Allen-Bradley

DeviceNet™ Media

Media, Sensors and Distributed I/O

- Flat, Thick and Thin Media
- Photoelectric and Inductive Proximity Sensors
- Limit Switches
- Encoders
- ArmorBlock MaXum™, Point I/O™, Compact I/O™ and Flex I/O™

Allen-Bradley
RELIANCE ELECTRIC
DODGE
ROCKWELL SOFTWARE
Rockwell Automation

Bringing Together Leading Brands in Industrial Automation

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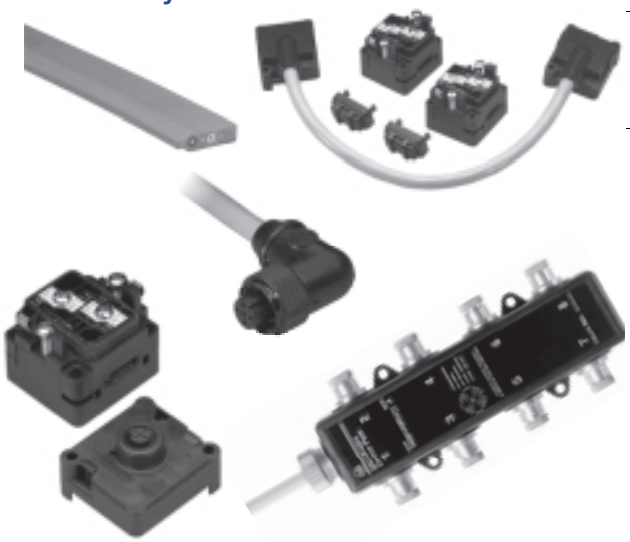
Flat Media System



Description	KwikLink™ DeviceNet™ Media	
Features	Plug and play installation, keyed 4-conductor TPE or PVC flat cable, clamp-on insulation displacement connectors, mini, micro, and terminal style connections, PVC drop cables, simple modular installation	
Available Models	Type	Page Number
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Thick Trunk Round Media

Description	DeviceNet™ Media	
Features	Heavy duty PVC trunk system, premolded quick disconnect or terminal style connections, single and multi-port taps, rugged CPE drop cables, mini or micro style connectors, simple modular installation	
Available Models	Type	Page Number
	Thick Cable Trunk	22
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Thin Trunk Round Media

Description	DeviceNet™ Media	
Features	Rugged CPE trunk and drop system, mini or micro style connectors, premolded quick disconnect or terminal style connections, single and multi-port taps, simple modular installation	
Available Models	Type	Page Number
	Thin Cable Trunk and Drop	38
	Terminal Chambers	40
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	T-Port	42
	PowerTap™	43
	DeviceBox™	44
	DevicePort™	45
	ArmorBlock MaXum	46
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I/O

Description	DeviceLink Single Point I/O	
Output Type	DeviceNet	
Features	DeviceNet Network compatibility, strobing only, 1200psi washdown rated, configurable debounce filtering	
Available Models	Type	Page Number
	Mini DeviceNet connection	52
	Micro DeviceNet connection	52
	Cable DeviceNet connection	52

Description	ArmorBlock MaXum	
Output Type	DeviceNet	
Features	DeviceNet hardened I/O, rugged housing, mini, micro, or flat cable trunk/drop connections; 2, 4, 8, or 16 point, auxiliary power option, compatible with sinking/sourcing/2-wire devices, advanced diagnostics	
Available Models	Type	Page Number
	4-port	54
	8-port	54

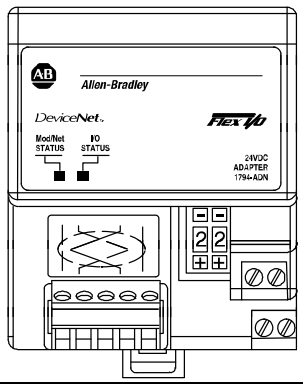
Description	ArmorBlock High Current	
Output Type	DeviceNet	
Features	DeviceNet I/O, rugged housing, 5–10 amp solid state outputs, configurable for sinking or sourcing devices, advanced diagnostics, selectable input filters	
Available Models	Type	Page Number
	High Current	55

Quick Selection Guide

I/O (continued)

Description	**Point I/O DeviceNet™ Interface**	
Output Type	DeviceNet	
Features	Space saving modular DeviceNet I/O, DIN rail mounted, removable terminals; DC, analog, and relay I/O modules, removal and insertion under power	
Available Models	**Type**	**Page Number**
	DeviceNet Interface	56

Description	**Compact I/O DeviceNet™ Adaptor**	
Output Type	DeviceNet	
Features	Space saving modular DeviceNet I/O, DIN rail or panel mounted, removable terminal blocks, up to 30 I/O modules on single node; AC, DC, analog, and relay I/O modules	
Available Models	**Type**	**Page Number**
	DeviceNet Adaptor	57



Description	**FLEX I/O DeviceNet™ Adaptor**	
Output Type	DeviceNet	
Features	Flexible modular DeviceNet I/O, DIN rail mounted, wide variety of I/O modules, removal and insertion under power, plug and play operability	
Available Models	**Type**	**Page Number**
	DeviceNet Adaptor	58

DeviceNet™ Sensors

Description	**RightSight ™ Photoelectric Sensor**	
Output Type	DeviceNet	
Connections	5-pin DC micro QD	
Features	DeviceNet Network compatibility, rugged compact housing, standard 18mm mounting options, 1200psi washdown rated, advanced diagnostics, counter, time delay	
Available Models	**Type**	**Page Number**
	Polarized Retroreflective	62
	Standard Diffuse	62
	Sharp Cutoff Diffuse	62
	Background Suppression	62
	Infrared Fiber Optic	63
	Transmitted Beam	63

Description	**Series 9000 Photoelectric Sensor**	
Output Type	DeviceNet	
Connections	• 5-pin DC micro QD • 5-pin mini QD • 2m CPE cable	
Features	DeviceNet Network compatibility, rugged housing, 1200psi washdown rated, L.O./D.O. switch, sensitivity adjustment, alignment and diagnostic indicators, timing functions	
Available Models	**Type**	**Page Number**
	Retroreflective	66
	Polarized Retroreflective	66
	ClearSight Retroreflective	66
	Standard Diffuse	66
	Infrared Fiber Optic	67
	Visible Red Fiber Optic	67
	Transmitted Beam	67

Description	**871TM Inductive Proximity Sensor**	
Output Type	DeviceNet	
Connections	• 5-pin DC micro QD • 5-pin mini QD • 2m CPE cable	
Features	DeviceNet Network compatibility, stainless steel face and barrel, 1200psi washdown rated, standard mounting, discrete or analog output, timing options, advanced diagnostics	
Available Models	**Type**	**Page Number**
	18mm shielded	69
	18mm unshielded	69
	30mm shielded	69
	30mm unshielded	69

DeviceNet Sensors (continued)

Description	**802DN Limit Switch**	
Output Type	DeviceNet	
Connections	• 5-pin DC micro QD • 5-pin mini QD • 2m CPE cable	
Features	DeviceNet Network compatibility, NEMA 13 rated, standard mounting, discrete or analog output, dual setpoints, timing options, advanced diagnostics	
Available Models	**Type**	**Page Number**
	Limit Switch without lever	71
	Limit Switch with wide belt roller	71

Description	**842D Encoder**	
Output Type	DeviceNet	
Connections	• 5-pin DC micro QD	
Features	DeviceNet Network compatibility, advanced diagnostics	
Available Models	**Type**	**Page Number**
	26-bit absolute multi-turn	72

General Description

DeviceNet™ is an open communication network designed to connect factory floor devices such as photoelectric sensors, inductive proximity sensors, motorstarters, drives, valve manifolds, and simple operator interfaces together without interfacing through an I/O system. It increases the amount and rate of information flowing from plant floor devices to control systems, and has the potential to substantially reduce wiring costs. Up to 64 intelligent nodes can be connected to one DeviceNet network. The ability to remove and replace devices from the network while under power without a programming tool is a distinct advantage of the DeviceNet network.

The DeviceNet network consists of a cabling system that provides both power and communication to nodes. Rockwell Automation/Allen-Bradley offers a number of media products for device connection and communication needs.

KwikLink Flat Media System

The KwikLink flat media system provides a simple, modular cabling method with its flat 4-wire cable and Insulation Displacement Connectors (IDCs). Designed to promote up to 50% savings in installation costs by offering a drastic reduction in labor and materials, the KwikLink system allows nodes to be added to the network quickly and easily—without severing the trunkline. Cutting or stripping of the trunkline is eliminated, as is the need for predetermined cable lengths. KwikLink offers maximum simplicity while still supporting 64 nodes. In addition to micro, mini pigtail, cable pigtail, open, and terminator style IDCs, specific KwikLink IDC connections also include splice kits for joining two separate flat media trunk sections. ArmorBlock MaXum I/O is also specifically designed to provide a direct interface to the KwikLink flat media system. A full complement of accessories is also available. For complete information on system installation and associated details, see Allen-Bradley publication DN–6.7.2.

Round Media— Thick Trunk System

Allen-Bradley round media thick trunk systems are based on the use of “thick cable” for DeviceNet. Allen-Bradley thick trunk cable allows maximum trunk line distance and is the original DeviceNet system configuration. Thick trunk cable is available in bulk spools or as mini male to mini female cordsets or patchcords in varying lengths. A wide variety of rugged, durable Allen-Bradley DeviceNet components are available for use in thick trunk systems. These components include drop cables, T-Ports, DeviceBox, DevicePort, PowerTap and a multitude of other components and accessories. Stainless steel versions of thick cable system components are also available. For complete information on system installation and associated details, see Allen-Bradley publication DN–6.7.2.

Round Media— Thin Trunk System

Allen-Bradley round media thin trunk systems are based on the use of “thin cable” for DeviceNet. The use of thin cable reduces maximum trunk line distances but allows for a more compact and cost effective installation for some applications. Allen-Bradley thin cable outer jacket material is TPE for additional chemical resistance. Thin trunk cable is available in a wide variety of configurations including raw spools and both micro and mini cordsets and patchcords. Similar to Allen-Bradley thick trunk systems, compatible components include T-Ports, DeviceBox, DevicePort, PowerTap, and a multitude of other components and accessories. Stainless steel versions of thin cable system components are also available. For complete information on system installation and associated details, see Allen-Bradley publication DN–6.7.2.

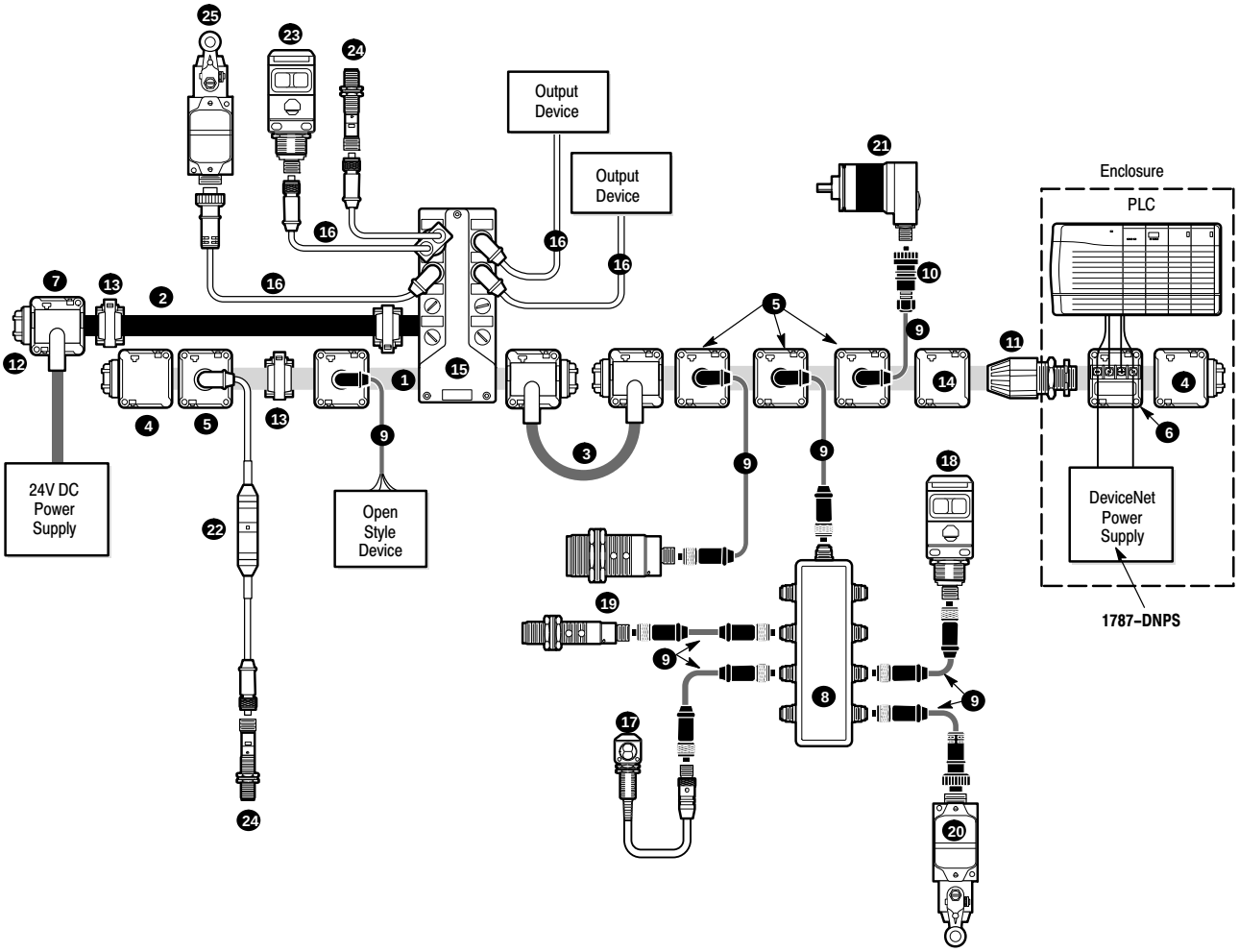
General Characteristics

Data Rates	125k baud	250k baud	500k baud
Flat Trunk Dist	420m (1378ft)	200m (656ft)	75m (246ft)
Thick Trunk Dist	500m (1640ft)	250m (820ft)	100m (328ft)
Thin Trunk Dist	100m (328ft)		
Max. Drop Length	6.1m (20ft)		
Cumulative Drop	156m (512ft)	78m (256ft)	39m (128ft)
Number of Nodes	64		

For detailed information on these characteristics, see Allen-Bradley publication DN 6.7.2.

Notes

Typical Configuration



See the *Sensors* Catalog.

Flat Media System

KwikLink™ Flat Cable Trunk

Class 1 Flat Cable

Class 2 Flat Cable

Auxiliary Power Flat Cable

Specifications

Cable	4-conductor unshielded
Agency Approvals	UL listed and CSA certified
Operating Temperature	–25°C to +75°C (–13°F to +167°F)

Description

Class 1 (CL1) Cable: Per NEC specifications for a Class 1 circuit (see NEC Article 725), the power source must have a rated output of less than 30V and 1000VA. So, based on the size of the flat cable conductors, the maximum current through the network must be no more than 8A. For applications requiring 8A in the field, a Class 1 rated flat cable is available.

