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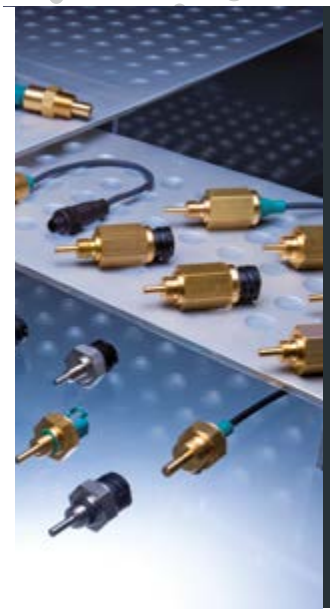

TEMPERATURE SWITCHES AND SENSORS

- BIMETAL TEMPERATURE SWITCHES
- ELECTRONIC TEMPERATURE SWITCHES
- ELECTRONIC TEMPERATURE SENSORS
- SCREW-IN RESISTORS

THOUGHT-OUT SOLUTIONS AT THE HIGHEST LEVEL

AEO

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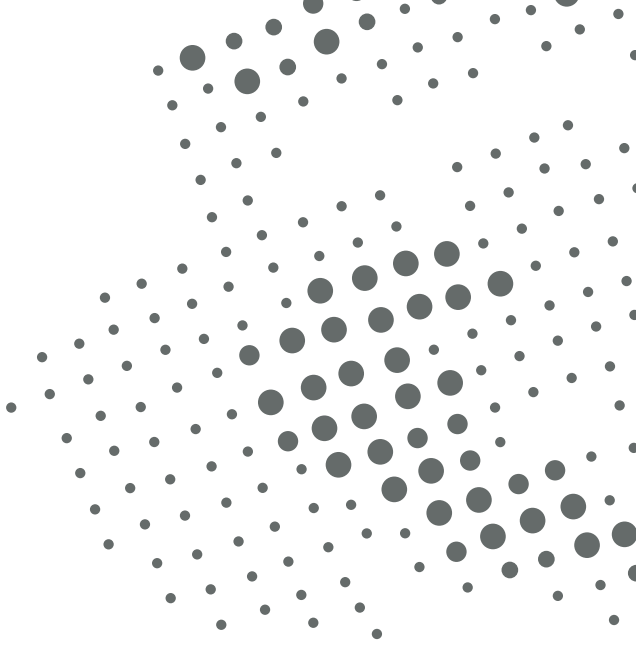


CONTENT

The company 4

%LPHWDO WHPSHUDWXUH VZLWFKHV ZLWK UHVHW KVWHUH

Connectors and designs 7

Order number overview 8

%LPHWDO WHPSHUDWXUH VZLWFKHV ZLWK UHVHW KVWHUH

Connectors and designs 11

Order number overview 12

Accessories 16

Electronic temperature switches

Connectors and designs 19

Order number overview 20

Accessories 21

Electronic temperature sensors

Connectors and designs 23

Order number overview 24

Accessories 25

Screw-in resistors

Connectors and designs 29

Characteristics of sensor elements 31

Order number overview 32

Accessories 35

BEDIA

The company

Measuring with system and passion

As a high performance and innovative company BEDIA developes, produces and distributes well thought out solutions for level and temperature monitoring.
We have been concentrating our skills in the domain of measuring filling levels and temperatures under extreme operating conditions. We are able to offer customized solutions to the specific requirements of our clients for small to large series. In doing so we are combining tried and tested technologies with innovative product ideas. Our expertise and flexibility are well demonstrated in the developement of customer specific solutions.

One thing that all our products have in common is the nonexistence of moving or adjustable parts; our parts are not subject to mechanical interference and exhibit exceptional operational reliability.

Since 1986 BEDIA Motorentechnik is a valued partner of numerous manufacturers of agricultural and construction machinery, compressors, engines, power train control systems and utility vehicles.
The high quality requirements of our world wide operating customers are our motivation for the constant improvement of our products and processes. The stable customer relationships of many years standing express the high quality of our products and the satisfaction of our customers.

We hope you will get a comprehensive overview of our products from this catalog. Please feel free to contact us, we will be happy to assist you with our advice and experience.

Company history at a glance

2018 currently about 140 employees

2016 30th company anniversary

2012 Foundation of BEDIA Sensors USA in Austin, Texas

2009 Relocation of BEDIA Motorentechnik and BEDIA Kabel to the new corporate building in Altdorf in the industrial park near the A6.

2008 Takeover of the production for sensors from the business entit E-T-A in Altdorf

2006 Spin-off of the new BEDIA Kabel business unit from BEDIA Motorentechnik GmbH & Co. KG into BEDIA Kabel GmbH & Co. KG.

2005 Reorganization of BEDIA Motorentechnik GmbH into BEDIA Motorentechnik GmbH & Co. KG, preparation and the transfer of business administration to Holger Schultheis.

2000 Sale of the water treatment business unit to Aqua-Concept GmbH.

1994 Transfer of the Sensor Systems and Water Treatment business unit from BEDIA Maschinenfabrik to BEDIA Motorentechnik.

1986 Foundation of BEDIA Motorentechnik in Leinburg. Core focus business with vehicle wiring cables and delivery of sensor parts for the Bedia Maschinenfabrik in Bonn.

Our products at a glance

- capacitive level sensors for a versatile range of applications:
  - CLS 20/25 for railway applications tested according to DIN EN 50155
  - CLS 40/45 for off- and onroad applications with E1-type approval of the KBA
  - CLS 50/55 for maritime applications with approvals of the classification societies
- intelligent, analog tank sensors for fuels and oils
- intelligent, analog hot wire sensors for monitoring oil sump fill levels
- temperature sensors
- mechanical temperature switches
- electronic temperature switches
- electronic temperature sensors
- DC/DC converters

We are certified in accordance with ISO 9001:2015 and ISO 14001:2015.

BIMETAL TEMPERATURE SWITCHES

Bimetal temperature switches with reset hysteresis ≤ 15 K

Description

In a robust brass or stainless steel housing there is a bimetal disc, which snaps over when nominal switching temperature is reached.
The switching contact can be implemented as a normally closed contact or a normally open contact in the temperature range between -25°C and 190°C.
The switch opens or closes its contact upon rising temperature and resets automatically to the original switching state when the temperature has dropped. The switching temperature cannot be adjusted.
The bimetal disc carries no current, and this eliminates the possibility of arcing.
The reset switching temperature is typically 5…15 K below the switching temperature. Other values on request.
A Normally Open (NO=open in the normal state) switch closes a circuit on reaching the switching temperature.
A Normally Closed (NC= closed in the normal state) switch opens a circuit on reaching the switching temperature.
The type of integral thread, sealing face and the heat transfer pin are to the customer specifications or can be selected from our extensive standard range.

