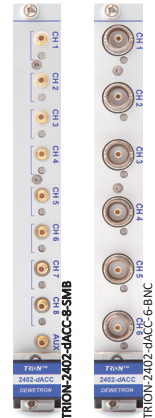


TRION-2402-dACC



- ▶ Differential multi-function input module
- ▶ Sampling: 24 bit; 200 kS/s per channel
- ▶ Input types
 - Voltage from ± 30 mV to ± 100 V
 - IEPE[®]
 - 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"> – Voltage: ± 30 mV, ± 100 mV, ± 300 mV, ± 1 V, ± 3 V, ± 10 V, ± 30 V, ± 100 V – IEPE[®]: ± 100 mV, 300 mV, 1 V, 3 V, 10 V – Resistance: 10 Ω, 30 Ω, 100 Ω, 300 Ω, 1 kΩ, 3 kΩ, 10 kΩ, 30 kΩ, 100 kΩ, 300 kΩ, 1000 kΩ – Current: Depending on external shunt
Voltage input accuracy ¹⁾	± 0.02 % of reading ± 0.02 % of range ± 200 μ V
<ul style="list-style-type: none"> – Gain drift – Offset drift – Linearity 	Typical 10 ppm/ $^{\circ}$ C max. 20 ppm/ $^{\circ}$ C Typical 0.3 μ V/ $^{\circ}$ C + 10 ppm of range/ $^{\circ}$ C, max 15 μ V/ $^{\circ}$ C + 20 ppm of range/ $^{\circ}$ C Typical 0.01 %
Input impedance	<ul style="list-style-type: none"> – Range ≤ 10 V: 10 MΩ – Range > 10 V: 2 MΩ
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 [®]	Short circuit and open sensor detection with LED indication
Excitation current	0.1 to 24 mADC (programmable, 16 Bit DAC, 2 ranges)
<ul style="list-style-type: none"> – Accuracy¹⁾ – Drift – Compliance voltage – Output impedance 	0.05% ± 2 μ A; > 20 mA: 10 % 15 ppm/ $^{\circ}$ C 23 V > 10 M Ω
Supported sensors	IEPE [®] (up to 24 mA excitation), resistance

Tab. 40: Module specifications

Module specifications TRION-2402-dACC												
Counter Channels	2 counter channels, linked to analog input channel 1 and channel 2											
– Counter modes	Event counting; periode; frequency; pulsewidth; dutycycle											
– Trigger level	Trigger and retrigger level freely programmable within analog input range											
– Counter input bandwidth	1 MHz											
Typical signal-to-noise ratio, Spurious	100 mV range			1 V range			10 V range			100 V range		
Free SNR, Effective number of bits ²⁾	SNR	SFDR ³⁾	ENOB ⁴⁾	SNR	SFDR ³⁾	ENOB ⁴⁾	SNR	SFDR ³⁾	ENOB ⁴⁾	SNR	SFDR ³⁾	ENOB ⁴⁾
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 ^{5)/110}	13.0	81	131 ^{5)/112}	13.2	81	132 ^{5)/110}	13.2	81	131 ^{5)/112}	13.2
Typical THD	-100 dB											
Typical CMRR	100 dB @ 50 Hz; 100 dB @ 1 kHz											
– ≤10V Range	100 dB @ 50 Hz; 100 dB @ 1 kHz											
– >10 to 200 V Range	90 dB @ 50 Hz; 70 dB @ 1 kHz											
Analog anti aliasing filter	2 nd order Bessel, automatically set by sample rate											
– Sample rate ≤ 1kS/s	2.5 kHz (-3 dB), 1.5 kHz (-1 dB)											
– Sample rate ≤ 10kS/s	25 kHz (-3 dB), 15 kHz (-1 dB)											
– Sample rate > 10kS/s	250 kHz (-3 dB), 150 kHz (-1 dB)											
Bandwidth (-3 dB digital filter)	0.494 fs											
– 1 kS/s ≤ fs ≤ 51.2 kS/s	0.494 fs											
– 51.2 kS/s < fs ≤ 102.4 kS/s	0.49 fs											
– 102.4 kS/s < fs ≤ 200 kS/s	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 _{RMS} , 46.7 V _{PEAK} , 70 V _{DC}											
Common mode voltage	Input range >10 V: ±100 V _{DC}											
	Input range ≤10 V: ±12 V _{DC}											
Overvoltage protection	150 V _{DC} (1 min)											
Supported TEDS chips	All common TEDS chips are supported.											
Power consumption ⁶⁾	6 W											
– Voltage mode no excitation	6 W											
– IEPE® mode 4 mA	6.5 W											
– IEPE® mode 16 mA	9.5 W											
– IEPE® mode 24 mA	11.4 W											
Weight	Approx. 210 g (SMB version), approx. 270 g (BNC version)											

Tab. 40: 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