

Thermocouples approved to DIN 34 40

- for indirect heating installations to DIN 47 54
- for temperatures up to 1500°C
- as single or twin thermocouple
- for operation in water, oil or air
- for approved control and limiter instruments

The thermocouples cited in this Data Sheet are suitable for approved temperature control and limitation equipment to DIN 47 54 (see table on page 4/4).

Thermocouples are preferably used for measuring temperatures in liquids and gases. Applications include heating installations, ovens, furnaces and equipment engineering.

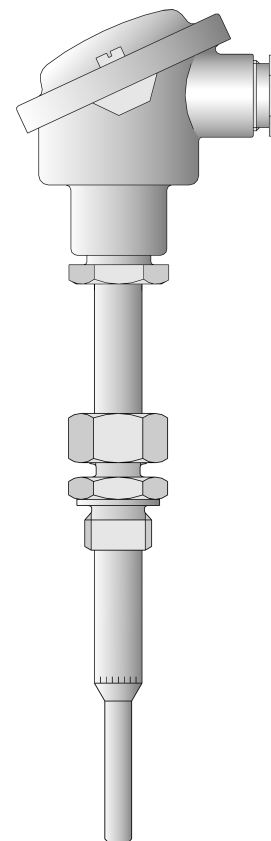
The terminal head Form B is suitable for ambient temperatures up to 100°C.

Protection tubes in different materials protect the measuring insert from chemical influences and mechanical damage. The choice of the appropriate protection tube material depends on the conditions prevailing on site.

The measuring insert is fitted with thermocouples to EN 60 584, Class 2 and DIN 43 710.

Modifications to the versions described below require a fresh type approval.

Note: when ordering please specify the Sales No. as shown in Price Sheet 90.1006



Screw-in thermocouples with screwed pipe joint and terminal head to DIN 43 729, Form B M 24 x 1.5

Fitting length EL in mm	Nom. length NL in mm	Thread G in inch	Temperature in °C	Type 1 thermocpl.	Type 2 thermocouples
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Protection tube stainless steel X 6 CrNiMoTi 17 12 2, Material Ref. 1.4571

Thermocouple NiCr-Ni K

65 – 670	710	1/2"	550	90.020-F03	-
65 – 670	710	1/2"	550	-	90.020-F02 ●

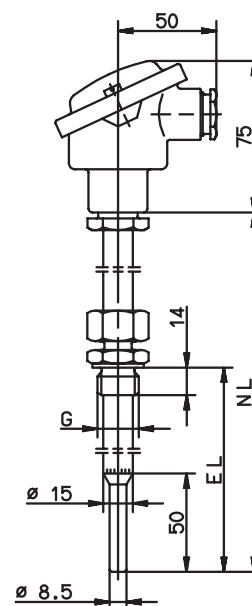
Thermocouple Fe-Con L

65 – 670	710	1/2"	550	90.020-F13	-
65 – 670	710	1/2"	550	-	90.020-F12

Operating medium: water, oil

Operating pressure: 27bar max. up to 100°C, 20bar up to 400°C, no pressure above 400°C.

● available from stock



Item 1

Screw-in thermocouples with weld-in pocket and terminal head to DIN 43 729, Form B M 24 x 1.5

Fitting length ¹ EL in mm	Length L in mm	Temperature in °C	Type 1 thermocpl.	Type 2 thermocouples
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Welding shoulder steel 15 Mo 3, Material Ref. 1.5415
Protection tube steel St 35.8, Material Ref. 1.0305

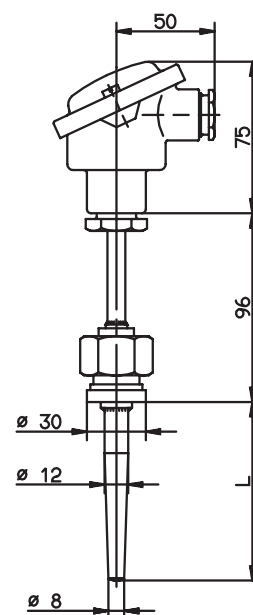
Thermocouple Fe-Con L

220	200	480	90.111-F01 ●	90.111-F02
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Operating medium: water, oil
Operating pressure: 103bar max. up to 100°C, 30bar up to 480°C.

● available from stock.