Allen-Bradley Class 1 KwikLink cable is UL listed for 600V and 8A at 24V DC. For optimal chemical resilience and superior protection in harsh environments, KwikLink Class 1 cable also features a TPE jacket. Maximum toughness with excellent flexibility.

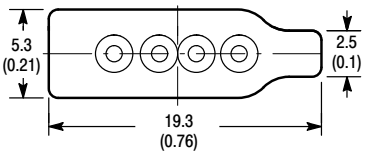
Class 2 (CL2) Cable: For less demanding applications at lower currents, Allen-Bradley offers a PVC-jacketed Class 2 cable. More flexible than the CL 1 cable, this design adheres to NEC Article 725, which states that for a Class 2 circuit, the power source must have a rated output of less than 30V and 100VA. In the case of DeviceNet, running at 24V, the maximum allowable current is then 100VA/24V or 4A. Therefore, KwikLink CL 2 cable is rated to 4A at 24V DC.

Auxiliary Power Cable (CL1): In some cases, it may be desirable to run an auxiliary bus to power outputs, i.e. valves, actuators, indicators. To support such an application, Allen-Bradley provides a black PVC power cable for use with KwikLink connectors. KwikLink power cable is a Class 1 cable capable of supplying 24V of output power with currents up to 8A.

Features

- Physical key to ensure proper connection alignment
- Sized to fit inside 1″ conduit
- TPE or PVC jacket material
- UL recognized and CSA certified

Selection Guide

Dimensions—mm (in)	Rating	Use	Jacket Material	Color	Catalog Number		
					75m Spool	200m Spool	420m Spool
	24V DC 8A (Class 1)	DeviceNet Trunk	TPE	Grey	1485C–P1E75	1485C–P1E200	1485C–P1E420
	24V DC 4A (Class 2)		PVC	Light Grey	1485C–P1G75	1485C–P1G200	1485C–P1G420
	24V DC 8A (Class 1)	Aux Power Trunk		Black	1485C–P1L75	1485C–P1L200	1485C–P1L420

Splice Kit

Specifications

Storage Temperature	–40°C to +85°C (–40°F to +185°F)
Operating Temperature	–25°C to +75°C (–13°F to +167°F)
Enclosure Rating	Unsealed: NEMA 1; IP60 (IEC 529) Sealed: NEMA 4, 6P, 13; IP67 (IEC 529) & 1200psi (8270kPa) washdown
Vibration	1.5mm displacement @ 10 to 500Hz, 10G peak, 3 planes
Housing Material	Valox®
Cable Jacket Material	Grey PVC
Dimensions	45mm x 49mm x 59mm (1.8in x 1.8in x 2.3in)

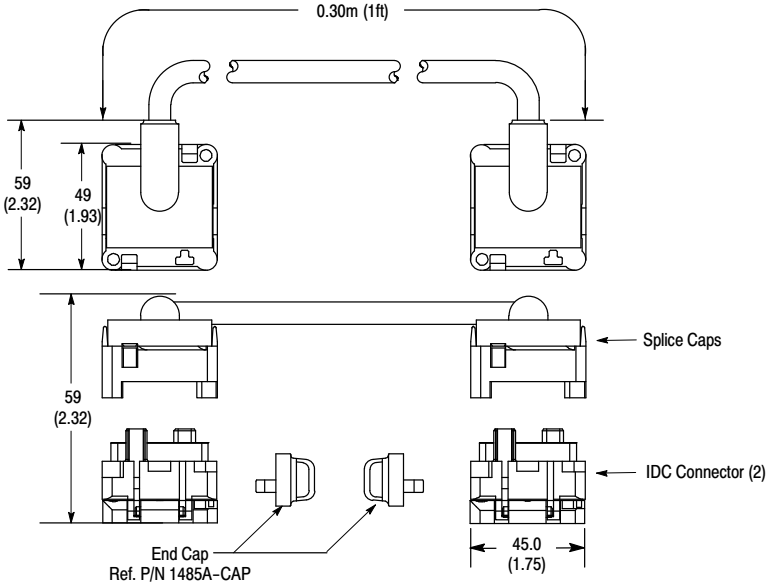
Features

- Sealed and unsealed versions
- Connects trunk segments with 8A current capacity
- Standard and power isolation versions
- Quick, simple installation
- Includes IDC connectors, splice caps, and flat cable end caps

Description

KwikLink splice kits are used for splicing together two sections of a flat cable network. Splice kits are rated for 8A at 24VDC (Class 1) and come with all the parts necessary to join sections of flat media. Kits include a pair of snap-on KwikLink modules factory-joined with Class 1 round cable, two IDC connector bases, and two flat cable end caps. Power Isolation versions are available to allow separation of power supplies along the network trunkline. This permits the connection of multiple power supplies to the trunk without mutual interference. Additional information on the IDC connector is found on page 12.

Dimensions—mm (in)



Selection Guide

Connector Style	Rating	Wiring Diagram	Cable Length	Catalog Number	
				Unsealed	Sealed
Splice Kit	24V DC 8A	V+ (Red) V+ Can-H (White) Can-H Can-L (Blue) Can-L V- (Black) V-	0.3 (1.0)	1485P-P1H4-S	1485P-P1E4-S
Power Isolation Splice Kit		V+ (No Connection) V+ Can-H (White) Can-H Can-L (Blue) Can-L V- (Black) V-		1485P-P1H4-SX	1485P-P1E4-SX

Flat Media System

KwikLink™ Insulation Displacement Connectors

Micro Style IDC

Open Style IDC

Terminator

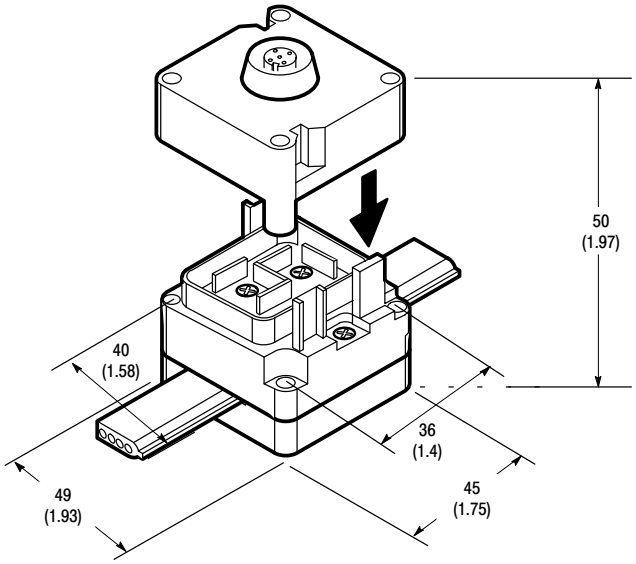
Specifications

Storage Temperature	–40°C to +85°C (–40°F to +185°F)
Operating Temperature	–25°C to +75°C (–13°F to +167°F)
Enclosure Rating	Unsealed: NEMA 1; IP60 (IEC 529) Sealed: NEMA 4, 6P, 13; IP67 (IEC 529) & 1200psi (8270kPa) washdown
Vibration	1.5mm displacement @ 10 to 500Hz, 10G peak, 3 planes
Housing Material	Valox®
Dimensions	45mm x 49mm x 50mm (1.8in x 1.8in x 2in)

Description

Allen-Bradley KwikLink Insulation Displacement Connectors (IDCs) interface drop cables to the flat cable trunkline with optimal plug-and-play capability at minimal cost. The hinged, two-piece base snaps snugly around the flat cable at any point along the trunk. Contact is made with the cable's four conductors by tightening two screws that drive the contacts through the cable jacket and into the conductors. The upper portion of the IDC provides the connection to the drop cable and is available in several versions including micro- and open-style connectors. Sealed versions offer NEMA 6P and 13, IP67 and 1200psi washdown protection and feature a wide working temperature range (–25°C to 75°C) for outdoor use. The compact Valox® construction (roughly 2″ square) makes KwikLink IDCs chemically resistant for use in harsh industrial environments.

Dimensions—mm (in)



Features

- Sealed and unsealed versions
- Quick simple installation
- Rugged Valox housing
- Includes interface and IDC module
- Terminator includes interface, IDC module, and flat cable end cap

Selection Guide

Connector Style	Rating	Connector Material	Color	Catalog Number	
				Unsealed	Sealed
Terminator	24V DC 8A	Valox®	Black	1485A–T1H4	1485A–T1E4
Micro Style	24V DC 3A			1485P–P1H4–R5	1485P–P1E4–R5
Open Style	24V DC 8A			1485P–P1H4–T4	—

Mini Style Pigtail Drop IDC

PowerTap/Cable Drop IDC

Features

- Sealed and unsealed versions
- Quick simple installation
- Rugged Valox housing and PVC cable
- Includes tap/drop and IDC connection
- Flying leads or female mini style connector

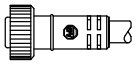
Specifications

Storage Temperature	–40°C to +85°C (–40°F to +185°F)
Operating Temperature	–25°C to +75°C (–13°F to +167°F)
Enclosure Rating	Unsealed: NEMA 1; IP60 (IEC 529) Sealed: NEMA 6P, 13; IP67 (IEC 529) and 1200psi (8270kPa) washdown
Vibration	1.5mm displacement @ 10 to 500Hz, 10G peak, 3 planes
Housing Material	Valox®
Dimensions	45mm x 49mm x 59mm (1.8in x 1.8in x 2.3in)

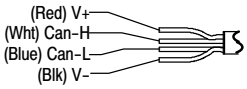
Description

KwikLink pigtail drops/power taps are Insulation Displacement Connectors (IDC) with integral Class 1 round cables for interfacing devices or power supplies to flat cable. These components are Class 1 rated (8A at 24V DC) and are available in multiple lengths for application flexibility. Each model includes both the pigtail drop module and the insulation displacement connector. For additional information on the IDC connector, see page 12.

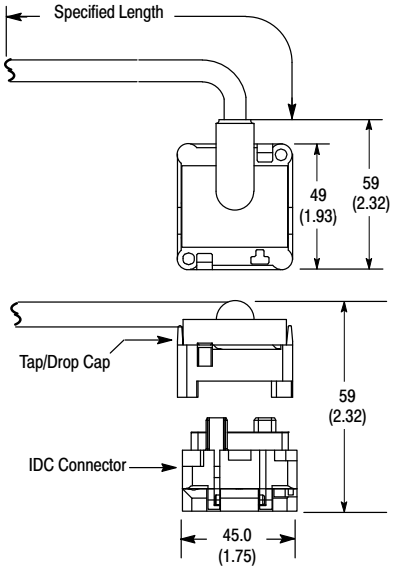
Dimensions—mm (in)



Mini Style Pigtail



Power Tap/Cable Drop



Selection Guide

Connector Style	Rating	Cable Jacket Material	Cable Length	Catalog Number	
				Unsealed	Sealed
Power Tap/Cable Drop	24V DC 8A	Grey PVC	1m	1485T–P1H4–B1	1485T–P1E4–B1
			2m	1485T–P1H4–B2	1485T–P1E4–B2
			3m	1485T–P1H4–B3	1485T–P1E4–B3
			6m	1485T–P1H4–B6	1485T–P1E4–B6
Mini-Style Pigtail Drop			1m	1485P–P1H4–B1–N5	1485P–P1E4–B1–N5
			2m	1485P–P1H4–B2–N5	1485P–P1E4–B2–N5
			3m	1485P–P1H4–B3–N5	1485P–P1E4–B3–N5
			6m	1485P–P1H4–B6–N5	1485P–P1E4–B6–N5

Flat Media System

DevicePort™

4- and 8-Port DevicePorts with Cable Drop

Features

- Passive
- Sealed (NEMA 6P)
- 4-Port or 8-Port
- Drop cable
- Micro quick-disconnect

Specifications

Storage Temperature	–40°F to 185°F (–40°C to +85°C)
Operating Temperature	–13°F to 158°F (–25°C to +70°C)
Enclosure Rating	NEMA 4, 6P and 1200 PSI, 3.5GPM, 140°F temperature Washdown; IP67 (IEC 529)
Shock and Vibration	5G, 30–120Hz
Housing Material	Chemical resistant black polymer

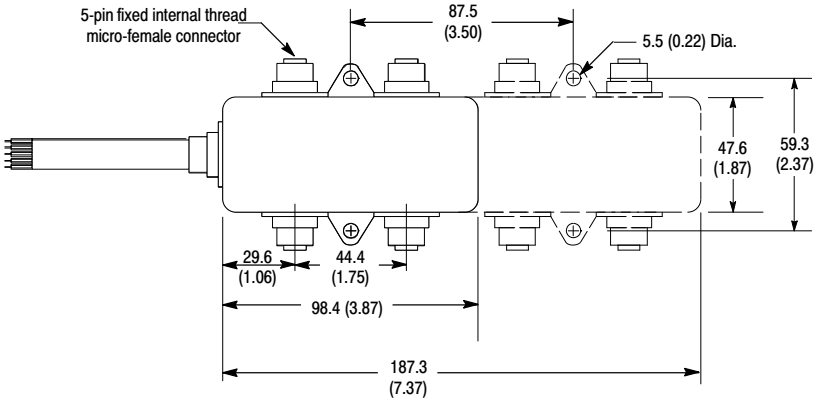
Description

DevicePort™ taps are passive multiport taps which connect via a drop cable. DevicePort™ taps are offered with 4 or 8 quick-disconnect ports in sealed versions to connect up to 8 physical nodes.

Using DevicePort reduces the number of physical taps on the trunk line from as many as eight taps to one. All device connections are micro female receptacles. Only micro male connectors with rotating coupling nuts can interface with each port. Allen-Bradley micro style DeviceNet drop cables are recommended.

Micro DevicePort Taps come standard with sealing caps for all ports. If replacement sealing caps are required, order catalog number **1485A–C3**.

Dimensions—mm (in)



Selection Guide

Male Connector Style	Female Connector Style	Number of Ports	Catalog Number
2m Cable	Micro	4	**1485P–P4R5–C2**
		8	**1485P–P8R5–C2**
Micro		4	**1485P–P4R5–D5**
		8	**1485P–P8R5–D5**
Right Angle Micro (2m pigtail)		4	**1485P–P4R5–C2–F5**
		8	**1485P–P8R5–C2–F5**

Other DevicePort configurations are also available (page 27).