Technical Data

Nominal voltage:	12 VDC / 24 VDC
Max. load:	16 A at 25°C
Min. load:	50 mA with silver-plated contacts (standard)
	≥ 10 mA with gold-plated contacts
Contact arrangement:	normally closed / normally open
Reset type:	automatic
Standard response temperature range	
stepped in 5 K intervals:	-25 °C to +190 °C
Standard tolerance:	±3 K / ±5 K / ± 8 K
Reset hysteresis:	≤ 15 K
	min. 5 K, other values on request
Standard contact resistance of switch	≤ 25 mΩ with silver-plated contacts (standard)
mechanism:	≤ 10 mΩ with gold-plated contacts
Switch operations at rated current:	50000 at 12 VDC / 10000 at 24 VDC
Vibration 10 Hz to 60 Hz:	10 g
Connector:	see order number overview
IP-protection:	depending on the connector type
Housing material:	brass (standard), stainless steel on request

CONNECTORS AND DESIGNS

■ Connector bayonet according to ISO 15170
Protection class IP 69K according to DIN 40050
without thermal conductivity probe

» Order number overview page 8

■ Connector DEUTSCH DT04-2P
Protection class IP 67 according to DIN 40050
without thermal conductivity probe

» Order number overview page 9

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
without thermal conductivity probe

» Order number overview page 8

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 8

■ Connector blade terminal 6,3 x 0,8; 2-pole
Protection class IP 67 according to to DIN 40050
without thermal conductivity probe

» Order number overview page 9

■ Connector blade terminal 6,3 x 0,8; 2-pole
Protection class IP 67 according to to DIN 40050
with thermal conductivity probe

» Order number overview page 9

■ Connector blade terminal 6,3 x 0,8; 1-pole
Protection class IP 67 according to to DIN 40050
with thermal conductivity probe

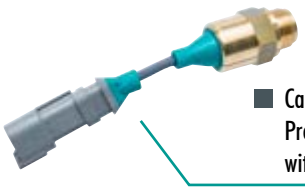
» Order number overview page 8

■ Connector bayonet 10SL plastic
Protection class IP 67 according to DIN 40050
without thermal conductivity probe

» Order number overview page 8

■ Cable with flying leads
Protection class IP 69K according to DIN 40050
without thermal conductivity probe

» Order number overview page 9



■ Cable with DEUTSCH DT04-3P
Protection class IP 69K according to DIN 40050
without thermal conductivity probe

» Order number overview page 9

■ Cable with DEUTSCH DT04-3P
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 9

■ Cable with connector M12x1
Protection class IP 69K according to DIN 40050
without thermal conductivity probe

» Order number overview page 9

Bimetal temperature switches with reset hysteresis ≤ 15 K

Connector blade terminal 6,3 x 0,8; 2-pole

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number	
M 14 x 1,5 / 22	/	55°C	normally open	8 K	potential free	422 871	1.
M 14 x 1,5 / 22	/	70°C	normally open	5 K	potential free	422 872	1.
M 14 x 1,5 / 22	12 mm	90°C	normally closed	5 K	potential free	420 293	2.
M 14 x 1,5 / 22	12 mm	95°C	normally closed	≤ 20 K	potential free	422 869	2.
M 14 x 1,5 / 22	/	100°C	normally closed	5 K	potential free	422 360	1.
M 18 x 1,5 / 22	/	90°C	normally open	8 K	potential free	421 085	1.
9/16" UNF / 22	12 mm	95°C	normally closed	≤ 20 K	potential free	422 870	2.

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Connector Deutsch DT04-2P

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number	
M 14 x 1,5 / 27	19 mm	5°C	normally closed	5 K	potential free	422 183	2.
1/2" - 14 NPTF / 27	/	110°C	normally open	5 K	potential free	422 862	1.

1.
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Cable connection

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Cable length	Cable connection type	Order number	
M 12 x 1,5 / 19	18 mm	95°C	normally closed	≤ 20 K	potential free	500mm	2*	422 855	5.
M 12 x 1,5 / 19	18 mm	105°C	normally closed	≤ 20 K	potential free	500mm	2*	422 856	5.
M 14 x 1,5 / 22	/	85°C	normally closed	5 K	potential free	300mm	4*	420 929	2.
M 14 x 1,5 / 22	/	95°C	normally closed	15 K	potential free	570mm	2*	422 218	4.
M 14 x 1,5 / 22	/	100°C	normally closed	5 K	potential free	570mm	2*	422 217	4.
M 14 x 1,5 / 27	19 mm	85°C	normally closed	5 K	potential free	350mm	3*	422 175	3.
M 14 x 1,5 / 27	19 mm	85°C	normally open	5 K	potential free	350mm	3*	422 158	3.
M 14 x 1,5 / 27	19 mm	100°C	normally closed	5 K	potential free	350mm	3*	422 176	3.
M 16 x 1,5 / 27	2,5 mm	92°C	normally open	5 K	potential free	350mm	3*	422 185	3.
M 22 x 1,5 / 27	2,5 mm	92°C	normally open	5 K	potential free	325mm	2*	422 865	5.
M 22 x 1,5 / 27	2,5 mm	92°C	normally open	5 K	potential free	350mm	3*	422 164	3.
M 22 x 1,5 / 27	2,5 mm	105°C	normally open	5 K	potential free	350mm	3*	422 157	3.
G 1/2" / 27	/	80°C	normally closed	5 K	potential free	400mm	1*	422 168	1.

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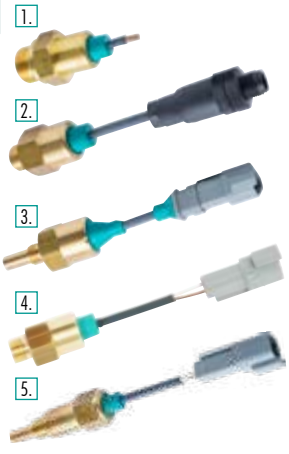


1* Cable with flying leads
2* Cable with Deutsch connector DT04-2P
3* Cable with Deutsch connector DT04-3P
4* Cable with connector M12x1

BIMETAL TEMPERATURE SWITCHES

Bimetal temperature switches with reset hysteresis ≤ 25 K

Description

These temperature switches operate by means of a thermally sensitive bimetal snap-element which switches a double electrical contact when reaching a pre-set response temperature. They can be normally open or normally closed. The electrical current flows through the bimetal element, which therefore gives a combination of temperature- and current-sensitivity.

