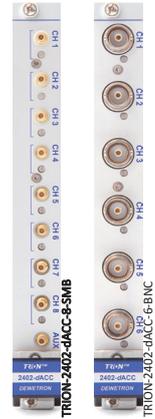


# TRION-2402-dACC



- ▶ Differential multi-function input module
- ▶ Sampling: 24 bit; 200 kS/s per channel
- ▶ Input types
  - Voltage from  $\pm 30$  mV to  $\pm 100$  V
  - IEPE<sup>®</sup>
  - Resistance
  - Current (using external shunt)
- ▶ Additional feature: AUX socket



## Module specifications

Module specifications TRION-2402-dACC	
Input channels	8 using SMB sockets (TRION-2402-dACC-8-SMB) 6 using BNC sockets (TRION-2402-dACC-6-BNC)
AUX socket (SMB version)	Selectable: Camera trigger, external trigger, CAL-port
Sampling rate	200 kS/s per channel
Resolution	24 bit
Input ranges	<ul style="list-style-type: none"> <li>– Voltage: <math>\pm 30</math> mV, <math>\pm 100</math> mV, <math>\pm 300</math> mV, <math>\pm 1</math> V, <math>\pm 3</math> V, <math>\pm 10</math> V, <math>\pm 30</math> V, <math>\pm 100</math> V</li> <li>– IEPE<sup>®</sup>: <math>\pm 100</math> mV, 300 mV, 1 V, 3 V, 10 V</li> <li>– Resistance: 10 <math>\Omega</math>, 30 <math>\Omega</math>, 100 <math>\Omega</math>, 300 <math>\Omega</math>, 1 k<math>\Omega</math>, 3 k<math>\Omega</math>, 10 k<math>\Omega</math>, 30 k<math>\Omega</math>, 100 k<math>\Omega</math>, 300 k<math>\Omega</math>, 1000 k<math>\Omega</math></li> <li>– Current: Depending on external shunt</li> </ul>
Voltage input accuracy <sup>1)</sup>	$\pm 0.02$ % of reading $\pm 0.02$ % of range $\pm 200$ $\mu$ V
<ul style="list-style-type: none"> <li>– Gain drift</li> <li>– Offset drift</li> <li>– Linearity</li> </ul>	Typical 10 ppm/ $^{\circ}$ C max. 20 ppm/ $^{\circ}$ C Typical 0.3 $\mu$ V/ $^{\circ}$ C + 10 ppm of range/ $^{\circ}$ C, max 15 $\mu$ V/ $^{\circ}$ C + 20 ppm of range/ $^{\circ}$ C Typical 0.01 %
Input impedance	<ul style="list-style-type: none"> <li>– Range <math>\leq 10</math> V: 10 M<math>\Omega</math></li> <li>– Range <math>&gt; 10</math> V: 2 M<math>\Omega</math></li> </ul>
Input bias current	$< 1$ nA
Input configuration	Single-ended or differential (programmable)
Input coupling	DC, AC (0.16 Hz, 0.5 Hz, 3.4 Hz, 10 Hz)
Sensor fault detection for IEPE <sup>®</sup>	Short circuit and open sensor detection with LED indication
Excitation current	0.1 to 24 mA <sub>DC</sub> (programmable, 16 Bit DAC, 2 ranges)
<ul style="list-style-type: none"> <li>– Accuracy<sup>1)</sup></li> <li>– Drift</li> <li>– Compliance voltage</li> <li>– Output impedance</li> </ul>	0.05% $\pm 2$ $\mu$ A; $> 20$ mA: 10 % 15 ppm/ $^{\circ}$ C 23 V $> 10$ M $\Omega$
Supported sensors	IEPE <sup>®</sup> (up to 24 mA excitation), resistance

Tab. 48: Module specifications

Module specifications TRION-2402-dACC												
Counter Channels – Counter modes – Trigger level – Counter input bandwidth	2 counter channels, linked to analog input channel 1 and channel 2 Event counting; periode; frequency; pulsewidth; dutycycle Trigger and retrigger level freely programmable within analog input range 1 MHz											
Counter time base	80 MHz											
Typical signal-to-noise ratio, Spurious Free SNR, Effective number of bits <sup>2)</sup>	100 mV range			1 V range			10 V range			100 V range		
	SNR	SFDR <sup>3)</sup>	ENOB <sup>4)</sup>	SNR	SFDR <sup>3)</sup>	ENOB <sup>4)</sup>	SNR	SFDR <sup>3)</sup>	ENOB <sup>4)</sup>	SNR	SFDR <sup>3)</sup>	ENOB <sup>4)</sup>
Sample rate	[dB]	[dB]	[Bit]	[dB]	[dB]	[Bit]	[dB]	[dB]	[Bit]	[dB]	[dB]	[Bit]
1 kS/s	97	124	15.8	111	139	18.1	112	140	18.3	112	139	18.3
10 kS/s	90	121	14.7	108	136	17.6	109	138	17.8	107	136	17.5
100 kS/s	87	118	14.2	104	134	17.0	107	134	17.5	104	134	17.0
200 kS/s	80	116 <sup>5)/110</sup>	13.0	81	131 <sup>5)/112</sup>	13.2	81	132 <sup>5)/110</sup>	13.2	81	131 <sup>5)/112</sup>	13.2
Typical THD	-100 dB											
Typical CMRR – ≤10V Range – >10 to 200 V Range	100 dB @ 50 Hz; 100 dB @ 1 kHz 90 dB @ 50 Hz; 70 dB @ 1 kHz											
Analog anti aliasing filter – Sample rate ≤ 1kS/s – Sample rate ≤ 10kS/s – Sample rate > 10kS/s	2 <sup>nd</sup> order Bessel, automatically set by sample rate 2.5 kHz (-3 dB), 1.5 kHz (-1 dB) 25 kHz (-3 dB), 15 kHz (-1 dB) 250 kHz (-3 dB), 150 kHz (-1 dB)											
Bandwidth (-3 dB digital filter) – 1 kS/s ≤ fs ≤ 51.2 kS/s – 51.2 kS/s < fs ≤ 102.4 kS/s – 102.4 kS/s < fs ≤ 200 kS/s	0.494 fs 0.49 fs 0.38 fs											
Crosstalk fin 1 kHz [10 kHz]	120 dB [105 dB]											
Channel-to-channel phase mismatch	Typically <60 ns between channels using the same range											
Rated input voltage according to EN 61010-2-30	33 V <sub>RMS</sub> , 46.7 V <sub>PEAK</sub> , 70 V <sub>DC</sub>											
Common mode voltage	Input range >10 V: ±100 V <sub>DC</sub> Input range ≤10 V: ±12 V <sub>DC</sub>											
Overvoltage protection	150 V <sub>DC</sub> (1 min)											
Supported TEDS chips	All common TEDS chips are supported.											
Power consumption <sup>6)</sup> – Voltage mode no excitation – IEPE® mode 4 mA – IEPE® mode 16 mA – IEPE® mode 24 mA	6 W 6.5 W 9.5 W 11.4 W											
Weight	Approx. 210 g (SMB version), approx. 270 g (BNC version)											

Tab. 48: Module specifications

1) 1 year accuracy 23 °C ±5 °C

2) LP Filter in auto mode

3) SFDR excluding harmonics

4) ENOB calculated from SNR

5) Below 0.22 fs

6) Consider maximum power supply of your DEWE2 chassis