

ELECTRONIC TEMPERATURE SENSORS

Technical description

This temperature sensor is for measuring the temperature of liquid in engines, sets of machines and utility vehicles.

A Pt1000 thin-film precision resistor is used as the measuring element. The temperature-dependent resistance of the Pt1000 is evaluated by an electronic circuit and outputted as a temperature-dependent voltage at the sensor's output. The interrelationship between temperature and voltage corresponds to the characteristic curve for the Pt100 and is thus nearly linear.

The assignment between temperature and output voltage is nearly freely selectable, the lesser temperature corresponding to the lesser output voltage. The sensor's lowest possible output voltage is 0.5 V and its greatest is 10 V. The output is overload-proof and short-circuit-proof.

The sensor has no mechanical moving parts and so is not susceptible to vibration and soiling.

Technical data

Nominal voltage:	18 bis 32 VDC
Current consumption:	< 10 mA
Operating temperature:	-40 °C to +125 °C
Medium temperature:	-50 °C to +150 °C
Sensor element:	Pt1000 Klasse B
Measuring range:	freely selectable between -50 °C and +150 °C
Output voltage range:	freely selectable between 0,5V and 10V
Standard tolerance:	±0,5 K at 0 °C, ± 2 K at +150 °C
Measuring media:	lubricating oil, hydraulic oil, fuel, cooling water
Connector:	see order number overview
IP-protection:	depending on the connector type
Housing material:	brass (standard), stainless steel on request
EMC:	according to to e1 standard 72/245/EWG

CONNECTORS AND DESIGNS



■ Connector bayonet according to ISO 15170
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

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■ Connector DEUTSCH DT04-3P
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

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■ Cable with flying leads
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

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■ Cable with flying leads
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

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■ Cable with bayonet according to ISO 15170 overmoulded
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

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■ Cable with DEUTSCH DT04-4P
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

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■ Cable with connection M12x1
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

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ORDER NUMBER OVERVIEW

Electronic temperature sensors

Connector bayonet according to ISO 15170

Thread/HEX	Measuring temperature	Output signal	Order number
M 14 x 1,5 / 27	-40°C...60°C	0,5...5V	420 508
M 14 x 1,5 / 27	-30°C...130°C	2...9V	420 135
M 14 x 1,5 / 27	-30°C...130°C	0,5...9,5V	420 372
M 14 x 1,5 / 27	-30°C...130°C	0,5...9,5V	420 503
M 14 x 1,5 / 27	-30°C...130°C	0,5...9,5V	420 515
M 14 x 1,5 / 27	-20°C...130°C	0,01...10V	420 371
M 14 x 1,5 / 27	-20°C...100°C	0,5...10V	420 398
M 14 x 1,5 / 27	-20°C...85°C	1...9V	420 377
M 14 x 1,5 / 27	-20°C...85°C	1...9V	420 500
M 14 x 1,5 / 27	-20°C...50°C	2...9V	420 134
M 14 x 1,5 / 27	0°C...150°C	0...10V	420 501
M 14 x 1,5 / 27	0°C...120°C	0,1...5V	420 504
M 14 x 1,5 / 27	0°C...120°C	0,1...5V	420 502
M 22 x 1,5 / 27	-30°C...150°C	0,5...9,5V	420 514
M 22 x 1,5 / 27	-20°C...130°C	0,01V...10V	420 370
G 3/8" / 27	-30°C...130°C	0,5...4,5V	420 505
G 3/8" / 27	-30°C...130°C	0,5...8,5V	420 393



Connector DT04-3P

Thread/HEX	Measuring temperature	Output signal	Order number
M 14 x 1,5 / 27	-30°C...100°C	0,5...5V	420 511



Electronic temperature sensors

Cable connection

Thread/HEX	Measuring temperature	Output signal	Cable length	Cable connection type	Order number
M 14 x 1,5 / 27	-30°C...130°C	0,1...10V	1000mm	1*	420 373 1.
G 1/2" / 27	-30°C...130°C	0,5...8V	800mm	2*	420 397 2.

1* Cable with flying leads

2* Cable with bayonet according to ISO 15170 overmoulded



ACCESSORIES

Connector bayonet according to ISO 15170

Order-Nr.	Description
420 700	4-pin bayonet ISO 15170 straight connector for corrugated tubing NW10
420 701	4-pin bayonet ISO 15170 90° angle for corrugated tubing NW10
420 703	4-pin bayonet ISO 15170 straight connector for cable
420 702	4-pin bayonet ISO 15170 90° angle for cable

Cable with connector bayonet according to ISO 15170

Order-Nr.	Description	Length	Connection
420 705	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	300 mm	2*
420 792	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	300 mm	4*
420 707	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	1000 mm	1*
420 709	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	2000 mm	1*
420 717	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	3000 mm	1*
420 714	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	5000 mm	1*
619 091	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	5000 mm	4*
420 719	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	6000 mm	1*
420 755	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	7000 mm	1*
421 730	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 straight connector	10000 mm	1*
420 694	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	150 mm	1*
420 704	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	300 mm	2*
420 706	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	1000 mm	1*
420 764	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	2000 mm	1*
420 708	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	3000 mm	1*
420 756	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	4000 mm	1*
420 718	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	5000 mm	1*
420 716	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	6000 mm	1*
420 715	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	10000 mm	1*
420 795	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	12000 mm	1*
423 158	Ready-made cable Type FLR33X33X 3 x 0,75 mm ² with 4-pin bayonet ISO 15170 90° angle	15000 mm	1*

1* Cable with flying leads

2* Cable with 3 pole blade terminals 6.3 in housing

3* Cable end with 3-pin DEUTSCH connector

4* Cable with 3-pin M 12 x 1 connector

Connector DT06-3S

Order-Nr.	Description
420 733	Connector DT06-3S