The resilient snap action disk ensures excellent performance.

The bimetal will only snap back to its initial condition after the temperature has dropped significantly. Compared to other temperature switches with relatively small hysteresis, the temperature difference between the temperature switch opening and closing is significantly higher. This ensures a more distinct status indication, i.e. longer switch-off times, in the event of a fault condition.

Technical Data

Nominal voltage:	12 VDC / 24 VDC
Max. load:	36 VDC / 1,0 A
	24 VDC / 1,5 A
Min. load:	50 mA
Contact arrangement:	normally closed / normally open
Reset type:	automatic
Standard response temperature range	
stepped in 5 K intervals:	+50 °C to +180 °C
Standard tolerance:	±3 K / ±5 K / ± 10 K
Reset hysteresis:	≤ 25 K
Standard contact resistance of switch	
mechanism:	≤ 40 mΩ
Switch operations at rated current:	10000
Vibration 10 Hz to 60 Hz:	10 g
Connector:	see order number overview
IP-protection:	depending on the connector type
Housing material:	brass (standard), stainless steel on request

CONNECTORS AND DESIGNS

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

» Order number overview page 12

■ Connector bayonet 10 SL according to VG 95234
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 12

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 13

■ Connector bayonet 10 SL plastic
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 13

■ Connector blade terminal 6,3 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 14

■ Connector blade terminal 6,3 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 14

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

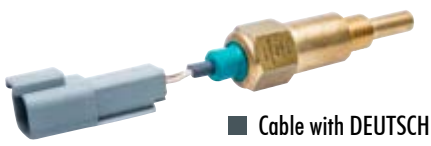
» Order number overview page 14

■ Cable with DEUTSCH DT06-2S
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 14

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

» Order number overview page 14



■ Cable with DEUTSCH DT04-2P
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 14

ORDER NUMBER OVERVIEW

Bimetal temperature switches with reset hysteresis ≤ 25 K

Connector bayonet according to ISO 15170

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number
M 14 x 1,5 / 27	11 mm	50°C	normally open	≤ 15 K	potential free	422 874
M 14 x 1,5 / 27	11 mm	60°C	normally closed	≤ 20 K	potential free	421 069
M 14 x 1,5 / 27	11 mm	90°C	normally closed	≤ 20 K	potential free	422 849
M 14 x 1,5 / 27	11 mm	95°C	normally open	< 20 K	potential free	422 842
M 14 x 1,5 / 27	11 mm	100°C	normally open	≤ 20 K	potential free	422 843
M 14 x 1,5 / 27	11 mm	110°C	normally open	≤ 20 K	potential free	422 320
M 14 x 1,5 / 27	11 mm	120°C	normally open	≤ 20 K	potential free	422 844
M 14 x 1,5 / 27	11 mm	120°C	normally closed	≤ 20 K	potential free	422 847
M 14 x 1,5 / 27	11 mm	150°C	normally open	≤ 20 K	potential free	422 321

Connector bayonet 10SL according to VG 95234

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number
M 14 x 1,5 / 27	11 mm	80°C	normally open	20 K	potential free	422 316
M 14 x 1,5 / 27	11 mm	120°C	normally closed	≤ 15 K	potential free	421 088
M 14 x 1,5 / 27	11 mm	130°C	normally open	≤ 20 K	potential free	422 313
M 14 x 1,5 / 27	11 mm	130°C	normally closed	20 K	potential free	420 295
M 18 x 1,5 / 27	11 mm	80°C	normally open	20 K	potential free	422 318

Bimetal temperature switches with reset hysteresis ≤ 25 K

Connector bayonet 10SL plastic

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number
9/16" - 18 UNF / 19	15 mm	50°C	normally open	≤ 20 K	potential free	420 186
9/16" - 18 UNF / 19	15 mm	60°C	normally closed	≤ 20 K	potential free	420 224
9/16" - 18 UNF / 19	15 mm	70°C	normally closed	≤ 15 K	potential free	420 190
9/16" - 18 UNF / 19	15 mm	100°C	normally open	≤ 20 K	potential free	420 353
9/16" - 18 UNF / 19	15 mm	120°C	normally open	≤ 20 K	potential free	420 187
9/16" - 18 UNF / 19	15 mm	150°C	normally open	≤ 20 K	potential free	420 191
3/4" - 16 UNF / 22	15 mm	100°C	normally open	≤ 20 K	potential free	420 189

Connector minitimer 2,8 x 0,8

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number
M 14 x 1,5 / 19	18 mm	50°C	normally closed	≤ 20 K	potential free	422 322

ORDER NUMBER OVERVIEW

Bimetal temperature switches with reset hysteresis ≤ 25 K

Connector blade terminal 6,3 x 0,8

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Order number	
M 14 x 1,5 / 19	15 mm	50°C	normally closed	≤ 20 K	potential free	421 099	1.
M 14 x 1,5 / 19	15 mm	70°C	normally open	≤ 20 K	potential free	421 079	1.
M 14 x 1,5 / 19	15 mm	95°C	normally open	≤ 20 K	potential free	421 077	1.
M 14 x 1,5 / 19	15 mm	95°C	normally closed	≤ 20 K	potential free	420 133	1.
M 14 x 1,5 / 19	15 mm	100°C	normally open	≤ 20 K	potential free	420 166	1.
M 14 x 1,5 / 19	15 mm	110°C	normally open	≤ 20 K	potential free	420 221	1.
M 14 x 1,5 / 19	15 mm	115°C	normally closed	20 K	potential free	422 230	1.
M 14 x 1,5 / 19	15 mm	120°C	normally open	≤ 20 K	potential free	420 155	1.
M 14 x 1,5 / 19	12 mm	130°C	normally closed	≤ 30 K	potential free	421 067	2.
M 16 x 1,5 / 19	15 mm	50°C	normally closed	≤ 20 K	potential free	421 087	1.
R 1/2" / 22	15 mm	95°C	normally closed	≤ 20 K	potential free	422 314	1.

