XIO Customer Presentation

Measurement and automation in the new virtual world

Digital operation, how new solutions for automation and monitoring can dramatically reduce costs
XIO Customer Presentation
XIO - Remote Expansion

Connectivity made easy - Smart remote IO and serial expansion
Connectivity and expansion challenges

- RTU/Controller expansion could be prohibitively expensive or not possible
- Wide varieties of Pad & facility configuration
- Single controller have limited built-up I/Os and capability
- Time consuming integration time for different hardware for I/O and comm.
- Too many points of failure
Connectivity and expansion challenges

Traditional I/O Configuration
XIO – A game changer on remote expansion modules

Meet your demands and automation needs of today and tomorrow

Augment remote IO module with additional serial ports, Ethernet ports, WiFi and Bluetooth.

Reduced installation and commissioning cost and time via daisy-chain connectivity to the main controller.

Maintain flexibility of native I/O modules together with open protocols for third party controller integration.
Features XIO-08
Hardware & Software

- DIN rail mounting
- Class 1, Division 2 rated for hazardous area
- 9 – 30 VDC external power
- 4 independent Ethernet ports for flexible network design.
- WiFi, Bluetooth and USB for local connectivity
- Support for up to 22 I/O Modules (TFIO) per XIO

- Support for multiple XIOs connected in the same loop
- New XIO Interface App to transfers up to 15 Comm Applications from the XIO to the RMC
- Auto discovery and remote services when connected to RMC
- Support for new Hot Pluggable / Swappable TFIO Modules
- Modbus TCP connectivity to third party controllers
- Configurable Fail-Safe options
XIO – Expandable IO Versatile modular design

Hardware Features

Hardware description

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>External Power supply input</td>
<td>8</td>
<td>Micro SD holder</td>
</tr>
<tr>
<td>2</td>
<td>Wi-Fi Antenna Connector</td>
<td>9</td>
<td>Cold reset button</td>
</tr>
<tr>
<td>3</td>
<td>Security switch</td>
<td>19</td>
<td>A Network ethernet ports 1 and 2</td>
</tr>
<tr>
<td>4</td>
<td>System status LEDs</td>
<td>11</td>
<td>B Network ethernet ports 1 and 2</td>
</tr>
<tr>
<td>5</td>
<td>TFIQ Module interface (Male)</td>
<td>12</td>
<td>COM 1 – Com 8 Serial communication ports</td>
</tr>
<tr>
<td>6</td>
<td>Reset button</td>
<td>13</td>
<td>TFIQ Module interface (Female)</td>
</tr>
<tr>
<td>7</td>
<td>USB mini port</td>
<td>14</td>
<td>Communication card status LEDs</td>
</tr>
</tbody>
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Product overview

Key features and benefits
Wellhead instrumentation

Traditional three wellhead pad could take approximately 2-3 days, with remote IO could just take hours
Instrumentation on each skid

Centralized skid wiring, single daisy-chain network connectivity to controller
Main considerations

Key Market Features

### Installation / Regulations
- Low Power Solution 9 – 30VDC external power
  - DIN Rail mounted,
  - Class 1 Division 2 UL Certified

### Connectivity and Interoperability
- WiFi and Bluetooth for local access
- 4 Ethernet ports, 8 Serial ports
- Standard Modbus TCP for third party controller integration

### Modular Flexibility
- Connect multiple XIO via daisy-chain
- Ability to add up to 22 TFIO modules per XIO

### Configurable
- Configurable Fail-Safe and I/O connectivity
  - Basic local controls capabilities
- Auto discovery, minimal setup ABB controller
Connectivity and Interoperability
Operator interfacing

Value Proposition

- Daisy-chain connectivity of multiple XIOs with automatically data transfer over the network to the RMC.
- Ethernet to Serial configuration option to connect remotely to smart instrumentation.
- New XIO Interface on the RMC allows complete data transfer of up to 15 Interface applications enabled on the XIO.
WiFi and Bluetooth for local access
Operator interfacing

Value Proposition

– WiFi and Bluetooth wireless capabilities for remote device management and configuration from a distance.
– WiFi can be configured on a separate network.
– The WiFi configuration can be use to also access the RMC remotely.
## Ethernet and Serial Communication

Connectivity expansion

<table>
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<tr>
<th>Four Ethernet Ports</th>
<th>Value Proposition</th>
<th>Eight Serial Communication ports</th>
</tr>
</thead>
</table>
| ![Four Ethernet Ports](image1) | – The serial communication capabilities allows multiple daisy-chain connectivity with field devices.  
– Using auto-discovery, the information is instantly visible to the RMC  
– Multiple networking configuration allowing fast and secure isolated network.  
– Multiple Ethernet ports eliminate need for additional devices | ![Eight Serial Communication ports](image2) |
IO Expansion
Hot pluggable IO modules

Value Proposition

- Up to 22 hot pluggable IO modules per XIO, provides no power or process disruption
- No special hardware tools, for convenient removal and replacement.
- Consistence hardware and software features for RMC and XIO, fewer spare parts
Product family
Available and future options
Remote Expansion Modules Family
Three basic available options with expansion up to 22 I/O modules

XIO-08 + DI/DO
4 Ethernet + 8 Serial & up to 22 TFIO

XIO-08 + AI
4 Ethernet + 8 Serial & up to 22 TFIO

XIO-08 + AO
4 Ethernet + 8 Serial & up to 22 TFIO
Remote Expansion Modules Family

New I/O Hot pluggable modules
XIO – Expandable IO Versatile modular design
Meeting demands and automation needs of today and tomorrow

Remote I/O and Serial expansion

Auto-discovery and post-based VLAN

Interoperability with any controller

Hot pluggable IO Modules

WiFi & Bluetooth