

Multichannel Temperature Amplifier for the injection molding industry

Type 2205B...

The thermocouple amplifier Type 2205B... 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 ComoNeo Type 5887A and Kistler temperature sensors.

Description

The inputs of the amplifier are designed for a measuring range of 0 ... 400°C. It is available with 2, 4 or 8 channels. The temperature sensors are connected directly, using the cut and grip technique to avoid the need for a conventional connector. 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 1708B... and 1710B... .

The voltage outputs of all channels and the power supply (18 ... 30 VDC) are connected to one or two single 9-pin connectors.

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 process monitoring system ComoNeo Type 5887A with just one cable (Kistler Type 1491A...w). This eliminates laborious cabling of individual sensors during the mold set up and avoids incorrect measurements caused by wrong connections.



Technical data

Number of channels	–	2 / 4 / 8
Thermocouples	Type	K / J / N
Measuring range	°C	0 ... 400
Amplifier operating temperature	°C	0 ... 125
Frequency range (-3 dB)	Hz	0 ... >10
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 2-/4-channel	mA	<40
Current consumption 8-channel	mA	<60

Voltage outputs

Output signal (0 ... 400°C)	mV/°C	25
Maximum voltage	VDC	10.5
Minimum voltage	VDC	0.025
Output resistance	Ω	≈10
Max. current	mA	1

Sensor inputs

Input resistance	MΩ	>1
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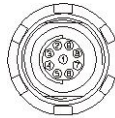
Pin allocation

Power supply/voltage outputs

Pin assignment:

Function	Pin
Exct GND	1
Signal Out CH 1/5	2
Signal Out CH2/6	3
Signal Out CH3/7	4
Signal Out CH4/8	5
Signal GND	6
TEDSN	7
TEDSP	8
Exct 18 ... 30 VDC	9

Type Fischer 102
A059-130NE female

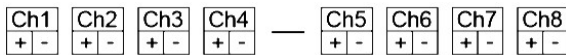


Sensor inputs

Pin assignment

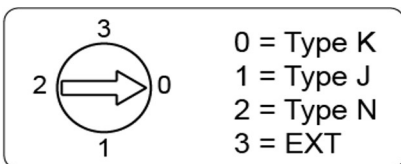
Function	Pin
Sensor x +	Chx +
Sensor x -	Chx -

Type Harting
14010413102000



Setting sensor type

The thermocouple type of the connected sensor element can be set separately for each channel via the rotary switch.



Switch position

0 = Type K
1 = Type J
2 = Type N
3 = Setting via single-wire interface (not yet implemented)

For 8-channel variant Type 2205B8, the switches for channel 1 and 8 are accessible from the side.

