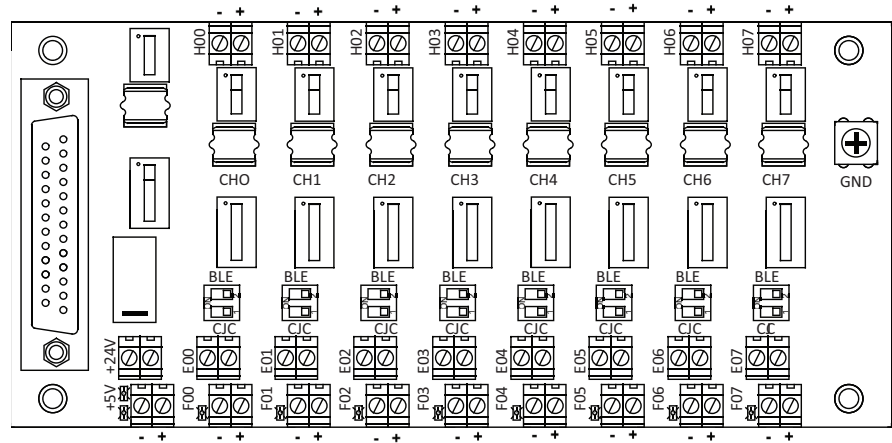


# Signal Conditioners: microBlox® Series

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  MADE IN USA

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## 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**  
uB04: 2.845" high, 4.005" wide, 1.8" deep  
uB08: 2.845" high, 6.213" wide, 1.8" deep  
uB16: 2.845" high, 11.181" wide, 1.8" deep  
DIN rail versions (uBxxD) add 0.105" to width and 0.3" to depth.  
Inserting plug-in I/O modules add 0.780" to depth.

#### ■ Environmental

**Operating Temperature**  
-40 to 80°C (-40° to 176°F)

**Storage Temperature**  
-40 to 85°C (-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.

### Ordering Information

[Go to on-line ordering page >](#)

**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

**uB04D**  
16 channel panel, DIN rail mount

#### Accessories

**4001-110**  
5-foot ribbon cable, DB male to 26-pin female, for 7B/8B interface to 3B/5B backpanel

**4001-111**  
5-foot ribbon cable, 26-pin female to DB25 female, for 3B/5B interface to 7B/8B backpanel

