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Mineral-insulated thermocouples

according to DIN EN 43710 and DIN EN 60584

Description

The mineral-insulated thermocouple measures temperatures in liquids and gases.

The device is suitable for hard-to-reach places in machines and systems thanks to the flexible sheath cable.

Areas of application

- Chemical industry
- Power plants
- Mechanical and plant engineering
- Engine manufacturing
- Testing and laboratory technology
- Container/pipeline construction

Special features

- Flexible sheath cable with vibration-resistant measuring insert
- Quick response time
- SIL and PL-qualified



Type 901250/3X

Type 901240/20



Type 901230/40

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Trademark information

All trademarks and trade and company names used are the property of their rightful owners or authors.

Approval marks and certificates



Certificates for approved device versions are available for download on the manufacturer's website.

Technical data

Information on connection types of RTD temperature probes and thermocouples ⇒ [Data sheet 900002](#).

Information on terminal heads and terminal bases ⇒ [Data sheet 909715](#).

Information on the design and application of thermocouples ⇒ [Data sheet 901000](#).

Electrical data

Electrical connection	
Connection element	Connection line with a stripped line end Connection line with ferrules Connection line with plug-in sleeves Connection line with multi-pole plug connection

Line resistances at 20 °C

Thermocouple	Protection tube diameter	1 couple	2 couples
Fe-CuNi "L"	6.0 mm	0.66 Ω/m	0.85 Ω/m
	4.5 mm	1.40 Ω/m	1.80 Ω/m
	3.0 mm	2.70 Ω/m	3.50 Ω/m
	2.0 mm	5.00 Ω/m	-
	1.5 mm	12.00 Ω/m	-
	1.0 mm	21.50 Ω/m	-
Fe-CuNi "J"	6.0 mm	0.54 Ω/m	-
	3.0 mm	2.10 Ω/m	-
	2.0 mm	8.60 Ω/m	-
	1.5 mm	15.00 Ω/m	-
	1.0 mm	34.00 Ω/m	-
NiCr-Ni "K"	6.0 mm	0.88 Ω/m	2.70 Ω/m
	4.5 mm	1.56 Ω/m	4.80 Ω/m
	3.0 mm	3.50 Ω/m	11.00 Ω/m
	2.0 mm	7.90 Ω/m	25.00 Ω/m
	1.5 mm	14.00 Ω/m	-
	1.0 mm	32.00 Ω/m	-
	0.5 mm	126.00 Ω/m	-
NiCrSi-NiSi "N"	6.0 mm	1.81 Ω/m	1.68 Ω/m
	3.0 mm	5.98 Ω/m	7.00 Ω/m

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Inputs

Measuring range

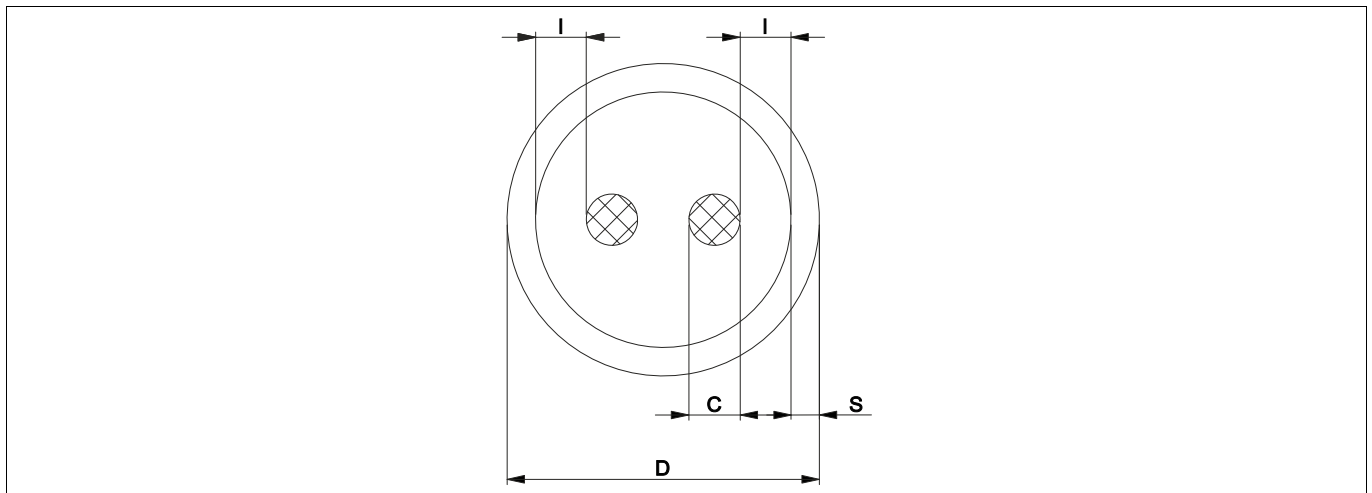
Thermocouple	Protection tube diameter	Measuring range ^a
Fe-CuNi "L", Fe-CuNi "J"	0.5 mm	-200 to +500 °C
	1.0 mm	-200 to +600 °C
	1.5 to 6.0 mm	-200 to +800 °C
NiCr-Ni "K", NiCrSi-NiSi "N"	0.5 to 1.0 mm	-200 to +800 °C
	1.5 to 2.0 mm	-200 to +1,000 °C
	3.0 to 6.0 mm	-200 to +1,100 °C

