



# THTL-1AAAB0213MZ

THTL

TEMPERATURE SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
THTL-1AAAB0213MZ	6047648

Other models and accessories → [www.sick.com/THTL](http://www.sick.com/THTL)

### Detailed technical data

#### Features

<b>Measuring range</b>	-50 °C ... +150 °C
<b>Sensor element</b>	Pt1000
<b>Output signal</b>	4 mA ... 20 mA, 2-wire
<b>Maximum ohmic load <math>R_A</math></b>	$R_A \leq (L^+ - 10 \text{ V}) / 0.023 \text{ A}$ [Ohm]

#### Mechanics/electronics

<b>Process connection</b>	Angled pipe (DIN EN ISO 1127 and DIN 11866), row B, for welding
<b>Nominal width</b>	DN 21.3
<b>Wetted parts</b>	Stainless steel 1.4435 / 316L, $R_a \leq 0.8 \mu\text{m}$
<b>Pressure resistance</b>	Max. 25 bar at room temperature
<b>Housing material</b>	Stainless steel (CrNi)
<b>Connection type</b>	M12 round connector x 1, 4-pin <sup>1)</sup>
<b>Enclosure rating</b>	IP67 <sup>2)</sup> IP69 <sup>2)</sup>
<b>Supply voltage</b>	10 V DC ... 35 V DC
<b>Maximum current consumption</b>	Ca. 30 mA
<b>Electrical safety</b>	Protection class: III, dielectric strength: 500 V AC, Reverse polarity protection: L <sup>+</sup> to M
<b>Protection class III</b>	✓
<b>CE-conformity</b>	2004/108/EC, EN 61326-2-3
<b>RoHS certificate</b>	✓
<b>Initialization time</b>	Max. 4 s

<sup>1)</sup> The enclosure rating classes specified only apply while the thermometer is connected with female connectors that provide the corresponding enclosure rating.

<sup>2)</sup> IP enclosure rating as per IEC 60529.

#### Performance

<b>Accuracy of sensor element</b>	Class A according to IEC 60751 <sup>1)</sup>
<b>Transmitter accuracy</b>	± 0,25 K

<sup>1)</sup> Class B (measuring range -50 °C ... -30 °C).

<sup>2)</sup> Depending on sensor configuration, according to IEC 60751.

<b>Transmitter linearity</b>	≤ ± 0.1 % of span
<b>Response time</b>	t <sub>50</sub> ≤ 3,2 s t <sub>90</sub> ≤ 9,1 s <sup>2)</sup>

<sup>1)</sup> Class B (measuring range -50 ° C ... -30 ° C).

<sup>2)</sup> Depending on sensor configuration, according to IEC 60751.

### Ambient data

<b>Ambient temperature</b>	-40 °C ... +85 °C
<b>Storage and transport temperature</b>	-40 °C ... +85 °C
<b>Shock resistance</b>	50 g, 6ms (according to IEC 60068-2-27)
<b>Relative humidity</b>	100 % <sup>1)</sup>

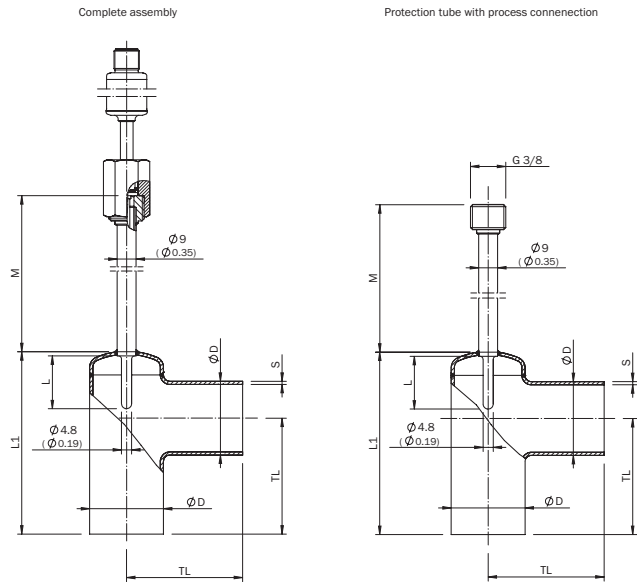
<sup>1)</sup> , Condensation allowed.

### Classifications

<b>ECLASS 5.0</b>	27200208
<b>ECLASS 5.1.4</b>	27200208
<b>ECLASS 6.0</b>	27200208
<b>ECLASS 6.2</b>	27200208
<b>ECLASS 7.0</b>	27200208
<b>ECLASS 8.0</b>	27200208
<b>ECLASS 8.1</b>	27200208
<b>ECLASS 9.0</b>	27200208
<b>ECLASS 10.0</b>	27200208
<b>ECLASS 11.0</b>	27200208
<b>ECLASS 12.0</b>	27200208
<b>ETIM 5.0</b>	EC002994
<b>ETIM 6.0</b>	EC002994
<b>ETIM 7.0</b>	EC002994
<b>ETIM 8.0</b>	EC002994
<b>UNSPSC 16.0901</b>	41112211

Dimensional drawing (Dimensions in mm (inch))

Dimensional drawing



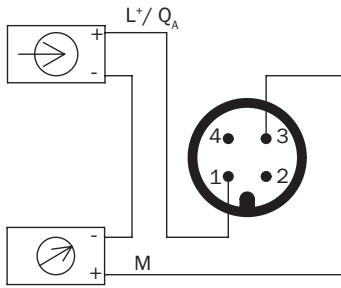
Design	Ø D	s	TL	L1	L	M	
Angled pipe	NW 17.2	17.2 (0.68)	1.6 (0.63)	34.0 (13.39)	55.0 (21.65)	16.0 (6.30)	41.0 (16.14)
	NW 21.3	21.3 (0.84)	1.6 (0.63)	36.0 (14.17)	58.0 (22.83)	18.0 (7.09)	39.0 (15.35)
	NW 26.9	26.9 (1.06)	1.6 (0.63)	55.0 (21.65)	81.0 (31.89)	30.0 (11.81)	27.0 (10.63)
	NW 42.4	42.4 (1.17)	2.0 (0.79)	65.0 (25.59)	102.0 (40.16)	30.0 (11.81)	27.0 (10.63)

Application








## Connection type







Plug M12 x 1, output signal 4 mA ... 20 mA



## Recommended accessories

Other models and accessories → [www.sick.com/THTL](http://www.sick.com/THTL)

	Brief description	Type	Part no.
Others			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14-020UB3XLEAX	2095607
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14-050UB3XLEAX	2095608
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14-100UB3XLEAX	2095609
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14-020UB3XLEAX	2095766
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14-050UB3XLEAX	2095767
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14-100UB3XLEAX	2095768

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A14-020VB3XLEAX	2096234
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A14-100VB3XLEAX	2096236
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 15 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A14-150VB3XLEAX	2096237
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YG2A14-020VB3XLEAX	2095895
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YG2A14-050VB3XLEAX	2095897
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YG2A14-100VB3XLEAX	2095898

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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