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Multichannel Temperature Amplifier

Type 2205A...

for the Injection Molding Industry

The thermocouple amplifier Type 2205A... amplifies the signal of a temperature sensor into a normalized 0 ... 10 V voltage signal. It was developed for industrial applications and optimized for use with the CoMo Injection Type 2869A…/B... and Kistler sensors.

Description

The inputs of the amplifier are designed for a measuring range of 0 ... 200 °C or 0 ... 400 °C. It is available with 2 or 4 channels. The temperature sensors are connected directly without tools, using the cut and grip technique to avoid the need for a conventional connector and socket combination. This method also allows the customer to cut the connecting cable to a length suiting the size of the mold. Cold spot compensation is attached to the terminals.

The amplifier's compactness and operating temperature of up to 125 °C allows it to be mounted right in the mold. The mounting dimensions correspond to those of the multichannel connector Type 1708A... .

The voltage outputs of all channels and the power supply (18 ... 30 VDC) are connected to a single 9-pin connector.

Applications

The amplifier Type 2205A... is intended for use with Kistler temperature or combined pressure and temperature sensors used in injection molding. It is suitable for mounting in molds at temperatures up to 125 °C.

The housing Type 5700A23 is available for use at higher mold temperatures up to 195 °C. It is designed for thermally insulated mounting on a mold.

The case can be combined with the screwed cable gland Type 1417 to allow installation at a distance from the mold without limits for the mold temperature.

As with the multi-channel arrangement for mold pressure, the amplifier is connected to the CoMo Injection Type 2869A1... or 2869B... measuring unit with just one cable (Kistler Type 1457A1A...). This eliminates laborious cabling of individual sensors during the mold set up and avoids incorrect measurements caused by wrong connections.

For combined p-T-sensors Type 6189A... and 6190A.../ B.../C..., the measuring range of 0 ... 200 °C must be choosen (Type 2205A121 or 2205A141).

Technical Data

Number of channels	–	2 or 4
Thermocouples	Type	K, J or N
Measuring ranges	°C	0 ... 200
	°C	0 ... 400
Amplifier operating temperature	°C	0 ... 125
Frequency range (–3 dB)	Hz	0 ... >500
Absolute error of electronics	%	<±1
Reproducibility error	%	<±0,25
Cold junction compensation error at cold spot dT of 10 °C	%	<±0,25

Power Supply

Voltage	VDC	18 ... 30
Current consumption	mA	<20

Voltage Outputs

Output signal (0 ... 200 °C, Version)	mV/°C	50
(0 ... 400 °C, Version)	mV/°C	25
Maximum voltage	VDC	10,5
Minimum voltage	VDC	−0,5
Output resistance	Ω	≈10
Max. current	mA	1

Sensor Inputs

Input resistance	MΩ	>1

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Pin Allocation

Power Supply/Voltage Outputs

Pin assignment:

Function	Pin
Exct GND	1
Signal Out CH1	2
Signal Out CH2	3
Signal Out CH3	4
Signal Out CH4	5
Signal GND	6
Res.	7
Res.	8
Exct 18 … 30 VDC	9

Type Fischer 102 A059-130NBE female
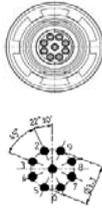
Sensor Inputs

Pin assignment

Function	Pin
Sensor CH1/3 −	1
Sensor CH1/3 +	2
Sensor CH2/4 −	3
Sensor CH2/4 +	4

Type Weidmüller LSF-SMT 3.50

Dimensions

Fig. 1: Dimensions Thermocouple Amplifier Type 2205A…
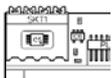
Mounting in External Housing Type 5700A23

