

## Reliability, durability, quality – a new class in sanitary temperature measurement

# TSM – One Temperature sensor for All

### Flex-Hybrid Technology: IO-Link and 4...20 mA

The Flex Hybrid Technology with IO-Link and 4...20 mA combines the best of two worlds: Data can be transmitted from the sensor in **digital, analog, or parallel mode**.

- Thanks to its flexible plug & play communication, **installation and commissioning are time- and cost-saving.**
- **Simple individual programming** with IO-Link Master, e.g., for changing the measuring range or for two-point calibration using offset and span
- Sensor replacement is **easier than ever before**, thanks to the "Smart Replace Design" with automatic sensor identification, configuration, and parameter setting.

### The new standard for temperature

The Anderson-Negele temperature sensors are already **synonymous with quality, reliability, and durability**. The new TSM series can outperform even this:

- **Extended process temperature range: -50...350 °F**
- **Considerably improved measuring accuracy:  $< \pm 0.1$  K**
- **Higher ambient temperature resistance: 185 °F**
- **Robust One-piece design** entirely in stainless steel: Long-term stability and application reliability

### Consistently configurable and compatible

Thanks to the **completely configurable concept**, you can design **your individual sensor** in just a few steps. Nearly all combinations are possible.

- For **new equipment**, Flex-Hybrid technology offers maximum flexibility and sustainability.
- For **retrofitting**, TSM can replace any TSMU mini-sensor in existing installations - with all additional benefits
- For the **replacement of third-party devices**, a suitable model is always possible due to the large selection of process adaptations and maximum flexibility in the configuration

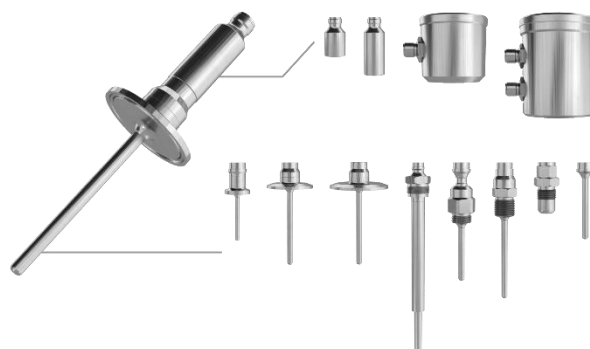
### Alternative Version: TSB (Ø 2.1") with extended functions



### Technical specification at a glance

- **One Temperature sensor for all applications**
- Extremely **compact Mini version** (Head Ø 0.7")
- **Flex-Hybrid Technology** with digital + analog interface (IO-Link + 4...20 mA)
- **Configurable Design: step-by-step selection** from the economic basic version to the high-end model
- Insertion length **0...43 " (0"...15/16")**
- **Version for flush installation available**
- Installation with thermowell possible, thus **sensor removal without process opening**
- **Protection class IP 69K** for max. application safety
- **Two-point calibration** possible using offset and slope

### Configurable design: Maximum flexibility for simplified individualization





## Order code

**T SMA** Temperatur Sensor Mini for Food Applications, material wetted parts 1.4404 (AISI 316L)

Process connection (A: 3-A conform)

001	Tri-Clamp 1/2"	074	E1 Style - 1/4" Dia. (A)
002	Tri-Clamp 3/4" (A)	075	E1 Style - 3/8" Dia. (A)
004	Tri-Clamp 1 1/2" (A)	079	E3 Style - 1/4" Dia. (w/ adj. union)
005	Tri-Clamp 2" (A)	080	E3 Style - 3/8" Dia. (w/ adj. union)
062	Thermo Well 41247 (A)	084	1/2" NPT (A)
		174	1/2" NPT Spring Loaded (A)

**X** Fixed character

RTD type

**0** 1x Pt100 A, 3-wire

Insertion length [inches]

**01...43** In steps of 1 inch

Insertion length [sixteenth]

00	0"	08	1/2"
01	1/16"	09	9/16"
02	1/8"	10	5/8"
03	3/16"	11	11/16"
04	1/4"	12	3/4"
05	5/16"	13	13/16"
06	3/8"	14	7/8"
07	7/16"	15	15/16"

Rod diameter (process connection specific)

20	5/32" (001, 002)
21	1/4" (004, 005, 074, 079, 084, 174)
22	3/8" (075, 080)
23	3/4" (004, 005)
24	41247 Well (062)

**XX** Fixed character

Surface finish

**1**  $R_a \leq 25 \mu\text{m}$

Transmitter

<b>0</b>	Without transmitter
<b>I</b>	TTM.I (IO-Link only)
<b>H</b>	TTM.H (hybrid: analog and IO-Link)

Measurement range

000	Without transmitter	04C	-10...40 °C
00C	Unit °C	05C	0...50 °C
	(only for TTM.I)	10C	0...100 °C
00F	Unit °F	15C	0...150 °C
	(only for TTM.I)	20C	0...200 °C
00K	Unit K	25C	0...250 °C
	(only for TTM.I)	10F	0...100 °F
M00	TTM custom configuration	15F	0...150 °F
		20F	0...200 °F
		23F	30...230 °F
		25F	0...250 °F

Electrical connection with transmitter

**4** M12 plug (4 pin,  $\leq 90 \text{ °C} / 197 \text{ °F}$ )

**XX** Fixed character

T SMA / 001 / X / 0 / 0100 / 20 / XX / 1 / 0 / 000 / 4 / XX

## Accessory: IOM-01

IO-Link Master with USB connection for control and programming of all Anderson-Negele IO-Link devices