KwikLInk Drop Cordset

Features

- Drop cables designed exclusively for use with KwikLink systems
- Micro, mini and cable connection
- Ratcheting coupling nut for vibration resistance

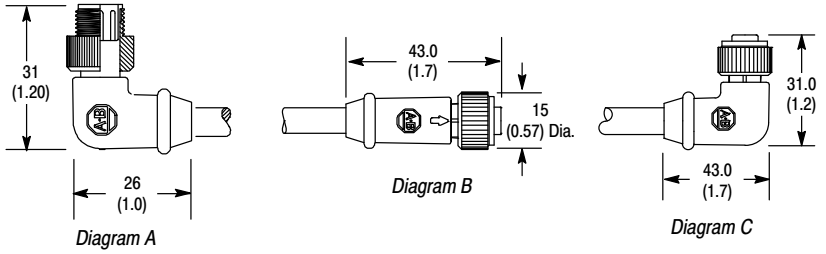
Specifications

Coupling Nut	Epoxy coated zinc
Connector	Molded oil resistant PVC
Contacts	Gold-plated palladium nickel
Cable	Oil resistant grey PVC jacket, unshielded, 22AWG power conductors, 24AWG signal conductors
Cable O.D.	6mm (0.24in)
Temperature	–20°C to +105°C (–4°F to +221°F)
Maximum Current	3 Amps

Drop Cables

Designed specifically for use with KwikLink, these drop cables come in the most common connection configurations. All trunkline connections are 90° micro male with 4-wire unshielded cable. Device connection options include 5-pin straight mini and micro as well as flying leads.

Dimensions—mm (in)



Selection Guide

KwikLink Drop Cable Cordsets and Patchcords

Connector Style	Dimensions (Diagram No.)	Catalog Number and Length—m (ft)					
		1 (3.3)	2 (6.5)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)
Right Angle Micro to Conductor	A	1485K-P1F5-C	1485K-P2F5-C	—	1485K-P4F5-C	—	1485K-P6F5-C
Right Angle Micro to Str Micro	A, B	1485K-P1F5-R5	1485K-P2F5-R5	1485K-P3F5-R5	1485K-P4F5-R5	1485K-P5F5-R5	1485K-P6F5-R5
Right Angle Micro to Right Angle Micro	A, C	1485K-P1F5-V5	1485K-P2F5-V5	1485K-P3F5-V5	1485K-P4F5-V5	1485K-P5F5-V5	1485K-P6F5-V5
Right Angle Micro to Str Mini	A, D	1485K-P1F5-N5	1485K-P2F5-N5	1485K-P3F5-N5	1485K-P4F5-N5	1485K-P5F5-N5	1485K-P6F5-N5
Right Angle Micro to Right Angle Mini	A, E	1485K-P1F5-Z5	1485K-P2F5-Z5	1485K-P3F5-Z5	1485K-P4F5-Z5	1485K-P5F5-Z5	1485K-P6F5-Z5

Additional drop cable configurations are available, contact your local Allen-Bradley distributor.

Note: These drop cables are only for use with the KwikLink flat cable system. They are not suitable for use with standard DeviceNet round cable systems.

Flat Media System

Terminal Chambers

Straight Female Micro Style Terminal Chamber

Features

- Field installable
- Straight 5-pin terminal chambers
- Mini and micro versions
- Screw terminal installation

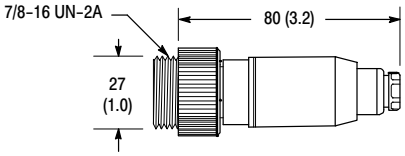
Specifications

Coupling Nut	Micro: nickel-plated brass; Mini: anodized aluminum
Connector Shell	Nylon
Contacts	Gold-plated palladium nickel
Enclosure	NEMA 6; IP67 (IEC 529)
Temperature	–40°C to 90°C (–40°F to 194°F)

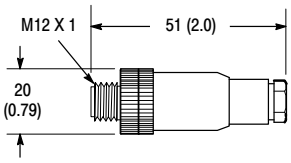
Description

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin micro style and 5-pin mini style terminal chambers are designed for use with DeviceNet systems. These connectors contain screw terminals for quick and easy installation and are sized for use with both standard thin drop cables and KwikLink drop cables. Other versions are also available for use with thick trunk systems.

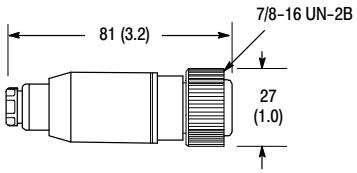
Dimensions—mm (in)



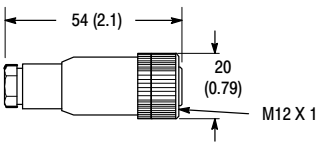
Mini Style Male



Micro Style Male



Mini Style Female



Micro Style Female

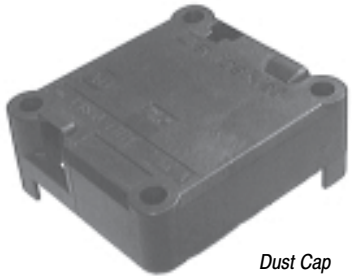
Drop Cable Terminal Chambers

Connector Style	Type	Catalog Number
Mini	Male	**871A–TS5–NM1**
	Female	**871A–TS5–N1**
Micro	Male	**871A–TS5–DM1**
	Female	**871A–TS5–D1**

Accessories

In order to support all of the options associated with the flexibility of KwikLink, Allen-Bradley offers an array of accessories including cable mounts, conduit adaptors, covers for unused nodes, and threaded plugs for sealing unused micro connectors.

Catalog Number	Description
1485A-C5E4	KwikLink module dust cap
1485A-CAD	Conduit adaptor (PG21)
1485A-FCM	Flat cable mounting clamp
1485A-M12	Plastic Threaded plug (M12)
1485A-C3	Aluminum Threaded Plug (M12)
1485A-CAP	Flat Cable End Cap



Dust Cap

Conduit Adaptor

Flat Cable End Cap

Mounting Clamp

M12 Threaded Plug (Plastic)

M12 Threaded Plug (Aluminum)

Flat Media System

ArmorBlock MaXum

ArmorBlock Maxum with Flat Cable Base

Features

- Autobaud, change-of-state
- I/O heartbeat notification
- Compatible with sinking/sourcing/ 2-wire devices
- Select off-to-on or on-to-off input filters
- Point level diagnostics: open wire, output no load
- Selectable output fault latching
- Auxiliary power detection

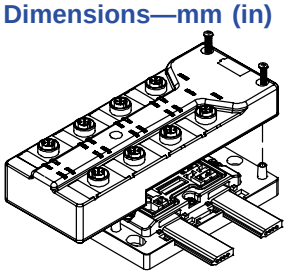
Specifications

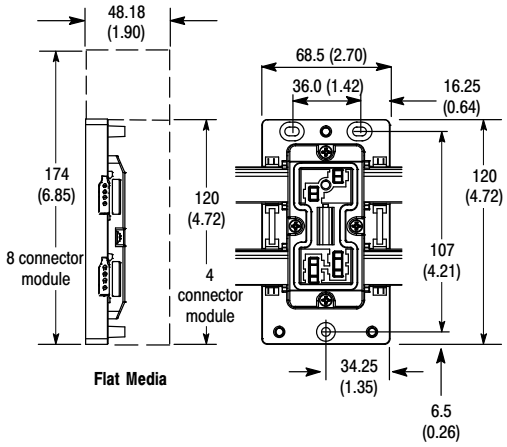
For detailed specifications see Rockwell Automation/Allen-Bradley ArmorBlock I/O publication 1792–2.1 or DN2.5.

Description

ArmorBlock MaXum is one of the first I/O products to take advantage of the DeviceNet KwikLink flat media system. ArmorBlock MaXum for KwikLink attaches directly to flat media for both network and optional auxiliary power cables, providing quick and simple device installation. The MaXum module's I/O is exchanged with the master device through polled, change-of-state, or cyclic messaging. It also contains a hardwired watchdog circuit that places outputs in a known state in case of a block internal fault.

Dimensions—mm (in)





1792D–CBFM Base

Selection Guide

Trunk Connection	Device Connection	No. of Device Connectors	Number of Inputs	Number of Outputs	Catalog Number
—	4-pin DC micro	2	2	0	1792D–2BV0D
		4	4		1792D–4BV0D
			8		1792D–8BVT0D
			2	2	1792D–2BVA2D
			4	4	1792D–4BVT4D
			0		1792D–0B4D
		8	16	0	1792D–16BVT0D
			8	8	1792D–8BVT8D
					1792D–8B108E
			12	4	1792D–12BVT4D
			0	8	1792D–0B8D
				16 (sinking)	1792D–0VT16E
Flat Media Connector					1792D–CBFM

Additional mounting bases are available, see page 54.

DC Micro to DC Micro Patchcord

DC Micro to Pico Patchcord

DC Micro Y-Cable

Specifications

Coupling Nut	• Cordsets/patchcords/y-cables: Epoxy-Coated Zinc • Splitter Tee/Terminal Chambers: Nickel-plated brass
Connector	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 22AWG conductors, 300V, UL recognized and CSA certified
Cable O.D.	5mm (0.21in)
Temperature	–20°C to +105°C (–4°F to +221°F)

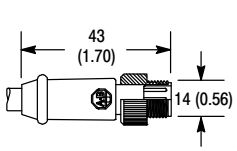
Description

Allen-Bradley offers a wide variety of cordsets, patchcords, Y-cables, field attachable connectors, and splitter Tees for interfacing devices to ArmorBlock I/O. These connection systems products are made of durable PVC cable and are designed to handle rough industrial environments. Stainless steel versions are also available for the most demanding applications.

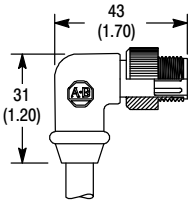
Features

- UL recognized and CSA certified
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance (except terminal chambers)

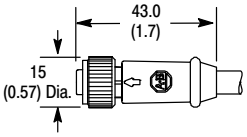
Dimensions—mm (in)



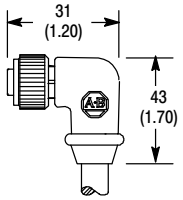
Drawing A



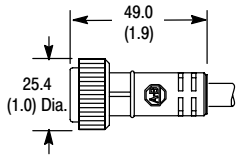
Drawing B



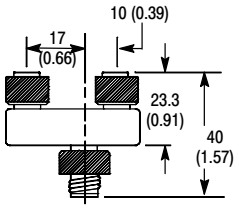
Drawing C



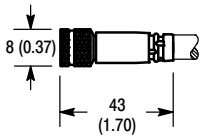
Drawing D



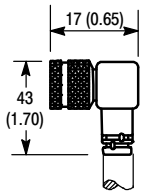
Drawing E



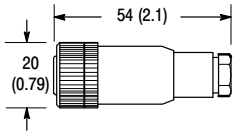
Drawing F



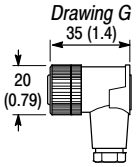
Drawing G



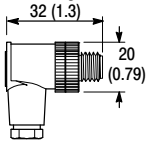
Drawing H



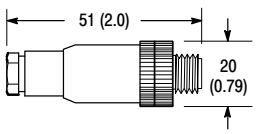
Drawing I



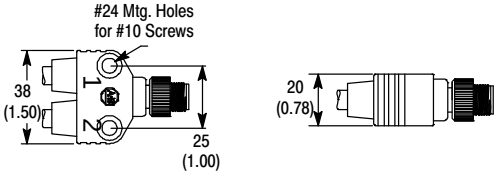
Drawing J



Drawing K



Drawing L



Drawing M

Dimensions are approximate. Illustrations are not drawn to scale.

Selection Guide

ArmorBlock Cordsets, Patchcords, and Y–Cables

Connection Type	Male Connector (ArmorBlock End)		Female Connector (Device End)		Dim. (Diag. No.)	Catalog Number Length—m (ft)				
	Type	Style	Type	Style		0.3 (1)	1 (3.3)	2 (6.5)	5 (16.4)	10 (32.8)
Cordset	4-pin Micro	Straight	Conductor	—	A	—	—	889D–M4AC–2	889D–M4AC–5	889D–M4AC–10
		Right Angle			B			889D–E4AC–2	889D–E4AC–5	889D–E4AC–10
Patchcord		Straight	4-pin Micro	Straight	A, C	889D–F4ACDM–0M3	889D–F4ACDM–1	889D–F4ACDM–2	889D–F4ACDM–5	889D–F4ACDM–10
				Right Angle	A, D	889D–R4ACDM–0M3	889D–R4ACDM–1	889D–R4ACDM–2	889D–R4ACDM–5	889D–R4ACDM–10
			4-pin Mini	Straight	A, E	—	871A–CS4–DM1N	871A–CS4–DM2N	—	—
		Right Angle	4-pin Micro	Straight	B, C	889D–F4ACDE–0M3	889D–F4ACDE–1	889D–F4ACDE–2	889D–F4ACDE–5	889D–F4ACDE–10
				Right Angle	B, D	889D–R4ACDE–0M3	889D–R4ACDE–1	889D–R4ACDE–2	889D–R4ACDE–5	889D–R4ACDE–10
			3-pin Pico	Straight	B, G	889P–F3ABDE4–0M3	889P–F3ABDE4–1	889P–F3ABDE4–2	889P–F3ABDE4–5	889P–F3ABDE4–10
				Right Angle	B, H	889P–R3ABDE4–0M3	889P–R3ABDE4–1	889P–R3ABDE4–2	889P–R3ABDE4–5	889P–R3ABDE4–10
			4-pin Pico	Straight	B, G	889P–F4ABDE–0M3	889P–F4ABDE–1	889P–F4ABDE–2	889P–F4ABDE–5	889P–F4ABDE–10
Y-Cable		Straight	Conductor	—	M	—	—	—	879–C3AEDM4–5	—
			4-pin Micro (2)	Straight	M, C	879D–F4ACDM–0M3	879D–F4ACDM–1	879D–F4ACDM–2	879D–F4ACDM–5	879D–F4ACDM–10
				Right Angle	M, D	879D–R4ACDM–0M3	879D–R4ACDM–1	879D–R4ACDM–2	879D–R4ACDM–5	879D–R4ACDM–10

Additional configurations are available, contact your local Allen-Bradley distributor for details.

