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VTI Instruments



EX1000 Series

EX1000A • EX1000A-TC • EX1016A

EX1032A • EX1048A • EX10SC • EX1000A-TCDC

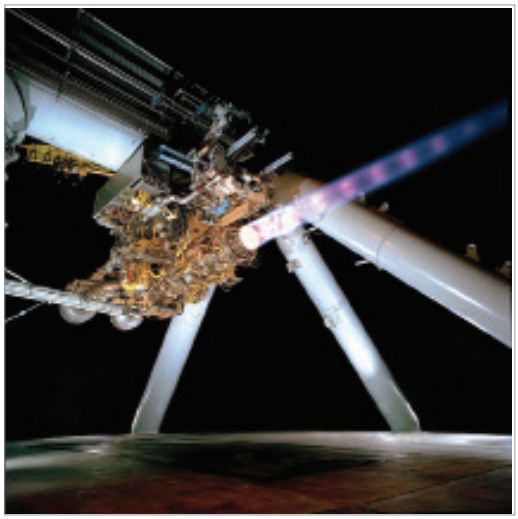
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EX1000 SERIES - HIGHLIGHTS

- High-density, compact (1U) precision data acquisition instruments
- LXI™ LAN connectivity
- Fully integrated signal conditioning maximizes performance and accuracy
- Easily integrate thermocouples, voltages, RTDs, thermistors, frequency, strain and pressure on an per-channel basis
- Distributed, synchronized measurements over the wire
- Scalable architecture easily expands from tens to thousands of channels
- DC version available for test cells requiring closer proximity to test article
- End-to-end self-calibration ensures optimum runtime performance
- Web-based access for monitoring and control
- Exlab turnkey software for simplified setup, control and data display

OVERVIEW

ACCURATE. POWERFUL. EASY TO USE.

The EX1000 family of LXI™ instruments are the most advanced, full-featured data acquisition solutions available on the market today. These scalable, standalone instruments provide superior measurement accuracy and repeatability thanks to fully integrated signal conditioning, advanced cold junction compensation (CJC), and end-to-end self-calibration. The EX1000 family of data acquisition instruments addresses your most demanding distributed measurement applications in one easy-to-use package.

FLEXIBLE CHANNEL CONFIGURATION

A wide range of transducer types, including pressure, strain, temperature, position and voltage, can be combined in this flexible solution. Each input incorporates an independent signal conditioning path with software selectable filters for maximum flexibility. Complete channel independence ensures data integrity regardless of sample speed or input overload conditions.

END-TO-END SELF-CALIBRATION

Complete end-to-end self-calibration is provided for each signal path on a programmable basis. A highly accurate calibration source provides reference signals that are applied prior to analog filtering and gain circuits to compensate for drift, aging, or temperature variations. Self-calibration is simple and quick, and can be performed as often as desired.

SCALABLE FOR SYNCHRONIZED HIGH-SPEED, HIGH CHANNEL COUNT

With LXI compliant features like a built-in Trigger Bus™ hardware trigger subsystem, the EX1000 family supports easy integration and synchronization of multiple devices including existing VXIbus instrumentation.

OPEN TRANSDUCER DETECTION

Each channel is configured with open transducer detection functionality, providing a continuous indication of the channel's status. Open transducer detection can be activated or deactivated on a per-channel basis. The detection mechanism is embedded in the signal conditioning circuitry and accurately provides an open circuit indication in the event of a broken or intermittent transducer. The open transducer detection applies a nominal bias current of +/- 7.5 nanoamps to each channel.

EX1000 Series

EX1000A • EX1000A-TC/TCDC • EX1016A
EX1032A • EX1048A • EX10SC

EX10SC HIGHLIGHTS

16-Channel capacity

Mix and match transducer types on a per-channel basis

Seamless integration with the EX1000A, EX1016A and EX1032A

Simplified, reliable field terminations

Turnkey Exlab support

1500Vrms isolation (module)

300V isolation (input to chassis)

Input protection to 240VAC continuous

ANSI/IEEE C37.90.1 transient protectiony

COLD JUNCTION COMPENSATION

The heart of any truly accurate thermocouple measurement system is the CJC implementation. These instruments combine multiple precision thermistors, a significant thermal mass, and careful parts placement to provide world-class measurement performance.

