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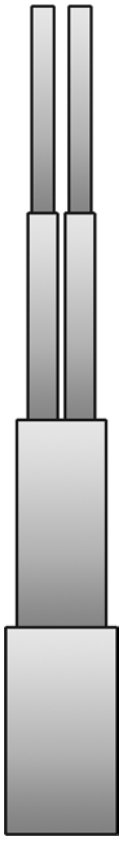
Compensating and connecting cables



- **compensating cables to EN 60584 and DIN 43714**
- **versions from -190 to +400 °C**
- **sheath in PTFE, silicone, PVC or fiberglass**
- **for single and twin thermocouples**

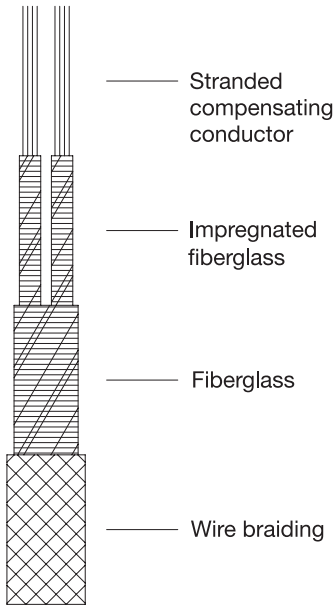
Compensating cables (pages 1 to 3)
When measuring temperature with thermocouples, the cold junction temperature has to be measured in addition to the thermal voltage. The cold junction temperature is acquired to the terminals of the evaluation electronics. Since this may not necessarily be identical with the temperature inside the terminal head, the thermocouple has to be extended by means of a compensating cable (no compensating cable is necessary for thermocouples type B).
Up to 200 °C, compensating cables have the same thermoelectric properties as the thermocouples themselves.

Connecting cables (pages 4 to 8)
Connecting cables with stranded copper conductors transmit the signals from resistance thermometers or transmitters, humidity sensors, and from transducers with a standard signal, to measurement, control and recording devices.
Their construction depends on the local conditions (temperature, humidity and mechanical stress).

Note: Please state sales no. as per price sheet 90.9735 when ordering!

Compensating cables for dry areas temperature range: -20 to +350 °C

Cross-section in mm²	Diameter in mm	Color coding/ Class	Ω/m per thermocouple	Part no.	
Thermocouple Fe-Con L					
2x 0.22	3.5	DIN 43714	2.50	00006479	●[2]
2x 0.50	4.3	DIN 43714	1.25	00017856	●[1]
4x 0.22	3.5	DIN 43714	2.50	00017857	●[2]
Thermocouple Fe-Con J					
2x 0.22	3.5	EN 60584/Cl. 1	2.50	00341902	●[1]
2x 0.50	4.7	EN 60584/Cl. 1	1.25	00341903	●[1]
Thermocouple NiCr-Ni K					
2x 0.50	4.0	EN 60584/Cl. 2	2.00	00017858	●[1]
4x 0.50	3.4	EN 60584/Cl. 2	2.00	00017860	●[2]
Thermocouple Pt10Rh-Pt S					
2x 0.50	4.7	EN 60584/Cl. 2	0.20	00017859	●[1]
4x 0.50	3.5	EN 60584/Cl. 2	0.20	00017861	●[2]



● available from stock

1. with galvanized steel braiding
2. with stainless steel braiding

Item 1

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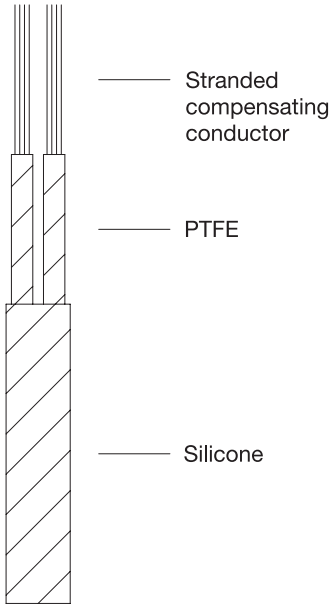
Compensating cables for dry and damp areas temperature range: -50 to +180 °C

Cross-section in mm²	Diameter in mm	Color coding/ Class	Ω/m per thermocouple	Part no.	
Thermocouple Fe-Con L					
2x 0.50	4.7	DIN 43714	1.25	00017846	●
4x 0.22	4.5	DIN 43714	2.50	00017848	●
Thermocouple NiCr-Ni K					
2x 0.22	3.2	EN 60584/Cl. 2	4.50	00052898	●
2x 0.50	4.7	EN 60584/Cl. 2	2.00	00017847	●
4x 0.22	4.7	EN 60584/Cl. 2	4.00	00017849	●



