

DAQP-STG

- Strain gauge, bridge sensors:
- Piezoresistive bridge:
- Voltage input:
- RTD

- Resistance:
- Isolation:
- Signal connection:

Additional signal input using MSI

- IEPE®

- THERMOCOUPLE

- CHARGE

- VOLTAGE

Isolated universal input module

- ±0.1 to ±1000 mV/V (@ 5 V_{DC} excitation)
- ±0.5 to ±10000 mV/mA (@ 1 mA excitation)
- ±500 µV to ±10 V
- Resistance Temperature Detector (Pt100 to Pt2000)
- 9 resistance ranges (8 to 4000 Ω)
- 25 mΩ to 100 kΩ
- 350 V_{DC}
- 9-pin SUB-D connector

- Constant current powered sensors (accelerometers, microphones); 12 ranges (±2.5 mV to 10 V); requires MSI-V-ACC
- full range of TC type requires MSI-BR-TH-x
- Charge up to 50000 pC requires MSI-V-CH-50
- up to ±200 V requires MSI-BR-V-200



Module specifications

	DAQP-STG
Gain	0.5 to 10 000
Voltage input ranges	±0.5, ±1, ±2.5, ±5, ±10, ±25, ±50, ±100, ±250, ±500 mV, ±1 V, ±2V, ±5 V, ±10 V
Sensitivity @ 5 V _{DC} excitation	±0.1, ±0.2, ±0.5, ±1, ±2, ±5, ±10, ±20, ±50, ±100, ±200, ±400, ±1000 mV/V
Resistance	25 mOhm to 100 kOhm
Input impedance	>100 MOhm (power off: 50 kOhm)
Input noise	3.5 nV * √Hz
Voltage input accuracy	±0.05 % of reading ± 0.02 % of range ±10 µV
Gain drift	typical 10 ppm/K max. 20 ppm/K
Offset drift	typical 0.3 µV/K + 10 ppm of range, max 2 µV/K + 20 ppm of range
linearity	typical 0.02 %
Excitation voltage	0, 0.25, 0.5, 1, 2.5, 5, 10 and 12 V _{DC} software programmable (16 Bit DAC)
Accuracy	±0.03 % ±1 mV
Drift	±10 ppm/K ±50 µV/K
Current limit	100 mA
Protection	Continuous short to ground
Excitation current	0.1, 0.2, 0.5, 1, 2, 5, 10 and 20 mA software programmable (16 Bit DAC)
Accuracy	0.05% ±2µA
Drift	15 ppm/K
Compliance voltage	12 V
Output impedance	>1 MOhm
Supported sensors	4- or 6-wire full bridge 3- or 5-wire ½ bridge with internal completion (software programmable) 3- or 4-wire ¼ bridge with internal resistor for 120 and 350 Ohm (software programmable) ¹⁾ 4-wire full bridge with constant current excitation (piezoresistive bridge sensors) Potentiometric Resistance Resistance Temperature Detection: Pt100, Pt200, Pt500, Pt1000, Pt2000
Bridge resistance	80 Ohm to 10 kOhm @ ≤ 5 V _{DC} excitation
Shunt calibration	Two internal shunt resistors 59.88 kOhm and 175 kOhm
Shunt and completion resistor accuracy	0.05 % ±15 ppm/K
Automatic bridge balance	Input range 500 µV to 1 V: ±200 % of Range 2.5 V to 5 V : ±20% of Range
Bandwidth (-3 dB)	300 kHz
Filters (low pass)	10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, 100 kHz (±1.5 dB @ f ₀)
Filter characteristics	10 Hz to 100 Hz: Butterworth or Bessel 40 dB/dec (2nd order) 300 kHz: Bessel 60 dB/dec (3rd order)

Typical SNR @ 100 kHz [1 kHz] and 5 V _{DC} excitation	66 dB [84 dB] @ 1 mV/V 82 dB [100 dB] @ 50 mV/V
Typical CMRR @ 0.1 mV/V [1 mV/V] and 5 V _{DC} excitation	160 dB [160 dB] @ DC 115 dB [110 dB] @ 400 Hz 110 dB [105 dB] @ 1 kHz
Isolation	±350 V _{DC} continuous (for input, excitation and TEDS interface)
Common mode voltage	±350 V _{DC} input to housing
Over voltage protection	±50 V _{DC} input (+) to input (-)
Output voltage	±5 V
Output resistance	< 1 Ohm
Output current	Max. 5 mA; short to ground protected for 10 seconds
RS-485 interface	Yes
Supported TEDS chips	DS2406, DS2430A, DS2431, DS2432, DS2433
MSI support	MSI-BR-TH-x, MSI-BR-ACC, MSI-BR-V-200, MSI-BR-CH-50
Power supply voltage	±9 V _{DC} (±1 %)
Power consumption	Typ. 1.7 W @ 350 Ohm, 2.15 W @ 120 Ohm (both full bridge @ 5 V _{DC} excitation) Absolute max.: 3 W (maximum excitation @ maximum current)