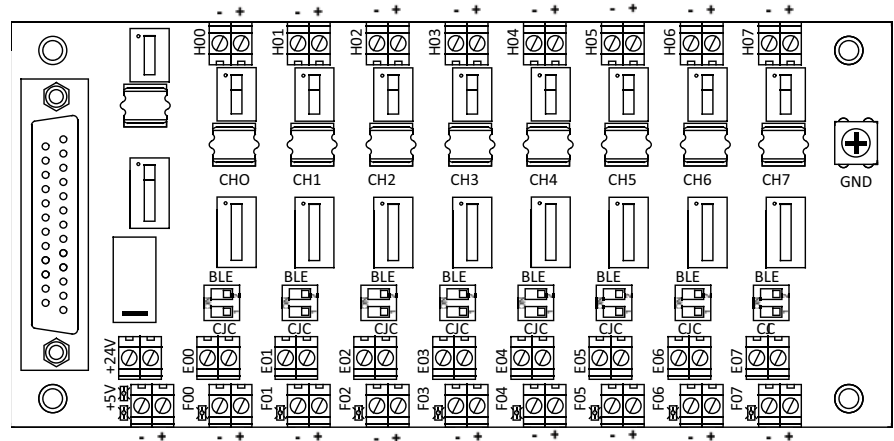# Signal Conditioners: microBlox™ Series

uB04/08/16 microBlox™ Backpanels

uB module carriers ◆ 4, 8, or 16 channel versions ◆ DIN-rail option ◆ CJC sensor

Description

Acromag's microBlox™ uB Series I/O modules offer a compact, high-performance solution for interfacing sensors and field devices with data acquisition systems. uB signal conditioning modules are ideal to isolate, filter, convert and amplify a wide variety of signal types for test, measurement and control systems. Just plug uB modules into 4, 8, or 16-channel backpanels in any mix for a high-density analog I/O interface. Channel-to-channel isolation provides optimal noise and surge protection from ground loops, spikes, and high common mode voltages.

These backpanels serve as a carrier for up to 16 microBlox I/O modules. They provide power connections, input/output wiring terminals, and earth grounding (host-side) for the I/O modules. Each module slot (I/O channel) has switches to enable Bluetooth communication (with LED) and cold junction compensation for thermocouple inputs.

An industry-standard analog I/O bus aggregates all host I/O channels on a DB25 connector to facilitate simultaneous access by high-speed data acquisition systems. Field points are isolated channel-to-channel and as a group to the host analog I/O bus (host includes power).

Key Features & Benefits

■ Choice of 4, 8, and 16 channel carriers

■ Optional DIN-rail mounting

■ Bluetooth and CJC support on all slots

■ Slot for DC power converter module uBDC1

■ Redundant power capable

■ DB25 port for simultaneous access to all I/O over a single cable connection

■ -40 to 80°C (-40 to 176°F) operation

■ UL, cUL Class I, Div 2, ABCD and ATEX Zone 2 hazardous location approvals

ISO9001
AS9100

uB04/08/16 microBlox™ Backpanels

Performance Specifications

See specific I/O models for additional system specifications.

■ General

Reverse Voltage Protection
Solid-state protection Included.

Over-Voltage Protection
1ms to break power above 8.6V.

Under-Voltage Protection
1ms to break power under 2.5V.

Transient Protection
Transient Voltage Suppressor (TVS) per field channel, plus TVS per Host channel, TVS at Host power connections.

Power
Back-panel power is +5V, sourced by wiring 5V to the +5V terminals, or via an optional uBDC1 module with wiring to the 24V terminals (10-32V). Power can be driven redundantly if both the host 5V and 24V power terminals are wired to separate power supplies and uBDC1 power module is installed (uBDC1 dominates).

Pass-Thru Power Limit
Current limiting from 5V set by capacity to 480-720mA (uB04), 990-1350mA (uB08), and 1900-2500mA (uB16).

Power Consumption
Less than 4mA (back-panel only), 30mA (including uBDC1 w/no I/O modules plugged in).

Channel I/O
Printed circuit edge connector sockets are polarized to prevent a mix-up between the power module socket and I/O module sockets.

Module Retainer
I/O modules and power module are retained via 3AG clips, 1 per channel.

Earth Ground
Screw terminal earth ground connection on panel and common to host minus.

LED Indicators
5V power: green
24V power: green
Bluetooth link: blue LED/channel.

Switches
Two DIP switches/channel: CJC enable/disable thermistor connection to IN- set ON or OFF per I/O model; enable/disable Bluetooth link ability (set ON for access to -B modules).

Interface Connector
Field & host channel: high-density screw clamp type, 16AWG maximum.
Host analog I/O bus: DB25, industry-standard I/O pin assignment bundles host-side I/O and shared host common.

Dimensions
Height: 1.380″ with connectors. 0.970″ without.
Width: 0.425″. Length: 1.425″.

■ Environmental

Operating Temperature
-40 to 80℃ (-40° to 176°F).
-CG Models: 0 to 50℃ (32 to 131°F)

Storage Temperature
-40 to 85℃ (-40° to 185°F).

Relative Humidity
0 to 95% non-condensing.

Safety Isolation
Field channels are individually isolated field channel-to-field channel and from the field to the host I/O bus (host group includes 5V power) for common-mode voltages up to 250V AC, or 354V DC off DC power ground, on a continuous basis (will withstand 1500VAC HIPOT/dielectric strength test for one minute without breakdown). This complies with test requirements of ANSI/ISA-82.01-1988 for voltage rating specified.

Shock and Vibration Immunity
Conforms to:
IEC 60068-2-6: 10-500 Hz, 4G, 2 hours/axis, for sinusoidal vibration.
IEC 60068-2-64: 10-500 Hz, 4G-rms, 2 hours/axis , for random vibration.
EC 60068-2-27: 25G, 11ms half-sine, 18 shocks at 6 orientations, for mechanical shock.

Electromagnetic Compatibility (EMC) Compliance
Minimum immunity per BS EN 61000-6-1 (2007):
CE marked, per EMC Directive 2004/108/EC.
Electrostatic Discharge Immunity (ESD), per IEC 61000-4-2.
Radiated Field Immunity (RFI), per IEC 61000-4-4.
Electrical Fast Transient Immunity (EFT), per IEC 61000-4-4.
Surge Immunity, per IEC 61000-4-5. Conducted RF Immunity (CRFI), per IEC 61000-4-6.

Emissions
Class B product with emissions per BS EN 61000-6-3 (2007+A1:2011): enclosure port, per CISPR 16.
Low voltage AC mains port, per CISPR 16.

Approvals
CE compliant. RoHS Compliant.
UL/cUL Class 1, Division 2, Groups ABCD.
ATEX Zone 2. No UL or ATEX Approvals on -CG models.

Ordering Information

To order commercial grade panels append with -CG, e.g. uB04-CG. Note: Commercial grade panels should be paired only with -CG modules.

Model	Description
uB04	4 channel panel, surface mount
uB04D	4 channel panel, DIN rail mount
uB08	8 channel panel, surface mount
uB08D	8 channel panel, DIN rail mount
uB16	16 channel panel, surface mount
uB16D	16 channel panel, DIN rail mount

Accessories

Model	Description
5028-606	Interface cable for microBlox uB backpanels, DB25 male/female, 1m long
5028-607	Interface cable for microBlox uB backpanels, DB25 male/female, 2m long
5028-608	Interface cable for microBlox uB backpanels, DB25 male/female, 7m long
uBXIF	Universal interface board, rack mount

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