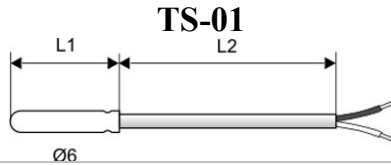
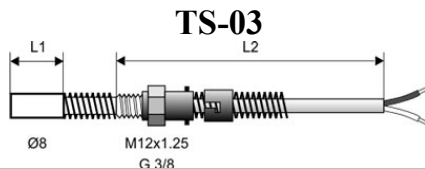


User instructions for temperature probes

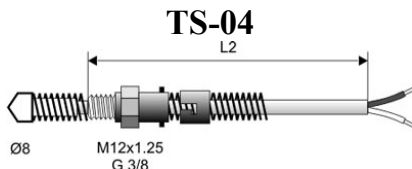
Temperature probes are used to measure the temperature in industrial processes, connecting to the appropriate devices. There are various types of probes, both in terms of sensor type and housing type. Depending on the type of process, the required accuracy, the maximum expected temperature, etc., the appropriate measuring probe should be selected. Some of the probes manufactured by NIGOS are listed below:



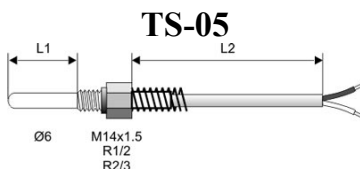
General characteristics of TS-01	
Type	Universal probe
Tube length L1	60 mm or as required
Tube diameter	Ø6 mm or as required
Length of cable L2	1.5 m or as required
Sensor type	Pt100 to 400°C; Pt1000 to 400°C; KTY10 to 100°C; Fe-Ko (J) to 400°C; NiCr-NiAl (K) to 600°C
Material	Stainless Steel 4580



General characteristics of TS-03	
Type	Probe with bayonet fitting and flat tip
Tube length L1	15 mm
Tube diameter	Ø8 mm
Length of cable L2	1.5 m or as required
Sensor connector	M 12 x 1.25; G 3/8
Sensor type	Pt100 to 400°C; Pt1000 to 400°C; KTY10 to 100°C; Fe-Ko (J) to 400°C; NiCr-NiAl (K) to 600°C
Material	Stainless Steel 4580

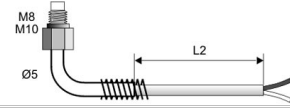


General characteristics of TS-04	
Type	Probe with bayonet fitting and conical tip
Tube diameter	Ø8 mm
Length of cable L2	1.5 m or as required
Sensor connector	M 12 x 1.25; G 3/8
Sensor type	KTY10 to 100°C; Fe-Ko (J type) to 400°C; NiCr-NiAl (K type) to 600°C
Material	Stainless Steel 4580



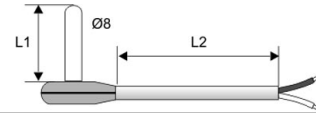
General characteristics of TS-05	
Type	Pressure vessel threaded probe
Tube length L1	80 mm or as required
Tube diameter	Ø6 mm or as required
Length of cable L2	1.5 m or as required
Sensor connector	M 14 x 1.5; R 1/2; R 2/3
Sensor type	Pt100 to 400°C; Pt1000 to 400°C; KTY10 to 100°C; Fe-Ko (J) to 400°C; NiCr-NiAl (K) to 600°C
Material	Stainless Steel 4580

TS-06



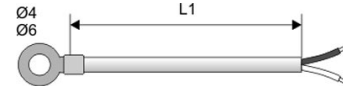
General characteristics of TS-06	
Type	Angled probe designed for installation on moving elements (cutter blades, plastic machinery, etc.)
Tube diameter	Ø5mm
Length of cable L2	1.5 m or as required
Priključak sonde	M 8; M 10
Sensor type	Fe-Ko (J) to 400°C; NiCr-NiAl (K) to 400°C
Material	Stainless Steel 4580

TS-07



General characteristics of TS-07	
Type	ARBURG type nozzle for injection moulds
Tube length L1	40 mm
Tube diameter	Ø8 mm
Length of cable L2	1.3 m or as required
Sensor type	Pt100 to 400°C; Pt1000 to 400°C; Fe-Ko (J) to 400°C; NiCr-NiAl (K) to 400°C
Material	Stainless Steel 4580

TS-08



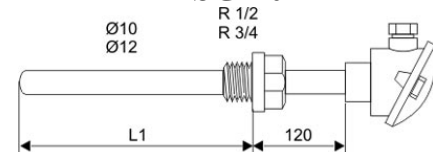
General characteristics of TS-08	
Type	Shafted probe
Stopica	Ø4 mm or Ø6 mm (M4 or M6)
Length of cable L2	1.5 m or as required
Sensor type	Fe-Ko (J type) to 400°C; NiCr-NiAl (K type) to 400°C
Material	Copper (nickel-plated)

THERMOCOUPLE



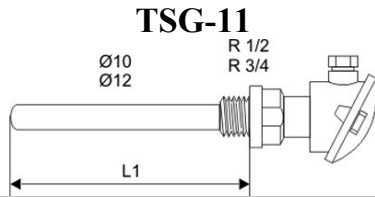
General characteristics of thermocouple	
Type	Thermocouple probe for pottery with or without a ceramic tube
Thermocouple length	300 mm or as required
Thermocouple thickness	1.2 mm; 3 mm
Sensor type	NiCr-NiAl (K type) to 1200°C
Tube length	250 mm; 500 mm; 700 mm; 1000 mm or as required
Tube diameter	Ø15 mm
Material	Aluminium Oxide C610 (Al ₂ O ₃ 60%)
Connector type	Ceramic lampholder, two-pin

