RETIRED

Acromag
THE LEADER IN INDUSTRIAL I/O

microBlox™ Isolated I/O Modules w/ *Bluetooth*® Wireless Technology

TC INPUT uB37 (Non-Linearized) & uB47 (Linearized)

MODEL	FIELD TC: INPUT	A/D RES	HOST OUTPUT	D/A RES	ACCURACY[1]
uB37J	J: -100 to +760°C, 5Hz	17185	0-5V DC	26305	<±0.10%/±0.86°C
uB37K	K: -100 to +1350°C, 5Hz	20837	0-5V DC	26305	<±0.10%/±1.45°C
uB37T	T: -100 to +400°C, 5Hz	17518	0-5V DC	26305	<±0.10%/±0.50°C
uB37R	R: 0 to +1750°C, 5Hz	15080	0-5V DC	25305	<±0.10%/±1.75°C
uB37S	S: 0 to +1750°C, 5Hz	26731	0-5V DC	26305	<±0.10%/±1.75°C
uB37-B	Pgm J, K, T, R, S, or E	Varies	Pgm Any -5V to +5V	Varies	<±0.10% per cal
uB47J-01	J: 0 to +760°C, 5Hz	15501	0-5V DC	26305	<±0.24%/±1.82°C
uB47J-02	J: -100 to +300°C, 5Hz	9575	0-5V DC	26305	<±0.24%/±0.96°C
uB47J-03	J: 0 to +500°C, 5Hz	9894	0-5V DC	26305	<±0.21%/±1.05°C
uB47J-12	J: -100 to +760°C, 5Hz	17185	0-5V DC	25305	<±0.24%/±0.86°C
uB47K-04	K: 0 to +1000°C, 5Hz	14908	0-5V DC	26305	<±0.24%/±2.10°C
uB47K-05	K: 0 to +500°C, 5Hz	7463	0-5V DC	26305	<±0.24%/±2.40°C
uB47K-05	K: -100 to +1350°C, 5Hz	20837	0-5V DC	26305	<±0.24%/±3.60°C
uB47K-13	K: 0 to +1200°C, 5Hz	17639	0-5V DC	26305	<±0.24%/±2.88°C
uB47T-06	T: -100 to +400°C, 5Hz	17518	0-5V DC	25305	<±0.48%/±2.40°C
uB47T-07	T: 0 to +200°C, 5Hz	5878	0-5V DC	26305	<±0.39%/±0.75°C
uB47-B	Pgm J, K, T, R, S, or E , 5Hz	Varies	Pgm Any -5V to +5V	Varies	<±0.48% per cal

[1]**Note:** Includes conformity, hysteresis, repeatability, but not CJC error.
Add model suffix "-CG" to specify a Commercial Grade model with 0˚C to 55˚C operating temperature, ±0.125%/±0.3%/±0.5% accuracy (per range), and no hazardous location approvals.

The microBlox™ (uB) modules offer a flexible space-saving solution for isolating, monitoring, and driving industrial process signals to interface with modern data acquisition systems. Individual microBlox™ modules plug into 4, 8, or 16 channel carriers in any mix to build flexible high-density analog I/O systems. Bluetooth wireless technology enabled versions allow input polling, and input/output ranges to be wirelessly configured to your specific application using a smart phone or tablet. All microBlox™ components have a high immunity to harsh industrial environments, are CE and ATEX compliant, and UL approved for installation in Class I, Division II hazardous locations (pending). The uB37 and uB47 models isolate thermoelectric input voltages from field thermocouples to an industry-standard host analog signal bus for the I/O ranges indicated in the Table above. The uB37 models drive a voltage output linear with thermocouple voltage, while the uB47 drives a voltage output linear with thermocouple temperature.

INPUT (FIELD)

Field Range:	TC type is per model (see Table), or TC type programmable ("-B" Models). Requires channel CJC switch set ON. Upscale break detect, or select up or down ("-B" models).
Resolution:	16-bit ADC, varies by model & calibration from 1/5878 to 1/36118 (see Table).
Resistance:	100MΩ.
Input Sample Rate:	40sps.
Normal Mode (Bandwidth):	-3dB at 5Hz, typical.
Protection:	TVS & Diode Clamps built-in plus additional protection on back-panel.
Common Mode Rejection:	130db typical, 50-60Hz.