^a According to DIN EN 60584 (Class 1, ⇒ [Data sheet 901000](#)) and DIN 43710.

Accuracy

Line exterior diameter (D) ± limit value deviation ^a	Minimum wall thickness (S) ^a	Internal conductor minimum diameter (C) ^a	Minimum insulation thick- ness (l) ^a
0.5 ± 0.025 mm	0.05 mm	–	0.04 mm
1.0 ± 0.025 mm	0.10 mm	0.08 mm	0.08 mm
1.5 ± 0.025 mm	0.15 mm	0.15 mm	0.12 mm
2.0 ± 0.025 mm	0.20 mm	0.24 mm	0.16 mm
3.0 ± 0.030 mm	0.30 mm	0.30 mm	0.24 mm
4.0 ± 0.045 mm	0.40 mm	0.48 mm	0.32 mm
4.5 ± 0.045 mm	0.45 mm	0.60 mm	0.36 mm
6.0 ± 0.060 mm	0.60 mm	–	0.48 mm

^a According to DIN EN 61515.



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Measurands

Temperature

Response times	
In water 0.4 m/s	$t_{0.5} \approx 0.15 \text{ s}, t_{0.9} \approx 0.30 \text{ s}, \varnothing 0.5 \text{ mm}$ $t_{0.5} \approx 0.20 \text{ s}, t_{0.9} \approx 0.60 \text{ s}, \varnothing 1.0 \text{ mm}$ $t_{0.5} \approx 0.40 \text{ s}, t_{0.9} \approx 0.90 \text{ s}, \varnothing 1.5 \text{ mm}$ $t_{0.5} \approx 0.80 \text{ s}, t_{0.9} \approx 2.60 \text{ s}, \varnothing 2.0 \text{ mm}$ $t_{0.5} \approx 1.00 \text{ s}, t_{0.9} \approx 2.80 \text{ s}, \varnothing 3.0 \text{ mm}$ $t_{0.5} \approx 2.50 \text{ s}, t_{0.9} \approx 6.50 \text{ s}, \varnothing 4.5 \text{ mm}$ $t_{0.5} \approx 3.00 \text{ s}, t_{0.9} \approx 9.00 \text{ s}, \varnothing 6.0 \text{ mm}$
In air 2.0 m/s	$t_{0.5} \approx 3.5 \text{ s}, t_{0.9} \approx 8.0 \text{ s}, \varnothing 0.5 \text{ mm}$ $t_{0.5} \approx 7.5 \text{ s}, t_{0.9} \approx 17.0 \text{ s}, \varnothing 1.0 \text{ mm}$ $t_{0.5} \approx 10.0 \text{ s}, t_{0.9} \approx 25.0 \text{ s}, \varnothing 1.5 \text{ mm}$ $t_{0.5} \approx 13.0 \text{ s}, t_{0.9} \approx 34.0 \text{ s}, \varnothing 2.0 \text{ mm}$ $t_{0.5} \approx 22.00 \text{ s}, t_{0.9} \approx 64.0 \text{ s}, \varnothing 3.0 \text{ mm}$ $t_{0.5} \approx 34.0 \text{ s}, t_{0.9} \approx 113.0 \text{ s}, \varnothing 4.5 \text{ mm}$ $t_{0.5} \approx 55.0 \text{ s}, t_{0.9} \approx 170.0 \text{ s}, \varnothing 6.0 \text{ mm}$

Outputs

Transmitter	
Analog	JUMO dTRANS T03 B ⇒ Data sheet 707030
Programmable	JUMO dTRANS T01 Junior ⇒ Data sheet 707010

Environmental influences

Admissible ambient temperature	
Connection line insulation material	
Silicone	-50 to +180 °C
PTFE	-190 to +260 °C
Metal braiding	-20 to +350 °C
Adapter sleeve (end closure)	Up to 120 °C as standard, up to 300 °C upon request

Caution: reduced ambient temperature range when using transmitters.

