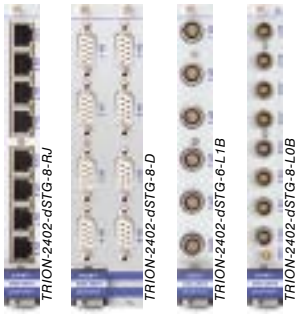
TRION-2402-dSTG Differential universal input module

- *Sampling:* *24 bit; 204.8 kS/s per channel*
- *Input types:* *Voltage up to ±10 V*
  Strain gauge, bridge sensor, piezoresistive bridge
  IEPE
  RTD; Pt100 to Pt2000
  Resistance, potentiometer



TRION-dSTG specifications				
Input channels	8 using RJ-45 sockets (TRION-2402-dSTG-8-RJ) 8 using DSUB 9 sockets (TRION-2402-dSTG-8-D, double-wide slotpanel) 6 using LEMO 1B sockets (TRION-2402-dSTG-6-L1B) 8 using LEMO 0B sockets (TRION-2402-dSTG-8-L0B)			
Sampling rate	204.8 kS/s per channel			
Resolution	24 bit			
Input ranges				
Voltage	±10, 30, 100, 300 mV, 1 V, 3 V, 10 V			
Bridge	1, 3, 10, 30, 100, 300, 1000 mV/V or mV/mA			
IEPE	±100, 300 mV, 1V, 3V, 10V			
Resistance	10, 30, 100, 300 Ω, 1, 3, 10, 30 kΩ			
Current	Depending on external Shunt			
Voltage input accuracy	±0.02 % of reading ± 0.02 % of range ±20 µV			
Gain drift	typical 10 ppm/°C max. 20 ppm/°C			
Offset drift	typical 0.3 µV/°C + 10 ppm of range, max 2 µV/°C + 20 ppm of range/°C			
linearity	typical 0.01 %			
Input impedance	100 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); max. DC voltage when AC coupled: 50 V			
Excitation voltage	0 to 13.5 V_{DC} (programmable, 1 mV steps), 100 mA max. current, max 8 W per module			
Accuracy	±0.03 % ±1 mV			
Drift	±10 ppm/K ±50 µV/K			
Current limit	100 mA			
Protection	Continuous short to ground			
Excitation current	0.2 to 20 mA_{DC} (programmable, 1 µA steps)			
Accuracy	0.05% ±2 µA			
Drift	15 ppm/°C			
Compliance voltage	10 V			
Output impedance	>10 MΩ			
IEPE Excitation	4 mA ±10 %			
Compliance voltage	22 V			
Supported sensors	4- or 6-wire full bridge 3- or 5-wire ½ bridge with internal completion (software programmable) 3- or 4-wire ¼ bridge with internal resistor for 120 and 350 Ω (software programmable) 4-wire full bridge with constant current excitation (piezoresistive bridge sensors) Potentiometric; Resistance Resistance Temperature Detection: Pt100, Pt200, Pt500, Pt1000, Pt2000 (software linearization functionality depending on measurement software) IEPE (fixed 4 mA excitation)			
Bridge resistance	80 Ω to 10 kΩ @ ≤ 5 V_{DC} excitation			
Shunt calibration	Two internal shunt resistors 50 kΩ and 100 kΩ			
Shunt and completion resistor accuracy	0.05 % ±15 ppm/K			
Automatic bridge balance	±250 % of Range			
Typical SNR Range	10 mV	100 mV	1 V	10 V
100 S/s ≤ fs ≤ 1 kS/s	82 dB	101 dB	111 dB	112 dB
10 kS/s < fs ≤ 102.4 kS/s	72 dB	92 dB	104 dB	107 dB
102.4 kS/s < f ≤ 200 kS/s	69 dB	80 dB	81 dB	81 dB
Spurious free dynamic range	10 mV	100 mV	1 V	10 V
100 S/s ≤ fs ≤ 1 kS/s	108 dB	128 dB	141 dB	141 dB
10 kS/s < fs ≤ 102.4 kS/s	103 dB	123 dB	134 dB	136 dB
102.4 kS/s < f ≤ 200 kS/s	99 dB	120 dB[1] / 106 dB	133 dB[1] / 106 dB	135 dB[1] / 106 dB
Typical CMRR	90 dB @ 1 KHz	80 dB @ 10 KHz		
Analog anti aliasing filter	2nd order Bessel, automatically set by sample rate			
Sample rate ≤ 1k S/s	2.5 kHz (-3 dB), 1.5 kHz (-1 dB)			
Sample rate ≤ 10 kS/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)				
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 ≤ 204.8 kS/s	0.38 fs			
Crosstalk fin 1 kHz [10 kHz]	120 dB [105 dB]			

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Channel to channel phase mismatch	<60 nsec between channels using the same range
Common mode voltage	±10 V_{DC}
Over voltage protection	±50 V_{DC}
Supported TEDS chips	DS2406, DS2430A, DS2431, DS2432, DS2433
Typical power consumption[2)]	Typ 10 W + excitation power
Voltage mode; no excitation	7 W
IEPE mode	7 W
350 Ω full bridge (5 V / 10 V)	7 W / 9.5 W
120 Ω quarter bridge 5 V excitation	8 W
Bridge mode without connected sensor	11.5 W[3)]
Weight	Appr. 200 g (RJ45 version), appr. 250 g (LEMO version)

Cables for TRION-2402-dSTG modules

TRION cables				
	Connector	Termination	Length	TRION modules
TRION-CBL-RJ-OE-05-00	RJ45	open end	5 m	TRION-x-dSTG-x-RJ
TRION-CBL-RJ-D9-01-00	RJ45	DSUB-9 socket (DAQP-STG/MDAQ-STG compatible)	1 m	TRION-x-dSTG-x-RJ
TRION-CBL-RJ-BNC-01-00	RJ45	BNC	1 m	TRION-x-dSTG-x-RJ
TRION-CBL-L0B9-OE-05-00	LEMO 0B.309	open end	5 m	TRION-x-dSTG-x-L0B
TRION-CBL-L0B9-OE-01-00	LEMO 0B.309	open end	1 m	TRION-x-dSTG-x-L0B
TRION-CBL-L0B9-D9-0.5-00	LEMO 0B.309	DSUB-9 socket (DAQP-STG/MDAQ-STG compatible)	0.5 m	TRION-x-dSTG-x-L0B
TRION-CBL-L1B8-OE-05-00	LEMO 1B.308	open end	5 m	TRION-x-dSTG-x-L1B
TRION-CBL-L1B8-D9-0.5-00	LEMO 1B.308	DSUB-9 socket (DAQP-STG/MDAQ-STG compatible)	0.5 m	TRION-x-dSTG-x-L1B

TRION-CBL-RJD9-01-00

TRION-CBL-RJBN-01-00

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-dSTG-x-LEMO
LEMO-FGG.1B.308.CLAD62Z	LEMO 1B.308	mating connector, for cable diameter 5.2 to 6.2 mm	-	TRION-x-dSTG-x-LEMO
LEMO-FGG.1B.308.CLAD72Z	LEMO 1B.308	mating connector, for cable diameter 6.2 to 7.2 mm	-	TRION-x-dSTG-x-LEMO