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# PRODUCT PROFILE

## CompactBlock LDX I/O
## In-Cabinet Block I/O Platform

### Benefits

**Space Efficient:** Highly compact package can fit into very confined areas including wireways and operator terminals.

**Cost Effective:** Economical solution for automation applications requiring in-cabinet IP20 environments. Its compact size decreases the need for large enclosures and eliminates long wire runs.

**Accommodates a Wide Range of Field Devices:** CompactBlock LDX modules, including digital, analog and temperature, are compatible with a variety of sensors.

**Easy to Connect and Configure:** Ease of commissioning using modular EDS or GSD files and autobaud rate detection. The optional pluggable D-shell connector allows for simple, fast connections and easy maintenance.

**Expandable:** Digital base blocks support up to 3 digital expansion blocks and up to 80 points of I/O

CompactBlock™ LDX I/O is a compact, cost-effective, and diverse distributed I/O solution for light industrial and commercial automation environments. Offering 24 VDC, 120 VAC, relay, analog, and temperature blocks, CompactBlock LDX supports a wide range of field devices and is compatible on both DeviceNet™ and PROFIBUS® DP.

CompactBlock LDX I/O is an economical solution where a small form factor is required for in-cabinet applications.

- Universal sink for source inputs reduce the number of components to stock and provide flexibility in input types
- Analog base modules, both current and voltage, support two additional modules of up to 32 points of digital I/O*
- Compatible with a broad range of sensors (Type 3 for DC, Type 1 for AC)
- Node address switches and autobaud rate detection ease network commissioning
  - CompactBlock LDX I/O offers the leading, lowest cost, device-level communication network, DeviceNet, to translate simple messages from the controller to the plant floor
- Cyclic and change-of-state messaging increases network throughput
- ODVA conformance ensures a high level of interoperability with other DeviceNet products
  - Also available on 3rd party networks
- Configure using GSD files and any PROFIBUS DP configuration package
- Works with any available PROFIBUS DP scanner

* RTD and thermocouple base modules do not support any expansion

| Discrete I/O | Description |
|---|---|
| **DeviceNet Bases** | |
| 1790D-0B16 | DNet LDX, 24 VDC, 16 sourcing output base, D-shell connector |
| 1790D-0V16 | DNet LDX, 24 VDC, 16 sinking output base, D-shell connector |
| 1790D-0W6 | DNet LDX, 6 relay output base, D-shell connector |
| 1790D-16BV0 | DNet LDX, 24 VDC, 16 universal in, D-shell |
| 1790D-8BV8B | DNet LDX, 24 VDC, 8 univ In/8 source out, D-shell |
| 1790D-8BV8V | DNet LDX, 24 VDC, 8 univ In/8 sink out, D-shell |
| 1790D-T0A6 | DNet LDX,120 VAC, 6 output base, terminal block |
| 1790D-T0B16 | DNet LDX, 24 VDC, 16 sourcing output base, terminal block |
| 1790D-T0V16 | DNet LDX, 24 VDC, 16 sinking output base, terminal block |
| 1790D-T0V32 | DNet LDX, 24VDC, 32 sinking output base, terminal block |
| 1790D-T0W6 | DNet LDX, 6 relay output base, terminal block |
| 1790D-T16BV0 | DNet LDX, 24 VDC, 16 universal in, terminal block |
| 1790D-T32BV0 | DNet LDX, 24VDC, 32 universal in, terminal block |
| 1790D-T8A0 | DNet LDX, 120 VAC, 8 input base, terminal block |
| 1790D-T8BV8B | DNet LDX, 24 VDC, 8 univ in/8 source out, terminal block |
| 1790D-T8BV8V | DNet LDX, 24 VDC, 8 univ in/8 sink out, terminal block |
| 1790D-T16BV16V | DNet LDX, 24VDC, 16 universal in/16 sink out, terminal block |
| **PROFIBUS® Bases** | |
| 1790P-T0W6 | PROFIBUS, 6 relay out base, terminal block |
| 1790P-T8BV8V | PROFIBUS, 24 VDC, 8 univ in/8 sink out base, terminal block |
| 1790P-T8BV8B | PROFIBUS, 24 VDC, 8 univ in/8 source out base, terminal block |
| **Expansions** | |
| 1790-0B16X | LDX I/O, 24 VDC, 16 source out expansion, D-shell |
| 1790-0V16X | LDX I/O, 24 VDC, 16 sink out expansion, D-shell |
| 1790-0W8X | LDX I/O, 8 relay out, expansion, D-shell |
| 1790-16BV0X | LDX I/O, 24 VDC, 16 universal in expansion, D-shell |
| 1790-8BV8BX | LDX I/O, 24 VDC, 8 univ in/8 source out expansion, D-shell |
| 1790-8BV8VX | LDX I/O, 24 VDC, 8 univ in/8 sink out expansion, D-shell |
| 1790-T0A8X | LDX I/O,120 VAC, 8 output expansion module, terminal block |
| 1790-T0B16X | LDX I/O, 24 VDC, 16 source out expansion, terminal block |
| 1790-T0V16X | LDX I/O, 24 VDC, 16 sink out expansion, terminal block |
| 1790-T0W8X | LDX I/O, 8 relay out, expansion, terminal block |
| 1790-T16BV0X | LDX I/O, 24 VDC, 16 universal in expansion, terminal block |
| 1790-T8A0X | LDX I/O,120 VAC, 8 input expansion module, terminal block |
| 1790-T8BV8BX | LDX I/O, 24 VDC, 8 univ in/8 source out expansion, terminal block |
| 1790-T8BV8VX | LDX I/O, 24 VDC, 8 univ in/8 sink out expansion, terminal block |
| **Analog I/O** | **Description** |
| **DeviceNet Bases** | |
| 1790D-4R0 | DNet LDX, 4 input RTD base, D-shell connector |
| 1790D-4T0 | DNet LDX, 4 input thermocouple base, D-shell connector |
| 1790D-N0C2 | DNet LDX, 2 output analog current base, D-shell connector |
| 1790D-N0V2 | DNet LDX, 2 output voltage analog base, D-shell connector |
| 1790D-N4C0 | DNet LDX, 4 input analog current base, D-shell connector |
| 1790D-N4V0 | DNet LDX, 4 input voltage analog base, D-shell connector |
| 1790D-T4R0 | DNet LDX, 4 input RTD base, terminal block |
| 1790D-T4T0 | DNet LDX, 4 input thermocouple base, terminal block |
| 1790D-TN0C2 | DNet LDX, 2 output analog current base, terminal block |
| 1790D-TN0V2 | DNet LDX, 2 output voltage analog base, terminal block |
| 1790D-TN4C0 | DNet LDX, 4 input analog current base, terminal block |
| 1790D-TN4V0 | DNet LDX, 4 input voltage analog base, terminal block |
| **PROFIBUS Bases** | |
| 1790P-T4R0 | PROFIBUS, 4 input RTD base, terminal block |
| 1790P-T4T0 | PROFIBUS, 4 input thermocouple base, terminal block |
| 1790P-TN0C2 | PROFIBUS, 2 output analog current base, terminal block |
| 1790P-TN4C0 | PROFIBUS, 4 input analog current base, terminal block |