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Cable connection

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Cable length	Cable connection type	Order number	
M 14 x 1,5 / 27	11 mm	50°C	normally open	≤ 15 K	potential free	1300mm	1*	421 096	1.
M 14 x 1,5 / 27	11 mm	70°C	normally open	5 K	potential free	315mm	3*	420 926	2.
M 14 x 1,5 / 27	11 mm	70°C	normally open	≤ 20 K	potential free	1300mm	1*	421 097	1.
M 14 x 1,5 / 27	13 mm	80°C	normally open	≤ 20 K	potential free	1300mm	1*	420 149	1.
M 14 x 1,5 / 27	6 mm	110°C	normally open	≤ 20 K	potential free	315mm	3*	420 206	2.
M 14 x 1,5 / 27	4 mm	120°C	normally open	≤ 20 K	potential free	320mm	2*	420 182	3.
M 14 x 1,5 / 27	18 mm	120°C	normally open	≤ 20 K	potential free	315mm	3*	422 841	2.

1* Cable with flying leads
2* Cable with Deutsch connector DT04-2P
3* Cable with Deutsch connector DT06-2S

1.

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3.

Temperature sensors with switch point

Connector bayonet according to ISO 15170

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Check values at	Order number
5/8"-18UNF / 27	11 mm	105°C	normally open	15 K	Low side switch	20 °C-698Ω±65Ω	422 319
						60 °C-144Ω±12Ω	
						100 °C-39,6Ω±3Ω	

Connector bayonet 10SL plastic

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Check values at	Order number
M 14 x 1,5 / 19	15 mm	100°C	normally open	≤ 20 K	Low side switch	20 °C-698 Ω±74 Ω	422 333
						60 °C-144 Ω±12 Ω	
						100 °C-39,6 Ω±3 Ω	

Connector minitimer 2,8 x 0,8

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Check values at	Order number
M 14 x 1,5 / 19	13 mm	110°C	normally open	≤ 20 K	Low side switch	20 °C-698 Ω±65 Ω	422 229
						60 °C-141 Ω±12 Ω	
						100 °C-39,6 Ω±3 Ω	

Temperature sensors with switch point

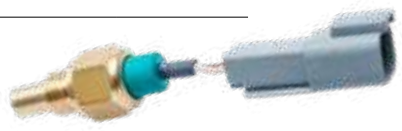
Connector blade terminal 6,3 x 0,8

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Check values at	Order number
M 14 x 1,5 / 19	15 mm	80°C	normally open	≤ 20 K	Low side switch	20 °C-698 Ω±74 Ω	420 156
						60 °C-144 Ω±12 Ω	
						100 °C-39,6 Ω±3 Ω	
M 14 x 1,5 / 19	15 mm	95°C	normally open	≤ 20 K	Low side switch	20 °C-698 Ω±74 Ω	420 152
						60 °C-144 Ω±12 Ω	
						100 °C-39,6 Ω±3 Ω	
M 14 x 1,5 / 19	15 mm	100°C	normally open	≤ 20 K	Low side switch	20 °C-698 Ω±74 Ω	421 094
						60 °C-144 Ω±12 Ω	
						100 °C-39,6 Ω±3 Ω	
M 14 x 1,5 / 19	15 mm	110°C	normally open	≤ 20 K	Low side switch	20 °C-698 Ω±74 Ω	421 095
						60 °C-144 Ω±12 Ω	
						100 °C-39,6 Ω±3 Ω	

Cable connection

Thread/HEX	thermal conductivity probe	Switch point	Function	Hysteresis	Electric potential	Check values at	Cable length	Cable connection type	Order number
M 14 x 1,5 / 19	11 mm	80°C	normally open	≤ 20 K	Low side switch	20 °C-698Ω±65Ω	100mm	2*	420 262
						60 °C-144Ω±12Ω			
						100 °C-39,6Ω±3Ω			

2* Cable with Deutsch connector DT04-2P



ACCESSORIES

Connector minitimer 2,8 mm x 0,8 mm	
Order-Nr.	**Description**
420 125	Female connector 2-pole

Connector bayonet 10 SL according to VG 95234	
Order-Nr.	**Description**
421 652	Female bayonet connector 10 SL straight according to VG 95234
421 885	Female bayonet connector 10 SL 90° according to VG 95234

Connector bayonet 10SL plastic	
Order-Nr.	**Description**
420 760	Female bayonet connector 10 SL straight
420 761	Female bayonet connector 10 SL 90°

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**
420 750	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	300 mm	1*
420 722	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	1000 mm	1*
420 724	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	3000 mm	1*
420 752	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	5000 mm	1*
420 739	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	300 mm	1*
420 732	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	1000 mm	1*
420 731	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	3000 mm	1*
420 751	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	5000 mm	1*
420 765	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	6000 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

ELECTRONIC TEMPERATURE SWITCHES

Technical description

The electronic temperature switch of BEDIA is fitted with thin-film resistor Pt1000 in a bridge circuit. This sensor element provides close switch point tolerances and a quick response. Switch point and reset hysteresis may be selected within the admissible operating range when ordering so as to allow the monitoring of both very wide and very close temperature ranges. The switching output is protected from short-circuit and overload.

The short-circuit current is limited by the output transistor switching off in the event of a fault. It will automatically reset as soon as the fault has been remedied.

The switch is available with low-side, high-side or potential-free DC switching output.

The switch is open in the event of power failure or disconnection of the power supply, independed of the switching function. It is available both as normally open (NO) or normally closed (NC) switch.

Technical data

Nominal voltage:	12 VDC / 24 VDC (-25 %/+50 %) (9-36 VDC)
Current consumption:	< 10 mA
Operating temperature:	-40 °C to +125 °C
Medium temperature:	-50 °C to +150 °C
Sensor element:	Pt1000 Klasse B
Max. switching current:	1 A
Voltage drop:	< 1,5 V (1 A)
Max. switching voltage:	36 VDC
Off-state leakage current:	10 µA (25 °C)
Switch point:	freely selectable between -50 °C and +150 °C
Standard tolerance:	±3 K
Hysteresis:	freely selectable, ≥ 1 K
Switching mode:	a) potential free DC switch, either normally close or normally open
	b) low-side switch, either normally close or normally open
	c) high-side switch, either normally close or normally open
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

» Order number overview page 20

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

» Order number overview page 20

- Connector bayonet 10SL according to VG 95234
  Protection class IP 67 according to DIN 40050
  with thermal conductivity probe

» Order number overview page 20

- Connector DIN EN 175301-803-A
  Protection class IP 65 according to DIN 40050
  with thermal conductivity probe

» Order number overview page 20

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

» Order number overview page 21

- Cable with flying leads
  Protection class IP 69K according to DIN 4005
  with thermal conductivity probe