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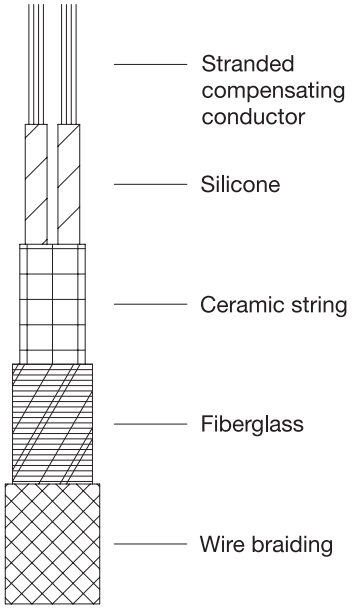
Item 2

Compensating cables for dry and damp areas temperature range: -50 to +180 °C

Cross-section in mm²	Diameter in mm	Color coding/ Class	Ω/m per thermocouple	Part no.	
Thermocouple Fe-Con L					
2x 1.50	6.5	DIN 43714	0.42	00017853	●
Thermocouple NiCr-Ni K					
2x 1.50	6.5	EN 60584/Cl. 2	0.70	00017854	●
Thermocouple Pt10Rh-Pt S					
2x 1.50	6.7	EN 60584/Cl. 2	0.07	00017855	●



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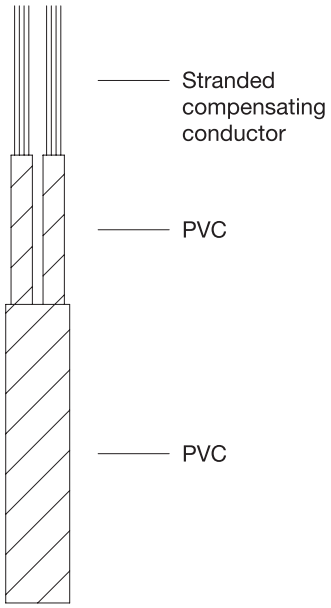
Compensating cables for dry and damp areas temperature range: +5 to +105 °C

Cross-section in mm²	Diameter in mm	Color coding	Ω/m per thermocouple	Part no.	
Thermocouple Fe-Con L					
2x 0.22	3.7	DIN 43 714	2.50	00038959	●



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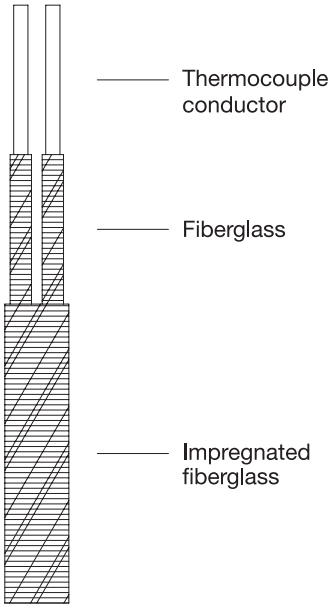
Item 4

Compensating cables for dry areas temperature range: -20 to +350 °C

Cross-section in mm²	Ext. dimension in mm	Color coding/ Class	Ω/m per thermocouple	Part no.	
Thermocouple Fe-Con L					
2x 0.19	1.20 x 1.85	DIN 43714	3.20	00010497	●
Thermocouple NiCr-Ni K					
2x 0.19	1.20 x 2.00	EN 60584/Cl. 2	5.20	00060294	●



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Item 5

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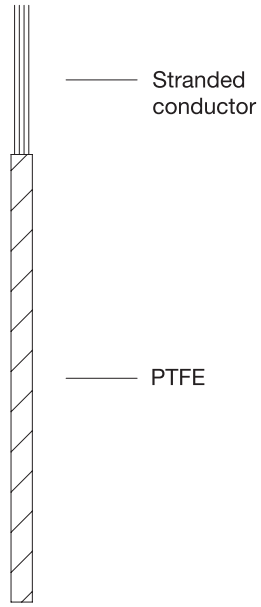
Connecting cables (single conductor) for dry and damp areas temperature range: -190 to +260 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
1x 0.22	1.2	0.0869	00020778	●



