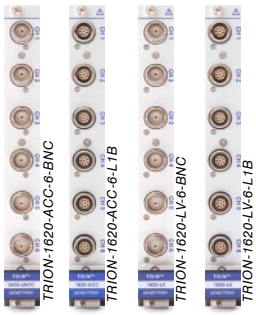
TRION-1620-ACC /-LV Isolated voltage / IEPE input module

- *Sampling:* *2 MS/s per channel at 16-bit*
  24 bit in oversampling mode
- *Input:* *Voltage ±5 mV to ± 100 V[1)]*
  IEPE ±5 mV to ±5 V, excitation 4 or 8 mA
  Current 10 mA to 100 mA[4)]
- *Isolation:* *1.5 kV*



TRION-1620-series specifications										
Input channels		TRION-1620-LV-6-BNC TRION-1620-ACC-6-BNC TRION-1620-LV-6-L1B TRION-1620-ACC-6-L1B			6 channels BNC; voltage input 6 channels BNC; voltage input; IEPE®; 1 counter 6 channels 1B LEMO; voltage input; 1 to 28 V sensor supply; TEDS 6 channels 1B LEMO; voltage input; IEPE®; 1 counter; sensor supply; TEDS					
Sampling Rate / Resolution										
High speed mode		>1 to 2 MS/s,			16-bit					
Over Sampling mode		100 S/s to 1MS/s,			24-bit					
Data Transfer		16-bit / 24-bit								
ADC type		SAR (Successive Approximation Register)								
Data rate DMA transfer		6 analog channels: max 24 MB/s; 1 x counter: max. 16 MB/s								
Input ranges	Voltage IEPE® Current[4)]	±5, ±10, ±20, ±50, ±100, ±200, ±500 mV, ±1 V, ±2 V, ±5 V, ±10 V, ±20 V, ±50 V, ±100 V[1)], ±5, ±10, ±20, ±50, ±100, ±200, ±500 mV, ±1 V, ±2 V, ±5 V, ±10 V, ±20 V, ±50 V 10, 20, 50, 100 mA								
Input noise (5 mV range)		0 to 10 Hz : Noise density:			1.5 μV_{PP} 6.4 nV/SQRT(Hz)					
Input impedance		1 MΩ shunted by 18 pF								
Current input		Internal 10 Ω shunt; max. 100 mA protected with resettable fuse								
Input bias current		<1 nA								
Input coupling		DC; AC: 0.16Hz[2)]								
Accuracy[3)]	Voltage	DC to 1 kHz >1 kHz to 5 kHz >5 kHz to 10 kHz >10 kHz to 100 kHz			±0.02 % of reading ± 0.02 % of range ±20 µV ±0.2 % of reading ± 0.02 % of range ±20 µV ±0.5 % of reading ± 0.02 % of range ±20 µV ±1.00 % of reading ± 0.02 % of range ±20 µV					
	Current[4)]	DC to 1 kHz >1 kHz to 5 kHz >5 kHz to 10 kHz >10 kHz to 100 kHz			±0.1 % of reading ± 0.02 % of range ±10 µA ±0.2 % of reading ± 0.02 % of range ±10 µA ±0.5 % of reading ± 0.02 % of range ±10 µA ±1.00 % of reading ± 0.02 % of range ±10 µA					
Gain drift		typical 10 ppm/°C max. 20 ppm/°C								
Offset drift		typical 0.3 µV/°C + 10 ppm of range, max 15 µV/°C + 20 ppm of range/°C								
Linearity		typical 0.01 %								
Input configuration Isolation impedance Isolation voltage		Isolated Isolation resistance >1 GΩ; Isolation capacitance typically 15 pF 1500 V								
IEPE® excitation[2)]		4 mA, 8 mA ±10 % @ 1 % ±1 mV accuracy @ 24V compliance voltage								
Voltage excitation[4)]		1 to 28 V @ 1 % ±1 mV accuracy freely programmable (max. 100 mA, max. 1 W)								
Signal-to-noise ratio, Spurious free SNR, Effective number of Bits		20 mV range			2 V range			100 V range		
		SNR	SFDR	ENOB	SNR	SFDR	ENOB	SNR	SFDR	ENOB
Sample rate		[dB]	[dB]	[Bit]	[dB]	[dB]	[Bit]	[dB]	[dB]	[Bit]
0.1 kS/s		104	125	17.0	130	155	21.3	130	155	21.3
1 kS/s		97	125	15.8	123	150	20.1	122	145	20.0
10 kS/s		91	122	14.8	111	150	18.1	112	135	18.3
100 kS/s		82	116	13.3	106	142	17.3	105	130	17.1
200 kS/s		78.7	116	12.8	103.7	142	16.9	102	125	16.7
500 kS/s		74	114	12.0	99.5	140	16.2	98	121	16.0
1000 kS/s		71	87	11.5	93.2	130	15.2	93	116	15.2
2000 kS/s		56	56	9.0	88	88	14.3	88	88	14.3
Typical CMRR	≤2 V range	>140 dB @ 50 Hz			>120 dB @ 1 kHz					
	>2 V range	>90 dB @ 50 Hz			>60 dB @ 1 kHz					
Low pass Filter (-3 dB, digital)		10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, 100 kHz, 300 kHz, 600 kHz								
Characterisic		Bessel or Butterworth								
Filter order		2nd , 4th, 6th, 8th								
Analog antialiasing filter		2nd order Bessel, automatically selected								
Bandwidth (-3 dB, deacivated digital filter)		1 MHz 2nd order Bessel filter								
Crosstalk fin 1 kHz [10 kHz]		≤2 V Range: 120 dB [105 dB]								
Channel to channel phase mismatch		typically <10 nsec when using the same input range; <60 nsec for using different ranges.								

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Board to board phase mismatch	<30 nsec
Over voltage protection	±300 V_{DC}
Counter	1 x counter channel linked to analog channel #1; trigger level 70 % of actual analog input range
Counter modes	Event counting, period, frequency, pulse width, duty cycle
Counter input bandwidth	1 MHz to 10 kHz depending on analog filter of CH1
ESD protection	IEC61000-4-2: ±8 kV air discharge, ±4 kV contact discharge
Supported TEDS chips (LEMO only)	DS2406, DS2430A, DS2431, DS2432, DS2433
Power consumption	Voltage mode: 6 W; IEPE® mode: 7.5 W

[1] For safety reasons maximum allowed voltage: 70 V_{DC} (46.7 V_{RMS} AC)
[2] TRION-1620-ACC only
[3] 1 year accuracy 23 °C ±5 °C
[4] TRION-1620-LV-6-L1B only

Cables for TRION-1620-ACC /-LV modules

TRION cables				
	Connector	Termination	Length	TRION modules
TRION-CBL-L1B8-OE-05-00	LEMO 1B.308	open end	5 m	TRION-x-LV-6-L1B
TRION-CBL-L1B8-BNC-0.5-00	LEMO 1B.308	BNC cable socket	0.5 m	TRION-x-LV-6-L1B

Mating connector

Connector				
	Connector	Termination	Length	TRION modules
LEMO-FGG.1B.308.CLAD52Z	LEMO 1B.308	mating connector, for cable diameter 4.2 to 5.2 mm	-	TRION-x-LV-6-L1B
LEMO-FGG.1B.308.CLAD62Z	LEMO 1B.308	mating connector, for cable diameter 5.2 to 6.2 mm	-	TRION-x-LV-6-L1B
LEMO-FGG.1B.308.CLAD72Z	LEMO 1B.308	mating connector, for cable diameter 6.2 to 7.2 mm	-	TRION-x-LV-6-L1B