UNMATCHED SIGNAL CONDITIONING FLEXIBILITY TO MEET YOUR MOST DEMANDING NEEDS

The EX10SC modular signal conditioning platform expands measurement capabilities to address the most demanding industrial signal acquisition challenges. This extension of the EX1000 family is designed to ensure seamless integration and connectivity, with exceptional measurement flexibility. Signals from a wide variety of transducer types can be mixed and matched, on a per-channel basis, ensuring complete coverage from a single, high-performance measurement platform.

ISOLATION AND PROTECTION

A wide range of signal types are supported. Transducer types can be mixed and matched on an individual channel basis.

- Thermocouple
- RTD
- Thermistor
- Potentiometer
- Strain gage
- Pressure
- High-level voltage
- Frequency
- Current

EX1000 Series

EX1000A • EX1000A-TC/TCDC • EX1016A
EX1032A • EX1048A • EX10SC



Challenging measurement environments, such as areas with high levels of electrical noise or transient power surges, require unique protection capabilities. The EX10SC signal conditioning platform provides exceptional input protection and isolation across a wide range of operating conditions, protecting valuable instrumentation and ensuring measurement integrity. Simply match the signal characteristics with the appropriate signal conditioning module, make connections with the easy-to-use termination access points, and start collecting data.

SIMPLIFIED INSTALLATION, SETUP AND CONTROL

Full LXI™ compliance makes the EX1000 family of instruments ideal for distributed measurements throughout your facility by reducing cabling and installation expenses. Connect directly to your LAN network using industry standard Ethernet cable and connections.

An onboard, web-accessible user interface allows you to instantly verify communications and instrument functionality. IVI and VXI Plug and Play drivers provide a familiar application programming interface to further reduce integration and program development time.

EXlab provides intuitive, programming-free instrument setup, data logging, and measurement display. This turn-key software solution provides out-of-the-box operation across the entire product family, resulting in faster time to test.

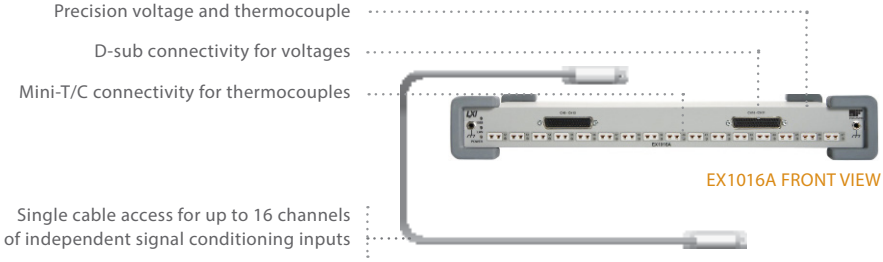
Precision, Scalable Measurement Instruments
LXI Synchronization Technology



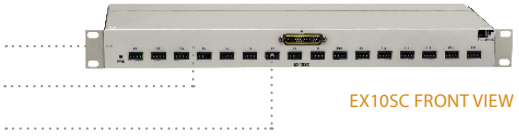
EX1048A FRONT VIEW



EX1048A REAR VIEW



EX1016A FRONT VIEW



EX10SC FRONT VIEW

MODEL SELECTION

Model	Thermocouple Channels (0.667 mV max)	Voltage Channels (10 V max)	Input Power	Connector Style	EX10SC Compatible
EX1000A	*	48	AC	D-sub	Yes
EX1000A/TC	48	**	AC	mini-TC	No
EX1000A-TCDC	48	**	DC	mini-TC	No
EX1016A	16	32	AC	mini-TC/D-sub	Yes
EX1032A	32	16	AC	mini-TC/D-sub	Yes
EX1048A	48	0	AC	mini-TC	No

* Thermocouple measurements require external CJC signal ** All channels capable of Thermocouple or 10V max operation