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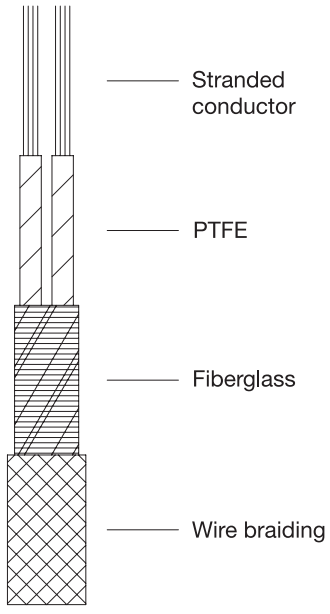
Item 6

Connecting cables for dry and damp areas temperature range: -50 to +260 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.35	3.5	0.055	00011944	●[2]
3x 0.35	3.5	0.055	00048074	●[2]
4x 0.35	3.5	0.055	00006235	●[2]
6x 0.22	4.7	0.080	00084534	●[2]



● available from stock 2. with stainless steel braiding

Item 7

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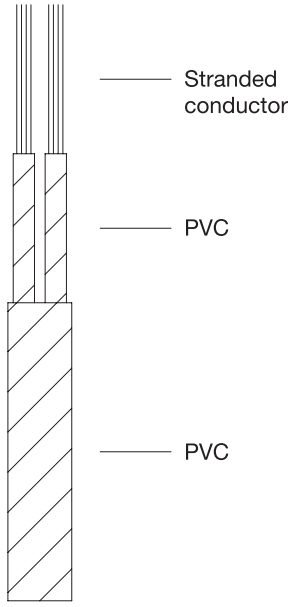
Connecting cables for dry and damp areas temperature range: -5 to +80 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.14	3.2	0.130	00052058	●
2x 0.34	4.7	0.060	00037564	●
2x 0.75	5.7	0.025	00001478	●
3x 0.34	4.7	0.060	00040122	●
3x 0.75	6.3	0.025	00001480	●
4x 0.14	3.7	0.130	00038186	●
4x 0.34	4.9	0.060	00047904	●



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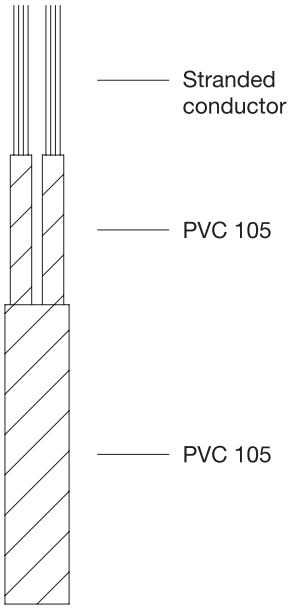
Item 8

Connecting cables for dry and damp areas temperature range: +5 to +105 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.25	4.3	0.070	00048228	●
2x 0.34	5.3	0.060	00052804	●
2x 0.75	6.4	0.025	00045951	●



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Item 9

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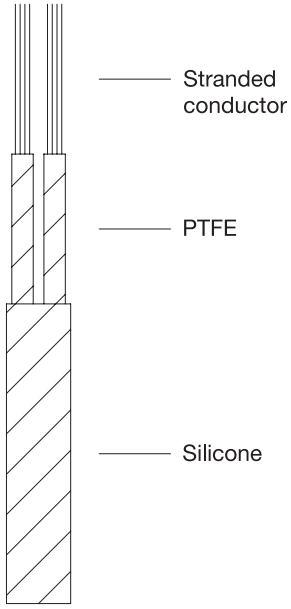
Connecting cables for dry and damp areas temperature range: -50 to +180 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.22	4.2	0.081	00047713	●
2x 0.34	4.6	0.060	00037101	●
3x 0.35	4.5	0.055	00039901	●
4x 0.14	3.8	0.130	00037843	●
4x 0.35	4.7	0.055	00064944	●
6x 0.14	4.6	0.130	00062432	●
6x 0.22	6.3	0.085	00043990	●



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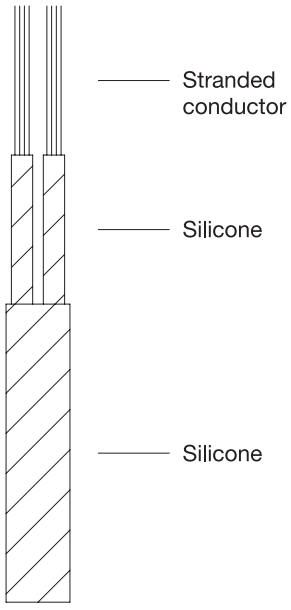
Item 10

