



SCT109

- temperature range $-40 \div 1200^{\circ}\text{C}$ depending on thermocouple
- connection head
- operating temperature of connection heads max. 150°C
- acid-resistant steel sheath
- inner thermowell made of C610 (60% Al_2O_3), C799 (99,7% Al_2O_3)
- possibility of mounting a 4...20mA or 0...10V temperature transmitter

The thermocouple SCT109 consists of a replaceable insert, an outer protective tube (thermowell) made of heat-resistant steel, additional protection tube made of ceramics and an aluminium connection head where a programmable temperature transmitter with a 4...20 mA output signal can be installed. Immersion length, compression fitting size (optional), material of the protective tube and connection head can be selected depending on the requirements of the application.

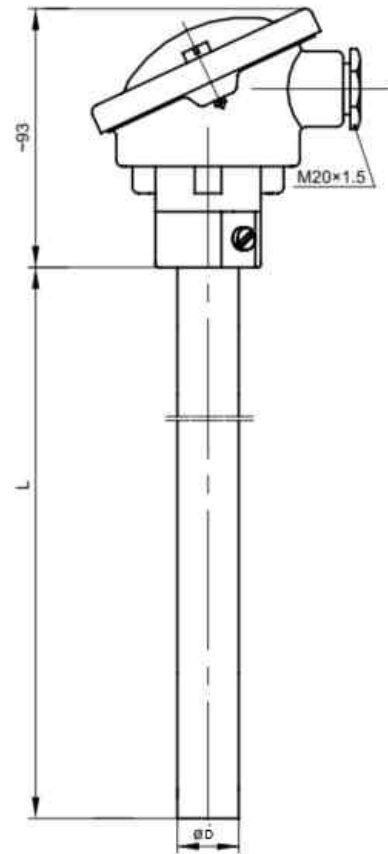
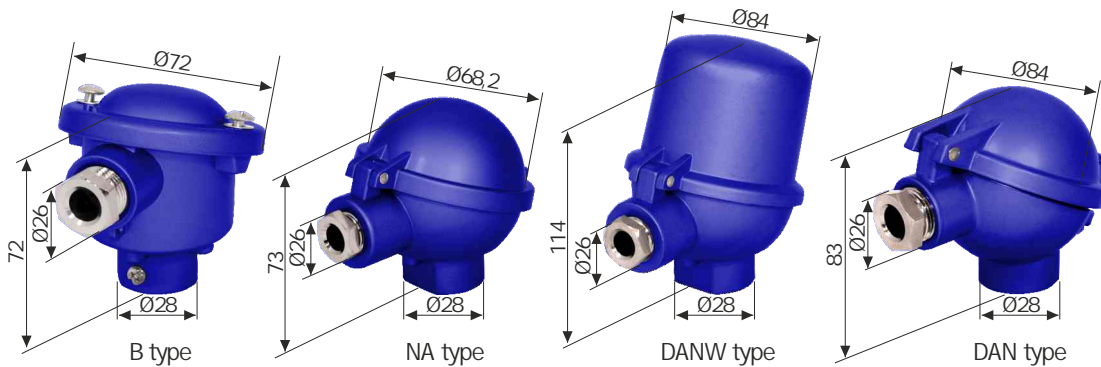
Application areas

- general machinery and equipment design,
- measuring temperature of liquids, gases and solid bodies,
- all branches of industry.

TECHNICAL DATA

Sensing element	J, K, N, R, S or B thermocouple (single, double)
Measuring range	$-40 \div 1200^{\circ}\text{C}$ (depending on thermocouple and material)
Connection head	B, NA or other, operating temperature $-40 \div 150^{\circ}\text{C}$
Class	1 or 2
Sheath	material: heat-resistant steel H25N20S2 (1.4841 / AISI314) or other any nominal length (specified when ordering) diameter: from 15 to 26 mm