EX1000A/16A/32A/48A/TC/TCDC

Specifications

CHANNELS	48 differential inputs
CHANNEL TYPES	Thermocouple inputs: J, K, T, E, S, R, B, N (EX1000A/TC, EX1000A-TCDC EX1016A, EX1032A, EX1048A) Voltage inputs: mV, V (EX1000A/TC, EX1000A-TCDC EX1016A, EX1032A)
SAMPLING RATE	1000 Sa/sec/ch maximum
TEMPERATURE RESOLUTION	0.1 ˚C
TEMPERATURE ACCURACY	See Thermocouple Accuracy table on page 5
TEMPERATURE NOISE, PEAK-TO-PEAK	0.08 ˚Cpp typical (J, K, T, E)
PROGRAMMABLE FILTERS	
Bessel (2 pole)	4 Hz, 15 Hz, 40 Hz, 100 Hz, 500 Hz (-3 dB cutoff frequency)
Butterworth (1 pole)	1000 Hz (-3 dB cutoff frequency)
	*Note: fluctuations for main voltage to the power supply not exceeding 10% of the nominal voltage.
VOLTAGE RESOLUTION	
±10.0 V	300 µV
±1.0 V	30 µV
±0.1 V	3.0 µV
±0.067 V	2.0 µV
±0.01 V	0.3 µV
VOLTAGE ACCURACY	
±10.0 V	±(0.025% + 500 µV) with self-cal, ±(0.05% + 1 mV) without self-cal
±1.0 V	±(0.025% + 50 µV) with self-cal, ±(0.05% + 100 µV) without self-cal
±0.1 V	±(0.025% + 10 µV) with self-cal, ±(0.05% + 20 µV) without self-cal
±0.067 V	±(0.025% + 10 µV) with self-cal, ±(0.05% + 20 µV) without self-cal
±0.01 V	±(0.050% + 10 µV) with self-cal, ±(0.10% + 20 µV) without self-cal
VOLTAGE OFFSET STABILITY	
±10.0 V	±20 µV/°C typical
±1.0 V	±10 µV/°C typical
±0.1 V	±5 µV/°C typical
±0.067 V	±2 µV/°C typical
±0.01 V	±2 µV/°C typical
VOLTAGE GAIN STABILITY	
Voltage input channels (all ranges) and thermocouple input channels	±25 ppm/°C without self-cal (typical) ±5 ppm/°C with self-cal at any operating temperature (typical)
INPUT IMPEDANCE	40 MΩ differential
INPUT BIAS CURRENT	5 nA typical
COMMON MODE INPUT RANGE	±10 V
COMMON MODE REJECTION RATIO (CMRR)	
4 Hz filter	DC: 100 dB minimum; (50/60) Hz: 140 dB typical, 120 dB minimum
1 kHz filter	DC: 100 dB minimum; (50/60) Hz: 100 dB typical, 80 dB minimum
INPUT PROTECTION	±15 V
NETWORK CONNECTION	10/100 Base-T
INPUT CONNECTOR	Cu-Cu mini-TC Jack 50-pin D-sub (EX1000A, EX1016A, EX1032A)
POWER INPUT	(90-264) V AC, (50/60) Hz, 47 VA maximum
POWER INPUT EX1000A-TCDC	Input Voltage DC, 10-34V DC
DIMENSIONS	1.75” H x 17.5” W x 13.6” D

EX1000A/16A/32A/48A/TC/TCDC

Specifications

LXI SPECIFICATIONS

CLOCK SPECIFICATIONS	
Clock oscillator accuracy	±50 ppm
Synchronization accuracy	Reports "synchronized" when < ±200 µs of the 1588 master clock
Timestamp	
Accuracy	As good as time synchronization down to 50 ns
Resolution	25 ns
IEEE 1588-BASED TRIGGER TIMING	
Alarm	
Trigger time accuracy	As good as time synchronization down to 50 ns
Time to trigger delay	50 ns
Receive LAN[0-7] Event	
Trigger time accuracy	As good as time synchronization down to 50 ns
Time to trigger delay	
Future timestamp	50 ns typical
Past/zero timestamp	1 ms maximum
HARDWARE TRIGGER TIMING	
LXI Trigger Bus	
Time to trigger delay	55 ns typical
DIO Bus	
Time to trigger delay	57 ns typical

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE	
Operating AC	-5 °C to +55 °C
Operating DC Models	-10°C to 65°C
Storage	-40 °C to +70 °C
HUMIDITY	5% – 95% (non-condensing)
ALTITUDE	Up to 3000 m
SHOCK AND VIBRATION	Conforms to MIL-PRF-28800F
Random Vibration	10 Min per Axis, MIL-PRF-2880F Class 3
Sinusoidal	5 to 55hz Resonance Search per MIL-PRF-2880F Class 3, each Axis
Shock	30g/Axis, 11mS half Sine pulse per MIL-PRF-2880F Class 3