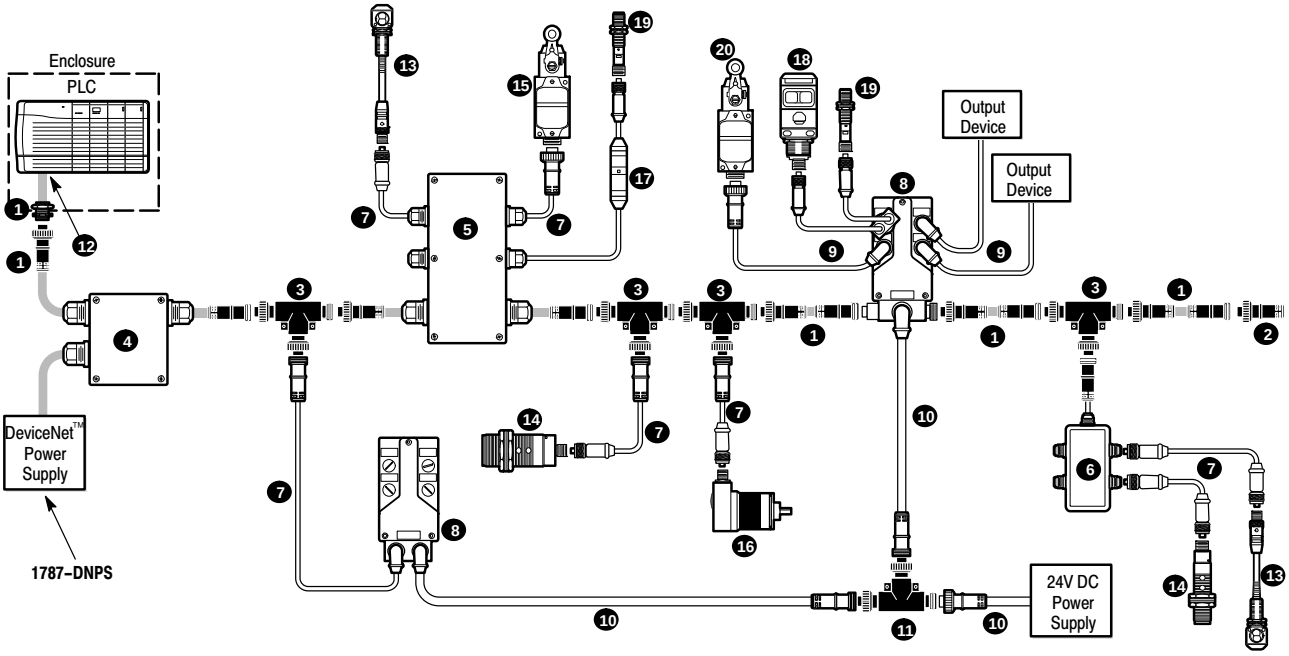
Splitter Tee

Male Connector (ArmorBlock End)	Female Connector (Device End)	Dimensions (Diagram Number)	Catalog Number
4-Pin Micro	4-Pin Micro (2)	F	1485P–P1R4–DR4

Terminal Chambers

Connector Style	Orientation	Cable Diameter—mm (in)	Dimensions—Male/Female (See Diagram)	Catalog Number Male	Catalog Number Female
4-Pin Micro	Right Angle	4.0–6.0 (0.16–0.24)	K/J	871A–TR4–DM	871A–TR4–D
	Straight		L/I	871A–TS4–DM	871A–TS4–D
		6.0–8.0 (0.24–0.32)		871A–TS4–DM1	871A–TS4–D1
5-Pin Micro				871–TS5–DM1	871A–TS5–D1

Typical Configuration



See the *Sensors* Catalog.

Thick Trunk System

Thick Cable Trunk

Thick Trunk Cable

Specifications

Operating Temperature	–20°C to +70°C (–15°F to +158°F)
Agency Approvals	UL listed and CSA certified
Enclosure Rating	NEMA 1, 2, 3, 4, 6P, 12, 13; IP67 1200psi (8720kPa) washdown
Housing Material	Gray PVC
Outside Diameter	12.2mm (0.48in)
Maximum Current	8 Amps (4A NEC)

Features

- PVC jacket offers good oil and chemical resistance
- Watertight connections (NEMA 4, 6P; IP67)
- Gold plated contacts
- UL recognized and CSA certified

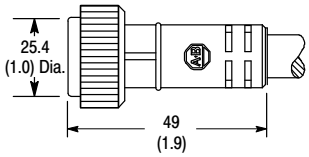
Description

Allen-Bradley thick trunk cable is available in raw spools as well as specified lengths with any of several connectors preattached. Cordsets and patchcords are prewired and factory-molded to assure reliable connection. Allen-Bradley thick trunk cables provide a rugged and durable foundation for DeviceNet systems. Although typically used in thick trunk systems as trunkline only, Allen-Bradley thick cable can also be used for DeviceNet drops.

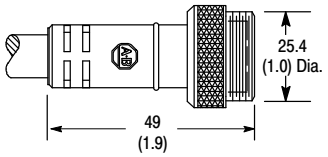
Selection Guide

Thick Trunk Cable	
Spool Size	**Catalog Number**
50m (164ft)	**1485C–P1A50**
150m (492ft)	**1485C–P1A150**
300m (984ft)	**1485C–P1A300**
500m (1640ft)	**1485C–P1A500**

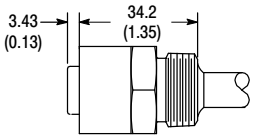
Dimensions—mm (in)



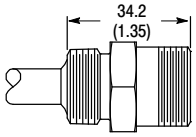
Mini Female Cordset/Patchcord



Mini Male Cordset/Patchcord



Mini Female Receptacle



Mini Male Receptacle

Dimensions are approximate. Illustrations are not drawn to scale.

Thick Trunk Cable Cordsets, Patchcords, and Receptacles

	Catalog Number				
Length—m (ft)	**Male Receptacle**	**Female Receptacle**	**Male Cordset**	**Female Cordset**	**Male/Female Patchcord**
1 (3.3)	**1485F–P1M5–A**	**1485F–P1N5–A**	**1485C–P1M5–C**	**1485C–P1N5–C**	**1485C–P1N5–M5**
2 (6.5)	—	—	**1485C–P2M5–C**	**1485C–P2N5–C**	**1485C–P2N5–M5**
3 (9.8)	—	—	**1485C–P3M5–C**	**1485C–P3N5–C**	**1485C–P3N5–M5**
4 (13.1)	—	—	**1485C–P4M5–C**	**1485C–P4N5–C**	**1485C–P4N5–M5**
5 (16.4)	—	—	**1485C–P5M5–C**	**1485C–P5N5–C**	**1485C–P5N5–M5**
6 (19.7)	—	—	**1485C–P6M5–C**	**1485C–P6N5–C**	**1485C–P6N5–M5**
8 (26.2)	—	—	**1485C–P8M5–C**	**1485C–P8N5–C**	**1485C–P8N5–M5**
10 (32.8)	—	—	**1485C–P10M5–C**	**1485C–P10N5–C**	**1485C–P10N5–M5**
12 (39.4)	—	—	**1485C–P12M5–C**	**1485C–P12N5–C**	**1485C–P12N5–M5**
18 (59.0)	—	—	**1485C–P18M5–C**	**1485C–P18N5–C**	**1485C–P18N5–M5**
24 (78.7)	—	—	**1485C–P24M5–C**	**1485C–P24N5–C**	**1485C–P24N5–M5**
30 (98.4)	—	—	**1485C–P30M5–C**	**1485C–P30N5–C**	**1485C–P30N5–M5**

Other styles and lengths are available, contact your local Allen-Bradley distributor for details.

Terminators

Features

- Male and female connector terminators
- Electrically stabilize network
- NEMA 1, 2, 4, 6P, 12, 13; IP67 rating

Selection Guide

Terminator Type	Catalog Number
Male	**1485A-T1M5**
Female	**1485A-T1N5**

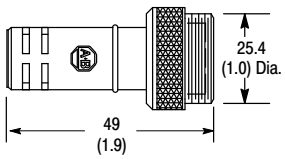
Specifications

Storage Temperature	–40°F to 185°F (–40°C to +85°C)
Operating Temperature	–13°F to 158°F (–25°C to +70°C)
Enclosure Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67, 1200 psi (8720kPa) washdown
Shock/Vibration	5G, 30–120Hz

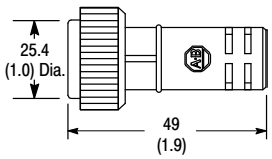
Description

Terminators are installed at both ends of the network to stabilize the DeviceNet system electrically. Offered in both male and female versions, each terminator contains a 121 ohm load resistor to ensure network functionality.

Dimensions—mm (in)



Male Mini Style Terminator



Female Mini Style Terminator

Dimensions are approximate. Illustrations are not drawn to scale.

Female Mini Style Terminal Chamber

Features

- Male and female versions
- IP67 rating
- Screw terminal connections

Selection Guide

Thick Drop Cable Terminal Chambers		
Connector Style	**Type**	**Catalog Number**
Mini	Male	**871A-TS5-NM3**
	Female	**871A-TS5-N3**

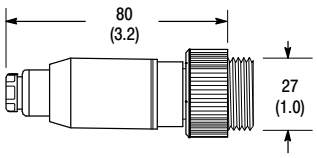
Specifications

Storage Temperature	–40°F to 185°F (–40°C to +85°C)
Operating Temperature	–13°F to 158°F (–25°C to +70°C)
Enclosure Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67, 1200 psi (8720kPa) washdown
Shock/Vibration	5G, 30–120Hz

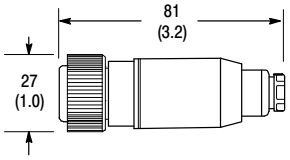
Description

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin mini style connectors contain screw terminals for quick and easy installation and are sized for use with DeviceNet thick cable. Other versions are also available for use with thin cable, see page 30.

Dimensions—mm (in)



Male Mini Style Terminal Chamber



Female Mini Style Terminal Chamber

Thick Trunk System

T-Port

Mini Style T-Port

Features

- Passive
- Sealed (NEMA 6P)
- Mini quick-disconnect trunk connections
- Mini or micro quick-disconnect drop connections
- Right or left key for positioning

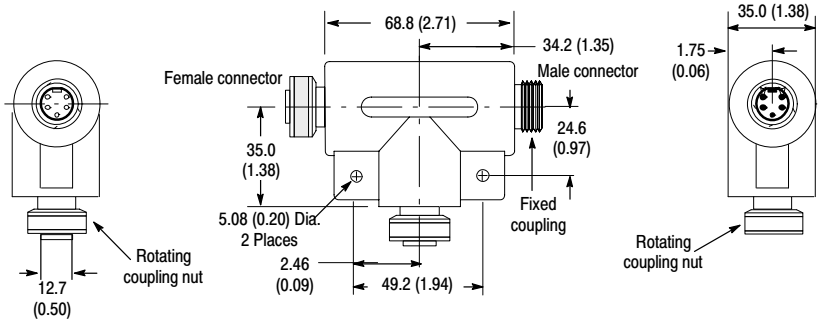
Specifications

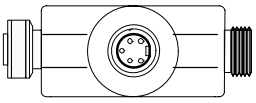
Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Temperature	–20°C to +70°C (–4°F to 158°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270kPa) at 60°C (140°F); temperature washdown; NEMA 6P, 12 and 13, IP67 (IEC529), 3.5GPM
Side Force Rating	5ft–lb

Description

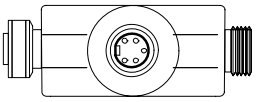
The T-ports are another alternative for connecting to the trunk line. The T-port is sealed to NEMA 6P with mini quick-disconnect. The T-port also has a right or left keyway for positioning purposes. An example of this would be if the customer connects a Photoelectric directly off the T-port. Depending on which direction the Photoelectric was positioned would dictate a right or left keyway. DeviceNet nodes can connect directly into the T-port or by using a drop cable or DevicePort™.

Dimensions—mm (in)

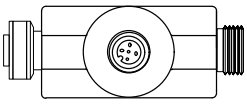




Mini Connector Left Keyway



Mini Connector Right Keyway



Micro Connector

Selection Guide

Trunk Connectors	Drop Connector	Keyway Orientation	Catalog Number
Mini	Mini	Left	**1485P–P1N5–MN5L1**
		Right	**1485P–P1N5–MN5R1**
	Micro		**1485P–P1R5–MN5R1**

PowerTap

Specifications

Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270 kPa); NEMA 3, 4X, 6P, 12 and 13; IP67 (IEC529)
Operating Temperature	–25°C to +70°C (–13°F to158°F)
Housing Material	Black polymer
Power	15.0A maximum total current; (7.5A maximum per trunk)

Features

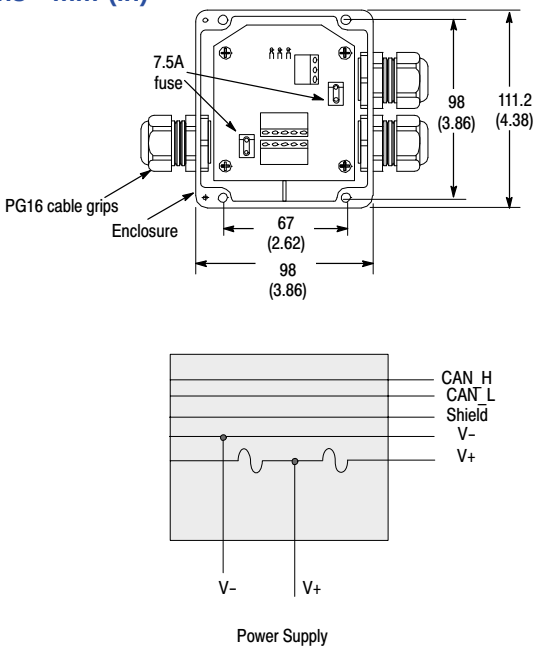
- Passive
- Cage clamp terminal strip connections
- Cord grip openings

Description

For power requirements on your DeviceNet™ network, Rockwell Automation/Allen-Bradley offers its PowerTap™. The PowerTap is a passive coupling device used to limit trunk current to agency specified values. This current limitation is provided by two standard mini blade-style fast blow type 7.5A fuses. The Allen-Bradley PowerTap™ is also used to permit the connection of multiple power supplies to the trunk without mutual interference. This is achieved through selective use or removal of appropriate fuses.

For complete information on connecting power to DeviceNet, see Allen-Bradley publication DN 6.7.2.

Dimensions—mm (in)



Fuse Placement Schematic

Selection Guide

Trunk Connection	Power Supply Connection	Fuse (2 included)	Catalog Number
Cable Gland/Terminal Strip	Cable Gland/Terminal Strip	7.5A	**1485T–P2T5–T5**

Thick Trunk System

2-, 4-, 8-Port DeviceBox™

2-port DeviceBox

4-port DeviceBox

Specifications

Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270 kPa); NEMA 3, 4X, 6P, 12 and 13; IP67 (IEC529)
Operating Temperature	–25°C to +70°C (–13°F to158°F)
Housing Material	Black polymer
Power	15.0A maximum total current; (7.5A maximum per trunk)

Description

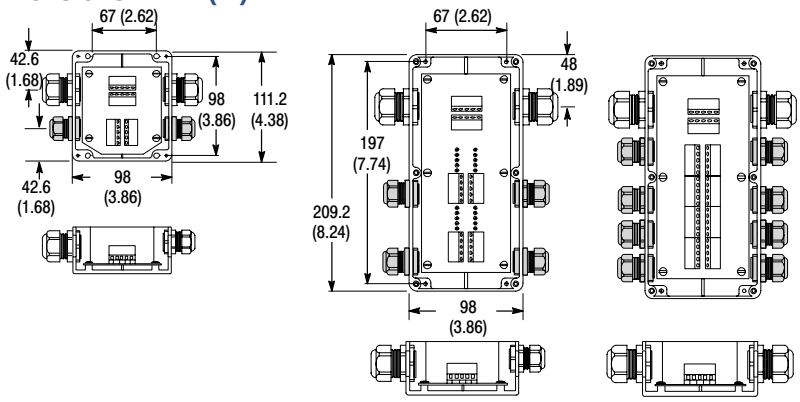
DeviceBox™ taps are passive sealed junction boxes offered in a 2-, 4-, or 8-port configuration. This is a direct connection onto the trunk line, providing terminal strip connections for up to 8 intelligent nodes.

An accessories kit is available for DeviceBox™ which includes a wrench for tightening down cable grips as well as mounting hardware such as combi-head sheet metal screws and machine mounting screws. The accessories kit includes spare plugs and a cable gland which provides a protective seal as well as various other spare components (see page 36).