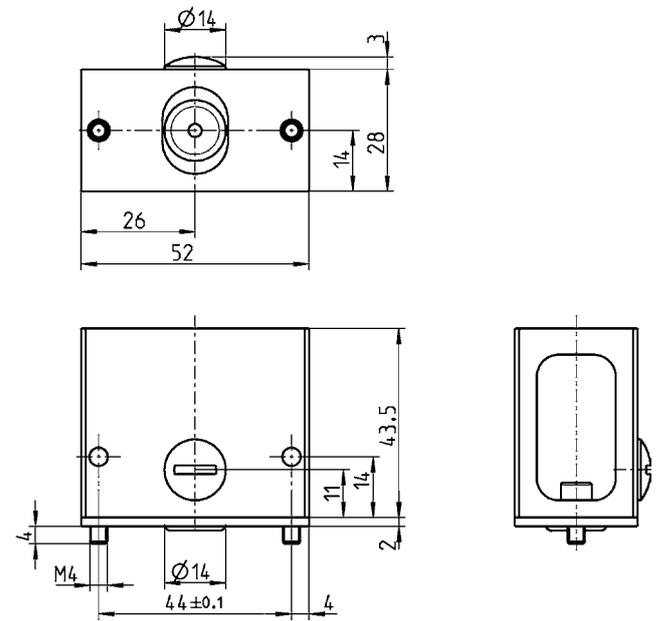With the housing Type 5700A23 the temperature amplifier can be installed outside the mold.

Fig. 2: Dimension housing Type 5700A23

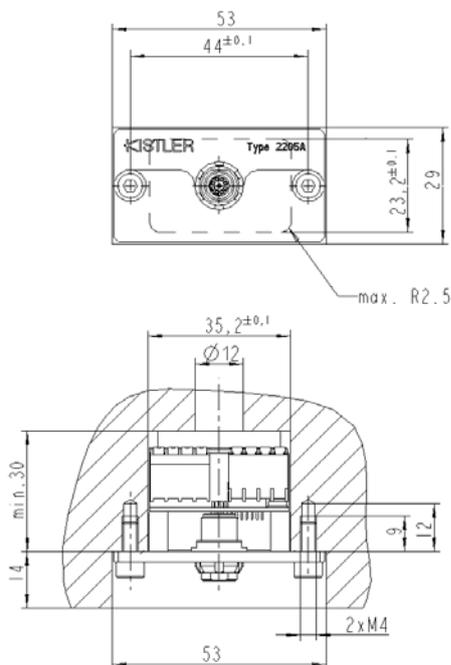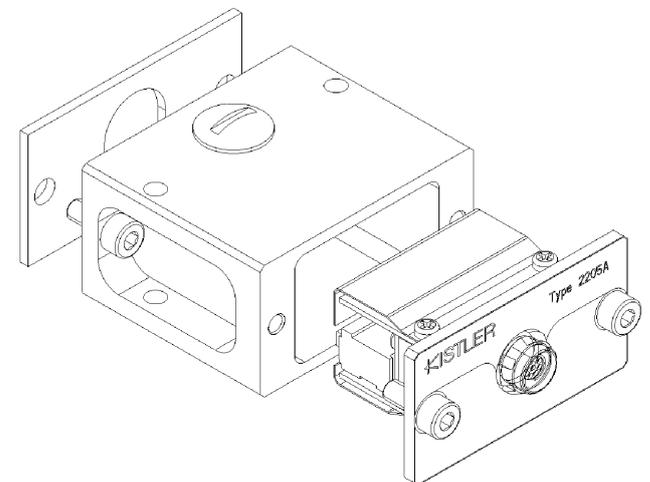Fig 3: Use with housing for installation on mold
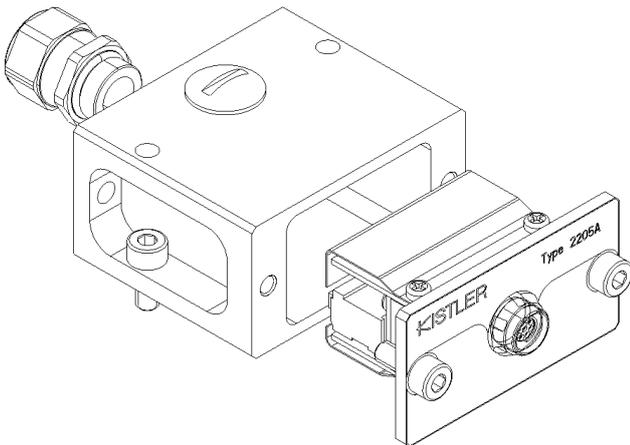
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Fig. 4: Use with housing and cable gland for in-line installation
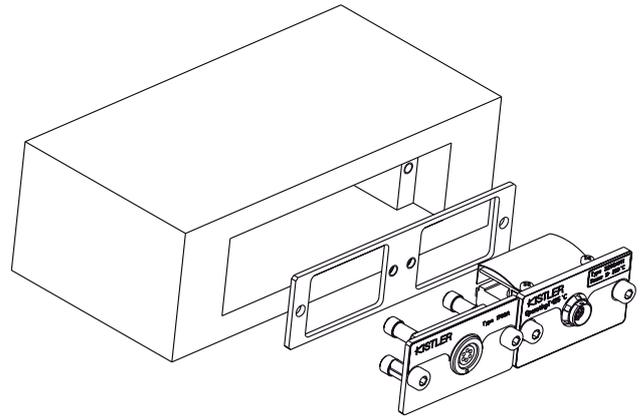

