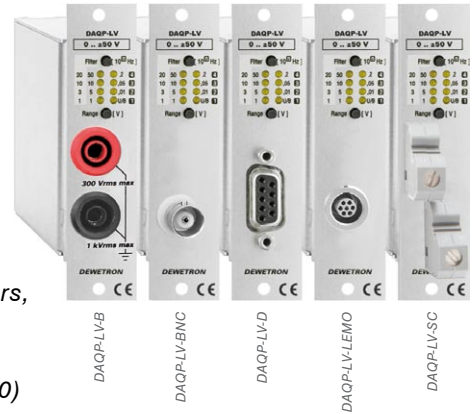


## DAQP-LV *Isolated low voltage module*

- **Voltage input:** 12 ranges (10 mV to 50 V)
- **Current input:** ±20 mA using DAQ-SHUNT-1  
±5 A using DAQ-SHUNT-4 or DAQ-SHUNT-5
- **Bandwidth:** 300 kHz
- **Isolation:** 350 V<sub>DC</sub> (1 kV<sub>RMS</sub> with banana connector)

Additional signal input using MSI

- **IEPE®** Constant current powered sensors (accelerometers, microphones); 12 ranges (10 mV to 5 V); requires MSI-V-ACC
- **RTD** Resistance Temperature Detector (Pt100 to Pt2000) 9 resistance ranges (8 to 4000 Ω); requires MSI-V-RTD
- **CHARGE** Charge up to 50000 pC requires MSI-V-CH-50



### Module specifications

DAQP-LV	
Input ranges unipolar and bipolar	10 mV, 20 mV, 50 mV, 100 mV, 200 mV, 500 mV, 1 V, 2.5 V, 5 V, 10 V, 25 V, 50 V
Push button selectable ranges	10 mV, 50 mV, 200 mV, 1 V, 5 V, 10 V, 50 V
DC accuracy	Range Accuracy
Bipolar	10 mV to 50 mV ±0.02 % of reading ±40 µV 100 mV to 50 V ±0.02 % of reading ±0.05 % of range
Unipolar	10 mV to 50 mV ±0.04 % of reading ±40 µV 100 mV to 50 V ±0.04 % of reading ±0.05 % of range
Input coupling	DC or AC software selectable (1.5 Hz standard, custom on request down to 0.01 Hz)
Gain linearity	0.01 % of full scale
Gain drift range	Typically 10 ppm/°K (max. 20 ppm/°K)
Offset drift	Uni- and bipolar
10 mV to 200 mV	3 µV/°K
500 mV to 50 V	10 ppm of Range/°K
Long term stability	100 ppm/sqrt (1000 hrs)
Input resistance	1 MOhm
-3 dB Bandwidth	300 kHz
Filter selection	Push button or software
Filter	10, 30, 100, 300, 1k, 3k, 10k, 30k, 100k, 300 kHz <sup>(1)</sup>
Filter type	Bessel or Butterworth 40 dB/decade
Typical SFDR and SNR:	300 kHz bandwidth 100 kHz bandwidth 10 kHz bandwidth
20 mV	SFDR SNR SFDR SNR SFDR SNR
1 V	100 dB 72 dB 98 dB 76 dB 97 dB 84 dB
50 V	102 dB 82 dB 99 dB 93 dB 97 dB 96 dB
50 V	102 dB 82 dB 99 dB 93 dB 97 dB 96 dB
Typical CMRR	10 mV to 1 V range: 2.5 V to 50 V range:
	>100 dB @ 50 Hz 90 dB @ 50 Hz
	>100 dB @ 1 kHz 65 dB @ 1 kHz
	83 dB @ 10 kHz 55 dB @ 10 kHz
Input overvoltage protection	350 V <sub>DC</sub>
Isolation voltage	350 V <sub>DC</sub> (1 kV <sub>RMS</sub> with banana connector)
Sensor supply	±9 V (±1 %), 12 V (±5 %), 200 mA resettable fuse protected <sup>(2)</sup>
Output voltage	±5 V
Output resistance	<10 Ohm
Maximum output current	5 mA
Output protection	Short to ground for 10 sec.
Power On default settings	Software programable
Power supply	±9 V <sub>DC</sub> ±1 %
Power consumption	0.8 W without sensor supply
RS-485 interface	Yes
TEDS	Hardware support for TEDS (Transducer Electronic Data Sheet)
Supported TEDS chips	DS2406, DS2430A, DS2432, DS2433, DS2431
Supported MSI	MSI-V-ACC; MSI-V-RTD

<sup>(1)</sup> 300 kHz exclusively for Bessel filter characteristic

<sup>(2)</sup> Overall current should not exceed DEWE-30-xx maximum power.