EX1000A/16A/32A/48A/TC/TCDC

Specifications

TEMPERATURE ACCURACY – THERMOCOUPLES

Type	Min [in °C]	Max [in °C]	-100 [in °C]	0 [in °C]	100 [in °C]	300 [in °C]	500 [in °C]	700 [in °C]	900 [in °C]	1100 [in °C]	1400 [in °C]
J	-200	1200	±0.25	±0.20	±0.20	±0.25	±0.30	±0.30	±0.35	±0.45	-
K	-200	1372	±0.25	±0.20	±0.20	±0.20	±0.35	±0.35	±0.45	±0.55	±0.50
T	-200	400	±0.25	±0.20	±0.20	±0.20	±0.25	-	-	-	-
E	-200	900	±0.25	±0.20	±0.20	±0.20	±0.25	±0.30	±0.35	-	-
S	-50	1768	-	±1.00	±0.75	±0.65	±0.65	±0.65	±0.70	±0.70	±0.75
R	-50	1768	±1.00	±0.75	±0.60	±0.60	±0.60	±0.60	±0.65	±0.70	-
B	-250	1820	-	-	-	±1.65	±1.10	±0.80	±0.70	±0.65	±0.65
N	-200	1300	±0.40	±0.25	±0.25	±0.25	±0.30	±0.35	±0.40	±0.40	-

Conditions
- 60-minute warm-up
- Guaranteed maximum limits are two times (2x) the typical values
- 7 days, ±5 °C from last self-calibration
- 20 °C to 30 °C, 1 year from full calibration
- Exclusive of thermocouple errors
- Exclusive of noise
- Common mode voltage = 0

Note for K type: 1400 accuracy is for 1372 °C
Note for T type: 500 accuracy is for 400 °C

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B32-02	0 to 20 mA Input
INPUT RANGE	0 mA to 20 mA or 4 mA to 20 mA
INPUT RESISTANCE	
Normal	< 50Ω
Power Off	< 50Ω
INPUT PROTECTION	
Continuous	40VAC
Transient	ANSI/IEEE C37.90.1
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50HZ OR 60HZ)	120 dB
NMR	70 dB at 60 Hz
ACCURACY	±0.05% Span
LINEARITY	±0.02% Span
STABILITY	
Offset	±25ppm/°C
Gain	±50ppm/°C
NOISE	
Output	100 kHz 250 µVrms
BANDWIDTH, –3 dB	3 Hz
RESPONSE TIME, 90% SPAN	150 ms

EX10SC-8B34-04	2&3W 100 Ω RTD (0 TO 600 °C)
INPUT RANGE LIMITS	
Input Range	0 °C t o +600 °C (+32 °F t o +1112 °F)
Accuracy	±0.45°C
INPUT RESISTANCE	
Normal	50 MΩ
Power Off	200 kΩ
Overload	200 kΩ
INPUT PROTECTION	
Continuous	240 V AC
Transient	ANSI/IEEE C37.90.1
SENSOR EXCITATION CURRENT	0.25mA
LEAD RESISTANCE EFFECT	±0.02 °C/Ω
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50 OR 60Hz)	120 dB
NMR	70dB at 60Hz
ACCURACY	See Ordering Information
STABILITY	
Offset	±20 ppm/°C
Gain	±50 ppm/°C
NOISE	
Output, 100 kHz	200 µVrms
BANDWIDTH, –3dB	3 Hz
RESPONSE TIME, 90% SPAN	150 ms
RTD STANDARDS 100 Ω PT	
Alpha Coefficient	0.00385
DIN	DIN 43760
JIS	JIS C 1604-1989
IEC	IEC 751

