M12 I/O
connection sockets

Signal status display

Labelling areas

Power supply
status display:
Box supply (Us)

Auxiliary voltage (UP)

1 | Sensor supply UP
2 | Input +
3 | GNDP
4 | Input -
5 | Shield

1 | + 24 V DC Us
2 | + 24 V DC UP
3 | GNDs
4 | GNDP

IP3102-Bxxx

I/O connection

Connector assignment

IP3102-Bxxx | 4-channel analog input ±10 V

The IP3102 analog input module handles signals in the range from -10 to +10 V. The voltage is digitised to a resolution of 16 bits and transmitted, electrically isolated, to the higher-level automation device. The four input channels have differential inputs and possess a common, internal ground potential. The applied auxiliary voltage (which can be any value up to 30 V DC) is fed through to supply the sensor. It is thus possible, for instance, to supply a measuring potentiometer with 10 V DC from an external voltage source.

The module is quite versatile, but default settings have been selected in such a way that in most cases it is not necessary to perform configuration. The input filter and associated conversion times can be set within a wide range; several data output formats may be chosen. If required, the inputs can be scaled differently. Automatic limit monitoring is also available. Parameterisation may be carried out either via the fieldbus or using the KS2000 software tool.

Technical data	IP3102-Bxxx
Number of inputs	4
Input connections	M12, screw type
Signal voltage	-10/0…+10 V
Internal resistance	> 100 kΩ
Common-mode voltage U_{CM}	35 V max.
Resolution	16 bit (for 0…10 V range: resolution 15 bit)
Measuring error	< ±0.3 % (relative to full scale value)
Conversion time	250 ms, configurable to 5 ms
Nominal voltage	24 V DC (-15 %/+20 %)
Input filter	configurable
Sensor supply	from load supply voltage U_P
Current consumption from U_S (without sensor current)	see documentation
Power supply connection	feed: 1 x M8 male socket, 4-pin; downstream connection: 1 x M8 female socket, 4-pin
Bit width in the process image	input: 4 x 16 bit data, optional: 4 x 8 bit control/status
Electrical isolation	channels/control voltage: 500 V, between the channels: no, control voltage/fieldbus: depends on the bus system
Operating/storage temperature	0…+55 °C/-25…+85 °C
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 65/66/67 (conforms to EN 60529)/variable
Approvals	CE, UL