» Order number overview page 21

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

» Order number overview page 21

ORDER NUMBER OVERVIEW

Electronic temperature switches

Connector bayonet according to ISO 15170

Thread/HEX	Switch point	Function	Hysteresis	Electric potential	Order number
M 14 x 1,5 / 27	0 °C	normally open	5K	potential free	420 151
M 14 x 1,5 / 27	5 °C	normally open	3K	potential free	420 215
M 14 x 1,5 / 27	10 °C	normally closed	1K	potential free	420 509
M 14 x 1,5 / 27	15 °C	normally closed	5K	potential free	420 216
M 14 x 1,5 / 27	25 °C	normally open	15K	High side switch	420 510
M 14 x 1,5 / 27	75 °C	normally closed	7K	High side switch	420 518
M 14 x 1,5 / 27	75 °C	normally open	3K	Low side switch	420 507
M 14 x 1,5 / 27	82 °C	normally open	8K	Low side switch	420 131
M 14 x 1,5 / 27	86 °C	normally open	1K	Low side switch	420 176
M 14 x 1,5 / 27	87 °C	normally open	1K	Low side switch	420 139
M 14 x 1,5 / 27	92 °C	normally open	1K	Low side switch	420 142
M 14 x 1,5 / 27	96 °C	normally open	1K	Low side switch	420 137
M 14 x 1,5 / 27	120 °C	normally closed	1K	Low side switch	420 399
G 3/8" / 27	5 °C	normally open	5K	High side switch	420 499
G 3/8" / 27	15 °C	normally open	1K	High side switch	420 120
G 3/8" / 27	40 °C	normally open	15K	High side switch	420 199
G 3/8" / 27	50 °C	normally open	1K	High side switch	420 178
G 3/8" / 27	60 °C	normally open	1K	High side switch	420 121
G 3/8" / 27	80 °C	normally open	1K	High side switch	420 179
G 3/8" / 27	80 °C	normally open	15K	High side switch	420 195

Connector bayonet 10SL according to VG 95234

Thread/HEX	Switch point	Function	Hysteresis	Electric potential	Order number
M 14 x 1,5 / 27	0 °C	normally open	4K	Low side switch	420 229
M 14 x 1,5 / 27	0 °C	normally closed	10K	Low side switch	421 084
M 14 x 1,5 / 27	10 °C	normally open	10K	potential free	420 138
M 14 x 1,5 / 27	96 °C	normally open	1K	Low side switch	420 157

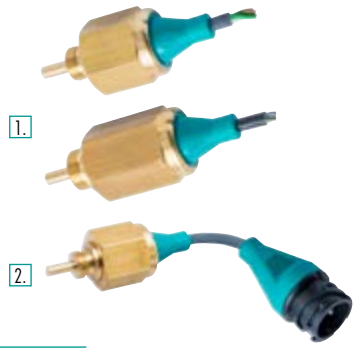
Connector DIN EN 175301-803-A

Thread/HEX	Switch point	Function	Hysteresis	Electric potential	Order number
G 1/4" / 27	80°C	normally closed	10K	High side switch	420 352

Electronic temperature switches

Cable connection

Thread/HEX	Switch point	Function	Hysteresis	Electric potential	Cable length	Cable connection type	Order number	
M 14 x 1,5 / 27	3 °C	normally open	1K	Low side switch	2000 mm	1*	420 249	1.
M 14 x 1,5 / 27	15 °C	normally open	1K	Low side switch	2000 mm	1*	420 297	1.
M 14 x 1,5 / 27	45 °C	normally open	1K	Low side switch	10000 mm	1*	420 144	1.
M 14 x 1,5 / 27	45 °C	normally open	1K	High side switch	4000 mm	2*	420 146	2.
M 14 x 1,5 / 27	100 °C	normally closed	1K	Low side switch	10000 mm	1*	420 145	1.
M 14 x 1,5 / 27	100 °C	normally closed	1K	High side switch	4000 mm	2*	420 147	2.
M 14 x 1,5 / 27	100°C	normally closed	1K	High side switch	1000 mm	2*	420 374	2.
M 16 x 1,5 / 27	40 °C	normally closed	10 K	High side switch	10000 mm	1*	420 313	1.
M 16 x 1,5 / 27	80 °C	normally closed	10 K	High side switch	10000 mm	1*	420 351	1.
G 3/8" / 27	3 °C	normally open	0,5 K	potential free	1000 mm	1*	420 140	1.
G 3/8" / 27	20 °C	normally closed	5 K	potential free	1000 mm	1*	420 141	1.



1* Cable with flying leads
2* Cable with bayonet according to ISO 15170 overmolded

ACCESSORIES

Connector bayonet 10 SL according to VG 95234

Order-Nr.	Description
421 652	Plug-in connector bayonet 10 SL straight with mounting flange VG 95234
421 885	Plug-in connector bayonet 10 SL 90° angle with mounting flange VG 95234

Cable with connector bayonet 10 SL according to VG 95234

Order-Nr.	Description	Length	Connection	
421 653	Ready-made cable Type CL105 3 x 0,75 mm² with 3-pin bayonet connector 10 SL VG 95234 straight	2000 mm	1*	
421 657	Ready-made cable Type CL105 3 x 0,75 mm² with 3-pin bayonet connector 10 SL VG 95234 straight	5000 mm	1*	
421 658	Ready-made cable Type CL105 3 x 0,75 mm² with 3-pin bayonet connector 10 SL VG 95234 90° angle	2000 mm	1*	
421 841	Ready-made cable Type CL105 3 x 0,75 mm² with 3-pin bayonet connector 10 SL VG 95234 90° angle	3000 mm	1*	
421 697	Ready-made cable Type CL105 3 x 0,75 mm² with 3-pin bayonet connector 10 SL VG 95234 90° angle	5000 mm	1*	
420 805	Ready-made cable Type CL105 3 x 0,75 mm² with 3-pin bayonet connector 10 SL VG 95234 90° angle	5000 mm	1*	

