



FLOW
LEVEL
PRESSURE
ANALYTICAL
TEMPERATURE
INSTRUMENTATION
PASTEURIZATION CONTROLS

Negele Temperature Sensors

- *Modular fittings for flexibility and reduced spare parts cost*
- *Adaptors and fitting styles for clamp, flush mount, and CPM*
- *Flush style is industries smallest, most accurate sensor*
- *18mm fixed range transmitter – lowest cost, miniature in size*
- *50mm offers 4 transmitter options*
 - 4-20 mA Programmable*
 - 4-20 with back-lit LCD*
 - 4-20 mA with HART*
 - Profibus*

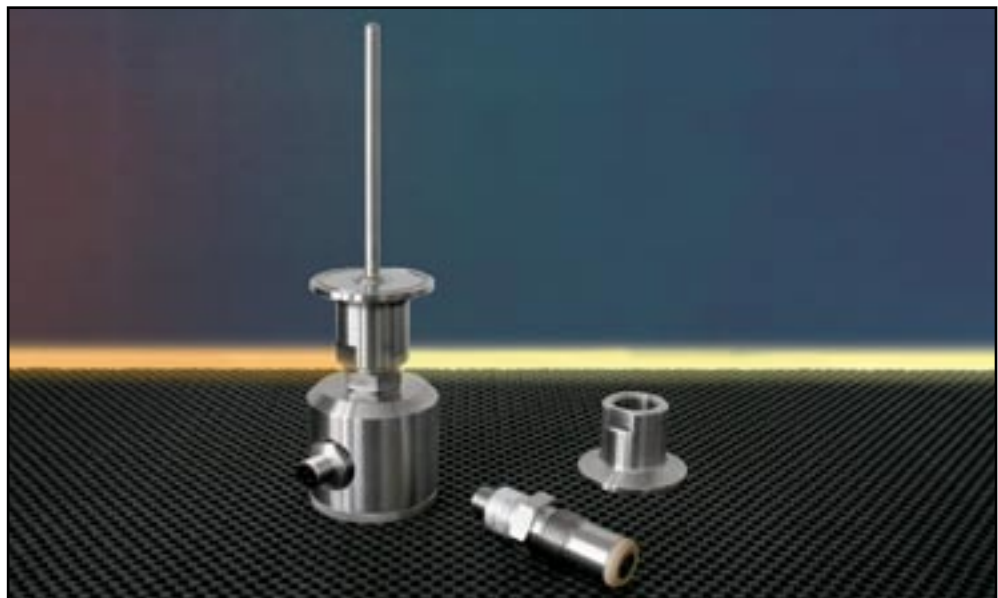
Anderson is pleased to now offer select versions of the Negele TFP series of temperature sensors and transmitters. These products provide some unique features and pricing that customers can benefit from in many applications. They are widely recognized and used by both OEM's and processors in Negele's traditional markets, and can now help our customers as well.

There are basically two styles of sensor, an insertion style and a flush style. And for each style the wiring can be specified as an 18mm (approx. 11/16") or 55mm (approx 2.2") diameter head. The larger head is provided with a removable cap, and as such is available with more output and display options. The smaller head is sealed, but can still be ordered as an RTD only or with a fixed range 4-20mA output.

All probes come with a standard G1/2" thread that mates with a variety of adaptors

to convert it to a hygienic fitting. The metal-to-metal or PEEK-to-metal seal that is created by the addition of the adaptors does not comply with current 3A sanitary standards, but is EHEDG compliant and widely accepted by processors outside the dairy industry. Negele sensors are especially well known in the brewing market, and are finding their way into many food processing plants where the features at the left provide benefits well beyond current solutions.

As with all Anderson products, our customer service and applications teams stand ready to help you specify, order, install, and service any of these Negele products. And they carry the same 1 year warranty as our other temperature sensors. On the reverse are specifications and ordering information. Contact your local distributor or Anderson directly for price and delivery information.