Dimensions

2-channel

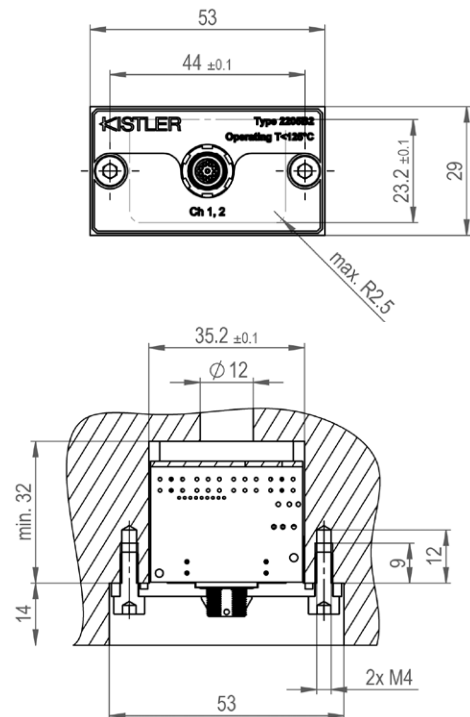


Fig. 1: Dimensions and installation dimensions – 2-channel

4-channel

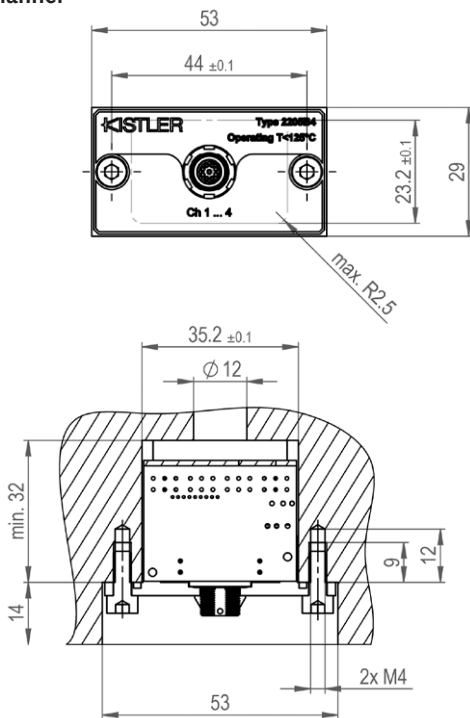


Fig. 2: Dimensions and installation dimensions – 4-channel

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8-channel

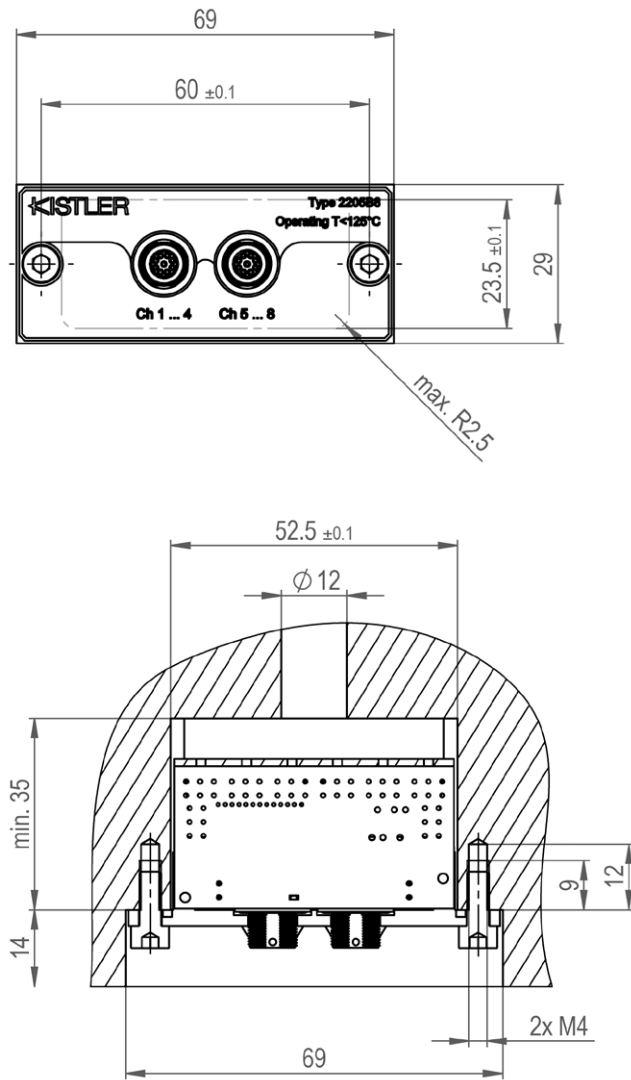


Fig. 3: Dimensions and installation dimensions – 8-channel

Mounting in external housing Type 5700A23

With the housing Type 5700A23 the temperature amplifier Type 2205B2/4 can be installed outside the mold.