1* Cable with flying leads

Connector bayonet according to ISO 15170

Order-Nr.	Description
	see page 17

Cable with connector bayonet according to ISO 15170

Order-Nr.	Description	Length	Connection	
	see page 17			

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

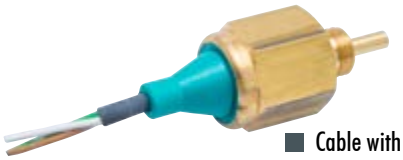
CONNECTORS AND DESIGNS

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

» Order number overview page 24

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

» Order number overview page 24



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

» Order number overview page 25

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

» Order number overview page 25

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

» Order number overview page 25

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

» Order number overview page 25

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

» Order number overview page 25

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 mm² with 4-pin bayonet ISO 15170 straight connector	300 mm	2*
420 792	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	300 mm	4*
420 707	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	1000 mm	1*
420 709	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	2000 mm	1*
420 717	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	3000 mm	1*
420 714	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	5000 mm	1*
619 091	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	5000 mm	4*
420 719	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	6000 mm	1*
420 755	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	7000 mm	1*
421 730	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	10000 mm	1*
420 694	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	150 mm	1*
420 704	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	300 mm	2*
420 706	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	1000 mm	1*
420 764	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	2000 mm	1*
420 708	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	3000 mm	1*
420 756	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	4000 mm	1*
420 718	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	5000 mm	1*
420 716	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	6000 mm	1*
420 715	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	10000 mm	1*
420 795	Ready-made cable Type FLR33X33X 3 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	12000 mm	1*
423 158	Ready-made cable Type FLR33X33X 3 x 0,75 mm² 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

SCREW-IN RESISTORS

Screw-in resistors

Technical description

In many sectors, temperature measurement is one of the most important physically defined parameter to determine product quality, safety and reliability. Temperature sensors are produced with different technologies to fit specific application requirements.

Despite this, precise temperature measurement is one of the most difficult tasks in motor technology. To meet the constantly increasing requirements for improved motor performance, higher efficiency and reduced emissions, it is necessary to use reliable and precise sensors in modern motor control systems. Temperature has a decisive influence on process efficiency, energy consumption and other parameters. Also the service life of machines, equipment and motors is affected by temperature conditions. In many industry sectors, the most important factor is to use the information from reliable temperature measurements for control and regulation functions.

The increased requirements over the last few years regarding measurement accuracy and reliability of temperature measurements has meant that many equipment operators must reconsider the suitability and capability of their temperature measurement equipment.

Screw-in resistors can be used between -50°C and +200°C. BEDIA shockproofed screw-in resistors permit temperature measurement in commercial vehicles, compressors, engine and transmission construction, oil level measurement, biogas plants, wind turbines, plant engineering, ship building and motor test benches.

An optimal thermal coupling of the temperature sensor to the housing ensures a rapid response behavior and high measurement accuracy despite its small installation length.

The insert is normally fitted with a Pt100 temperature sensor according to to EN 60751, Class B. Versions with Pt500, Pt1000, Ni100, Ni1000 as well as KTY silicon sensors or NTC thermistors can also be supplied.

Measurement resistors can be fitted with 2-, 3- or 4-wire technology (standard is 2-wire technology).

The connection thread can be made to customer specifications (the standard is M 14 x 1,5).

The change of resistance in operation can occur by temperature change in the environment (external heating) or by self-heating due to excessive measuring current. Therefore, it is very important to comply with specified maximum performance.

SCREW-IN RESISTORS

Platinum Temperature Sensors

The temperature sensor consists of a high-purity platinum meander structured on a ceramic substrate. The resistivity is laser-trimmed and precisely adjusted to the final value. The resistive structure is covered with a glass passivation layer protecting the sensor against mechanical and chemical damages.

Positive features:

- **FAST REPONSE TIME**
- **EXCELLENT LONG-TERM STABILITY**
- **LOW SELF-HEATING**
- **VIBRATION AND TEMPERATURE SHOCK RESISTANT**

Nickel Temperature Sensors

The temperature sensor consists of a high-purity nickel meander structured on a ceramic substrate. The resistivity is laser-trimmed and precisely adjusted to the final value. The resistive structure is covered with a passivation layer protecting the sensor against mechanical and chemical damages.

Positive features:

- **FAST REPONSE TIME**
- **EXCELLENT LONG-TERM STABILITY**
- **LOW SELF-HEATING**
- **SIMPLE LINEARIZATION**
- **VIBRATION AND TEMPERATURE SHOCK RESISTANT**

The change in ohmic value after 1000 hrs at maximum operating temperature amounts to less than 0.1%.

SCREW-IN RESISTORS

KTY Silicon Sensors

Silicon sensors of the KTY series are devices with a semiconductor layer. They possess, similar to PTC thermistors, a positive temperature coefficient but in contrast they show an approximate linear characteristic.
KTY sensors are lower-priced alternative to Pt sensors, where a non-linear characteristic is acceptable.
The tolerance range at reference temperature is between 1% and 5% accurancy depending on construction, much larger than a Pt resistance thermometer.
The resistance characteristics show a positive behavior, which means that the resistance value increases with increasing temperature (but not linearly).

NTC Thermistors

The NTC thermistor is a temperature dependent semiconductor resistor, whose resistance value decreases with increasing temperature. The Negative Temperature Coefficient (NTC) is about -2 to -6% per Kelvin and thus about ten times larger than for metals. NTC thermistors are therefore well suited for temperature measurements.
The change of resistance in operation can occur by temperature change in the environment (external heating) or by self-heating due to excessive measuring current. Therefore, it is very important to comply with the specified maximum performance of the thermistor.
Thermistors (NTC) are mainly used to monitor resistance over a wide temperature range. The characteristic of a thermistor is showing a non-linear behavior compared to platinum sensors due to the temperature dependency of the resistance.

CONNECTORS AND DESIGNS

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

» Order number overview page 32

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

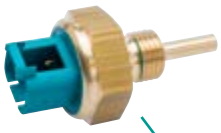
» Order number overview page 32

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

» Order number overview page 32

■ Connector bayonet 10 SL according to VG 95234
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 34

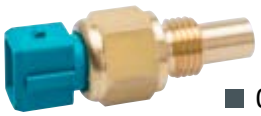


■ Connector DEUTSCH DT04-2P
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 33

■ Connector DEUTSCH DT04-2P
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 33



■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 33

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 33

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermally isolated thermal conductivity probe

» Order number overview page 33

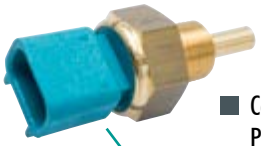
■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermally isolated thermal conductivity probe

» Order number overview page 33

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 33

CONNECTORS AND DESIGNS



■ Connector Packard
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 32

■ Connector blade terminal 6,3 x 0,8
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

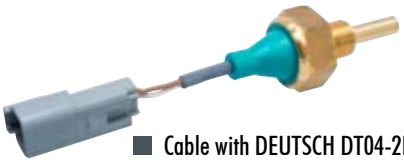
» Order number overview page 32

■ Connector pin contact Ø 4
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 33

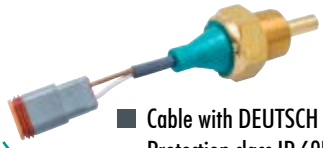
■ Cable with flying leads
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 34