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Mechanical features

Materials

Process connection	Stainless steel
Sheath materials	
Form J	1.4541 (Fe-CuNi)
Form K	2.4816 (NiCr-Ni)
Form L	1.4541 (Fe-CuNi)
Form N	2.4816 (NiCrSi-NiSi)
Connection line insulation material	Silicone PTFE Metal braiding

Device

Terminal head	
Thread	
Form B	M20 × 1.5
Form BUZ	M20 × 1.5
Form BUZH	M20 × 1.5
Form J	M16 × 1.5
Protection tube	Ø 0.5 mm (only in conjunction with measuring insert 1043) Ø 1.0 mm Ø 1.5 mm Ø 2.0 mm Ø 3.0 mm Ø 4.5 mm Ø 6.0 mm

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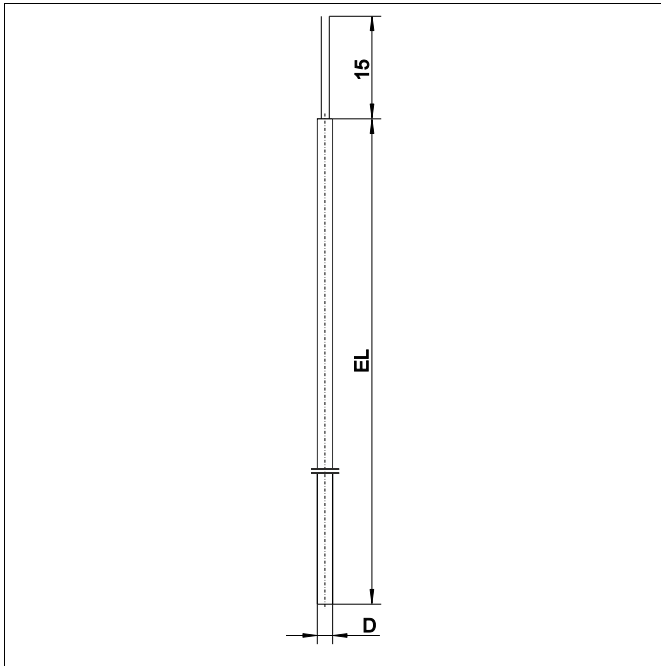
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Dimensions