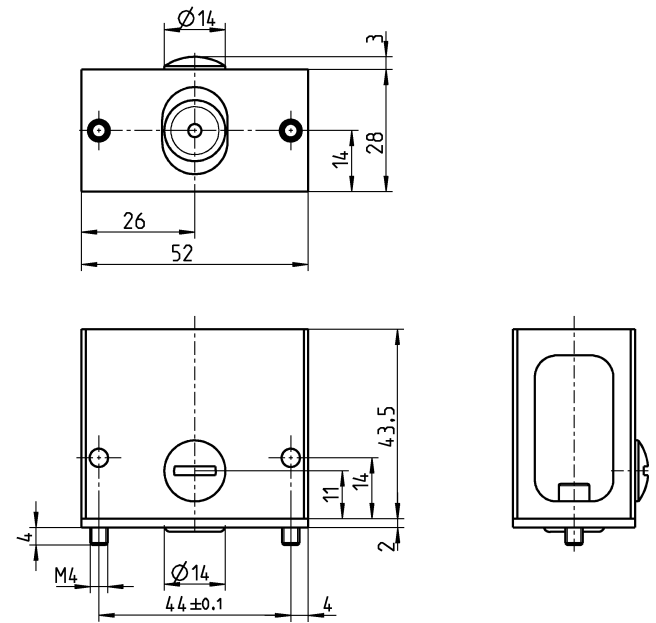


Fig. 4: Dimension housing Type 5700A23

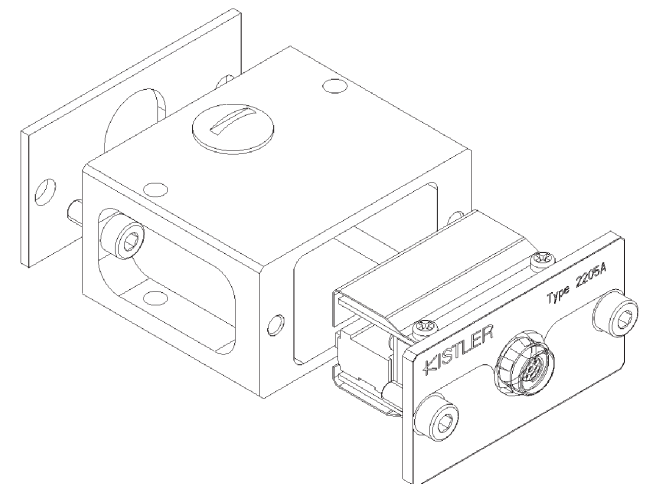


Fig 5: Use with housing for installation on mold

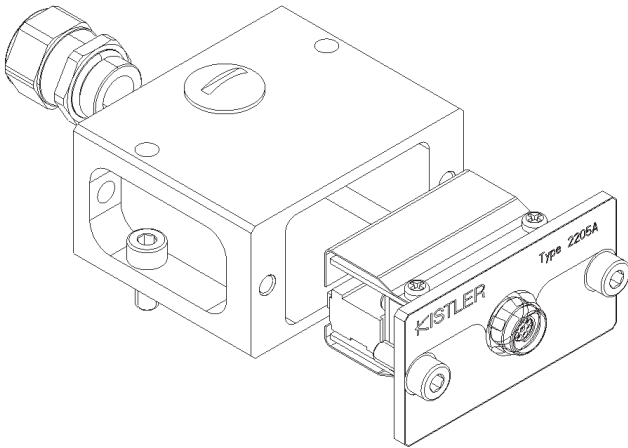


Fig. 6: Use with housing and cable gland for in-line installation

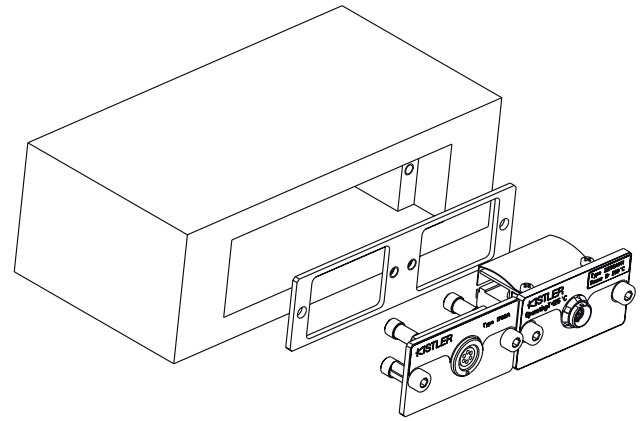


Fig. 8: Installation together with multichannel connector Type 1708A...

