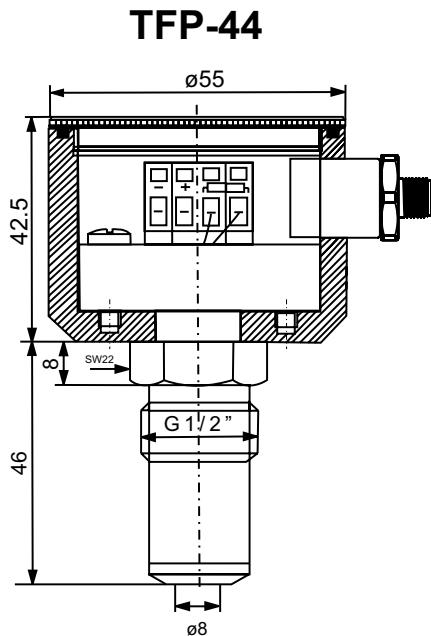
(only for types with transmitter; not including MPU-LCD, which provides selectable ranges shown)

- 10-40C (14-104F)
- 0-50C (32-122F)
- 0-100C (32-212F)
- 0-150C (32-302F)
- 0-200C (32-392F)
- xx-yy Special Range
- xx-yy Special Range MPU-M

NOTE: These sensors require a separate adaptor to convert to a sanitary connection. (See the G1/2" Sanitary Adaptors price page)

ORDERING EXAMPLE:

Flush Mount RTD with G 1/2" flush mount connection, class A, 18mm wiring head, with fixed range transmitter, 0-100°C.
TFP-164-A-M12-MPU-M-0-100C



Note: All measurements in mm