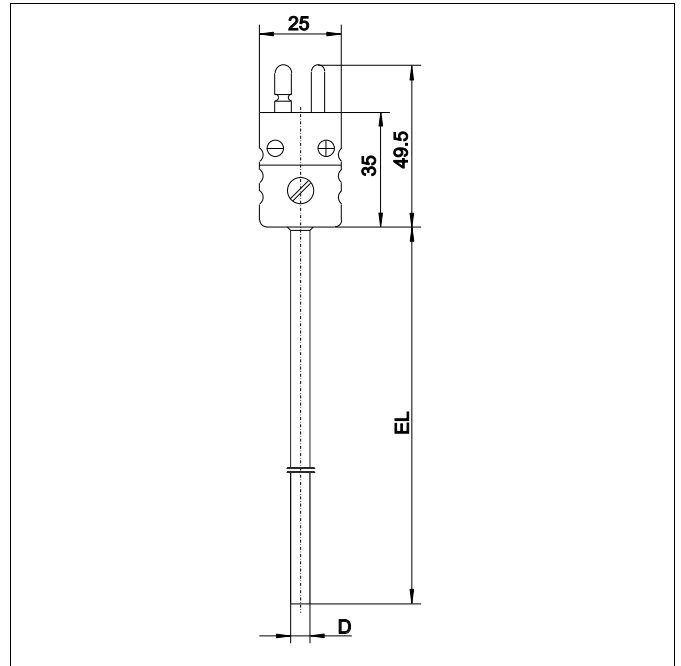
Type 901210/10

Mineral-insulated thermocouple with bare connection wires



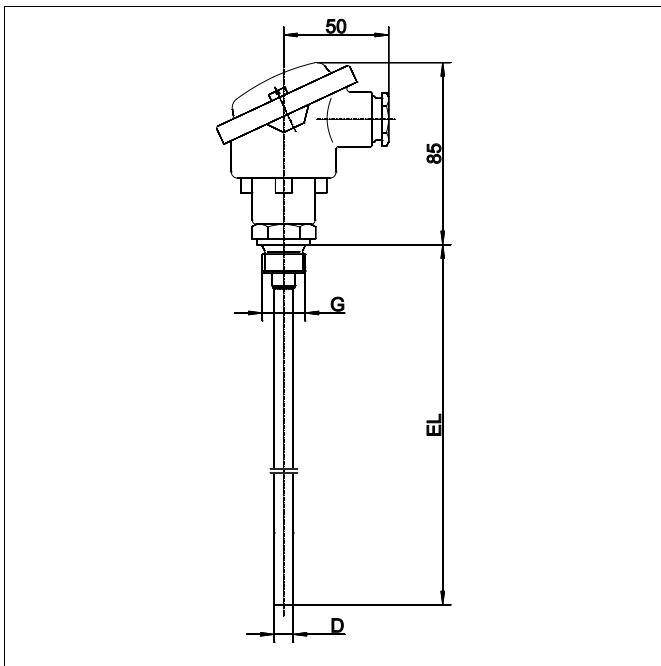
Type 901240/20

Mineral-insulated thermocouple with thermal-voltage-free standard tab connector



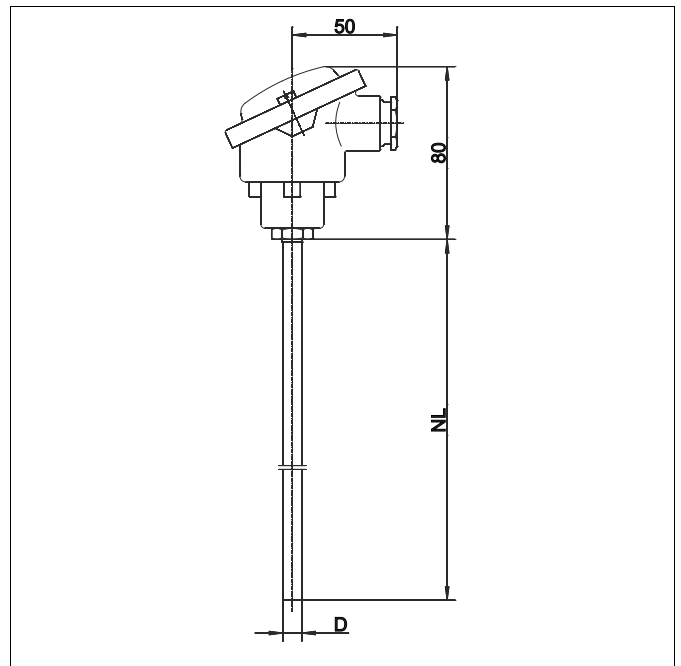
Type 901220/40

Screw-in mineral-insulated thermocouple with terminal head form B



Type 901220/41

Push-in mineral-insulated thermocouple with terminal head form B



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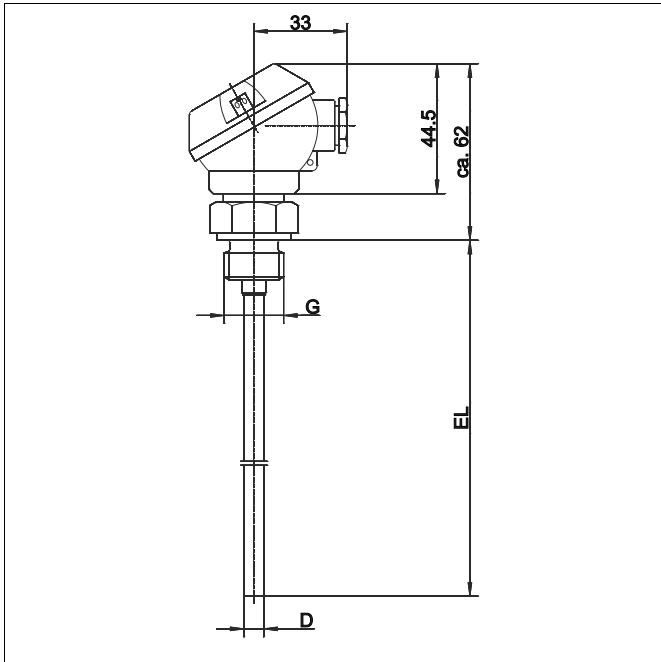
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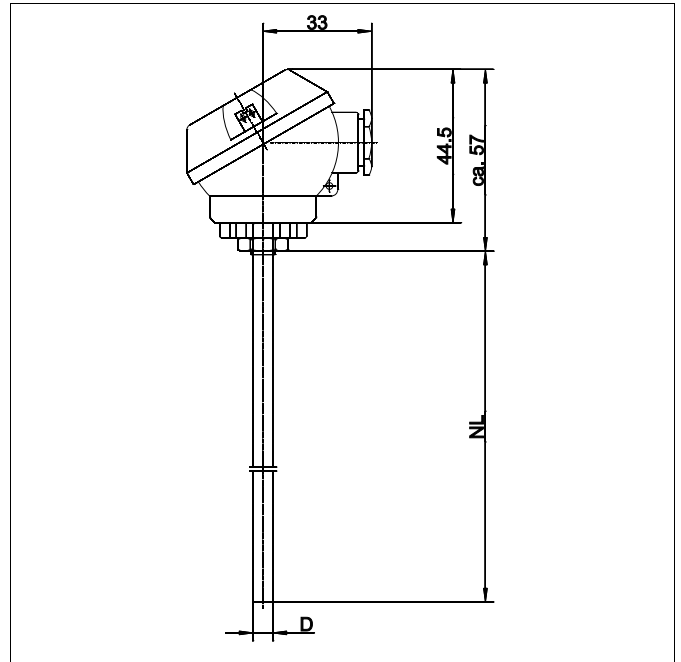