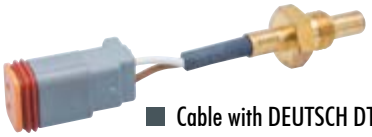
■ Cable with DEUTSCH DT04-2P
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 34



■ Cable with DEUTSCH DT06-2S
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 34

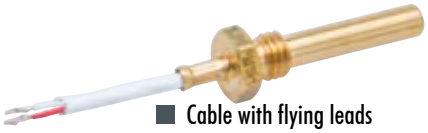


■ Cable with DEUTSCH DT06-2S
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 34

■ Cable with connector M 8x1
Protection class IP 69K according to DIN 40050
with thermal conductivity probe

» Order number overview page 34



■ Cable with flying leads
Protection class IP 67 according to DIN 40050
with thermal conductivity probe

» Order number overview page 34

■ Connector minitimer 2,8 x 0,8
Protection class IP 67 according to DIN 40050
for air temperature

» Order number overview page 33

■ Connector M12x1
Protection class IP 67 according to DIN 40050
for air temperature

» Order number overview page 34

CHARACTERISTICS FOR SENSOR ELEMENTS

Sensor elements – Basic values for platinum and nickel

Temperature / °C	Pt100 Ω DIN IEC 751	Pt 500 Ω DIN IEC 751	Pt1000 Ω DIN IEC 751	Ni 100 Ω DIN IEC 43760	Ni1000 Ω DIN IEC 43760
	Resistance at °C TK / C°				
–70	72,33				
–60	76,33	381,64	763,28	69,5	695
–50	80,31			74,3	743
–40	84,27	421,36	842,71	79,1	791
–30	88,22			84,2	842
–20	92,16	460,8	921,6	89,3	893
–10	96,09			94,6	946
0	100	500	1000	100	1000
10	103,9		1039,02	105,6	1056
20	107,79	538,96	1077,93	111,2	1112
30	111,67		1116,71	117,1	1171
40	115,54	577,7	1155,39	123	1230
50	119,4		1193,95	129,1	1291
60	123,24	616,2	1232,39	135,3	1353
70	127,07		1270,71	141,7	1417
80	130,89	654,46	1308,93	148,2	1482
90	134,7		1347,02	154,9	1549
100	138,5	692,5	1385	161,8	1618
110	142,29		1422,86	168,8	1688
120	146,06	730,4	1460,61	176	1760
130	149,82		1498,24	183,3	1833
140	153,58	767,88	1535,76	190,9	1909
150	157,31		1573,16	198,6	1986
160	161,04	805,22	1610,54	206,6	2066
170	164,76		1647,62	214,8	2148
180	168,46	842,32	1684,67	223,2	2232
190	172,16		172,61	231,8	2318
200	175,84	9879,28	1758,43	240,7	2407

ORDER NUMBER OVERVIEW

Screw-in resistors

Connector bayonet according to ISO 15170

Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Order number	
M 14 x 1,5 / 27*	18 mm	Pt100	–50°C…200°C	2-Wire	422 326	3.
M 14 x 1,5 / 27*	18 mm	Pt100	-50°C…200°C	2-Wire	420 852	3.
M 14 x 1,5 / 27	23 mm	Pt100	–50°C…200°C	2-Wire	420 105	1.
M 14 x 1,5 / 27	23 mm	Pt100	-50°C…200°C	4-Wire	422 181	1.
G 1/2" / 27	21 mm	Pt100	–50°C…200°C	2-Wire	420 108	1.
M 14 x 1,5 / 27*	18 mm	Pt1000	–50°C…200°C	2-Wire	420 106	3.
M 14 x 1,5 / 27	23 mm	Pt1000	–50°C…200°C	2-Wire	422 325	1.
M 12 x 1,5 / 27	21 mm	Ni1000	–50°C…200°C	2-Wire	420 112	1.
M 14 x 1,5 / 27	23 mm	Ni1000	–50°C…200°C	2-Wire	420 109	1.
M 10 x 1 / 27*	12 mm	KTY	-50°C…150°C	2-Wire	420 857	3.
M 18 x 1,5 / 27*/**	23 mm	KTY	-50°C…150°C	2-Wire	420 856	2.
M 14 x 1,5 / 27	23 mm	KTY	–50°C…150°C	2-Wire	420 116	1.
M 14 x 1,5 / 27**	16 mm	NTC	-50°C…180°C	2-Wire	420 200	4.
M 14 x 1,5 / 27**	26 mm	NTC	-50°C…180°C	2-Wire	420 201	4.
M 14 x 1,5 / 27**	26 mm	NTC	-50°C…180°C	2-Wire	420 202	4.

* housing stainless steel
**thermally decoupled

1.

2.

3.

4.

Connector Packard

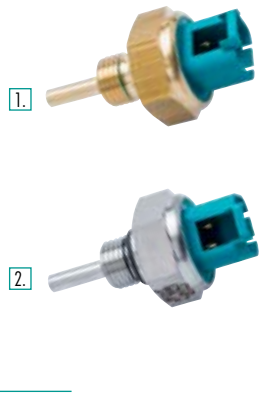
Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Order number
3/8"-18NPTF	17 mm	KTY	-50°C…150°C	2-Wire	422 177

Screw-in resistors

Connector DT04-2P

Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Order number	
M 10 x 1 / 27*	13 mm	Pt1000	–50°C...200°C	2-Wire	420 269	2.
M 10 x 1 / 27	75 mm	Pt1000	–50°C...200°C	2-Wire	420 357	1.
M 14 x 1,5 / 27	18 mm	Pt100	–50°C...200°C	2-Wire	422 187	1.
M 14 x 1,5 / 27*	18 mm	Pt1000	–50°C...200°C	2-Wire	420 343	2.
M 14 x 1,5 / 27	18 mm	Pt1000	–50°C...200°C	2-Wire	420 346	1.
M 16 x 1,5 / 27	17 mm	Pt1000	-50°C...200°C	2-Wire	420 863	1.
G 1/2" / 27	21 mm	Pt100	–50°C...200°C	2-Wire	420 355	1.
1/2" NPTF / 27	18 mm	Pt100	–50°C...200°C	2-Wire	420 366	1.
1/2" NPTF / 27	18 mm	Pt1000	–50°C...200°C	2-Wire	420 347	1.