Features

- Passive
- 2-, 4- or 8-Port
- Cage clamp terminal strip connections
- Cord grip openings

Dimensions—mm (in)



Selection Guide

Trunk Connection	Drop Connection	Number of Ports	Catalog Number
Cable Gland/Terminal Strip	Cable Gland/Terminal Strip	2	**1485P–P2T5–T5**
		4	**1485P–P4T5–T5**
		8	**1485P–P8T5–T5**

8-Port DevicePort with Micro Connectors

Features

- Passive
- Sealed (NEMA 6P)
- 4-Port or 8-Port
- Drop cable, mini quick-disconnect, or mini quick-disconnect pigtail drop connection
- Mini or micro quick-disconnect device connections

Specifications

Storage Temperature	–40°F to 185°F (–40°C to +85°C)
Operating Temperature	–13°F to 158°F (–25°C to +70°C)
Enclosure Rating	IP–67 rating, NEMA 4, 6P 1200 PSI, 3.5GPM, 140°F temperature Washdown; IP67 (IEC 529)
Shock and Vibration	5G, 30–120Hz
Housing Material	Chemical resistant black polymer

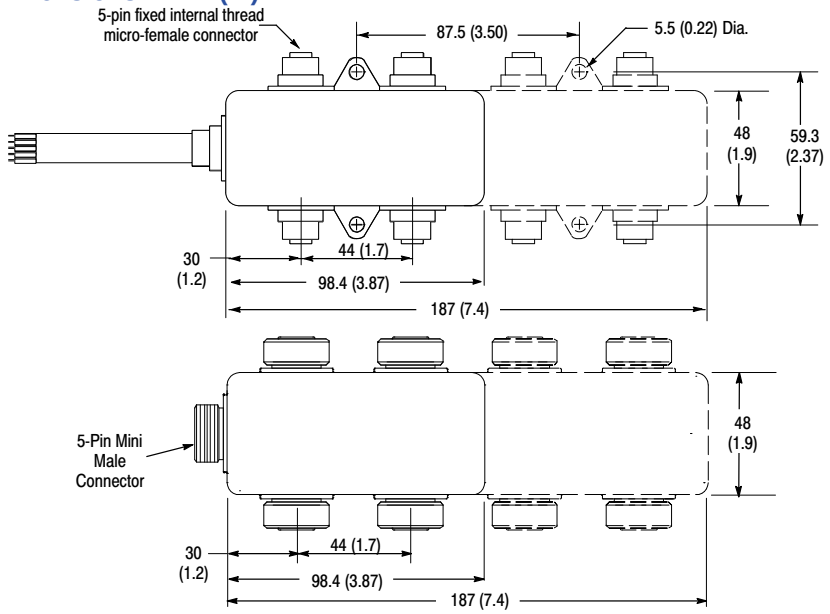
Description

DevicePort™ taps are passive multiport taps which connect to the trunk via a drop cable. DevicePort taps are offered with 4 or 8 quick-disconnect ports in sealed versions to connect up to 8 physical nodes.

Using the DevicePort tap reduces the number of physical taps on the trunk line from as many as eight taps to one.

Allen-Bradley micro DevicePorts come standard with sealing caps for all ports and replacement caps are available using catalog number **1485A–C3**. Sealing caps are not provided with mini DevicePorts. If mini sealing caps are required, order catalog number **1485A–C1**.

Dimensions—mm (in)



Selection Guide

Male Connector Style	Female Connector Style	Number of Ports	Catalog Number
Mini	Mini	4	1485P–P4N5–M5
		8	1485P–P8N5–M5
Mini (2m pigtail)	Micro	4	1485P–P4R5–C2–M5
		8	1485P–P8R5–C2–M5
2m Cable		4	1485P–P4R5–C2
		8	1485P–P8R5–C2

Other DevicePort configurations are also available (page 14).

Thick Trunk System

Thin Cable Drop

Mini to Micro Drop Cordset

Mini to Mini Drop Cordset

Specifications

Operating Temperature	-20°C to +70°C (-15°F to +158°F)
Agency Approvals	UL listed and CSA certified
Shock/Vibration	5G, 30-120Hz
Housing Material	Yellow CPE (Chemical Resistant)
Outside Diameter	6.9mm (0.270in)
Maximum Current	3 Amps

Description

Rockwell Automation/Allen-Bradley offers thin pre-molded DeviceNet cables in various lengths for use as trunk or drops. Designed in a heavy-duty, chemical-resistant yellow jacket, these cables have been designed specifically for harsh industrial environments including those applications involving dirt, oil and constant flexing. The molded construction and gold plated connector pins make for reliable connections that are impervious to most external contaminants.

Features

- Standard cable jacket is chemical resistant
- Water tight performance to a rating of IP67
- Inserts are securely bonded to the connector body for superior side load and pull-out resistance
- Gold plated contacts for corrosion resistance

Dimensions—mm (in)

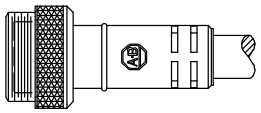


Diagram A

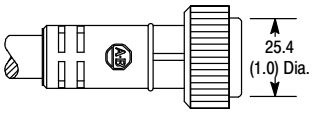


Diagram B

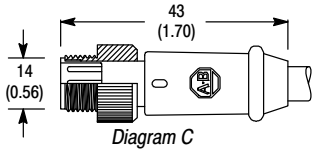


Diagram C

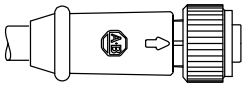


Diagram D

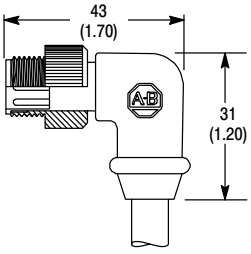


Diagram E

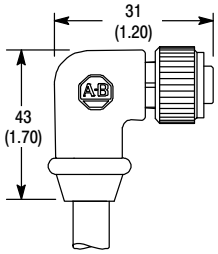


Diagram F

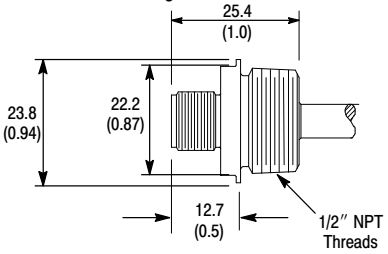


Diagram G

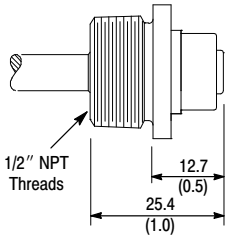


Diagram H

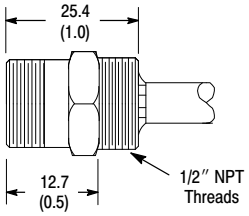


Diagram I

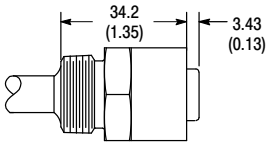


Diagram J

Selection Guide

Thin Drop Cable Cordsets and Patchcords							
Connector Style	Dimensions (Diagram No.)	Catalog Number Length—m (ft)					
		1 (3.3)	2 (6.5)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)
Str Mini Male to Str Mini Female	A and B	1485R-P1N5-M5	1485R-P2N5-M5	1485R-P3N5-M5	1485R-P4N5-M5	1485R-P5N5-M5	1485R-P6N5-M5
Str Mini Male to Str Micro Female	A and D	1485R-P1M5-R5	1485R-P2M5-R5	1485R-P3M5-R5	1485R-P4M5-R5	1485R-P5M5-R5	1485R-P6M5-R5
Str Mini Male to Conductor	A	1485R-P1M5-C	1485R-P2M5-C	1485R-P3M5-C	1485R-P4M5-C	1485R-P5M5-C	1485R-P6M5-C
Conductor to Str Mini Female	B	1485R-P1N5-C	1485R-P2N5-C	1485R-P3N5-C	1485R-P4N5-C	1485R-P5N5-C	1485R-P6N5-C
Right Angle Micro Male to Conductor	E	1485R-P1F5-C	1485R-P2F5-C	1485R-P3F5-C	1485R-P4F5-C	1485R-P5F5-C	1485R-P6F5-C
R.A. Micro Male to Str Mini Female	E and B	1485R-P1N5-F5	1485R-P2N5-F5	1485R-P3N5-F5	1485R-P4N5-F5	1485R-P5N5-F5	1485R-P6N5-F5
R.A. Micro Male to Str Micro Female	E and D	1485R-P1R5-F5	1485R-P2R5-F5	1485R-P3R5-F5	1485R-P4R5-F5	1485R-P5R5-F5	1485R-P6R5-F5
Str Micro Male to Str Micro Female	C and D	1485R-P1R5-D5	1485R-P2R5-D5	1485R-P3R5-D5	1485R-P4R5-D5	1485R-P5R5-D5	1485R-P6R5-D5
Conductor to Str Micro Female	D	1485R-P1R5-C	1485R-P2R5-C	1485R-P3R5-C	1485R-P4R5-C	1485R-P5R5-C	1485R-P6R5-C
Conductor to R.A. Micro Female	F	1485R-P1V5-C	1485R-P2V5-C	1485R-P3V5-C	1485R-P4V5-C	1485R-P5V5-C	1485R-P6V5-C
Conductor to Mini Male Receptacle	I	1485F-P1M5-C	—	—	—	—	—
Conductor to Mini Female Receptacle	J	1485F-P1N5-C	—	—	—	—	—
Conductor to Micro Male Receptacle	G	1485F-P1D5-C	—	—	—	—	—
Conductor to Micro Female Receptacle	H	1485F-P1R5-C	—	—	—	—	—

Additional drop cable configurations are available, contact your local Allen-Bradley distributor for details.

Thin Drop Cable	
Spool Size	Catalog Number
50m (164ft)	1485C-P1C50
150m (492ft)	1485C-P1C150
300m (984ft)	1485C-P1C300
600m (1968ft)	1485C-P1C600

Thick Trunk System

Thin Cable Terminal Chambers

Straight Female Micro Style Terminal Chamber

Features

- Field installable
- Straight 5-pin terminal chambers
- Mini and micro versions
- Screw terminal installation

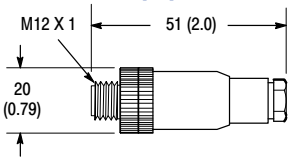
Specifications

Coupling Nut	Micro: nickel-plated brass; Mini: anodized aluminum
Connector Shell	Nylon
Contacts	Gold-plated palladium nickel
Enclosure	NEMA 6; IP67 (IEC 529)
Temperature	–40°C to 90°C (–40°F to 194°F)

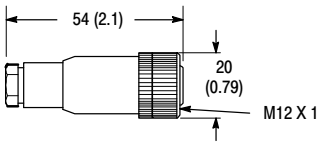
Description

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin micro style and 5-pin mini style terminal chambers are designed for use with DeviceNet systems. These connectors contain screw terminals for quick and easy installation and are sized for use with DeviceNet thin cables. Other versions are also available for use with thick cable, see page 23.

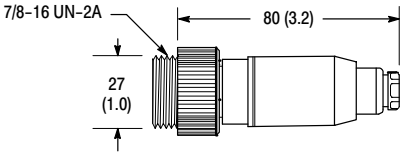
Dimensions—mm (in)



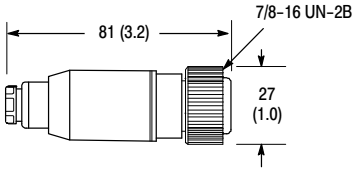
Micro Style Male



Micro Style Female



Mini Style Male



Mini Style Female

Thin Trunk or Drop Cable Terminal Chambers

Connector Style	Type	Catalog Number
Micro	Male	**871A–TS5–DM1**
	Female	**871A–TS5–D1**
Mini	Male	**871A–TS5–NM1**
	Female	**871A–TS5–N1**

4-Port ArmorBlock MaXum with Mini Plus Pass-Thru Base

Features

- Autobaud, change of state
- I/O heartbeat notification
- Compatible with sinking/sourcing/ 2-wire devices
- Select off-to-on or on-to-off input filters
- Point level diagnostics: open wire, output no load
- Selectable output fault latching
- Auxiliary power detection

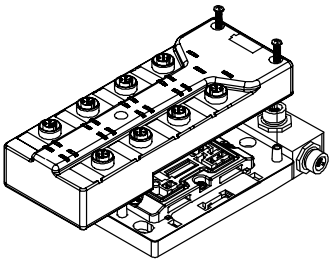
Specifications

For detailed specifications on ArmorBlock I/O, see Rockwell Automation/Allen-Bradley publication 1792–2.1 or DN2.5.

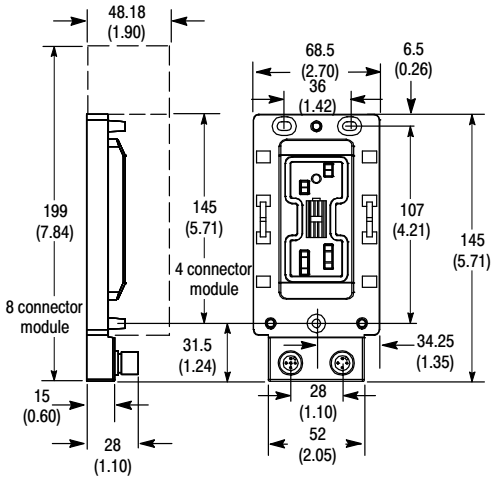
Description

ArmorBlock MaXum is a versatile hardened I/O package that can be mounted directly on equipment without the addition of enclosures. It is ideal for applications requiring highly distributed I/O in locations close to sensors and actuators. The MaXum module's I/O is exchanged with the master device through polled, change-of-state, or cyclic messaging. It also contains a hardwired watchdog circuit that places outputs in a known state in case of a block internal fault.

Dimensions—mm (in)



ArmorBlock MaXum with 1792D–CB18P Connection Base



1792D–CB12 Connection Base

Selection Guide

Trunk Connection	Device Connection	No. of Device Connectors	Number of Inputs	Number of Outputs	Catalog Number
—	4-Pin DC micro	2	2	0	1792D–2BV0D
		4	4		1792D–4BV0D
			8		1792D–8BVT0D
			2	2	1792D–2BVA2D
			4	4	1792D–4BVT4D
			0		1792D–0B4D
		8	16	0	1792D–16BVT0D
			8	8	1792D–8BVT8D
					1792D–8B108E
			12	4	1792D–12BVT4D
			0	8	1792D–0B8D
				16 (sinking)	1792D–0VT16E
Micro Drop Connector					1792D–CB12
Mini Drop Connector					1792D–CB18
Mini Trunk Passthru with Aux Power					1792D–CB18P
Mini Trunk and Aux Power Passthru					1792D–CB18PT

Additional mounting bases are available, see page 54.