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B36-04	Potentiometer Input (0 to 10 KΩ)
INPUT RANGE	0 to 10 kΩ
INPUT RESISTANCE	
Normal	50 MΩ
Power Off	200 kΩ
Overload	200 kΩ
INPUT PROTECTION	
Continuous	240 V AC
Transient	ANSI/IEEE C37.90.1
SENSOR EXCITATION CURRENT	0.25 mA; 100 Ω, 500 Ω, 1 kΩ Sensor 0.10 mA;
10 kΩ Sensor	
LEAD RESISTANCE EFFECT	±0.01 Ω/Ω; 100 Ω, 500 Ω, 1 kΩ Sensor, ±0.02
Ω/Ω; 10 kΩ Sensor	
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50 OR 60Hz)	120 dB
NMR	70 dB at 60 Hz
ACCURACY	±0.05% Span
LINEARITY	±0.02% Span
STABILITY	
Offset	±20 ppm/°C
Gain	±50 ppm/°C
NOISE	
Output, 100 kHz	200 µVrms
BANDWIDTH, –3 dB	3 Hz
RESPONSE TIME, 90% SPAN	150ms

EX10SC-8B33-03	0 TO 10 V RMS
IFREQUENCY RANGE	45 Hz to 1000 Hz (Extended Range to 10kHz) Compatible with Standard Current and
Potential Transformers	
ACCURACY	±0.25% Factory
ISOLATION	1500 Vrms Transformer
INPUT OVERLOAD PROTECTED	350 Vrms Max (Peak AC & DC) or 2Arms
Continuous	
TRANSIENT PROTECTION	ANSI/IEEE C37.90.1
CMR	120dBRESPONSE TIME, 90% SPAN
150 ms	
RTD STANDARDS 100 Ω PT	
Alpha Coefficient	0.00385
DIN	DIN 43760
JIS	JIS C 1604-1989
IEC	IEC 751

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B35-04	4 W 100 Ω RTD (0 to 600 °C)
INPUT RANGE LIMITS	–200 °C to +850 °C (100 Ω Pt)
INPUT RESISTANCE	
Normal	50 MΩ
Power Off	200 kΩ
Overload	200 kΩ
INPUT PROTECTION	
Continuous	240 V AC
Transient	ANSI/IEEE C37.90.1
SENSOR EXCITATION CURRENT	0.25 mA
LEAD RESISTANCE EFFECT	±0.005 °C/Ω
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50 OR 60Hz)	120 dB
NMR	70 dB at 60 Hz
STABILITY	
Offset	±20 ppm/°C
Gain	±50 ppm/°C
NOISE	
Output, 100 kHz	200 µVrms
BANDWIDTH, –3 dB	3 Hz
RESPONSE TIME, 90% SPAN	150 ms
100 Ω PT	
Input Range	0 °C to +600 °C (+32 °F t o +1112 °F)
Accuracy	±0.45 °C
RTD STANDARDS	
100 Ω PT	
Alpha Coefficient	0.00385
DIN	DIN 43760
JIS	JIS C 1604-1989
IEC	IEC 751
DIN	DIN 43760
JIS	JIS C 1604-1989
IEC	IEC 751

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B38-01	Full Bridge Strain (3.33V Excitation)
EX10SC-8B38-02	Full Bridge Strain (10V Excitation
INPUT RANGE	±10 mV to ±100 mV
INPUT BIAS CURRENT	±0.5 nA
INPUT RESISTANCE	
Normal	50 MΩ
Power Off	100 kΩ
Overload	100 kΩ
INPUT PROTECTION	
Continuous	240 V AC
Transient	ANSI/IEEE C37.90.1
EXCITATION OUTPUT (-X1)	±3.333 V ±2 mV
Load Resistance	100 Ω to 2 kΩ
EXCITATION OUTPUT (-X2,-X5)	±10 V ±5 mV
Load Resistance	300 Ω to 2 kΩ
EXCITATION LOAD REGULATION	15 ppm/mA
EXCITATION STABILITY	50 ppm/°C
EXCITATION PROTECTION	120 V AC
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50 OR 60 Hz)	100 dB
NMR	100 dB per decade above 8 kHz
ACCURACY	±0.05% Span
LINEARITY	±0.02% Span
STABILITY	
Offset	±25 ppm/°C
Gain	±100 ppm/°C
NOISE	
Output, 100 kHz	1500 µVrms
BANDWIDTH, –3 dB	8 kHz
RESPONSE TIME, 90% SPAN	70 µs
MODEL 01	
Bandwidth	8 kHz
Input Range	–10 mV to +10 mV
Exc.	±3.333 V
Sens.	3 mV/V
MODEL 02	
Bandwidth	8 kHz
Input Range	–30 mV to +30 mV
Exc.	±10.0 V
Sens.	3 mV/V