Type 901230/40

Screw-in mineral-insulated thermocouple with terminal head form J



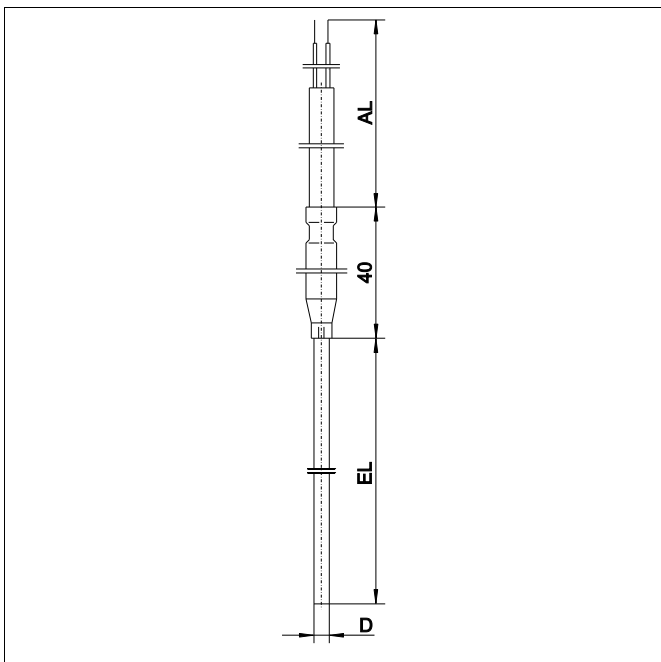
Type 901230/41

Push-in mineral-insulated thermocouple with terminal head form J



Type 901250/3x

Mineral-insulated thermocouple with
 /23 silicone-insulated compensating cable
 /33 PTFE-insulated compensating cable
 /34 metal-braided and insulated with glass fiber



Insofar as the design type allows it, yellow terminal heads are used for SIL and PL applications (extra code 658, 659, or 665). Exceptions to this are probes for use in alkaline environments and probes that are strictly required to be PWIS-free.