Thick Trunk System

ArmorBlock Cordsets

DC Micro to DC Micro Patchcord

DC Micro to Pico Patchcord

DC Micro Y-Cable

Features

- UL recognized and CSA certified
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance

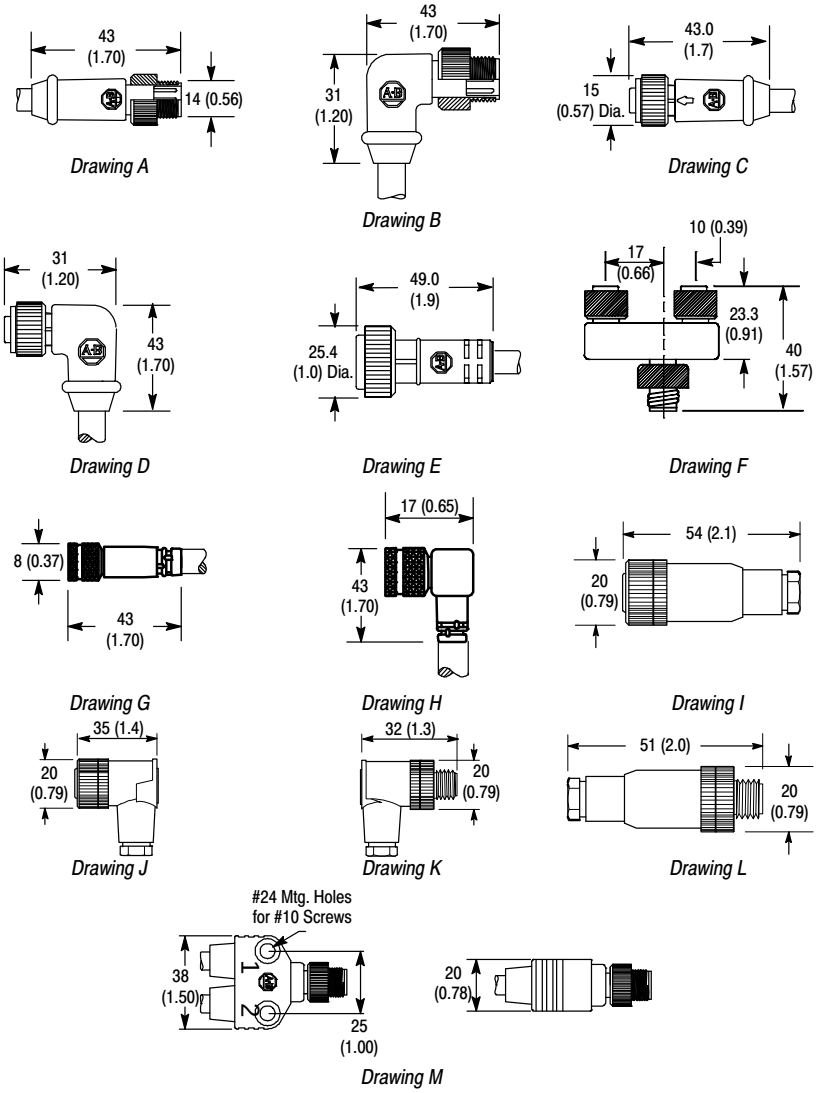
Specifications

Coupling Nut	Epoxy-Coated Zinc
Connector	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 22AWG conductors, 300V, UL recognized and CSA certified
Cable O.D.	5mm (0.21in)
Temperature	–20°C to +105°C (–4°F to +221°F)

Description

Allen-Bradley offers a wide variety of cordsets, patchcords, Y-cables, field attachable connectors, and splitter Tees for interfacing devices to ArmorBlock I/O. These connection systems products are made of durable PVC cable and are designed to handle rough industrial environments. Stainless steel versions are also available for the most demanding applications.

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Selection Guide

ArmorBlock Cordsets, Patchcords, and Y–Cables

Connection Type	Male Connector (ArmorBlock End)		Female Connector (Device End)		Dim. (Diag. No.)	Catalog Number Length—m (ft)				
	Type	Style	Type	Style		0.3 (1)	1 (3.3)	2 (6.5)	5 (16.4)	10 (32.8)
Cordset	4-Pin Micro	Straight	Conductor	—	A	—	—	889D–M4AC–2	889D–M4AC–5	889D–M4AC–10
		Right Angle			B			889D–E4AC–2	889D–E4AC–5	889D–E4AC–10
Patchcord		Straight	4- Micro	Straight	A, C	889D–F4ACDM–0M3	889D–F4ACDM–1	889D–F4ACDM–2	889D–F4ACDM–5	889D–F4ACDM–10
				Right Angle	A, D	889D–R4ACDM–0M3	889D–R4ACDM–1	889D–R4ACDM–2	889D–R4ACDM–5	889D–R4ACDM–10
			4-Pin Mini	Straight	A, E	—	871A–CS4–DM1N	871A–CS4–DM2N	—	—
		Right Angle	4- Micro	Straight	B, C	889D–F4ACDE–0M3	889D–F4ACDE–1	889D–F4ACDE–2	889D–F4ACDE–5	889D–F4ACDE–10
				Right Angle	B, D	889D–R4ACDE–0M3	889D–R4ACDE–1	889D–R4ACDE–2	889D–R4ACDE–5	889D–R4ACDE–10
			3-Pin Pico	Straight	B, G	889P–F3ABDE4–0M3	889P–F3ABDE4–1	889P–F3ABDE4–2	889P–F3ABDE4–5	889P–F3ABDE4–10
				Right Angle	B, H	889P–R3ABDE4–0M3	889P–R3ABDE4–1	889P–R3ABDE4–2	889P–R3ABDE4–5	889P–R3ABDE4–10
			4-Pin Pico	Straight	B, G	889P–F4ABDE–0M3	889P–F4ABDE–1	889P–F4ABDE–2	889P–F4ABDE–5	889P–F4ABDE–10
Y-Cable		Straight	Conductor	—	M	—	—	—	879–C3AEDM4–5	—
			4-Pin Micro (2)	Straight	M, C	879D–F4ACDM–0M3	879D–F4ACDM–1	879D–F4ACDM–2	879D–F4ACDM–5	879D–F4ACDM–10
				Right Angle	M, D	879D–R4ACDM–0M3	879D–R4ACDM–1	879D–R4ACDM–2	879D–R4ACDM–5	879D–R4ACDM–10

Additional configurations are available, contact your local Allen-Bradley distributor for details.

Splitter Tee

Male Connector (ArmorBlock End)	Female Connector (Device End)	Dimensions (Diagram Number)	Catalog Number
4-Pin Micro	4-Pin Micro (2)	F	1485P–P1R4–DR4

Terminal Chambers

Connector Style	Orientation	Cable Diameter—mm (in)	Dimensions—Male/Female (See Diagram)	Catalog Number Male	Catalog Number Female
4-Pin Micro	Right Angle	4.0–6.0 (0.16–0.24)	K/J	871A–TR4–DM	871A–TR4–D
	Straight		L/I	871A–TS4–DM	871A–TS4–D
		6.0–8.0 (0.24–0.32)		871A–TS4–DM1	871A–TS4–D1
5-Pin Micro				871–TS5–DM1	871A–TS5–D1

Thick Trunk System

Power Trunk/Drops

Mini to Mini Power Trunk

Specifications

Coupling Nut	Epoxy-Coated Zinc
Connector	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, UL recognized and CSA certified, 16AWG cable: 600V, 18AWG cable: 300V,
Cable O.D.	16AWG: 11mm (0.42in), 18AWG: 7.4mm (0.29in)
Temperature	–20°C to +105°C (–4°F to +221°F)

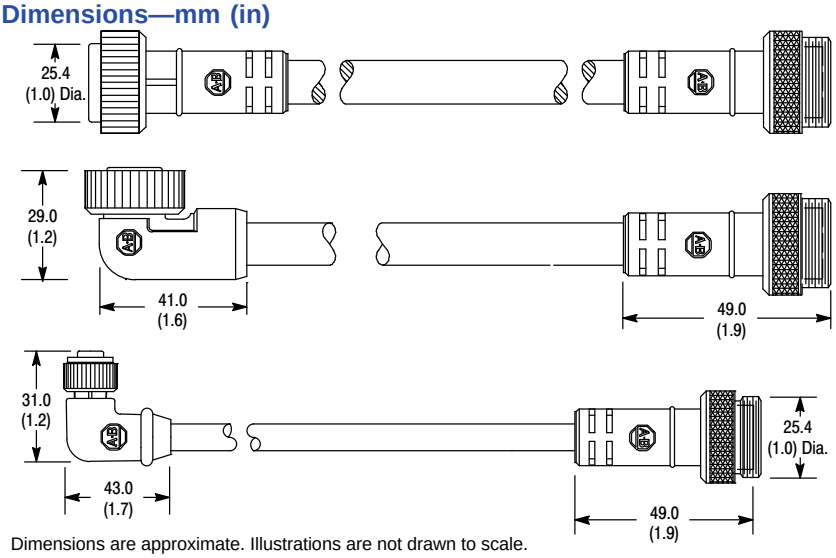
Features

- Male connector with external threads for cable extensions
- UL recognized and CSA certified
- Heavy duty STOOW 16AWG cable or standard 18AWG cable
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance

Description

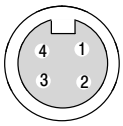
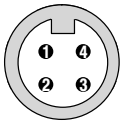
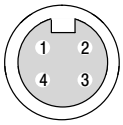
Auxiliary power cables are used to provide power to output devices requiring separate power and assure proper DeviceNet operation by avoiding spikes, dropouts, or other noise being imposed on DeviceNet power. Auxiliary power trunk cables are 4-pin mini style patchcords. Either mini or micro style connectors are available as power drop cables.

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Selection Guide

Female Connector		Cable		Male Connector (External Threaded)		
Face View of Female	Connector Style	Wire Rating	Length m (ft)	Face View of Male	Connector Style	Catalog Number
Mini 	Straight	16AWG 600V 10A	1 (3.3)	Mini 	Straight	889N–F4AFNM–1
			2 (6.5)			889N–F4AFNM–2
			3 (9.8)			889N–F4AFNM–3
			6 (19.8)			889N–F4AFNM–6
	Right Angle		1 (3.3)			889N–R4AFNM–1
			2 (6.5)			889N–R4AFNM–2
			3 (9.8)			889N–R4AFNM–3
			6 (19.8)			889N–R4AFNM–6
DC Micro 		18AWG 300V 3A	1 (3.3)			889D–R4AENM–1
			2 (6.5)			889D–R4AENM–2
			3 (9.8)			889D–R4AENM–3

Other lengths available, contact your local Allen-Bradley distributor for details.

4-Pin Mini Style
Power Trunk Tee

Features

- Passive
- Sealed (NEMA 6P)
- 4-pin mini quick-disconnect

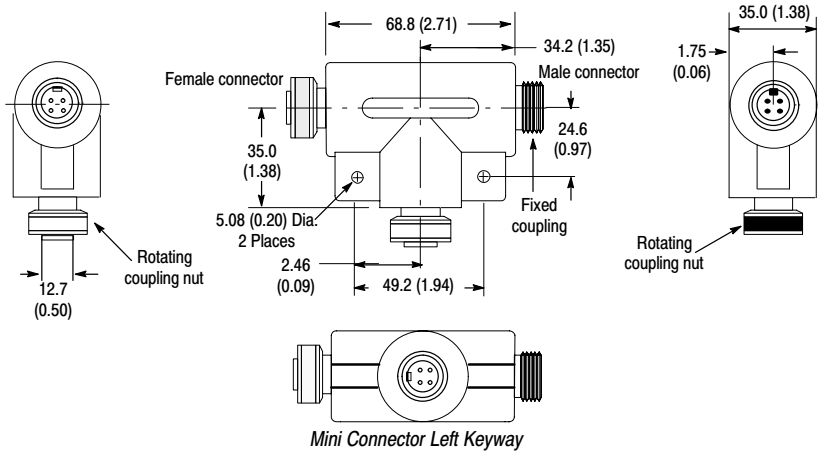
Specifications

Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Temperature	–20°C to +70°C (–4°F to 158°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270kPa) at 60°C (140°F); temperature washdown; NEMA 4x, 6P, 12 and 13, IP67 (IEC529), 3.5GPM
Side Force Rating	5ft–lb

Description

Power Trunk Tees allow connecting devices to the power trunk line. The T-port is sealed to NEMA 6P with mini quick-disconnect. The customer will connect onto the trunkline using the Power Trunk Tee and an associated Power Drop cordset.

Dimensions—mm (in)



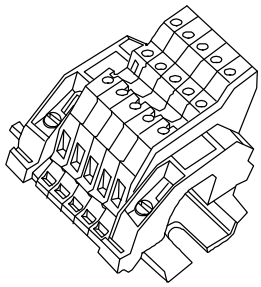
Mini Connector Left Keyway

Selection Guide

Power Trunk Connectors	Power Drop Connector	Catalog Number
4-Pin mini	4-Pin mini female	**898N–43PB–N4**

Thick Trunk System

Open-Style Connectors and Accessories



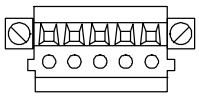
Open Style Tap

Description

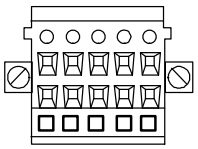
Open-style taps provide a way for drop cables to be connected to the trunk line using open-style wiring connections. Three sets of 5-position color coded wiring chambers accomodate all wires (for entering trunk cable, exiting trunk cable, and drop cable). The open-style top can be mounted on a DIN rail. Jack screws on open-style taps and connectors provide additional physical support.

Selection Guide

Catalog Number
1492–DN3TW



5-Pin Linear Plug



10-Pin Linear Plug

Description

Open-style connectors come in two primary varieties—5 position (5-pin linear plug) and 10 position (10-pin linear plug). Ten position connectors provide easier daisy-chaining because there is an independent wire chamber for each wire (entering and exiting cable).