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B41-0 ±1 V Input with 1Khz Bandwidth	
EX10SC-8B41-03 ±10 V Input with 1Khz Bandwidth	
EX10SC-8B41-07 ±20 V Input with 1Khz Bandwidth	
EX10SC-8B41-09 ±40 V Input with 1Khz Bandwidth	
EX10SC-8B41-12 ±60 V Input with 1Khz Bandwidth	
INPUT RANGE	±10 mV to ±100 mV
INPUT BIAS CURRENT	±0.5 nA
INPUT RESISTANCE	
Normal	50 MΩ
Power Off	100 kΩ
Overload	100 kΩ
INPUT PROTECTION	
Continuous	240 V AC
Transient	ANSI/IEEE C37.90.1
EXCITATION OUTPUT (-X1)	±3.333 V ±2 mV
Load Resistance	100 Ω to 2 kΩ
EXCITATION OUTPUT (-X2,-X5)	±10 V ±5 mV
Load Resistance	300 Ω to 2 kΩ
EXCITATION LOAD REGULATION	15 ppm/mA
EXCITATION STABILITY	50 ppm/°C
EXCITATION PROTECTION	120 V AC
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50 OR 60 Hz)	100 dB
NMR	100 dB per decade above 8 kHz
ACCURACY	±0.05% Span
LINEARITY	±0.02% Span
STABILITY	
Offset	±25 ppm/°C
Gain	±100 ppm/°C
NOISE	
Output, 100 kHz	1500 µVrms
BANDWIDTH, –3 dB	8 kHz
RESPONSE TIME, 90% SPAN	70 µs
MODEL 01	
Bandwidth	8 kHz
Input Range	–10 mV to +10 mV
Exc.	±3.333 V
Sens.	3 mV/V
MODEL 02	
Bandwidth	8 kHz
Input Range	–30 mV to +30 mV
Exc.	±10.0 V
Sens.	3 mV/V

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B45-02	Frequency Input (0 to 1 KHz)
EX10SC-8B45-05	Frequency Input (0 to 10 KHz)
EX10SC-8B45-08	Frequency Input (0 to 100 KHz)

INPUT RANGE	0 Hz to 100 kHz
INPUT THRESHOLD	Zero Crossing
Minimum Input	100 mVp-p
Maximum Input	350 Vp-p TTL, 170 Vp-p Zero Crossing
Minimum Pulse Width	4 µs
TTL Input Low	0.8 V max
TTL Input High	2.4 V min
INPUT HYSTERESIS	
Zero Crossing	±50 mV
TTL	1.5 V
INPUT RESISTANCE	
Normal	68 kΩ
Power Off	68 kΩ
Overload	68 kΩ
INPUT PROTECTION	
Continuous	240 Vrms max
Transient	ANSI/IEEE C37.90.1
EXCITATION	±5 V at 8 mA max
CMV, INPUT TO OUTPUT	
Continuous	1500 Vrms max
Transient	ANSI/IEEE C37.90.1
CMR (50 OR 60 Hz)	100 dB
ACCURACY	±0.05% Span
LINEARITY	±0.02% Span
STABILITY	
Offset	±25 ppm/°C
Gain	±100 ppm/°C
NOISE	
Output Ripple	< 10 mVp-p at Input > 2% span
RESPONSE TIME (0 TO 90%)	
8B45-01, -02, -03	160 ms, 80 ms, 35 ms
8B45-04, -05, -06	16 ms, 8.5 ms, 3.4 ms
8B45-07, -08	1.6 ms, 0.8 ms

EX10SC

Signal Conditioning Module Specifications

EX10SC-8B47J-12	Linearized TC Type J (-100 to 760 °C)
EX10SC-8B47K-13	Linearized TC Type K (-100 to 1350 °C)
EX10SC-8B47T-06	Linearized TC Type T (-100 to 400 °C)

