TR 021A – TEMPERATURE SENSOR WITH A CONNECTOR AND THREAD

C02.04en

DESCRIPTION AND APPLICATION

These resistance temperature sensors TR021A with a connector are designed for temperature measurements of gaseous or liquid substances. The temperature range is -50 to 150 °C and these limits must not be exceeded even for a brief period. The temperature sensors consist of a metal case, where the temperature sensing element is placed, and Lumberg M12 connector, which is an integral part of the case. The temperature sensors meet ingress protection IP 67 according to EN 60529, as amended and they are designed for temperature measurement in pipelines. Their design allows faster response to changes in temperature compared to sensors with a thermowell and they can be used as pressure equipment within the meaning of the government regulation No. 26/2003 Coll. as amended. The sensors are designed to be operated in a chemically non-aggressive environment, the use must be chosen with regard to temperature and chemical resistance of the case and the connector.

ACCESSORIES

- CONEC 43-00092 connector or stainless steel RKCS 4/9 connector
- connection cables with the direct RKT connector or rectangular RKWT connector

DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

Calibration – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o.'s laboratory (according to requirements of the EN ISO/IEC 17025 standard) or in an Accredited laboratory.

SPECIFICATIONS

Sensor type	TR 021A
Measuring range	-50 to 150 °C (can be limited by the type of a sensor, determine in documentation)
Type of sensing element	all types (Pt 100, Pt 1000, Ni 1000, Ni 10000, Ni 2226=T1, NTC, PTC, KTY, TSiC, DALLAS and so on)
Ingress protection	IP 67 in accordance with EN 60529, as amended
Thread	G ½; M 20 x 1.5; M 27 x 2 and other according to customer requirements
Case material	stainless steel DIN 1.43601
Diameter of case	6.0 ± 0.1 mm
Length of case L	20 to 500 mm
Type of the connector	LUMBERG RSFM4, M12
Ambient temperature around connector	-25 to 80 °C
Wire resistance	0.254 Ω for 1 m at a temperature of 25 °C for 2-wire connection
Time response	τ0.5 < 7 s; τ0.9 < 9 (in flowing water 0.4 m.s-1)

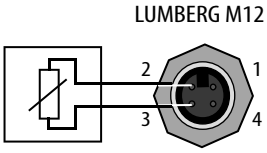
Operating conditions:

- Ambient temperature around connector: -25 to 80 °C
- Relative ambient humidity: 10 to 100%
- Atmospheric pressure: 70 to 106 kPa
- Maximum speed of water/air flow or water vapour flow when measuring the temperature in pipelines:

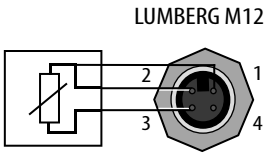
Length of case in mm	Water flow speed	Air flow speed
up to 60	2 m.s-1	20 m.s-1
> 60 to 100	1.5 m.s-1	15 m.s-1
> 100 to 160	1 m.s-1	8 m.s-1
> 160 to 220	0.6 m.s-1	2.5 m.s-1
> 220 to 400	0.3 m.s-1	0.6 m.s-1

WIRING DIAGRAM

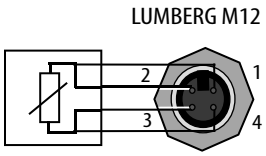
2-wire



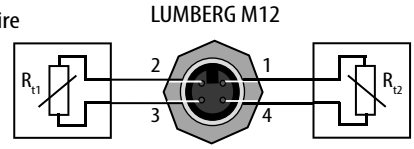
3-wire



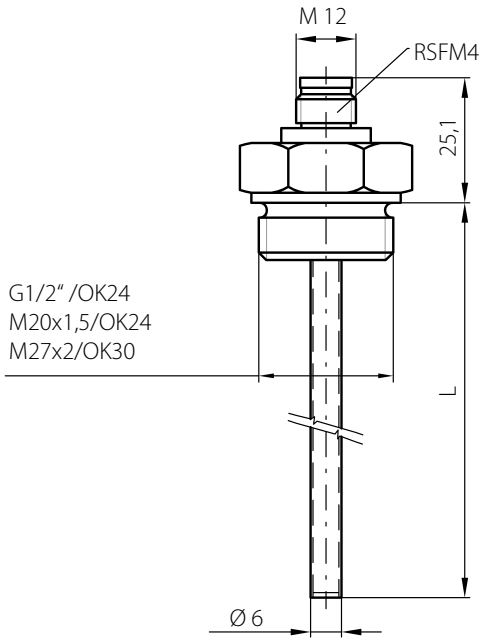
4-wire



2 x 2-wire



DIMENSIONAL DRAFT



MODIFICATION AND CUSTOMIZATION

- variable stem design in the area - L length, case material and diameter
- accuracy class A (except sensors Ni 10000/5000, Ni 10000/6180, T1 = Ni 2226, Thermistor NTC 20 k Ω)
- possibility of encasing non-standard temperature sensors (DALLAS, TSic, KTY, SMT, etc.
- thread is possible to change compared to the types offered as standard

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