

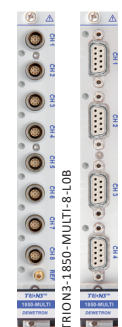
TRION(3)-18xx-MULTI



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UNIVERSAL INPUT MODULE

- > Sampling: up to 5 MS/s per channel
- > Input types: Voltage, bridge, resistance, RTD, IEPE® current and counter
- > Isolation: 350 V_{DC}
- > CAN: High-speed CAN2.0 port
- > Bandwidth: 2 MHz



SPECIFICATIONS

General specifications			
Input channels	TRION-1820-MULTI-4-D	4 channels DSUB connector	CH1 Analog/CAN CH2 Analog CH3 Analog/CNT CH4 Analog/CNT
	TRION3-1820-MULTI-8-LOB	8 channels 0B LEMO connector	CH1 Analog/CAN CH2 Analog CH3 Analog CH4 Analog CH5 Analog CH6 Analog CH7 Analog/CNT CH8 Analog/CNT
	TRION3-1820-MULTI-4-D	4 channels DSUB connector	CH1 Analog/CAN CH2 Analog CH3 Analog/CNT CH4 Analog/CNT
	TRION3-1850-MULTI-8-LOB	8 channels 0B LEMO connector	CH1 Analog/CAN CH2 Analog CH3 Analog CH4 Analog CH5 Analog CH6 Analog CH7 Analog/CNT CH8 Analog/CNT
	TRION3-1850-MULTI-4-D	4 channels DSUB connector	CH1 Analog/CAN CH2 Analog CH3 Analog/CNT CH4 Analog/CNT
Sampling rate / Resolution	TRION-1820-MULTI TRION3-1820-MULTI	100 S/s to 2 MS/s	24-bit
	TRION3-1850-MULTI	100 S/s to 2 MS/s >2 MS/s to 5 MS/s	24-bit 18-bit
Onboard data buffer	512 MB		
Isolation	Channel to channel 350 V _{DC} ¹⁾ Channel to chassis 350 V _{DC} ¹⁾		
Input types	Ranges		Supported sensors
	Voltage	±0.1 mV to ±100 V ¹⁾ freely programmable	-
	IEPE*	±100 mV to ±10 V freely programmable	IEPE® sensors
	Bridge	1 to 1000 mV/V	4-, 5-, 6-wire full bridge; 3-, 4-, 5-wire ½ bridge; 2-, 3-, 4-wire ¼ bridge; 120/350/1000 Ω internal ¼ bridge completion
	Resistance	10 Ω to 30 kΩ	Potentiometer, Resistance temperature detection: Pt100, Pt200, Pt300, Pt500, Pt2000 (2-, 3-, 4-wire)
	Current	±30 mA	4 to 20 mA sensors; loop powered sensors
	MSI	MSI-BR-CH-x: 500 to 50000 pC MSI-BR-TH-x: various TC ranges MSI-BR-LVDT	LVDT, RVDT, Charge output and thermocouple sensors
REF connector	SMB connector to apply external calibration signal (LEMO version only)		
Input connector	9-pin LEMO EPG.0B.309 (TRION3-18xx-MULTI-8-LOB)		
	9-pin SUB-D connector (TRION(3)-18xx-MULTI-4-D)		
Environmental specifications	Operating temperature	32 to 113 °F (0 to +45 °C)	
	Storage temperature	-4 to 158 °F (-20 to +70 °C)	
	Humidity	10 to 80 % non cond., 5 to 95 % rel. humidity	

¹⁾ for safety reasons it is not allowed to apply more than 47.2 V_{PEAK} or 70 V_{DC}



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Input amplifier																	
Voltage input accuracy ^{1) 2)} <																	



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Excitation	
Excitation voltage	0 to 24 V _{DC} ; freely programmable separately for each channel; 1mV resolution; balanced around GNDi; remote sense support;
1 year accuracy drift	±0.03 % ±1.5 mV
Drift	±10 ppm/°C ±50 µV/°C
Current limit	0.1 to 5 V: 100 mA >5 V to 24 V: limited to 0.5 W
Protection	Continuous short
Load and line regulation error	±0.002 % with sense line connected
Excitation current	0.1 to 60 mA _{DC} (programmable, 16 bit DAC) 1 µA; balanced around GNDi
1 year accuracy ¹⁾	0.1 to 5 mA: 0.05 % ±2 µA >5 to 60 mA: 0.5% ±5 µA
Drift	15 ppm/°C
Compliance voltage	0.1 to 20 mA: 24 V >20 mA: 10 V
Output impedance	>10 MΩ
Load regulation bandwidth	100 kHz
IEPE® excitation	2 to 20 mA; 10%; >21 V compliance voltage
¹⁾ 1 year accuracy 23 °C ±5 °C	

Bridge functions	
Supported bridge types	Full bridge 4-, 5- or 6-wire full bridge 4-wire full bridge with constant current excitation (piezoresistive bridge sensors), Potentiometer Half bridge 3-, 4- or 5-wire ½ bridge with internal completion (software programmable) Quarter bridge 2-, 3- or 4-wire ¼ bridge with internal completion resistor for 120 Ω, 350 Ω and 1000 Ω (software programmable) 2-wire ¼ with constant current excitation for dynamic measurement (AC coupled)
Internal quarter bridge completion	120 Ω; 350 Ω; 1000 Ω; ±0.05%
Bridge resistance	80 Ω to 10 kΩ @ ≤ 5 V _{DC} excitation; the lower limit is caused by the maximum power supply.
Shunt calibration	4000 steps programmable shunt; shunt target can be programmed in mV/V;
Completion resistor accuracy	0.05 % ±15 ppm/K
Automatic bridge balance	±400% of range
Bridge features	Bridge Balance; line-resistance compensation

CAN functions	
CAN specification	CAN 2.0
CAN physical layer	High speed
CAN termination	Programmable: high impedance or 120 Ω
CAN bus protection	±36 V

Counter functions	
Counter	2 x counter channels linked to the last two analog channels; trigger level is 70% of range
Counter modes	Event counting, frequency
Timebase / resolution	5 MHz (200 nsec)