Selection Guide

Number of Pins	Jack Screws	Catalog Number
5	No	**942153–05**
5	Yes	**942154–05**
10	Yes	**1787–PLUG10R**

Mini and MIcro Cap

Terminating Resistor

DeviceBox Accessory Kit

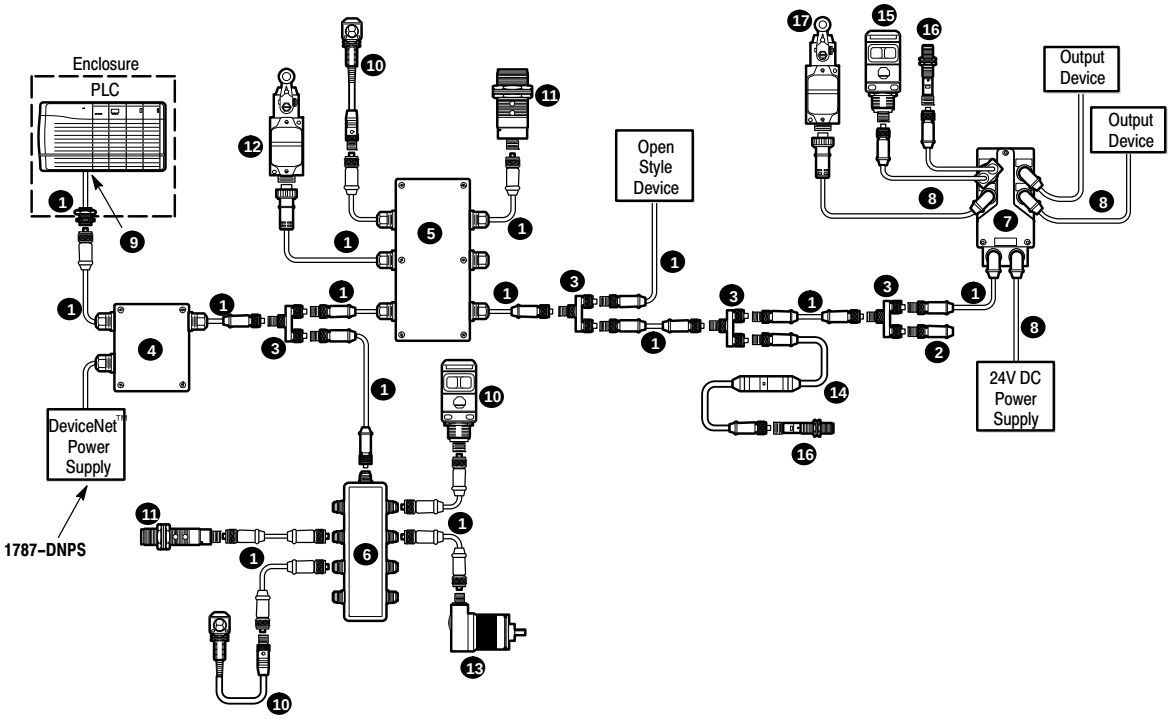
Description

A variety of accessories are available to complement the DeviceNet Media systems. Accessories include both mini and micro style caps for sealing unused connectors, standalone terminating resistors, and an installation accessory kit for DeviceBox.

Selection Guide

Description	Catalog Number
Mini Cap	**1485A–C1**
Resistor	**1485A–C2**
Micro Cap	**1485A–C3**
Kit for DeviceBox	**1485A–ACCKIT**

Typical Configuration



See the *Sensors* Catalog.

Thin Trunk System

Thin Cable Trunk and Drop

Thin Cable

Micro Thin Cable Patchcord

Micro Thin Cable Patchcord

Features

- Standard cable jacket is chemical resistant
- Water tight performance to a rating of IP67
- Inserts are securely bonded to the connector body for superior side load and pull-out resistance
- Gold plated contacts for corrosion resistance

Specifications

Operating Temperature	-20°C to +70°C (-15°F to +158°F)
Agency Approvals	UL listed and CSA certified
Shock/Vibration	5G, 30-120Hz
Housing Material	Yellow CPE (Chemical Resistant)
Outside Diameter	6.9mm (0.270in)
Maximum Current	3 Amps

Description

Rockwell Automation/Allen-Bradley offers thin pre-molded DeviceNet cables in various lengths for use as trunk or drops. Designed in a heavy-duty, chemical-resistant yellow jacket, these cables have been designed specifically for harsh industrial environments including those applications involving dirt, oil and constant flexing. The molded construction and gold plated connector pins make for reliable connections that are impervious to most external contaminants.

Dimensions—mm (in)

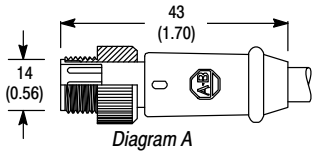


Diagram A

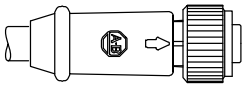


Diagram B

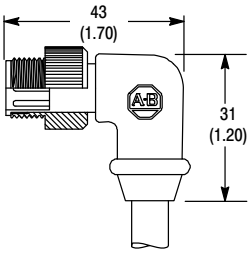


Diagram C

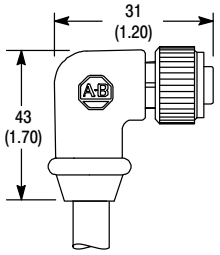


Diagram D

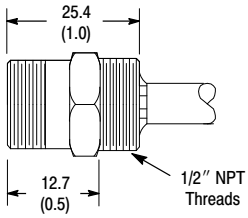


Diagram E

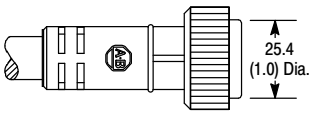


Diagram F

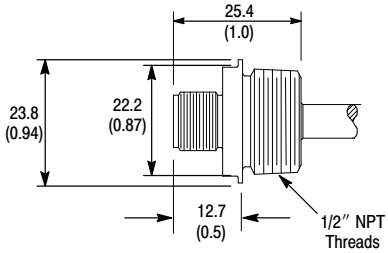


Diagram G

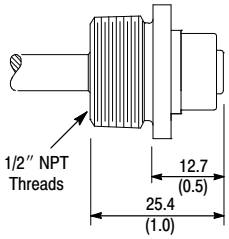


Diagram H

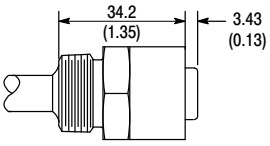


Diagram I

Selection Guide

Thin Trunk or Drop Cable Cordsets and Patchcords

Connector Style	Dimensions (Diagram No.)	Catalog Number Length—m (ft)					
		1 (3.3)	2 (6.5)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)
Str Micro Male to Str Micro Female	A and B	1485R-P1R5-D5	1485R-P2R5-D5	1485R-P3R5-D5	1485R-P4R5-D5	1485R-P5R5-D5	1485R-P6R5-D5
R.A. Micro Male to Str Micro Female	C and B	1485R-P1R5-F5	1485R-P2R5-F5	1485R-P3R5-F5	1485R-P4R5-F5	1485R-P5R5-F5	1485R-P6R5-F5
Conductor to Str Micro Female	B	1485R-P1R5-C	1485R-P2R5-C	1485R-P3R5-C	1485R-P4R5-C	1485R-P5R5-C	1485R-P6R5-C
Conductor to R.A. Micro Female	D	1485R-P1V5-C	1485R-P2V5-C	1485R-P3V5-C	1485R-P4V5-C	1485R-P5V5-C	1485R-P6V5-C
Right Angle Micro Male to Conductor	C	1485R-P1F5-C	1485R-P2F5-C	1485R-P3F5-C	1485R-P4F5-C	1485R-P5F5-C	1485R-P6F5-C
R.A. Micro Male to Str Mini Female	C and F	1485R-P1N5-F5	1485R-P2N5-F5	1485R-P3N5-F5	1485R-P4N5-F5	1485R-P5N5-F5	1485R-P6N5-F5
Conductor to Str Mini Female	F	1485R-P1N5-C	1485R-P2N5-C	1485R-P3N5-C	1485R-P4N5-C	1485R-P5N5-C	1485R-P6N5-C
Conductor to Mini Male Receptacle	E	1485F-P1M5-C	—	—	—	—	—
Conductor to Mini Female Receptacle	I	1485F-P1N5-C	—	—	—	—	—
Conductor to Micro Male Receptacle	G	1485F-P1D5-C	—	—	—	—	—
Conductor to Micro Female Receptacle	H	1485F-P1R5-C	—	—	—	—	—

Additional thin cable configurations are available, contact your local Allen-Bradley distributor for details.

Thin Drop Cable

Spool Size	Catalog Number
50m (164ft)	1485C-P1C50
150m (492ft)	1485C-P1C150
300m (984ft)	1485C-P1C300
600m (1968ft)	1485C-P1C600

Thin Trunk System

Thin Cable Terminal Chambers

Straight Female Micro Style Terminal Chamber

Features

- Field installable
- Straight 5-pin terminal chambers
- Mini and micro versions
- Screw terminal installation

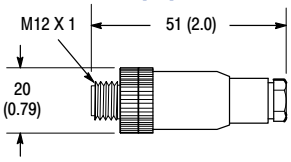
Specifications

Coupling Nut	Micro: nickel-plated brass; Mini: anodized aluminum
Connector Shell	Nylon
Contacts	Gold-plated palladium nickel
Enclosure	NEMA 6; IP67 (IEC 529)
Temperature	–40°C to 90°C (–40°F to 194°F)

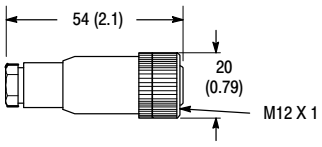
Description

Terminal chambers are passive field-installable connectors. Allen-Bradley 5-pin micro style and 5-pin mini style terminal chambers are designed for use with DeviceNet systems. These connectors contain screw terminals for quick and easy installation and are sized for use with DeviceNet thin cables. Other versions are also available for use with thick trunk systems.

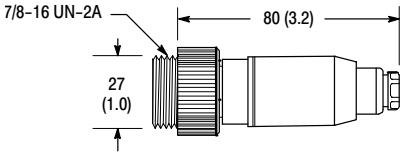
Dimensions—mm (in)



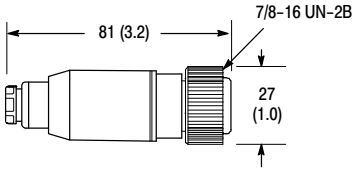
Micro Style Male



Micro Style Female



Mini Style Male



Mini Style Female

Thin Trunk or Drop Cable Terminal Chambers

Connector Style	Type	Catalog Number
Micro	Male	**871A–TS5–DM1**
	Female	**871A–TS5–D1**
Mini	Male	**871A–TS5–NM1**
	Female	**871A–TS5–N1**

Micro Style Terminators

Features

- Male and female connector terminators
- Electrically stabilize network
- NEMA 1, 2, 4, 6P, 12, 13; IP67 rating

Selection Guide

Terminator Type	Catalog Number
Male	**1485A–T1D5**
Female	**1485A–T1R5**

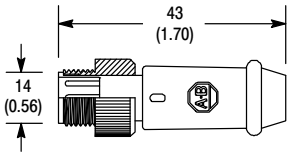
Specifications

Storage Temperature	–40°F to 185°F (–40°C to +85°C)
Operating Temperature	–13°F to 158°F (–25°C to +70°C)
Enclosure Rating	NEMA 1, 2, 3, 4, 6P, 12, 13, IP67, 1200 psi (8720kPa) washdown
Shock/Vibration	5G, 30–120Hz

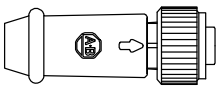
Description

Terminators are installed at both ends of the network to stabilize the DeviceNet system electrically. Offered in both male and female versions, each terminator contains a 121 ohm load resistor to ensure network functionality.

Dimensions—mm (in)



Male Micro Style Terminator



Female Micro Style Terminator

Dimensions are approximate. Illustrations are not drawn to scale.

Thin Trunk System

T-Port

Micro Style T-Port

Features

- Passive
- Sealed (NEMA 6P)
- Micro quick-disconnect trunk connections
- Micro quick-disconnect drop connections

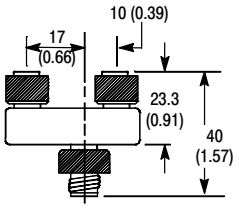
Specifications

Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Temperature	–20°C to +70°C (–4°F to 158°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270kPa) at 60°C (140°F); temperature washdown; NEMA 6P, 12 and 13, IP67 (IEC529), 3.5GPM
Side Force Rating	5ft–lb

Description

The T-ports are another alternative for connecting to the trunk line. The T-port is sealed to NEMA 6P with micro quick-disconnect. DeviceNet nodes can connect directly into the T-port or by using a drop cable or DevicePort™.

Dimensions—mm (in)



Selection Guide

Trunk Connectors	Drop Connector	Catalog Number
Micro	Micro	**1485P–P1R5–DR5**

PowerTap, Thin Cable

Features

- Passive
- Cage clamp terminal strip connections
- Cord grip openings

Specifications

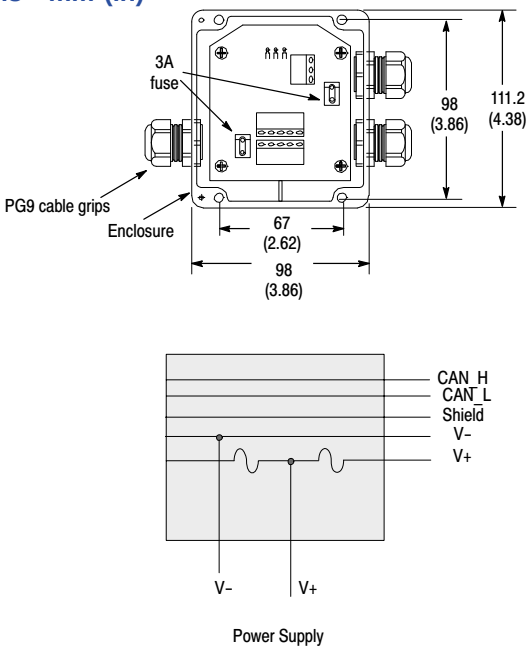
Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270 kPa); NEMA 3, 4X, 6P, 12 and 13; IP67 (IEC529)
Operating Temperature	–25°C to +70°C (–13°F to158°F)
Housing Material	Black polymer
Power	6A maximum total current; (3A maximum per trunk)

Description

For power requirements on your DeviceNet™ network, Rockwell Automation/Allen-Bradley offers its PowerTap™. The PowerTap is a passive coupling device used to limit trunk current to agency specified values. This current limitation is provided by two standard mini blade-style fast blow type 3A fuses. The Allen-Bradley PowerTap™ is also used to permit the connection of multiple power supplies to the trunk without mutual interference. This is achieved through selective use or removal of appropriate fuses.

For complete information on connecting power to DeviceNet, see Allen-Bradley publication DN 6.7.2.

Dimensions—mm (in)



Fuse Placement Schematic

Selection Guide

Trunk Connection	Power Supply Connection	Fuse (2 included)	Catalog Number
Cable Gland/Terminal Strip	Cable Gland/Terminal Strip	3A	**1485T–P2T5–T5C**

Thin Trunk System

2-, 4-, 8-Port DeviceBox™

4-port DeviceBox, Thin Cable

Specifications

Storage Temperature	–40°C to +85°C (–40°F to 185°F)
Operating Humidity	5%–95% relative (noncondensing)
Washdown Rating	1200 PSI (8270 kPa); NEMA 3, 4X, 6P, 12 and 13; IP67 (IEC529)
Operating Temperature	–25°C to +70°C (–13°F to158°F)
Housing Material	Black polymer
Power	15.0A maximum total current; (7.5A maximum per trunk)

Description

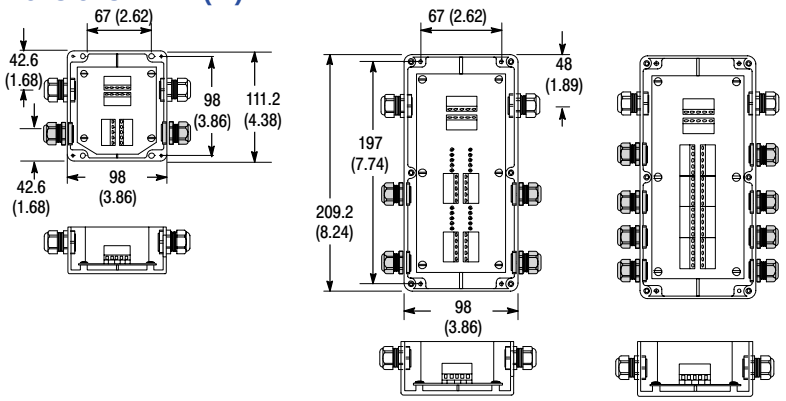
DeviceBox™ taps are passive sealed junction boxes offered in a 2-, 4-, or 8-port configuration. This is a direct connection onto the trunk line, providing terminal strip connections for up to 8 intelligent nodes.