TSG-10

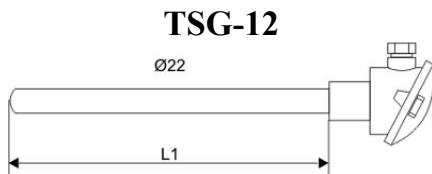


General characteristics of TSG-10	
Type	Probe with coupling head, with neck fitting
Tube length L1	160mm; 250 mm or as required
Tube diameter	Ø10mm; Ø12 mm or as required
Sensor connector	R 1/2; R 3/4 or as required

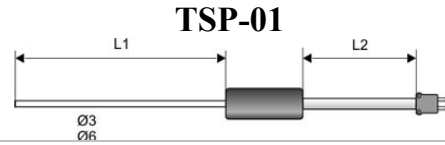
Sensor type	Pt100 to 600°C; 2xPt100 to 600°C; Pt1000 to 400°C; Fe-Ko (J) to 600°C; NiCr-NiAl (K) to 800°C
Material	Stainless Steel 4580
Optional	TSG-10T with 4-20mA transmitter built into the head



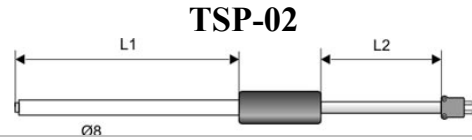
General characteristics of TSG-11	
Type	Probe with plug-in head, without neck fitting
Tube length L1	160 mm; 250 mm or as required
Tube diameter	Ø10 mm; Ø12 mm or as required
Sensor connector	R 1/2; R 3/4 or as required
Sensor type	Pt100 to 600°C; 2xPt100 to 600°C; Pt1000 to 400°C; Fe-Ko (J) to 600°C; NiCr-NiAl (K) to 800°C
Material	Stainless Steel 4580
Optional	TSG-11T with 4-20mA transmitter built into the head



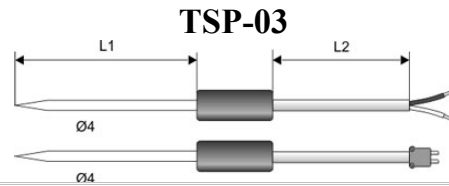
General characteristics of TSG-12	
Type	K-type thermocouple probe for temperatures up to 1200°C
Tube length L1	300 mm; 500 mm; 710 mm; 1000 mm; 1400 mm; 2000 mm or as required
Tube diameter	Ø22 mm
Sensor type	NiCr-NiAl (K) to 1200°C; 2 x NiCr-NiAl (K) to 1200°C
Material	X15CrNiSi2520 / 314 / 1.4841 (high resistance to oxygen-poor environments); X10CrAl24 / 446 / 1.4762 (high resistance to the presence of sulphur dioxide)



General characteristics of TSP-01	
Type	Submersible probe for the DTM-902 portable thermometer
Tube length L1	450 mm or as required
Tube diameter	Ø3 mm ili Ø6 mm
Length of cable L2	1.2 m
Connector type	IM-K Type K mini
Sensor type	NiCr-NiAl (K) up to 800°C
Material	Mantale



General characteristics of TSP-02	
Type	Touch probe for DTM-902 portable thermometer
Tube length L1	140 mm
Tube diameter	Ø8 mm
Length of cable L2	1.2 m
Type priključka	IM-K Type K mini
Sensor type	NiCr-NiAl (K) to 600°C
Material	Stainless Steel 4580



General characteristics of TSP-03	
Type	Needle probe for measuring meat temperature
Dužina ubodnog dela L1	140 mm
Tube diameter	Ø4 mm
Length of cable L2	2.5 m or as required
Type priključka	free ends; IM-K Type K mini (for the DTM-902 portable thermometer)
Sensor type	Pt100 to 400°C; Pt1000 to 400°C
Material	Stainless Steel 4580

Installation and connection method for temperature probes

General notes:

- The connection of the measuring probe to the device must be carried out by a qualified person. The maximum temperature indicated on the probe refers to the measuring part (the probe tip), which is the only part that may be located in the heating or measuring zone. The electronics, cable and connection terminals are installed outside the heating zone.
- The measuring device and the probe must be compatible (please refer to the instruction manual or the connection label for the measuring device).
- Each probe has a label which shows the probe's type and model, the maximum temperature, and the polarity, if it is a thermocouple probe.
K-type: the shield cable has a green thread, green lead +, white lead -
J-type: the shield cable has a black thread, black lead +, white lead -
- Thermocouple probes (J, K...) may only be connected with the appropriate compensation cables of the same type.
- If any specifications do not match, DO NOT INSTALL the probe but contact the manufacturer.

Installation sequence:

- Switch off the measuring device. Fix mechanically position of probe and connect it to device.

If the probe is polarised, pay attention to that!

- Switch device on and check that the measurement is correct.

Installation specifics:

- The TSP-0x probes are pre-wired, and care must be taken with the polarity of the thermocouple probes when connecting. If it is a 3-wire Pt100 probe, the conductors originating from the same sensor point are the same colour.
- The THEROCOUPLE probe is connected with a K-type compensation cable (the polarity marking is drawn on the terminals).
- The TSG-10, TSG-11, and TSG-12 probes are probes with a connector head, and the connection is made inside the head via the appropriate terminal. Resistance temperature probes are connected using standard copper cables (e.g., 2x0.75mm), whereas a compensation cable is required for thermocouple probes.
- The TSG-10T and TSG-11T probes are probe heads that house a temperature transmitter. The probe has a label indicating its temperature range (e.g. 0-100°C) and the output it provides (4-20mA). This is known as a two-wire connection.
- The TSP-01 and TSP-02 probes have a K mini male connector and are therefore connected to devices with a corresponding female K-type connector.