INPUT RANGE	–0.1 V to +0.5 V
INPUT BIAS CURRENT	–25 nA
INPUT RESISTANCE	
Normal	50 MΩ
Power Off	200 kΩ
Overload	200 kΩ
INPUT PROTECTION	
Continuous	240 V AC
Transient	ANSI/IEEE C37.90.1
CMV, INPUT TO OUTPUT	1500 Vrms max
TRANSIENT, INPUT TO OUTPUT	ANSI/IEEE C37.90.1
CMR (50 OR 60Hz)	120 dB
NMR	70 dB at 60 Hz
STABILITY	
Offset	±20 ppm/°C
Gain	±75 ppm/°C
NOISE	
Output, 100 kHz	250 µVrms
BANDWIDTH, –3 dB	3 Hz
RESPONSE TIME, 90% SPAN	150 ms
TRANSIENT	ANSI/IEEE C37.90.1
COLD JUNCTION COMPENSATION	
Accuracy, 25 °C	±0.5 °C
Accuracy, –40 °C to +85 °C	±1.5 °C
OPEN INPUT RESPONSE	Upscale
OPEN INPUT DETECTION TIME	< 10 s
MODEL 12	
TC Type	J
Input Range	–100 °C to +760 °C (–148 °F to +1400 °F)
Accuracy	±0.24% ±2.10 °C
MODEL 13	
TC Type	K
Input Range	–100 °C to +1350 °C (–148 °F to +2462 °F)
Accuracy	±0.24% ±3.60 °C
MODEL 06	
TC Type	T
Input Range	–100 °C to +400 °C (–148 °F to +752 °F)
Accuracy	±0.48% ±2.40 °C

Ordering Information

MODEL	TYPE
EX1000A	48-channel Precision Voltage Instrument
EX1000A-TC	48-channel Precision Thermocouple and Voltage Instrument
EX1000A-TCDC	48-channel Precision Thermocouple and Voltage Instrument (DC Input)
EX1016A	16-channel Precision Thermocouple Instrument
	32-channel Precision Voltage Instrument
EX1032A	32-channel Precision Thermocouple Instrument
	16-channel Precision Voltage Instrument
EX1048A	48-channel Precision Thermocouple Instrument
70-0355-900	Rack Mount Kit for EX10XXA Series
70-0355-902	Table Top Kit for EX10XXA Series
EX10SC	16-Channel Signal Conditioning Expansion Chassis (Modules sold separately. See below)
EX10SC-RK001	Rackmount slide rails

EX10SC MODULES

MODEL	TYPE	INPUT RANGE	OUTPUT RANGE
EX10SC-8B32-02	Current input	0 to 20 mA	0 to +5 V
EX10SC-8B33-03	RMS Voltage	0 to 10 V	0 to +5 V
EX10SC-8B34-04	2/3-Wire RTD (100 Ω Pt)	0 ºC to +600 ºC (+32 ºF to +1112 ºF)	0 to +5 V
EX10SC-8B35-04	4-Wire RTD (100 Ω Pt)	0 ºC to +600 ºC (+32 ºF to +1112 ºF)	0 to +5 V
EX10SC-8B36-04	Potentiometer	0 to 10 kΩ	0 to +5 V
EX10SC-8B38-01	Strain gage	±10 mV (excitation +3.333 V / sense 3m V/V)	±5 V
EX10SC-8B38-02	Strain gage	±30 mV (excitation +10.0 V / sense 3m V/V)	±5 V
EX10SC-8B41-01	Voltage input	±1 V	±5 V
EX10SC-8B41-03	Voltage input	±10 V	±5 V
EX10SC-8B41-07	Voltage input	±20 V	±5 V
EX10SC-8B41-09	Voltage input	±40 V	±5 V
EX10SC-8B41-12	Voltage input	±60 V	±5 V
EX10SC-8B42-01	2-wire Transmitter	4 to 20 mA	0 to +5 V
EX10SC-8B45-02	Frequency input	0 to 1 kHz	0 to +5 V
EX10SC-8B45-05	Frequency input	0 to 10 kHz	0 to +5 V
EX10SC-8B45-08	Frequency input	0 to 100 kHz	0 to +5 V
EX10SC-8B47J-12	J-thermocouple	–100 ºC to +760 ºC (–148 ºF to +1400 ºF)	0 to +5 V
EX10SC-8B47K-13	K-thermocouple	–100 ºC to +1350 ºC (–148 ºF to +2462 ºF)	0 to +5 V
EX10SC-8B47T-06	T-thermocouple	–100 ºC to +400 ºC (–148 ºF to +752 ºF)	0 to +5 V

EX10SC CABLE ASSEMBLIES

MODEL	TYPE
EX10SC-CBL01	24" EX10SC to EX10xx interconnect cable

rev14B

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