Frontplate Type 5700A25 for combination with multichannel connector

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

Cable installation

To install the cable, it is recommended to use a slotted screwdriver with dimensions at the tip of 0.4x2 mm. For example, the slotted screwdriver from Wera, part number 055118006001, may be used. Kistler does not carry this type of product. This screwdriver is inserted into the internal connector and held there until the cable is inserted deep enough. The screwdriver is then removed and the cable will be held in place.

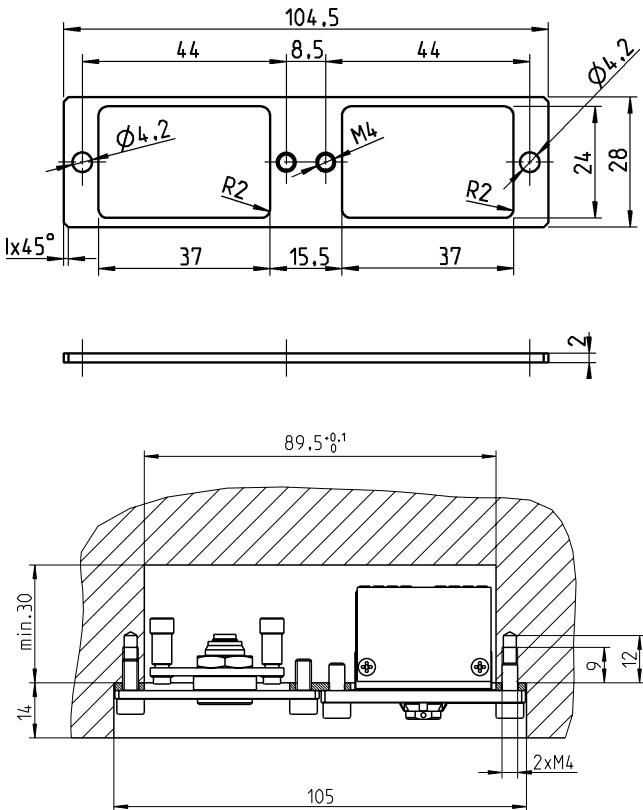


Fig. 7: Front plate mass Type 5700A25

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Included accessories **Type/Mat. No.**
 • Item Art. No. Two M4x10 Allen screws 65012773

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

4 channel extension cable for ComoNeo
 • Length $l = 2 \text{ m}$ 1491A1A2
 • Length $l = 5 \text{ m}$ 1491A1A5
 • Length to customer order 1491A1Asp
 ($L_{\min} = 0.3 \text{ m}/L_{\max} = 20 \text{ m}$)

2x4 channel extension cable (Y-cable) for ComoNeo
 • Length $l = 2 \text{ m}$ 1491A2A2
 • Length $l = 5 \text{ m}$ 1491A2A5

4 channel extension cable for CoMo Injection
 • Length $l = 1 \text{ m}$ 1457A1A1
 • Length $l = 2 \text{ m}$ 1457A1A2
 • Length $l = 5 \text{ m}$ 1457A1A5
 • Length to customer order 1457A1Asp
 ($L_{\min} = 0.3 \text{ m}/L_{\max} = 20 \text{ m}$)

4 channel extension cable with open ends
 • Length $l = 7 \text{ m}$ 1457B2A7
 • Length to customer order 1457B2Asp
 ($L_{\min} = 0.3 \text{ m}/L_{\max} = 20 \text{ m}$)

Ordering key

Type 2205B

2 channel	2
4 channel	4
8 channel	8



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