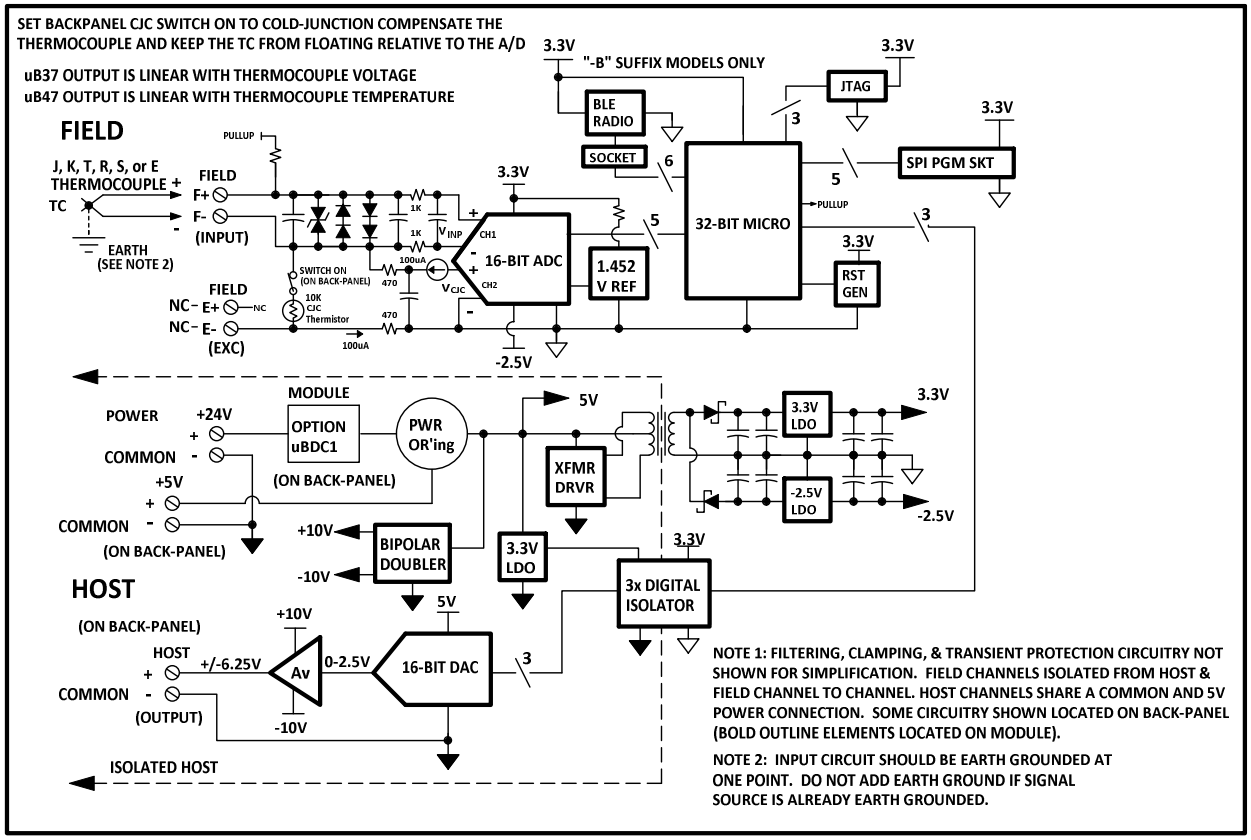
OUTPUT (HOST)

Host Range:	0-5V or ±5V per range model (see Table), or programmable -5V to +5V ("-B" model).
Resolution:	16-bit DAC, 0-5V: 1/26305; or optionally ±5V: 1/52610 ("-B" Model).
Current Drive:	5V into 1KΩ minimum or 5mA max.
Response Time:	Output Step 0-98% in 300ms, typical.

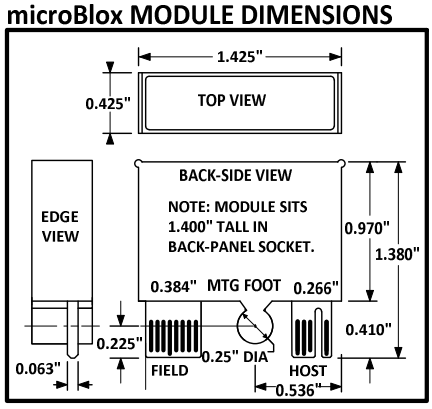
GENERAL

Power Consumption:	0.25W maximum, 50mA from +5V maximum.
I/O Resolution:	Effective resolution is the least of input (A/D) and output (D/A) resolution (see Table).
Accuracy/Non-Linearity:	Varies by Range and TC type (See Table). "-CG" Models: ±0.125%/±0.3%/±0.5%.
Cold Junction Compensation:	Better than ±2.0C, typical.
Noise:	Better than 0.03% of span p-p rms.
Ambient Effect:	Better than ±80ppm/°C.
MTBF:	Consult Factory.

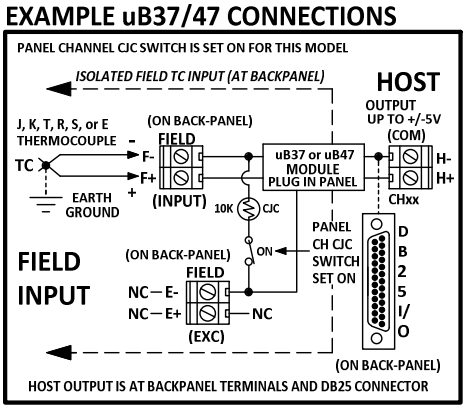
SIMPLIFIED uB37/47 ISOLATED FIELD THERMOCOUPLE INPUT TO HOST VOLTAGE OUTPUT CONVERTER



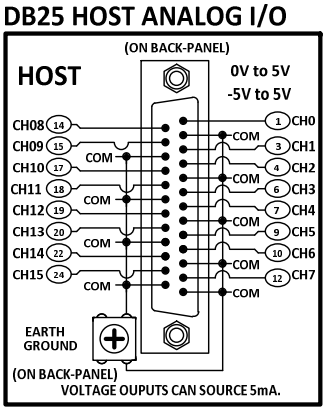
microBlox MODULE DIMENSIONS



EXAMPLE uB37/47 CONNECTIONS



DB25 HOST ANALOG I/O



Refer to 8501-038 microBlox™ family specifications for additional details and other available microBlox™ modules and accessories.

Revision History

REV DATE	Version	EGR/DOC	Description of Revision
01-JUN-2016	A	BC/MJO	Initial Release
20-OCT-2017	B	BC/MJO	Added earth ground note 2, CJC switch note.
28-NOV-2017	C	FJM/ARP	Added Type E Thermocouple to the TC input field of the TC Input Table. (Ref. ECO 17G021)
23-MAY-2018	D	BC/MJO	Noted support for E type w/ uB37-B and R, S, E types w/ uB47-B