Simple

Bedrock Automation’s Secure IO Modules (SIO) uses layers of advanced technology to deliver a software defined IO platform. This results in an 90% reduction in module types for typical users, and perpetual life cycle cost saving.

Introducing SIO4.E:  The SIO4.E is our 5 channel secure software configurable Ethernet module which offers:

- Software configurable protocols on each port
- Support for Ethernet I/P, Modbus TCP and OPC UA client
- Other Protocols including Profinet and DNP3 planned
- PoE available on each port for Ethernet powered devices
- 10/100 Mbps half/full duplex capability

Scalable

Designed from a clean sheet of paper, Bedrock delivers a revolutionary automation architecture with unlimited scalability from tens to tens of thousands of IO using fewer than a dozen system part numbers.

The SIO4.E occupies a single position on the patented magnetic backplane. This revolutionary pin-less 4Gbit magnetic backplane supports advanced Controller, Power Supply and IO Modules with scalable single/dual/triple IO redundancy. Regardless of application or size, our universal cyber secure controller, secure power supply, and virtual IO are the solution.

Secure

Traditional industrial control systems are vulnerable to multiple forms of cyber attack and IP and counterfeiting theft. Black Fabric™ is Bedrock’s embedded deep trust cyber defense using patented processor, memory, communications, interconnections, backplane and packaging technologies to integrate cyber security into every module at birth. Embedded deep trust also means Black Fabric™ comes at no additional cost or compromise to performance. Black Fabric™ works transparently and instantly upon startup to manage transistor-encased authentication keys that protect the hardware firmware software and application transactions of every module throughout its entire life cycle. The SIO4.E is born with Black Fabric™, fortified for the user against the threats of today and tomorrow.
**Simple Scalable Secure**

**Number of Channels**
5 software configurable Ethernet channels

**Protocols Supported**
Ethernet I/P

**Modes**
Master/Server

**Communication Rate**
10/100 Mbps

**Port Connection**
RJ45 Category 5

**Max Ethernet IP Nodes**
128

**Power Supplied per port**
-48 V @ 0.5 A (25 Watts)

**Max Power for PoE**
127 Watts

**PoE Voltage Drop**
0.8 V

**PoE Power Dissipation**
2 Watts

**PoE Transmission Support**
Ports 1, 2, 3 Alternative A; Port 4, 5 Alternative B

**Power Consumption**
4.0 watts

**Operating Temperature**
-40°C to 80°C

**Storage Temperature**
-40°C to 85°C

**Relative humidity**
5% to 95% non-condensing

**Shock**
IEC60068-2-27 Operating 30 g, Non-operating 50 g

**Vibration**
IEC 60068-2-6 2g @ 10-500 Hz

**Emissions**
IEC 61000-6-4 30 MHz to 230 MHz 40 db uV/m Quasi-peak at 10 meters
230 MHz to 1 GHz 47 db uV/m Quasi-peak at 10 meters

**ESD Immunity**
IEC 61000-4-2 6 kV contact discharges, 8 kV air discharges
IEC 61000-4-3 1 kHz sine-wave 80% AM, 10 V/m (30 MHz to 1000 MHz)
3 V/m (1.4 GHz to 2.0 GHz), 1 V/m (2.0 GHz to 2.7 GHz)

**EFT/B Immunity**
IEC 61000-4-4 ±2 kV at 5 kHz on signal ports

**Surge Transient Immunity**
IEC 61000-4-5 ±2 kV line-earth (CM) on shielded ports

**Conducted RF Immunity**
IEC 61000-4-6 10 Vrms with 1 kHz sine-wave 80% AM from 150 kHz to 80 MHz

**Height**
167.894 mm (6.61 inches)

**Width**
18.034 mm (0.71 inches)

**Depth**
106.426 mm (4.19 inches)

**Weight**
~290 g (10.2 ounces)

**Certifications:**
This product meets or exceeds all of the applicable product safety requirements contained in UL and CENELEC standards.
The product design meets the following electrical certification requirements:
- UL (US and Canadian Certification) ordinary locations and Class 1, Division 2, Groups A-D locations
- CENELEC Group IIC, Zone 2 locations.

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<table>
<thead>
<tr>
<th>48V PoE Connector Pinout</th>
<th>Label</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>+ 48 V</td>
</tr>
<tr>
<td>2</td>
<td>- Return</td>
<td>-48V</td>
</tr>
<tr>
<td>3</td>
<td>EARTH_GND</td>
<td>Ground</td>
</tr>
</tbody>
</table>