

SPECIFICATION SHEET

Pressure & Vibration Signal Conditioner PVSC-4200

1. SCOPE

The PVSC-4200 Pressure & Vibration Signal Conditioner is a 4-channel DIN-rail mounted industrial module designed for combined pressure and vibration measurement, signal conditioning, isolation, diagnostics, and retransmission. It supports 2 pressure channels for strain-gauge bridge sensors and voltage/current pressure transmitters, and 2 vibration channels for IEPE/ICP accelerometers, velocity sensors, and proximity probe inputs. The module provides selectable bridge excitation, constant-current IEPE excitation, programmable filtering, and standard analog outputs including 4–20 mA, 0–10 V, and ± 10 V. With RS-485 Modbus RTU setup, fault diagnostics, NAMUR-style fault output, 1.5 kV DC isolation, IP20 protection, and 24 VDC nominal supply, it is suitable for PLC, DCS, SCADA, and DAQ systems in industrial monitoring, machinery health, pressure measurement, and vibration analysis applications.



Parameter	Specification
Model / Part number	PVSC-4200
Product type	4-channel DIN-rail mounted pressure and vibration signal conditioner
Channel configuration	2 pressure channels (CH1 bridge, CH2 transmitter) + 2 vibration channels (CH3, CH4)
Mounting	35 mm DIN rail
Enclosure material	Industrial plastic, UL94-V0 target
Protection rating	IP20
Configuration interface	RS-485 Modbus RTU

Channel	Input Type	Sensor / Signal
CH1	Pressure bridge input	Strain-gauge pressure transducer
CH2	Pressure transmitter input	4–20 mA / 0–10 V / ± 10 V
CH3	Vibration input	IEPE / ICP accelerometer
CH4	Vibration input	IEPE / velocity / proximity probe

Parameter	Specification
Operating temperature	-20 °C to +70 °C
Humidity	5% to 95% RH, non-condensing

Parameter	Specification
Supply voltage	18–30 VDC (Nominal 24V)
Power consumption	≤ 8 W typical
Output types	4–20 mA, 0–10 V, ± 10 V

Parameter	Specification
Maximum loop resistance	600 Ω
Voltage output load	≥ 10 k Ω recommended
Output fault level	< 3.6 mA or > 21 mA, configurable
Raw vibration output	Buffered BNC / terminal output, optional

Parameter	Bridge Input (CH1)	Current / Voltage Input (CH2)
Sensor type	Full bridge / half bridge	Pressure transmitter
Input range	± 5 mV to ± 400 mV	0–20 mA, 4–20 mA, 0–5 V, 0–10 V, ± 10 V
Bridge sensitivity	0.5 to 30 mV/V	—
Bridge resistance	120 Ω to 10 k Ω	—
Excitation voltage	2.5 V / 5 V / 10 V selectable	—
Accuracy	$\pm 0.05\%$ FS target	$\pm 0.05\%$ FS target
Filtering	Programmable low-pass	Programmable low-pass

Parameter	IEPE / ICP (CH3)	Velocity (CH4)	Proximity (CH4)
Sensor type	IEPE / ICP accelerometer	Velocity sensor	Proximity probe driver
Sensitivity range	10 to 500 mV/g	100 to 500 mV/ips typical	0–10 V / ± 10 V
Sensor excitation	2 mA / 4 mA selectable	As per sensor type	External probe driver
Compliance voltage	24 V nominal	—	—
Input range	± 5 V peak minimum	Sensor dependent	0–10 V / ± 10 V
Frequency range	0.5 Hz to 10 kHz	2 Hz to 2 kHz	2 Hz to 5 kHz

Standard	Description
IEC 61326-1	EMC requirements for electrical equipment for measurement, control, and laboratory use
IEC 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use
IEC 60068	Environmental testing
IEC 60715	35 mm DIN rail mounting
IEC 60529	Degrees of protection provided by enclosures (IP20)