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Order details

		(1) Basic type	
	901210/10	Mineral-insulated thermocouple with bare connection wires	
	901240/20	Mineral-insulated thermocouple with thermal-voltage-free standard tab connector	
		(2) Measuring insert/operating temperature	
x x	1040	1× Fe-CuNi "J", operating temperature -200 to +800 °C	
x x	1042	1× Fe-CuNi "L", operating temperature -200 to +800 °C	
x x	1043	1× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x	1048	1× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 1.5 mm, 3 mm, 6 mm	
x	2042	2× Fe-CuNi "L", operating temperature -200 to +800 °C	
x	2043	2× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x	2048	2× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 3 mm, 6 mm	
		(3) Protection tube diameter D	
x	0.5	Ø 0.5 mm (only in conjunction with measuring insert 1043)	
x x	1	Ø 1 mm	
x x	1.5	Ø 1.5 mm	
x x	2	Ø 2 mm	
x x	3	Ø 3 mm	
x x	4.5	Ø 4.5 mm	
x x	6	Ø 6 mm	
		(4) Insertion length EL	
x x	100	100 mm	
x x	200	200 mm	
x x	300	300 mm	
x x	400	400 mm	
x x	500	500 mm	
x x	...	Specification in plain text (50 to 50,000 mm; 50 mm increments)	
		(5) Extra codes	
x x	000	None	
x x	309	Non-insulated construction (element welded to the base)	
x x	855	High-temperature end closure form 1, up to 300 °C	
x x	366	Inspection certificate 3.1 DIN EN 10204 tolerance/calibration	
x x	775	DAkkS calibration according to ISO/IEC 17025	
x x	1150	Accuracy for temperature probe according to AMS 2750 (except Primary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
x x	1151	Accuracy for temperature probe according to CQI-9 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
x x	1152	Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, nur in Verbindung mit Toleranzklasse A oder AA und 4-Leitertechnik)	
x	658	SIL and PL-compatible (only in connection with safetyM safety temperature limiter/monitor according to data sheet 701150; not in connection with transmitters)	

Order code (1) (2) (3) (4) (5)
 Order example 901210/10 - 1042 - 3 - 200 / 000 , ...^a


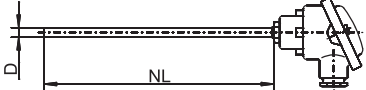
^a List extra codes in sequence, separated by commas.

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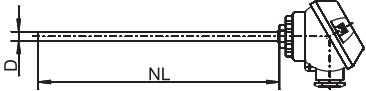
		(1) Basic type	
	901220/40	Screw-in mineral-insulated thermocouple with terminal head form B	
	901220/41	Push-in mineral-insulated thermocouple with terminal head form B	
		(2) Measuring insert/operating temperature	
x x	1040	1× Fe-CuNi "J", operating temperature -200 to +800 °C	
x x	1042	1× Fe-CuNi "L", operating temperature -200 to +800 °C	
x x	1043	1× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x	1048	1× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 1.5 mm, 3 mm, 6 mm	
x	2042	2× Fe-CuNi "L", operating temperature -200 to +800 °C	
x	2043	2× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x	2048	2× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 3 mm, 6 mm	
		(3) Protection tube diameter D	
x x	3	Ø 3 mm	
x x	4.5	Ø 4.5 mm	
x x	6	Ø 6 mm	
		(4) Insertion length EL/NL	
x x	100	100 mm	
x x	200	200 mm	
x x	300	300 mm	
x x	400	400 mm	
x x	500	500 mm	
x x	...	Specification in plain text (50 to 50,000 mm; 50 mm increments)	
		(5) Process connection	
x	000	None	
x	104	Screw connection G 1/2"	
		(6) Extra codes	
x x	000	None	
x x	424	Terminal head form B with M12 plug connector	
x x	309	Non-insulated construction (element welded to the base)	
x x	320	Terminal head form BUZ	
x x	321	Terminal head form BUZH	
x x	331	1× programmable dTRANS T01 Junior transmitter according to data sheet 707010 (not in conjunction with extra code 658, 659, or 665)	
x x	334	2× analog dTRANS T03 B transmitters according to data sheet 707030 (only in conjunction with extra code 321; not in conjunction with extra code 658, 659, or 665)	
x x	335	2× programmable dTRANS T01 Junior transmitters according to data sheet 707010 (only in conjunction with extra code 321; not in conjunction with extra code 658, 659, or 665)	
x x	336	1× programmable dTRANS T01 Junior transmitter and HART® interface according to data sheet 707010 (not in conjunction with extra code 658, 659, or 665)	
x x	867	1× programmable dTRANS T07 B SIL two-channel transmitter with HART® communication and SIL according to data sheet 707080 (not in conjunction with other transmitters)	
x x	366	Inspection certificate 3.1 DIN EN 10204 tolerance/calibration	
x x	775	DAkK calibration according to ISO/IEC 17025	
x x	1150	Accuracy for temperature probe according to AMS 2750 (except Primary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
x x	1151	Accuracy for temperature probe according to CQI-9 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	