1. Fitting length of thermocouple



Item 2

Push-in thermocouples with sliding stop flange and terminal head to DIN 43 729, Form B M 24 x 1.5

Fitting length EL in mm	Nom. length NL in mm	Temperature in °C	Type 2 thermocouples
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Protection tube stainless steel X 6 CrNiMoTi 17 12 2, Material Ref. 1.4571

Thermocouple NiCr-Ni K

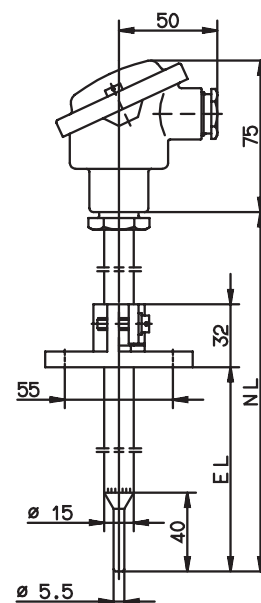
50 – 460	500	800	90.019-F01 ●
50 – 670	710	800	90.020-F01
50 – 960	1000	800	90.021-F01

Thermocouple Fe-Con L

50 – 460	500	700	90.019-F11
50 – 670	710	700	90.020-F11
50 – 960	1000	700	90.021-F11

Operating medium: air

● available from stock



Item 3

Push-in thermocouples with sliding stop flange and terminal head to DIN 43 729, Form B 15

Fitting length EL in mm	Nom. length NL in mm	Diameter D in mm	Temperature in °C	Type 2 thermocouples
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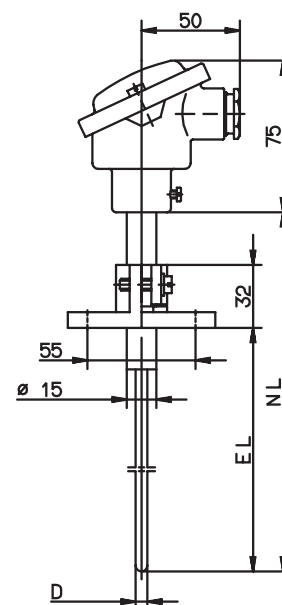
Protection tube ceramic KER 710

Thermocouple NiCr-Ni K

420 – 470	500	6	1000	90.023-F01 ●
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Operating medium: air

● available from stock



Item 4

Push-in thermocouples with sliding stop flange and terminal head to DIN 43 729, Form B 15

Fitting length EL in mm	Nom. length NL in mm	Diameter D in mm	Temperature in °C	Type 1 thermocopl.	Type 2 thermocouples
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Protection tube ceramic KER 710

Thermocouple Pt10Rh-Pt S

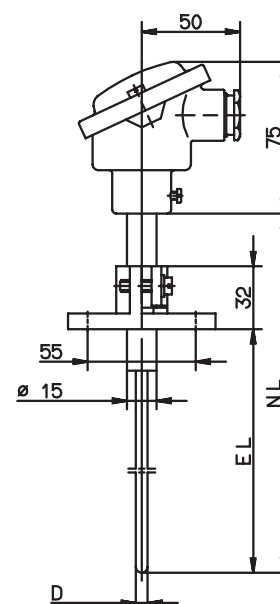
420 – 470	500	6	1300	90.023	90 D 023
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Thermocouple Pt30Rh-Pt6Rh B

420 – 470	500	6	1500	90.029	90 D 029
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Operating medium: air

● available from stock



Item 5

Universal process controllers (DICON 500), temperature limiters (TB), temperature monitors (TW), safety temperature limiters (STB) and safety temperature monitors (STW) with approved temperature probes to DIN 34 40

Thermo-couples	Transducer	Max. temp. in °C	Weld-in pocket	Water/oil	Air/gas	DICON 500	TB/TW	STB/STW
						T 70.3570 ¹	T 70.1130 ¹	T 70.1130 ¹
90.020-F03	1x NiCr-Ni K	550	-	X	-	X	X	-
90.020-F02	2x NiCr-Ni K	550	-	X	-	X	X	X
90.020-F13	1x Fe-Con L	550	-	X	-	X	X	-
90.020-F12	2x Fe-Con L	550	-	X	-	X	X	X
90.111-F01	1x Fe-Con L	480	X	X	-	X	X	X
90.111-F02	2x Fe-Con L	480	X	X	-	X	X	X
90.019-F01	2x NiCr-Ni K	800	-	-	X	X	X	X
90.020-F01	2x NiCr-Ni K	800	-	-	X	X	X	X
90.021-F01	2x NiCr-Ni K	800	-	-	X	X	X	X
90.019-F11	2x Fe-Con L	700	-	-	X	X	X	X
90.020-F11	2x Fe-Con L	700	-	-	X	X	X	X
90.021-F11	2x Fe-Con L	700	-	-	X	X	X	X
90.023-F01	2x NiCr-Ni K	1000	-	-	X	X	X	X
90.023	1x Pt10Rh-Pt S	1300	-	-	X	X	X	-
90 D 023	2x Pt10Rh-Pt S	1300	-	-	X	X	X	X
90.029	1x Pt30Rh-Pt6Rh B	1500	-	-	X	X	X	-
90 D 029	2x Pt30Rh-Pt6Rh B	1500	-	-	X	X	X	X

X = approved - = not approved 1. T 70. ... = Data Sheet 70. ... see Section catalog "Controllers, actuators and system engineering"