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%

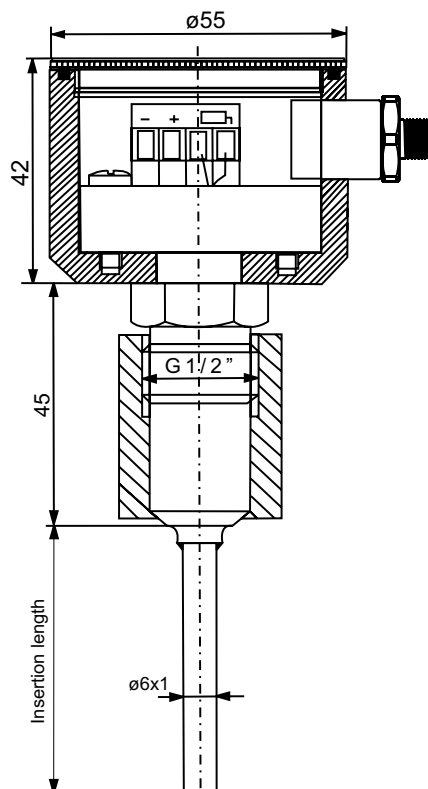
TRANSMITTER (MPU-M)

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)

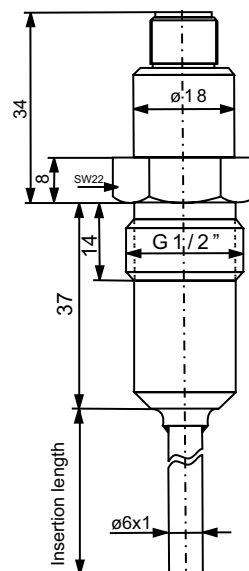
ADAPTORS

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				

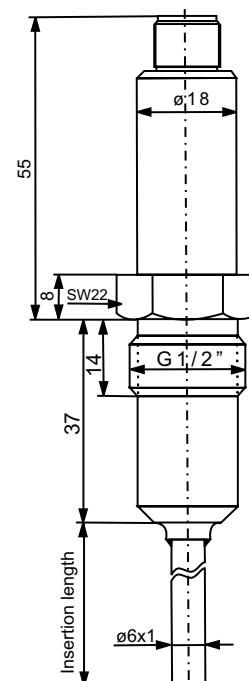
TFP-41



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

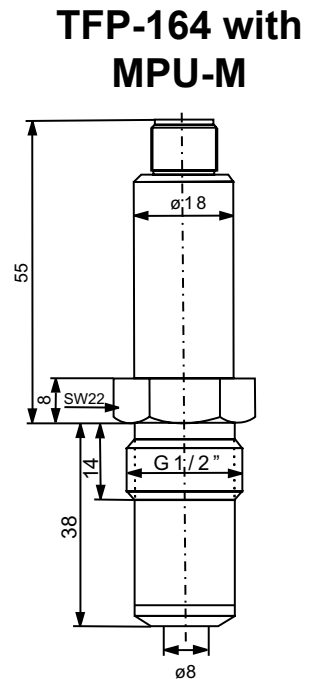
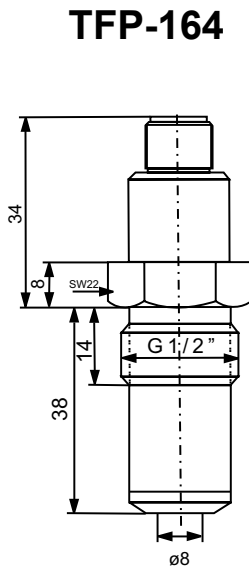
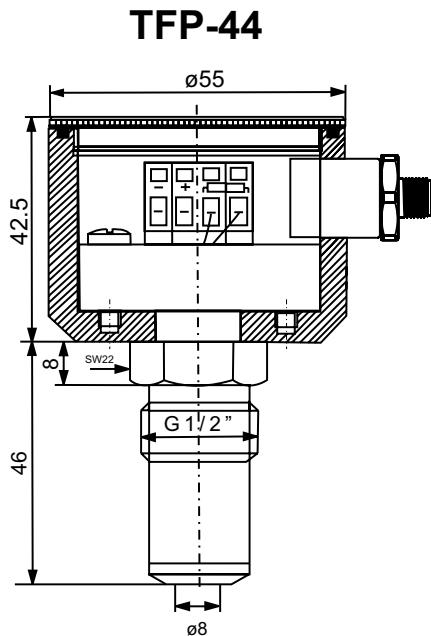
(only for types with transmitter; not including MPU-LCD, which provides selectable ranges shown)

- 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