**MSI specifications**

<b>MSI-V-ACC plugged in DAQP-LV-D</b>																																		
Supported by	DAQP-LV																																	
Sensor types	IEPE® sensor only																																	
Sensor excitation	4 mA ±10 %																																	
Input coupling	AC																																	
Input impedance	1 M Ohm																																	
Filter high pass	1.4 Hz																																	
Input voltage range	±10 mV, 20 mV, 50 mV, 100 mV, 200 mV, 500 mV, 1 V, 2.5 V, 5 V, 10 V, 50 V																																	
DC accuracy	10 mV to 50 mV range ±0.02 % of reading ±40 µV 100 mV to 50 V ±0.02 % of reading ±0.05 % of range																																	
Bandwidth	1.4 to 300 kHz																																	
Typical SFDR and SNR	<table border="1"> <thead> <tr> <th colspan="2">300 kHz bandwidth</th> <th colspan="2">100 kHz bandwidth</th> <th colspan="2">10 kHz bandwidth</th> </tr> <tr> <th>SFDR</th> <th>SNR</th> <th>SFDR</th> <th>SNR</th> <th>SFDR</th> <th>SNR</th> </tr> </thead> <tbody> <tr> <td>20 mV</td> <td>100 dB</td> <td>72 dB</td> <td>98 dB</td> <td>76 dB</td> <td>97 dB</td> <td>84 dB</td> </tr> <tr> <td>1 V</td> <td>102 dB</td> <td>82 dB</td> <td>99 dB</td> <td>93 dB</td> <td>97 dB</td> <td>96 dB</td> </tr> <tr> <td>50 V</td> <td>102 dB</td> <td>82 dB</td> <td>99 dB</td> <td>93 dB</td> <td>97 dB</td> <td>96 dB</td> </tr> </tbody> </table>	300 kHz bandwidth		100 kHz bandwidth		10 kHz bandwidth		SFDR	SNR	SFDR	SNR	SFDR	SNR	20 mV	100 dB	72 dB	98 dB	76 dB	97 dB	84 dB	1 V	102 dB	82 dB	99 dB	93 dB	97 dB	96 dB	50 V	102 dB	82 dB	99 dB	93 dB	97 dB	96 dB
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Input connector	BNC																																	
TEDS	Automatic MSI detection via TEDS interface																																	

<b>MSI-V-RTD plugged in DAQP-LV-D</b>		
Connection types	2-, 3- or 4-wire	
Resistance ranges	8, 16, 40, 80, 160, 400, 800, 1600, 4000 Ω	
RTD types	PT100, PT200, PT500, PT1000, PT2000	
Ohm	Range	Accuracy
	8 to 40 Ω 80 to 4000 Ω	±0.04 Ω ±0.05 % of reading 0.05 % of range
PT100	-200 to 150 °C -200 to 850 °C	±0.5 °C ±1.1 °C
PT200	-200 to 250 °C -200 to 850 °C	±0.6 °C ±1.1 °C
PT500	-200 to 150 °C -200 to 600 °C -200 to 850 °C	±0.5 °C ±0.9 °C ±1.7 °C
PT1000	-200 to 150 °C -200 to 600 °C -200 to 800 °C	±0.5 °C ±1.1 °C ±1.7 °C
PT2000	-200 to 150 °C -200 to 250 °C	±0.6 °C ±0.8 °C
Constant current	1.25 mA	
Constant current drift	22 ppm/°C	
Linearisation	Through software (ITS 90 norm)	
Bandwidth (-3 dB)	30 kHz	
Typical noise (PT100)	fg = 10 Hz	0.003 °C
Range (-200 to 250 °C)	fg = 1 kHz	0.009 °C
Sensor connection	Binder subminiature circular connectors series 712, 5-pin	
Software support	Automatic MSI detection via TEDS interface	