

## Cable probe TSIC™ Digital Semiconductor Temperature Sensors TSIC 306, with ZACwire communication

### Description



### Characteristic features

- Fast response behaviour
- Excellent long term stability
- Accuracy 0.5 / 0.3 K (TSic 206 / 306)
- Wider temperature range 50 ... +150 °C
- Sensor in stainless steel housing (1.4571)
- Minimum development cost and time
- Simple integration, ZACwire-interface
- Protection class IP67

### Typical areas of applications

- Measuring and control systems
- Medical applications
- Temperature monitoring
- Battery operated systems
- Industrial measuring systems

### Technical data

Digital Temperature sensors	
Measuring range	-50...+150 °C
Connection	Digital connection, 11 Bit, ZACwire
Accuracy (in range 10...90 °C)	TSic 306 ±0.3 K
Resolution	0.1 K
Measuring rate	10 Hz
Operating voltage	2.97...5.5 V
Operating current (at 3.3 V)	< 80 µA at 25 °C (30...80 µA)
Load at output	$R_L > 10 \text{ k}\Omega$ $C_L < 10 \text{ nF}$
Cable	FEP (Teflon®/Shield/SIL, 0,22 mm <sup>2</sup> , multi-pin connector, 4.000 mm
Probe	Protective sleeve stainless steel 1.4571, Ø 6 x 100 mm
Article number	0625 9009

### Features

TSIC™ temperature sensors are known for its high accuracy, fast response behaviour and also its special long term stability. Against other semiconductor temperature sensors, they offer an extended measuring range of -50... 150 °C with a resolution of 0.1K.

Through the digital ZACwire-interface, connection to a micro-controller is very simple otherwise an additional analog-digital converter is required. The sensors are calibrated, hence any further adjustment work by the device manufacturer or the customer is not necessary.

These innovative semiconductor sensors are powerful and cost effective solution for temperature measurements in industrial measurement and regulation systems.

# DATA SHEET

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### Digital Temperature value

Measuring range -50 .. +150 °C / -58 ..+302 °F		
Temp (°C)	Temp (°F)	Tsic 306 (digital)
-50	-58	0x000
-10	14	0x199
0	32	0x200
25	77	0x2FF
60	140	0x465
125	257	0x6FE
150	302	0x7FF

### Temperature accuracy TSIC 306

Parameter	Max	Units
T1: +10 ... 90 °C	±0.3	K
T2: -20 ... 110 °C	±0.6	K
T3: -50 ... 150 °C	±1.2	K

### Connection assignment



Pin Nr.	Name	Description
1	V+	Operating voltage (3 ... 5.5 V)
2	Signal	Temperature ZACwire
3	Gnd	Ground