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		(1) Basic type	
	901230/40	Screw-in mineral-insulated thermocouple with terminal head form J	
	901230/41	Push-in mineral-insulated thermocouple with terminal head form J	
		(2) Measuring insert/operating temperature	
x x	1040	1× Fe-CuNi "J", operating temperature -200 to +800 °C	
x x	1042	1× Fe-CuNi "L", operating temperature -200 to +800 °C	
x x	1043	1× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x	1048	1× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 1.5 mm, 3 mm, 6 mm	
x	2042	2× Fe-CuNi "L", operating temperature -200 to +800 °C	
x	2043	2× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x	2048	2× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 3 mm, 6 mm	
		(3) Protection tube diameter D	
x x	3	Ø 3 mm	
x x	4.5	Ø 4.5 mm	
x x	6	Ø 6 mm	
		(4) Insertion length EL/NL	
x x	100	100 mm	
x x	200	200 mm	
x x	300	300 mm	
x x	400	400 mm	
x x	500	500 mm	
x x	...	Specification in plain text (50 to 50,000 mm; 50 mm increments)	
		(5) Process connection	
x	000	None	
x	104	Screw connection G 1/2"	
x	254	Movable screw connection G 1/2"	
		(6) Extra codes	
x x	000	None	
x x	424	Terminal head form J with M12 plug connector	
x x	309	Non-insulated construction (element welded to the base)	
x x	366	Inspection certificate 3.1 DIN EN 10204 tolerance/calibration	
x x	775	DAkkS calibration according to ISO/IEC 17025	
x x	1150	Accuracy for temperature probe according to AMS 2750 (except Primary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
x x	1151	Accuracy for temperature probe according to CQI-9 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
x x	1152	Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, nur in Verbindung mit Toleranzklasse A oder AA und 4-Leitertechnik)	
x x	658	SIL and PL-compatible (only in connection with safetyM safety temperature limiter/monitor according to data sheet 701150; not in connection with transmitters)	
x x	659	SIL and PL-compatible (only in conjunction with dTRANS T06 DIN rail according to data sheet 707071; not in conjunction with transmitters)	
x x	665	SIL and PL-compatible (only in connection with programmable dTRANS T07 T SIL two-channel transmitter with HART® communication and SIL according to data sheet 707080; not in connection with other transmitters)	

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(1) Basic type		
901250/32	Mineral-insulated thermocouple with silicone-insulated compensating cable	
901250/33	Mineral-insulated thermocouple with PTFE-insulated compensating cable	
901250/34	Mineral-insulated thermocouple with metal-braided compensating cable which is insulated with glass fiber	
(2) Measuring insert/operating temperature		
x x x 1040	1× Fe-CuNi "J", operating temperature -200 to +800 °C	
x x x 1042	1× Fe-CuNi "L", operating temperature -200 to +800 °C	
x x x 1043	1× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x x x 1048	1× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 1.5 mm, 3 mm, 6 mm	
x x x 2042	2× Fe-CuNi "L", operating temperature -200 to +800 °C	
x x x 2043	2× NiCr-Ni "K", operating temperature -200 to +1,200 °C	
x x x 2048	2× NiCrSi-NiSi "N", operating temperature -200 to +1,200 °C, D = 3 mm, 6 mm	
(3) Protection tube diameter D		
x x x 0.5	Ø 0.5 mm (only in conjunction with measuring insert 1043)	
x x x 1	Ø 1 mm	
x x x 1.5	Ø 1.5 mm	
x x x 2	Ø 2 mm	
x x x 3	Ø 3 mm	
x x x 4.5	Ø 4.5 mm	
	6 Ø 6 mm	
(4) Insertion length EL		
x x x 100	100 mm	
x x x 200	200 mm	
	300 300 mm	
x x x 400	400 mm	
x x x 500	500 mm	
x x x ...	Specification in plain text (50 to 50,000 mm; 50 mm increments)	
(5) Connection line end		
x x x 03	Bare connection wires	
x x x 04	Tin-plated connection wires	
x x x 11	Ferrules according to DIN 46228 Part 4 (standard)	
x x x 56	M12 plug connector	
x x x 80	Multi-pole plug connection (specify type in plain text)	
(6) Connection line length AL		
x x x 2500	2500 mm	
x x x	Specification in plain text (500 to 500,000 mm; 500 mm increments)	
(7) Extra codes		
x x 000	None	
x x 309	Non-insulated construction (element welded to the base)	
x x x 315	Bend protection spring	
x x x 316	Bend protection tubing	
x x 317	Shielded connection line	
x x x 093	Shielding connected with protection tube (only in connection with extra code 317)	
x x x 094	Shielding fed out on the connection side with grounding wire (only in connection with extra code 317)	
x x x 855	High-temperature end closure form 1, up to 300 °C	
x x x 638	Adapter sleeve potted	

