

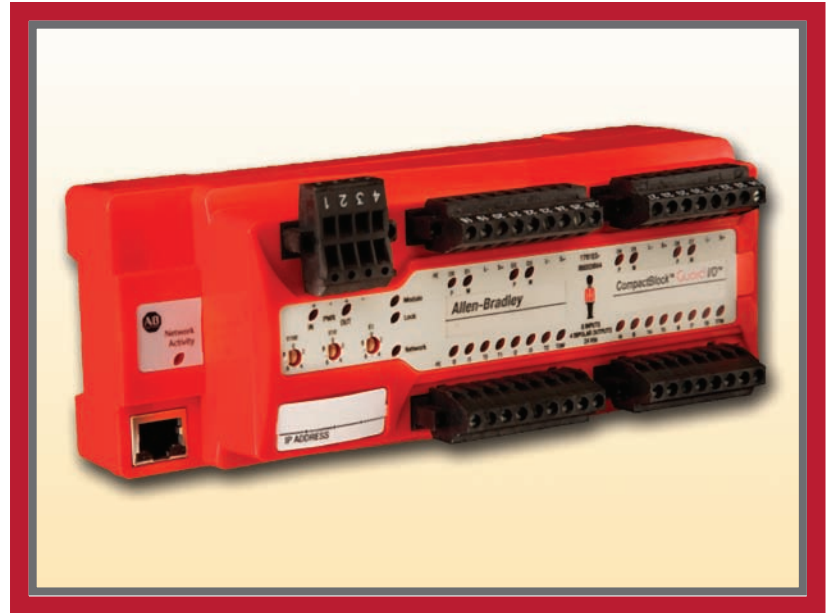
# PRODUCT PROFILE

## 1791ES CompactBlock™ Guard I/O™

Improve productivity; simplify control system design, while enhancing operator protection

### Benefits

- **I/O point level diagnostics and LEDs:** quickly identify a problem and help reduce machine downtime
- **TÜV certified:** for use in safety applications, up to SIL3 and CAT 4
- **Versatility:** can connect to both standard and safety-rated sensors
- **Easy Configuration:** via RSLogix™ 5000 with full support of IP addressing
- **Flexibility:** supports connection of single and dual channel safety devices on inputs and outputs
- **Individual Test Outputs:** An individual test output can be assigned for each safety input device, allowing for optimized cable installations.
- **Muting Lamp control:** provided on selected test pulse outputs for lamp control and fault monitoring
- **Standard control:** use test outputs for panel lamps, standard actuators, etc.
- **Compatilbilty** – EtherNet/IP is standard Ethernet and can be used with standard media i.e. fiber, wireless, etc.



CompactBlock™ Guard I/O™ on EtherNet/IP is a safety rated I/O module designed for use in safety applications. It communicates on EtherNet/IP using the CIP Safety protocol and is optimized to work with GuardLogix® controllers.

The application of the CIP Safety protocol enables the simultaneous transmission of safety and standard control data and diagnostics information over a common EtherNet/IP network. EtherNet/IP enables a flat network topology by reducing the number of networks for different control disciplines and also by allowing standard and safe control on the same network.

CompactBlock Guard I/O on EtherNet/IP is ideal for applications where Ethernet technology is preferred or for applications requiring highly distributed I/O blocks close to sensors and actuators. The compact footprint and solid-state design allows for module replacement in minutes and reduces the need for special maintenance or training.

CompactBlock Guard I/O is designed for use with industrial equipment and is especially suited for robotic, point-of-operation, guard-monitoring and distributed control applications covering long distances.

# PRODUCT SPECIFICATIONS

| Cat. No.                                 | 1791ES-IB16   | 1791ES-IB8XOBV4  |
|--|---|--|
| Description                              | 24V dc Input Module on Ethernet/IP Networks   | 24V dc Input/Solid-State Output Module on Ethernet/IP Networks                               |
| Current Consumption                      | 250 mA @ 24V dc   | 250 mA @ 24V dc  |
| Operating Voltage Range                  | 19.2...28.8V dc<br>(24V dc, -20...+20%)   | 19.2...28.8V dc<br>(24V dc, -20...+20%)  |
| I/O Channel Isolation                    | Isolated  | Isolated   |
| <b>Digital Inputs</b>                    |   |  |
| Number of Inputs (single-channel)        | 16 safety   | 8 safety   |
| Voltage, On-State Input, Min.            | 11 V dc   | 11 V dc  |
| Voltage, Off-State Input, Max.           | 5V dc   | 5V dc  |
| Current, On-State Input, Min.            | 3.3 mA  | 3.3 mA   |
| Input Delay Time, OFF to ON <sup>1</sup> | 16.2 ms max   | 16.2 ms max  |
| Input Delay Time, ON to OFF <sup>1</sup> | 16.2 ms max   | 16.2 ms max  |
| <b>Digital Outputs</b>                   |   |  |
| Number of Outputs                        | —   | 4 dual channel Bipolar   |
| Output type                              | —   | current sourcing/current sinking pair  |
| Output Current Rating                    | —   | 2 A max. per point<br>8 A total module @ 40 °C (104 °F)<br>6 A total module @ 60 °C (140 °F) |
| Output Leakage Current, Max.             | —   | ± 1.0 mA   |
| Output Delay Time, OFF to ON, Max.       | —   | 6.2 ms   |
| Output Delay Time, ON to OFF, Max.       | —   | 6.2 ms   |
| Short Circuit Protection                 | —   | Yes  |
| Overcurrent Detection                    | —   | Yes  |
| <b>Standard Pulse Test Outputs</b>       |   |  |
| Number of Pulse Test Sources             | 16  | 8  |
| Pulse Test Output Current                | 0.7 A per point   | 0.7 A per point  |
| Pulse Test Output Leakage Current, Max.  | 0.1 mA  | 0.1 mA   |
| Short Circuit Protection                 | Yes   | Yes  |
| Overcurrent Protection                   | Yes   | Yes  |
| <b>General</b>                           |   |  |
| Operating Temperature                    | -20°C...+60°C (-4°F...+140°F)   | -20°C...+60°C (-4°F...+140°F)  |
| Storage Temperature                      | -40°C...+85°C (-40°F...+185°F)  | -40°C...+85°C (-40°F...+185°F)   |
| Relative Humidity                        | 5...95% noncondensing   | 5...95% noncondensing  |
| Vibration                                | 5 g @ 10...500 Hz   | 5 g @ 10...500 Hz  |
| Shock, Operating                         | 30 g  | 30 g   |
| Enclosure Protection                     | IP 20   | IP 20  |
| Dimensions (HxWxD), Metric               | 80 x 196 x 77 mm <sup>1</sup>   | 80 x 196 x 77 mm <sup>1</sup>  |
| Dimensions (HxWxD), Imperial             | 3.2 x 7.7 x 3 in <sup>1</sup>   | 3.2 x 7.7 x 3 in <sup>1</sup>  |
| Weight, Metric                           | 600 g   | 600 g  |
| Weight, Imperial                         | 1.32 lb   | 1.32 lb  |
| Certifications <sup>2</sup>              | UL, CE, C-Tick, CSA, UL Class I Div 2 Hazardous, UL NRGF, ODVA Conformance, TÜV certified for functional safety up to SIL 3, Cat. 4 |  |

<sup>1</sup> Includes DIN latch and connectors.

<sup>2</sup> When product is marked. See the Product Certification link at <http://www.ab.com/certification> for Declarations of Conformity, Certificates, and other certification details. All specifications are subject to change. Refer to product installations instructions.

[www.rockwellautomation.com](http://www.rockwellautomation.com)

## Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846