

IBRM-6

Input Module for TMX All-in-One Data Acquisition Systems

MODULE OVERVIEW

The IBRM-6 provides 6 isolated differential inputs for bridge or isolated Integrated Electronics Piezo-Electric (IEPE / ICP®) sensor inputs. Features include software-selectable voltage excitation, bridge completion, and shunt calibration for bridge type sensors and constant current excitation for IEPE sensors.



MODULE HIGHLIGHTS

- Simultaneous sampling at up to 800 kS/s/ch
- Full 16-bit resolution across selected range
- Software-selectable bridge completion
- 250 VRMS or DC, Cat II isolation
- Supports 120, 350, and 1000 Ohm bridge resistances
- High Accuracy (+/- 0.07% of selected range)
- Built-in counter and timer functions
- TEDS compatible

ORDERING INFORMATION

Module Part Number: 32850040

ITEM	PART NO.	DESCRIPTION
MAT-10U	25460010	Extra mating connector, 10-position
MAT-4U	25460004	Mating connector for 4-wire bridge connection only
SC-TMX	41047000	Soft Carry Case for TMX
HC-TMX	41047010	Hard Transport Case for TMX
TMX-E	42885000	TMX Expansion Chassis for up to three additional Input Modules
TMX-OS	14004600	TMX Offline Software for 1 user
TMX-DAT	26801350	Additional 1 TB Data Capture Drive
AstroDock	42832500	PC Docking Station for use with TMX removable drives

IBRM-6 DETAILED SPECIFICATIONS

COMMON SPECIFICATIONS	
Channels Per Module	6
Sample Rate	800 kS/s/ch (400 kS/s/ch when using more than three modules with the TMX-E or TMX-R)
Rated Isolation	250 VRMS or DC, Cat II (iso-common to chassis and other iso-commons)
A/D	16-bit SAR (one per channel)
Frequency Counter Capability	Yes, first channel. Software-selectable.
Anti-Aliasing Filter	4 pole Bessel
Counter Modes	Gated time-frequency counter, cycle-based frequency counter, pulse counter, pulse width detector, period width detector, duty cycle detector
Frequency ctr range (menu)	Up to 70 KHz
Frequency ctr range (spec'd)	2 - 40 KHz (48 Hz - 40 KHz for cycle-based frequency counter)
Frequency ctr accuracy	+/- 0.07% of measurement +.002 Hz
Min counter input amplitude	25% of span for freq and pulse counters, 90% of span for all other modes
Pulse counter range	64000000 maximum. (16-bit display resolution)
Pulse width accuracy	1.0 μ s +.00167% of span
Pulse width range	10 μ s - 40000 μ s
Period width accuracy	.02% of measurement + .00167% of span + 1.0 μ s
Period width range	20 μ s - 80000 μ s (12.5 Hz - 50 KHz)
Duty cycle accuracy	.5% (Inputs in the 15 Hz - 10 KHz range with 20% - 80% duty cycles)
Connector	10-wire screw terminal
Input	Differential, DC coupled
Bandwidth	50KHz (40 KHz with spans less than 10 mVFS)
Measurement ranges	+/- 1000 mV, +/- 500 mV, +/- 50 mV (2mV min span)
Max Transient Input	+/- 20 V (no damage)
Common Mode Voltage	+/- 12V
Zero Suppression	Yes, digital
DC Accuracy (25°C)	+/- 0.07% of attenuator
Overshoot	<1.0%
Intrinsic Noise (pk-pk)	< 0.07% of attenuator + .14% of span (1000 mV att) < 0.08% of attenuator + .14% of span (500 mV att) < 0.1% of attenuator + .14% of span (50 mV att)
Input Impedance	> 300 K Ω (150 K Ω balanced to isolated common)
CMR at 60 Hz	> 85 dB
Excitation	DC adjustable, 0.1 to 10 V. 30 mA maximum
Excitation Accuracy	0.05 V
Excitation Output Noise	< 1.5 mV pp (50 KHz BW)
Bridge Auto Balance	Yes – Up to 10% of attenuator (limited by maximum span)
Cold Start Drift	< 0.04% of attenuator +.1% of span (60 min.)

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