Fig. 6: Installation together with multichannel connector Type 1708A...

Frontplate Type 5700A25 for Combination with Multichannel Connector

To install the temperature amplifier together with the multi-channel connector Type 1708A... in one mold the front plate type 5700A25 is available.

Mounting Tool Type 1300A20

The mounting tool Type 1300A20 helps connect the sensor cables to the temperature amplifier. The temperature amplifier can be held with one hand while operating the connecting terminal mounting tool.
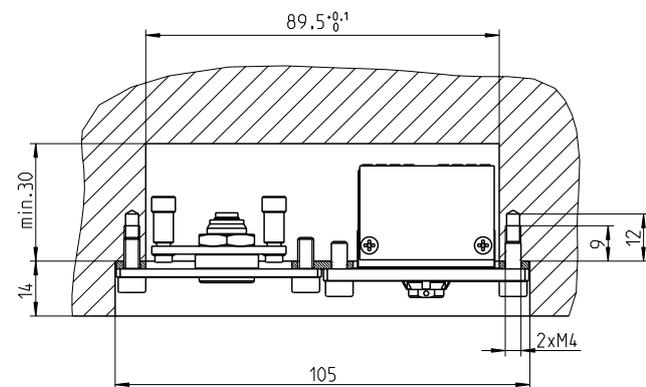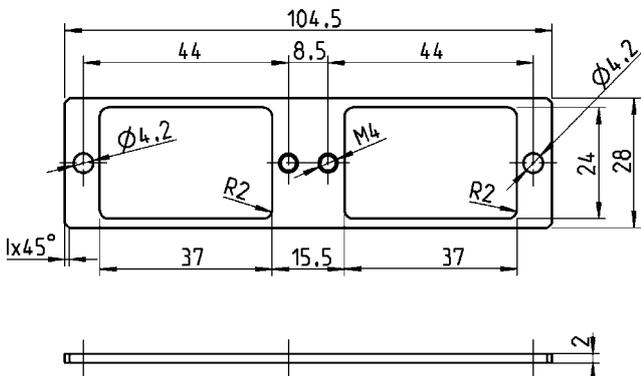

Fig. 7: Mounting tool Type 1300A20

Fig. 5: Front plate mass Type 5700A25

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Included Accessories	**Type/Art. No.**
• Item Art. No. Two M4x10 Allen screws	6.120.117
• Coding plate red (52x18x1,5)	3.520.1074

Optional Accessories	**Typ/Art. Nr.**
• External housing	5700A23
• Front plate for combination Type 1708A...	5700A25
• Cable gland M12x1,5 D6,5 ... 8 mm with Fluoropolymer seal	1417
• Mounting tool	1300A20

4 channel extension cable for CoMo Injection
• Length l = 1 m	1457A1A1
• Length l = 2 m	1457A1A2
• Length l = 5 m	1457A1A5
• Length to customer order (L_{min} = 1 m/L_{max} = 15 m)	1457A1Asp

4 channel extension cable with open ends
• Length l = 7 m	1457A2A7
• Length to customer order (L_{min} = 1 m/L_{max} = 15 m)	1457A2Asp

Ordering Key

Type 2205A ☐☐ ☐

Measuring range 200 °C	1
Measuring range 400 °C	2

2 channels	2
4 channels	4

Thermocouple Type K	1
Thermocouple Type J	2
Thermocouple Type N	3

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