Digital Charge Amplifier

Model: PSA4T-XXXX-MP

Features

_ Wide measuring range

_ High Accuracy

_ Fast sampling time

_ Oversampling

_ EtherCAT, Profinet, Powerlink, Ethernet IP, Profibus

Actual product may not be exactly as shown

The **P**iezo **S**ignal **A**mplifier **PSA4T** is a 4-channel digital charge and temperature measurement amplifier with integrated multi-protocol bus interface that can be used to measure mechanical force, tonnage, pressure, acceleration, vibration and torsion using piezoelectric sensors.

Its fast sampling rate and high resolution enable evaluation of high speed processes using all types of piezo sensors. The combination of charge amplifier and thermocouple amplifier makes it an ideal measurement device for and manufacturing environments such as injection molding machines.

The integrated thermocouple measurement amplifier is suitable for thermocouple types J or K. The amplifiers are equipped with wire break detection and come pre-calibrated from the factory. The temperature value readout can be scaled to the Kelvin or Celsius scale. In the event that a broken wire is detected, a replacement value can be specified.

The rugged aluminum enclosure is IP67 rated which makes the PSA4T ready for use in harsh industrial environments ensuring long lasting and reliable operation.

The extremely low amount of drift on the amplifier inputs and the digital processing of the charge signal result in a highly accurate readout that allows for quasi-static force measurement.

The multi-protocol bus interface supports any Ethernet based communication protocols such as EtherCAT, ProfiNet, POWERLINK or Ethernet IP as well as Profibus. The desired protocol can be selected by the customer via a code switch or through the configuration settings in the diagnostic interface.

Subject to change without notice

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Technical information

Charge amplifier Inputs 1..4

Measuring range selection	Individual channel configuration
Minimal resolution	0,01 pC / digit
Measuring range	+/- 2,147 x 10^9 digits
Readout data format	32 Bit IEEE float
Readout data scaled to +/-10V	16 BIT INT
Samplingrate / integrator speed	200 KSPS
Connector type	BNC neg.

Thermocouple inputs 1..4 (TC)

Thermocouple types	J/K
Measuring range	0..800°C
Accuracy	<1,5°C
Connector type	Fischer DBPU102A051

Industrial Ethernet (IN/OUT)

Type	100 MBit/s, Full Duplex
Protocols	EtherCAT/Profinet/POWERLINK
Connector type	M12 4-pin socket, D-coded

Ethernet (Diagnostics)

Type	10/100 MBit/s, Full/Half Duplex
Connector type	M12 4-pin socket, D-coded

Profibus

Type	Profibus Slave DPV0
Baudrate	<= 12 MBit/s
Connector tye	M12 5-pin plug B-coded (IN) M12 5-pin socket B-coded (OUT)

Supply voltage

Supply voltage Vs/Vp	24 VDC +/- 10%
Max. current	<= 400mA at 24V
Connector type	M8 4-pin plug (IN) M8 4-pin socket (OUT)

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Environmental ratings

Operating temperature	0…+50 °C
Storage temperature	-20..+80 °C
Shock	25 G, 10 ms, ½ sinus
Vibration IEC 68 part 2-6	10 G
Ingress protection	IP 67

Dimensional drawing
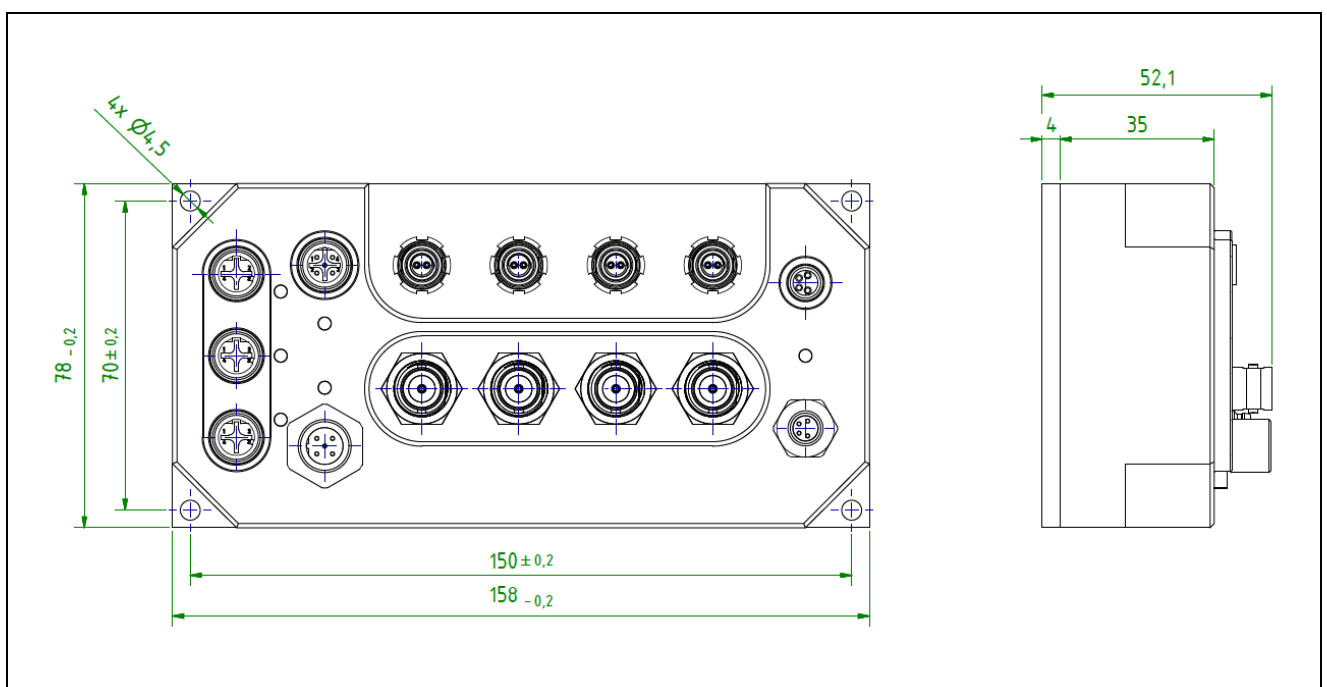
Dimensions

Enclosure (LxWxH)	158 x 78 x 39 mm
Incl. connectors (max.) (LxWxH)	158 x 78 x 52,1 mm
Mounting holes	150 x 70 mm
Weight	800g

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