Connecting cables for dry and damp areas temperature range: -50 to +180 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.75	6.2	0.025	00001487	●
4x 0.75	7.8	0.025	00001492	●



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Item 11

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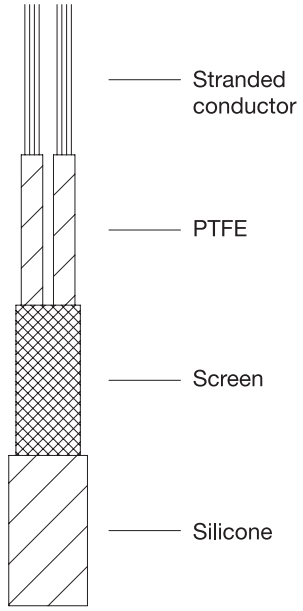
Connecting cables for dry and damp areas temperature range: -50 to +180 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.22	4.5	0.085	00044774	●5
4x 0.14	4.6	0.130	00062502	●4
4x 0.35	6.2	0.055	00039902	●3



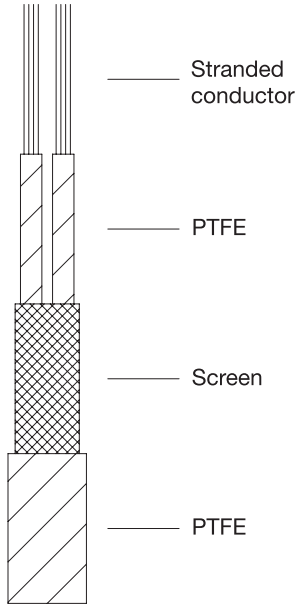
3. screen: nickel-plated copper
4. screen: silver-plated copper
5. screen: plain copper

● available from stock

Item 12

Connecting cables for dry and damp areas temperature range: -190 to +260 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.61	4.9	0.030	00043637	●3
4x 0.14	3.5	0.130	00062849	●4
4x 0.50	4.8	0.040	00045655	●3
8x 0.14	4.9	0.130	00345480	●3



3. screen: nickel-plated copper
4. screen: silver-plated copper

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Item 13

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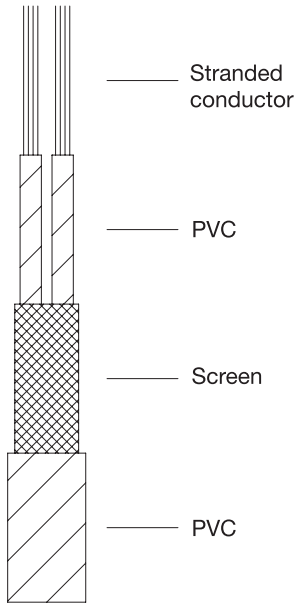
Connecting cables for dry and damp areas temperature range: -5 to +80 °C

Cross-section in mm²	Diameter in mm	Ω/m per conductor	Part no.	
2x 0.14	3.7	0.130	00039272	●[6]
2x 0.25	4.7	0.070	00048185	●[6]
6x 0.14	4.7	0.130	00044132	●[6]



● available from stock 6. screen: tinned copper Item 14

Color coding for compensating cables and thermocables

New color coding to EN 60584					Old color coding to DIN 43714 as of June 1979		
Thermocouple	Type	Conductor color Positive limb	Conductor color Negative limb	Sheath color	Conductor color Positive limb	Conductor color Negative limb	Sheath color
Cu-Con	U[1]	red	brown	brown	red	brown	brown
Cu-Con	T	brown	white	brown	-	-	-
Fe-Con	L[1]	red	blue	blue	red	blue	blue
Fe-Con	J	black	white	black	-	-	-
NiCr-Ni	K	green	white	green	red	green	green
NiCr-Con	E	violet	white	violet	-	-	-
NiCrSi-NiSi	N	mauve	white	mauve	no details		
Pt10Rh-Pt	S	orange	white	orange	red	white	white
Pt13Rh-Pt	R	orange	white	orange	red	white	white
Pt30Rh-Pt6Rh	B	gray	white	gray	no details		

Note: sheath color can also be a colored thread.

1. for thermocouples to DIN 43710.