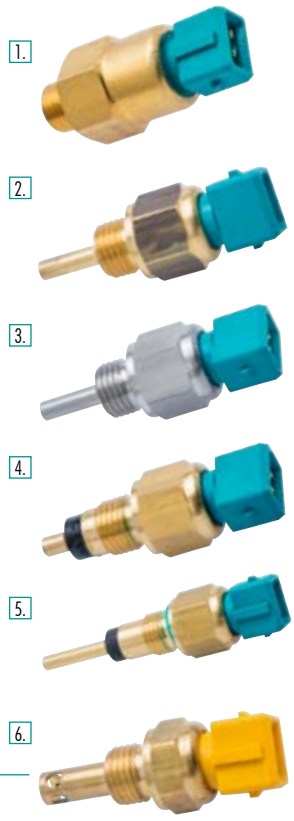
* housing stainless steel



Connector minitimer 2,8 x 0,8

Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Order number	
M 14 x 1,5 / 19	17 mm	Pt100	–50°C…200°C	2-Wire	420 104	2.
M 14 x 1,5 / 19*	17 mm	Pt100	–50°C…200°C	2-Wire	420 549	3.
G 1/2" / 27	17 mm	Pt100	–50°C…200°C	2-Wire	422 331	2.
G 3/8" / 19	17 mm	Pt100	–50°C…200°C	2-Wire	420 329	2.
G 3/8" / 19*	17 mm	Pt100	–50°C…200°C	2-Wire	420 102	3.
M 12 x 1 / 19	17 mm	Pt1000	–50°C…200°C	2-Wire	420 851	2.
M 12 x 1,5 / 19	17 mm	Pt1000	–50°C…200°C	2-Wire	422 179	2.
M 14 x 1,5 / 19	17 mm	Pt1000	–50°C…200°C	2-Wire	420 239	2.
M 14 x 1,5 / 19	18 mm	Pt1000	–50°C…200°C	2-Wire	422 341	2.
G 1/4" / 19	17 mm	Pt1000	–50°C…200°C	2-Wire	422 340	2.
M 14 x 1,5 / 19**	8 mm	Ni1000	–50°C…200°C	2-Wire	420 286	4.
M 14 x 1,5 / 19	17 mm	Ni1000	–50°C…200°C	2-Wire	420 238	2.
M 14 x 1,5 / 19*	18 mm	Ni1000	–50°C…200°C	2-Wire	420 110	3.
M 14 x 1,5 / 19**	26 mm	Ni1000	–50°C…200°C	2-Wire	420 205	5.
M 14 x 1,5 / 19**	49,5 mm	Ni1000	–50°C…200°C	2-Wire	420 204	5.
M 10 x 1 / 19	17 mm	KTY	-50°C…150°C	2-Wire	420 858	2.
M 14 x 1,5 / 19	17 mm	KTY	-50°C…150°C	2-Wire	420 861	2.
M 14 x 1,5 / 19***	17,5 mm	KTY	-50°C…150°C	2-Wire	420 931	6.
M 14 x 1,5 / 19	13 mm	NTC	-40°C…120°C	2-Wire	422 361	3.
M 14 x 1,5 / 19	17 mm	NTC	-40°C…140°C	2-Wire	420 298	2.
M 14 x 1,5 / 19**	39,5 mm	NTC	–50°C…150°C	2-Wire	420 203	5.

* housing stainless steel
** thermally decoupled
*** air sensor



ORDER NUMBER OVERVIEW

Screw-in resistors

Connector M 12 x 1

Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Order number
M 12 x 1 / 13 ***/****	16 mm	NTC	-40°C...125°C	3-Wire	420 920

*** air sensor
**** plastic housing

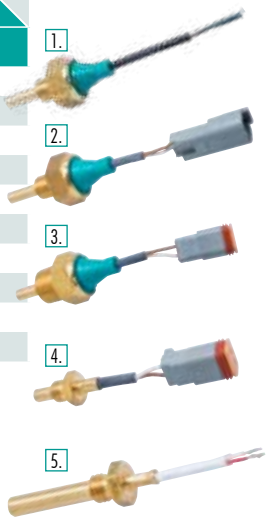
Connector bayonet 10 SL VG 95234

Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Order number
M 14 x 1,5 / 27 *	34 mm	Pt100	–50°C…200°C	3-Wire	420 498

* housing stainless steel

Cable connection

Thread/HEX	thermal conductivity probe	sensing element	Temperature ranges	Mode of connection	Cable length	Cable connection type	Order number	
M 14 x 1,5 / 27	10 mm	Pt100	–50°C…200°C	4-Wire	5000 mm	1*	420 107	1.
M 14 x 1,5 / 19	17 mm	Pt100	–50°C…200°C	2-Wire	4000 mm	1*	422 323	1.
M 14 x 1,5 / 27	23 mm	Pt100	–50°C…200°C	4-Wire	275 mm	1*	420 237	1.
G 1/2" / 27	21 mm	Pt100	–50°C…200°C	2-Wire	275 mm	1*	420 100	1.
G 1/2" / 27	21 mm	Pt100	–50°C…200°C	4-Wire	275 mm	1*	420 236	1.
G 1/2" / 27	21 mm	Pt100	–50°C…200°C	2-Wire	400 mm	1*	420 280	1.
M 10 x 1,5 / 14	31 mm	Pt1000	–50°C…250°C	2-Wire	250 mm	1*	420 522	5.
M 10 x 1 / 14	10 mm	KTY	–50°C…200°C	2-Wire	300 mm	3*	420 862	4.
M 14 x 1,5 / 27	23 mm	KTY	–50°C…150°C	2-Wire	275 mm	2*	420 115	2.
1/2" NPTF / 27	18 mm	KTY	–50°C…150°C	2-Wire	300 mm	3*	420 250	3.



1* Cable with flying leads
2* Cable with Deutsch connector DT04-2P
3* Cable with Deutsch connector DT06-2S

ACCESSORIES

Connector minitimer 2,8 mm x 0,8 mm

Order-Nr.	Description
420 125	Female connector 2-pole

Connector bayonet 10SL plastic

Order-Nr.	Description
420 760	Female bayonet connector 10 SL straight
420 761	Female bayonet connector 10 SL 90°

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
420 750	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	300 mm	1*
420 722	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	1000 mm	1*
420 724	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	3000 mm	1*
420 752	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 straight connector	5000 mm	1*
420 739	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	300 mm	1*
420 732	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	1000 mm	1*
420 731	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	3000 mm	1*
420 751	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	5000 mm	1*
420 765	Ready-made cable Type FLR33X33X 2 x 0,75 mm² with 4-pin bayonet ISO 15170 90° angle	6000 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

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