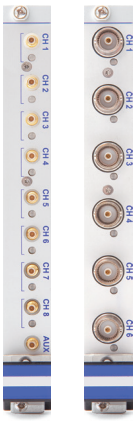
TY-2402-dACC

- 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 specificaions TY-2402-dACC	
Input channels	8 using SMB sockets (TY-2402-dACC-8-SMB)
	6 using BNC sockets (TY-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	
– 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 µV
– Gain drift	Typical 10 ppm/°C max. 20 ppm/°C
– Offset drift	Typical 0.3 µV/°C + 10 ppm of range/°C, max 15 µV/°C + 20 ppm of range/°C
– Linearity	Typical 0.01 %
Input impedance	
– 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)
– Accuracy[1)]	0.05% ±2 µA; >20 mA: 10 %
– Drift	15 ppm/°C
– Compliance voltage	23 V
– Output impedance	>10 MΩ
Supported sensors	IEPE® (up to 24 mA excitation), resistance

Tab. 40: Module specifications

Module specificaions TY-2402-dACC												
Counter Channels – Counter modes – Trigger level – Counter input band-width	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[2]	**100 mV range**			**1 V range**			**10 V range**			**100 V range**		
	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 – ≤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	2nd 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_{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] – 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. 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