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Stock versions

Order code	Part no.
901230/40-1043-6-200-104/000	00068430
901230/40-1043-6-300-104/000	00068431
901250/32-1042-3-100-11-2500/000	00056809
901250/32-1042-1,5-100-11-2500/000	00056811
901250/32-1043-6-100-11-2500/000	00056812
901250/32-1043-6-200-11-2500/000	00068427
901250/32-1043-3-100-11-2500/000	00056813
901250/32-1043-3-200-11-2500/000	00068441
901250/32-1043-3-300-11-2500/000	00068442
901250/32-1043-3-500-11-2500/000	00068443
901250/32-1043-1,5-100-11-2500/000	00049205
901250/32-1043-1,5-200-11-2500/000	00068436
901250/32-1043-1,5-500-11-2500/000	00068437
901250/32-1043-0,5-100-11-2500/000	00066345

Accessories

Type 901220

Designation	Part no.
Stainless steel M8 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 3 mm	00080810
Stainless steel M8 × 1 compression fitting, PTFE clamping ring for protection tube diameter of 3 mm	00049709
Stainless steel M8 × 1 compression fitting, PTFE clamping ring for protection tube diameter of 4.5 mm	00049710
Stainless steel M10 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00065416
Stainless steel G 1/4 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00080811
Steel G 3/8 compression fitting, steel clamping ring for protection tube diameter of 6 mm	00057945
Stainless steel G 3/8 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00317966
Stainless steel G 1/2 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00305445
Stainless steel 1/2-14NPT compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00444210
Steel sheet flange for diameter 6 mm	00065062
USB cable, A connector to Mini-B connector, length 3 m	00506252
PC interface with USB/TTL converter	00456352
Setup program dTRANS T01 CD-ROM	00378733
Setup program dTRANS T05	00574959
JUMO setup dTRANS T01J	00605080
Calibration box type K	30054432

Type 901230

Designation	Part no.
Stainless steel M8 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 3 mm	00080810
Stainless steel M8 × 1 compression fitting, PTFE clamping ring for protection tube diameter of 3 mm	00049709
Stainless steel M8 × 1 compression fitting, PTFE clamping ring for protection tube diameter of 4.5 mm	00049710
Stainless steel M10 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00065416
Stainless steel G 1/4 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00080811
Steel G 3/8 compression fitting, steel clamping ring for protection tube diameter of 6 mm	00057945
Stainless steel G 3/8 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00317966
Stainless steel G 1/2 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00305445
Stainless steel 1/2-14NPT compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00444210

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Steel sheet flange for diameter 6 mm	00065062
Calibration box type K	30054432

Type 901240

Designation	Part no.
Stainless steel M8 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 3 mm	00080810
Stainless steel M8 × 1 compression fitting, PTFE clamping ring for protection tube diameter of 3 mm	00049709
Stainless steel M10 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00065416
Stainless steel G 1/4 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00080811
Steel G 3/8 compression fitting, steel clamping ring for protection tube diameter of 6 mm	00057945
Stainless steel G 3/8 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00317966
Stainless steel G 1/2 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00305445
Stainless steel 1/2-14NPT compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00444210
Calibration box type K	30054432
Designation	Data sheet
Plug connections	909760

Type 901250

Designation	Part no.
Stainless steel M8 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 3 mm	00080810
Stainless steel M8 × 1 compression fitting, PTFE clamping ring for protection tube diameter of 3 mm	00049709
Stainless steel M10 × 1 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00065416
Stainless steel G 1/4 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00080811
Steel G 3/8 compression fitting, steel clamping ring for protection tube diameter of 6 mm	00057945
Stainless steel G 3/8 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00317966
Stainless steel G 1/2 compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00305445
Stainless steel 1/2-14NPT compression fitting, stainless steel clamping ring for protection tube diameter of 6 mm	00444210
Calibration box type K	30054432
Designation	Data sheet
Compression fittings	909750
Flanges	909750

Further information and Downloads



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