| Optional Components | |
|---|---|
| 1790-7CMCBL | LDX I/O replacement ribbon cable, 7cm (lots of 5) |
| 1790-15CMCBL | LDX I/O longer ribbon cable, 15cm (lots of 5) |
| 1799-DNETCON | 5-position open style plug for DNet |
| 1799-DNETSCON | 5-position open style plug/locking screws for DNet |
| 1799-DNC5MMS | DNet 5-position plug to 5-pin micro male connector, straight (lots of 5) |

| Environmental Specifications | |
|---|---|
| Operating Temp | 0 to 55C° (32 to 140°F) |
| Non-Operating Temp | -40 to 85°C (-40 to 185°F) |
| Relative Humidity | 5-90% non-condensing |
| Operating Altitude | 2000m |
| Shock Operating | 10g |
| Non-operating | 30g |
| Vibration | 2g@10-500Hz, 0.012 inch p-p from 10-57Hz |
| Mounting | DIN rail or screw |
| Cable Size | Terminal block:16 AWG maximum (1.25mm≈) |
| Weight | Base block: 0.3lb (0.1kg) |
| | Expansion block: 0.3lb (0.1kg) |

| General Specifications | |
|---|---|
| Indicators | 1 red/green module status |
| | 1 red/green network status |
| Wiring Category | 21 |
| Product Certifications | UL, UL Hazardous Class I, Div 2, Groups A, B, C, D2 |
| (where product or packaging is marked) | c-UL, c-UL Hazardous Class I, Div 2, Groups A, B, C, D2 |
| | CE marked for all applicable directives |

| DeviceNet Specifications | |
|---|---|
| Network Protocol | I/O slave messaging: |
| | Poll command, Cyclic Command, COS command |
| Network Length | 500 meters maximum @ 125Kbps |
| | 100 meters maximum @ 500Kbps |
| Number of Nodes | 64 maximum: rotary switch type |
| Communication Rate | 125Kbps, 250Kbps, 500Kbps: autobaud rate selection |
| Isolation | 1250 VAC rms isolation between user power & DeviceNet |
| Wiring | Refer to publication DN-6.7.2 |
| Dimensions | 52x104x42mm (2.03x4.07x1.64in) |

| PROFIBUS Specifications | |
|---|---|
| Network Protocol | PROFIBUS DP (EN 50170) |
| | Slave with Class 1 or Class 2 master |
| Modes | Freeze, Sync, Fail Safe |
| Network Length | 1200 meters max. @ 9.6Kbps, 100 meters max. @ 12Mbps |
| Number of Nodes | 100 Node/Max, rotary switches |
| Isolation | I/O to Logic: Photocoupler |
| | System power: non-isolation |
| Dimensions | 52x119x42mm |

| Technical Publications |
|---|
| I/O Module Brochure ACIG-BR002_-EN-P |
| CompactBlock LDX I/O Technical Data: 1790D-TD001_-EN-P(DeviceNet), 1790P-TD001_-EN-P(Profibus) |

*[1] Refer to publication 1770-4.1, Programmable Controller Wiring and Grounding Guidelines*
*[2] All blocks that have D-shell connectors are UL approved for use as part of Class 2 circuit only.*



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