

# 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
<b>DeviceNet Bases</b>	
1790D-0B16	DNet LDX, 24VDC, 16 sourcing output base, D-shell connector
1790D-0V16	DNet LDX, 24VDC, 16 sinking output base, D-shell connector
1790D-0W6	DNet LDX, 6 relay output base, D-shell connector
1790D-16BV0	DNet LDX, 24VDC, 16 universal in, D-shell
1790D-8BV8B	DNet LDX, 24VDC, 8 univ in/8 source out, D-shell
1790D-8BV8V	DNet LDX, 24VDC, 8 univ in/8 sink out, D-shell
1790D-T0A6	DNet LDX, 120 VAC, 6 output base, terminal block
1790D-T0B16	DNet LDX, 24VDC, 16 sourcing output base, terminal block
1790D-T0V16	DNet LDX, 24VDC, 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, 24VDC, 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, 24VDC, 8 univ in/8 source out, terminal block
1790D-T8BV8V	DNet LDX, 24VDC, 8 univ in/8 sink out, terminal block
1790D-T16BV16V	DNet LDX, 24VDC, 16 universal in/16 sink out, terminal block
<b>PROFIBUS® Bases</b>	
1790P-T0W6	PROFIBUS, 6 relay out base, terminal block
1790P-T8BV8V	PROFIBUS, 24VDC, 8 univ in/8 sink out base, terminal block
1790P-T8BV8B	PROFIBUS, 24VDC, 8 univ in/8 source out base, terminal block
<b>Expansions</b>	
1790-0B16X	LDX I/O, 24VDC, 16 source out expansion, D-shell
1790-0V16X	LDX I/O, 24VDC, 16 sink out expansion, D-shell
1790-0W8X	LDX I/O, 8 relay out, expansion, D-shell
1790-16BV0X	LDX I/O, 24VDC, 16 universal in expansion, D-shell
1790-8BV8BX	LDX I/O, 24VDC, 8 univ in/8 source out expansion, D-shell
1790-8BV8VX	LDX I/O, 24VDC, 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, 24VDC, 16 source out expansion, terminal block
1790-T0V16X	LDX I/O, 24VDC, 16 sink out expansion, terminal block
1790-T0W8X	LDX I/O, 8 relay out, expansion, terminal block
1790-T16BV0X	LDX I/O, 24VDC, 16 universal in expansion, terminal block
1790-T8A0X	LDX I/O, 120 VAC, 8 input expansion module, terminal block
1790-T8BV8BX	LDX I/O, 24VDC, 8 univ in/8 source out expansion, terminal block
1790-T8BV8VX	LDX I/O, 24VDC, 8 univ in/8 sink out expansion, terminal block
<b>Analog I/O</b>	<b>Description</b>
<b>DeviceNet Bases</b>	
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
<b>PROFIBUS Bases</b>	
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

<b>Optional Components</b>	
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)

<b>Environmental Specifications</b>	
Operating Temp	0 to 55°C (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)

<b>General Specifications</b>	
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

<b>DeviceNet Specifications</b>	
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)

<b>PROFIBUS Specifications</b>	
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

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

<sup>1</sup> Refer to publication 1770-4.1, Programmable Controller Wiring and Grounding Guidelines

<sup>2</sup> All blocks that have D-shell connectors are UL approved for use as part of Class 2 circuit only.

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