CONNECTION HEAD TYPES



THERMOCOUPLES TOLERANCE ACC. TO PN-EN 60584

Thermocouple	Class 1		Class 2	
	Temperature range	Tolerance	Temperature range	Tolerance
K (NiCr-Ni)	$-40 \div 1000^{\circ}\text{C}$	$\pm 1.5^{\circ}\text{C}$	$-40 \div 1200^{\circ}\text{C}$	$\pm 2.5^{\circ}\text{C}$
N (NiCr-Si-NiSi)	$-40 \div 1000^{\circ}\text{C}$	$\pm 0.0040^{\circ}\text{C} \times t $	$-40 \div 1200^{\circ}\text{C}$	$\pm 0.0075^{\circ}\text{C} \times t $
B (PtRh30-PtRh6)	-	-	$600 \div 1700^{\circ}\text{C}$	$\pm 0.0025^{\circ}\text{C} \times t $
R (PtRh13-Pt)	$0 \div 1100^{\circ}\text{C}$	$\pm 1.0^{\circ}\text{C}$	$0 \div 600^{\circ}\text{C}$	$\pm 1.5^{\circ}\text{C}$
S (PtRh10-Pt)	$1100 \div 1600^{\circ}\text{C}$	$\pm [1+0.003(t-1100)]^{\circ}\text{C}$	$600 \div 1600^{\circ}\text{C}$	$\pm 0.0025^{\circ}\text{C} \times t $



THERMOWELL MATERIAL - PROPERTIES

Material	Properties	Application
1.4404 AISI 316L	As a result of the addition of molybdenum, this material has higher corrosion resistance in non-oxidizing acids such as ethanolic acid, tartaric acid, phosphoric acid, sulphuric acid and others. Increased pitting resistance.	Sulphite, pulp, textile, dyeing, fatty acid, soap and pharmaceutical industries.
1.4841 AISI 314	Excellent resistance to corrosion, also at high temperatures. Also suitable in atmospheres containing carbon and sulphur. Resistant to oxidation in air up to 1000°C (interrupted service) or 1150°C (continuous service). Well suited with high thermal cycling. Recommended for long-term continuous use in the temperature range from 425°C to 850°C.	Boilers and blast furnaces, cement and brick kilns, glass production, crude oil and petrochemical industries, furnace construction and power stations.
1.479 AISI 446	Extremely good resistance to reducing, sulphurous atmospheres. Very good resistance to oxidation and air. Good resistance to corrosion caused by incinerator slag and copper, lead and tin smelts.	Petrochemical industry, metallurgy, power technology, recuperators, heat treatment kilns, vortex firing installations, waste incinerators.
2.4816 Inconel 600	Good general resistance to corrosion, resistant to tension crack corrosion. Excellent resistance to oxidation. Not recommended with gases containing CO ₂ and sulphur above 550°C and sodium above 750°C. In air, resistant up to 1100°C.	PWR, nuclear power, furnace construction, plastics industry, heat treatment, paper and food processing industries, boilers, aircraft engines.
Kanthal AF	Good heat resistance, very good resistance in sulfur contact. Not recommended for work in nitrogen gases. In air resistant up to 1350°C.	Industrial furnaces, metallurgy industry, heat treatment

ACCESSORIES

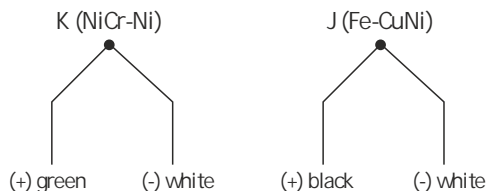


Mounting bracket SUZ11



Mounting bracket SUZ21

ELECTRICAL CONNECTION



ORDERING

SCT109-X-X-X-X-X-X-X-X-X

- temperature sensor:
 - 1: single
 - 2: double
 - PP: with transmitter
- sensing element:
 - K
 - N
 - S
 - other, please specify
- connection head:
 - B
 - NA
 - other, please specify
- thermocouple wire diameter:
 - 2: 2 mm
 - 3: 3 mm
 - other, please specify
- sensor measuring range or temperature transmitter settings: please specify
- accuracy class:
 - class 1
 - class 2
- thermowell length (L): please specify [mm]
- thermowell diameter ØD: please specify [mm]
- thermowell material:
 - 1.4404: acid-resistant steel
 - 1.4841: heat-resistant steel
 - 2.4816: nickel alloy INCONEL®600
 - Kanthal AF: FeCrAl alloy
- ceramic inner isolation:
 - no isolator
 - C61Q
 - C799

Ordering example:
 SCT109-1-K-B-3-1.4404-20-300-2
 Single TC temperature sensor, K thermocouple, B type connection head, 2 tolerance class. Thermocouple with a wire diameter of 3 mm, without inner isolation, steel 1.4404 sheath, diameter 20 mm, length L=300 mm.