An accessories kit is available for DeviceBox™ which includes a wrench for tightening down cable grips as well as mounting hardware such as combi-head sheet metal screws and machine mounting screws. The accessories kit includes spare plugs and a cable gland which provides a protective seal as well as various other spare components (see page 49).

Features

- Passive
- 2-, 4- or 8-Port
- Cage clamp terminal strip connections
- Cord grip openings

Dimensions—mm (in)



Selection Guide

Trunk Connection	Drop Connection	Number of Ports	Catalog Number
Cable Gland/Terminal Strip	Cable Gland/Terminal Strip	2	**1485P–P2T5–T5C**
		4	**1485P–P4T5–T5C**
		8	**1485P–P8T5–T5C**

4- and 8-Port DevicePorts with Cable Drop

Features

- Passive
- Sealed (NEMA 6P)
- 4-Port or 8-Port
- Drop cable
- Micro quick-disconnect

Specifications

Storage Temperature	–40°F to 185°F (–40°C to +85°C)
Operating Temperature	–13°F to 158°F (–25°C to +70°C)
Enclosure Rating	NEMA 4, 6P and 1200 PSI, 3.5GPM, 140°F temperature Washdown; IP67 (IEC 529)
Shock and Vibration	5G, 30–120Hz
Housing Material	Chemical resistant black polymer

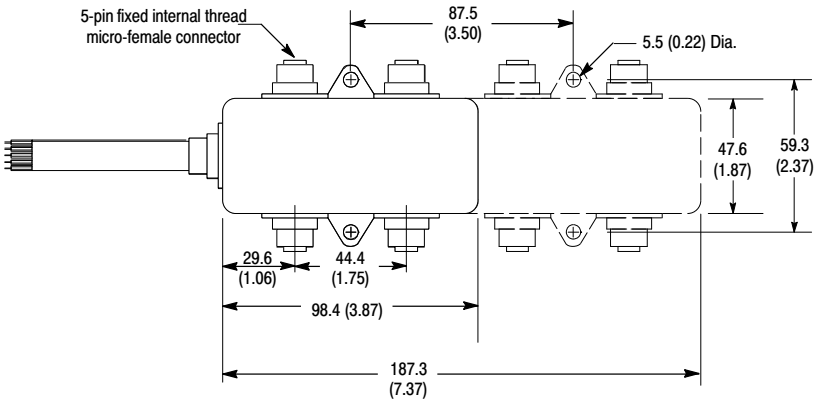
Description

DevicePort™ taps are passive multiport taps which connect via a drop cable. DevicePort™ taps are offered with 4 or 8 quick-disconnect ports in sealed versions to connect up to 8 physical nodes.

Using DevicePort reduces the number of physical taps on the trunk line from as many as eight taps to one. All device connections are micro female receptacles. Only micro male connectors with rotating coupling nuts can interface with each port. Allen-Bradley micro style DeviceNet drop cables are recommended.

Micro DevicePort Taps come standard with sealing caps for all ports. If replacement sealing caps are required, order catalog number **1485A–C3**.

Dimensions—mm (in)



Selection Guide

Male Connector Style	Female Connector Style	Number of Ports	Catalog Number
2m Cable	Micro	4	**1485P–P4R5–C2**
		8	**1485P–P8R5–C2**
Micro		4	**1485P–P4R5–D5**
		8	**1485P–P8R5–D5**
Right Angle Micro (2m pigtail)		4	**1485P–P4R5–C2–F5**
		8	**1485P–P8R5–C2–F5**

Other DevicePort configurations are also available (page 27).

Thin Trunk System

ArmorBlock MaXum

4-Port ArmorBlock MaXum with Micro Base

Features

- Autobaud, change of state
- I/O heartbeat notification
- Compatible with sinking/sourcing/ 2-wire devices
- Select off-to-on or on-to-off input filters
- Point level diagnostics: open wire, output no load
- Selectable output fault latching
- Auxiliary power detection

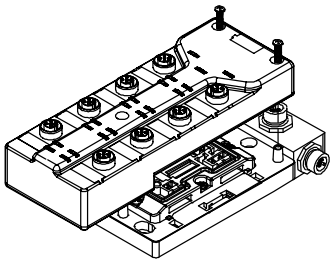
Specifications

For detailed specifications on ArmorBlock I/O, see Rockwell Automation/Allen-Bradley publication 1792–2.1 or DN2.5.

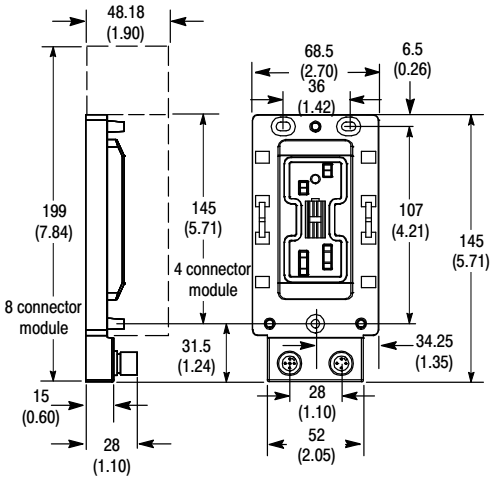
Description

ArmorBlock MaXum is a versatile hardened I/O package that can be mounted directly on equipment without the addition of enclosures. It is ideal for applications requiring highly distributed I/O in locations close to sensors and actuators. The MaXum module's I/O is exchanged with the master device through polled, change-of-state, or cyclic messaging. It also contains a hardwired watchdog circuit that places outputs in a known state in case of a block internal fault.

Dimensions—mm (in)



ArmorBlock MaXum with 1792D–CB18P Connection Base



1792D–CB12 Connection Base

Selection Guide

Trunk Connection	Device Connection	No. of Device Connectors	Number of Inputs	Number of Outputs	Catalog Number
—	4-pin DC micro	2	2	0	1792D–2BV0D
		4	4		1792D–4BV0D
			8		1792D–8BVT0D
			2	2	1792D–2BVA2D
			4	4	1792D–4BVT4D
			0		1792D–0B4D
		8	16	0	1792D–16BVT0D
			8	8	1792D–8BVT8D
					1792D–8B108E
			12	4	1792D–12BVT4D
			0	8	1792D–0B8D
				16 (sinking)	1792D–0VT16E
Micro Drop Connector					1792D–CB12
Mini Drop Connector					1792D–CB18
Mini Trunk Passthru with Aux Power					1792D–CB18P
Mini Trunk and Aux Power Passthru					1792D–CB18PT

Additional mounting bases are available, see page 54.

DC Micro to DC Micro Patchcord

DC Micro to Pico Patchcord

DC Micro Y-Cable

Features

- UL recognized and CSA certified
- Highly visible yellow PVC jacket offers good oil and chemical resistance
- Ratcheting coupling nut for vibration resistance

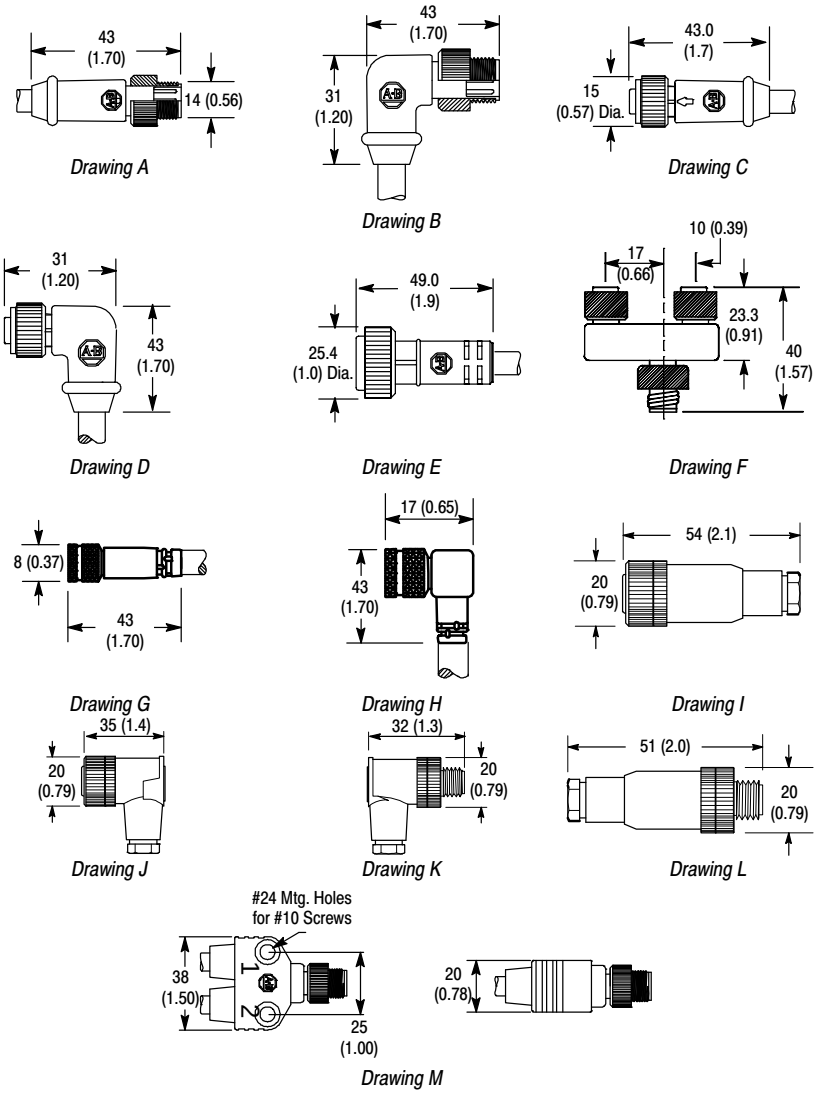
Specifications

Coupling Nut	Epoxy-Coated Zinc
Connector	Molded oil-resistant PVC
Contacts	Gold-plated palladium/nickel
Cable	Oil-resistant yellow PVC jacket, 22AWG conductors, 300V, UL recognized and CSA certified
Cable O.D.	5mm (0.21in)
Temperature	–20°C to +105°C (–4°F to +221°F)

Description

Allen-Bradley offers a wide variety of cordsets, patchcords, Y-cables, field attachable connectors, and splitter Tees for interfacing devices to ArmorBlock I/O. These connection systems products are made of durable PVC cable and are designed to handle rough industrial environments. Stainless steel versions are also available for the most demanding applications.

Dimensions—mm (in)



Dimensions are approximate. Illustrations are not drawn to scale.

Selection Guide

ArmorBlock Cordsets, Patchcords, and Y–Cables

Connection Type	Male Connector (ArmorBlock End)		Female Connector (Device End)		Dim. (Diag. No.)	Catalog Number Length—m (ft)				
	Type	Style	Type	Style		0.3 (1)	1 (3.3)	2 (6.5)	5 (16.4)	10 (32.8)
Cordset	4-pin Micro	Straight	Conductor	—	A	—	—	889D–M4AC–2	889D–M4AC–5	889D–M4AC–10
		Right Angle			B			889D–E4AC–2	889D–E4AC–5	889D–E4AC–10
Patchcord		Straight	4-pin Micro	Straight	A, C	889D–F4ACDM–0M3	889D–F4ACDM–1	889D–F4ACDM–2	889D–F4ACDM–5	889D–F4ACDM–10
				Right Angle	A, D	889D–R4ACDM–0M3	889D–R4ACDM–1	889D–R4ACDM–2	889D–R4ACDM–5	889D–R4ACDM–10
			4-pin Mini	Straight	A, E	—	871A–CS4–DM1N	871A–CS4–DM2N	—	—
		Right Angle	4-pin Micro	Straight	B, C	889D–F4ACDE–0M3	889D–F4ACDE–1	889D–F4ACDE–2	889D–F4ACDE–5	889D–F4ACDE–10
				Right Angle	B, D	889D–R4ACDE–0M3	889D–R4ACDE–1	889D–R4ACDE–2	889D–R4ACDE–5	889D–R4ACDE–10
			3-pin Pico	Straight	B, G	889P–F3ABDE4–0M3	889P–F3ABDE4–1	889P–F3ABDE4–2	889P–F3ABDE4–5	889P–F3ABDE4–10
				Right Angle	B, H	889P–R3ABDE4–0M3	889P–R3ABDE4–1	889P–R3ABDE4–2	889P–R3ABDE4–5	889P–R3ABDE4–10
			4-pin Pico	Straight	B, G	889P–F4ABDE–0M3	889P–F4ABDE–1	889P–F4ABDE–2	889P–F4ABDE–5	889P–F4ABDE–10
Y-Cable		Straight	Conductor	—	M	—	—	—	879–C3AEDM4–5	—
			4-pin Micro (2)	Straight	M, C	879D–F4ACDM–0M3	879D–F4ACDM–1	879D–F4ACDM–2	879D–F4ACDM–5	879D–F4ACDM–10
				Right Angle	M, D	879D–R4ACDM–0M3	879D–R4ACDM–1	879D–R4ACDM–2	879D–R4ACDM–5	879D–R4ACDM–10

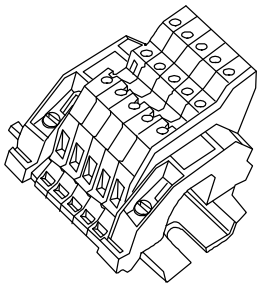
Additional configurations are available, contact your local Allen-Bradley distributor for details.

Splitter Tee

Male Connector (ArmorBlock End)	Female Connector (Device End)	Dimensions (Diagram Number)	Catalog Number
4-Pin Micro	4-Pin Micro (2)	F	1485P–P1R4–DR4

Terminal Chambers

Connector Style	Orientation	Cable Diameter—mm (in)	Dimensions—Male/Female (See Diagram)	Catalog Number Male	Catalog Number Female
4-Pin Micro	Right Angle	4.0–6.0 (0.16–0.24)	K/J	871A–TR4–DM	871A–TR4–D
	Straight		L/I	871A–TS4–DM	871A–TS4–D
		6.0–8.0 (0.24–0.32)		871A–TS4–DM1	871A–TS4–D1
5-Pin Micro				871–TS5–DM1	871A–TS5–D1



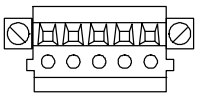
Open Style Tap

Description

Open-style taps provide a way for drop cables to be connected to the trunk line using open-style wiring connections. Three sets of 5-position color coded wiring chambers accomodate all wires (for entering trunk cable, exiting trunk cable, and drop cable). The open-style top can be mounted on a DIN rail. Jack screws on open-style taps and connectors provide additional physical support.

Selection Guide

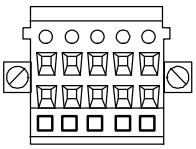
Catalog Number
1492–DN3TW



5-Pin Linear Plug

Description

Open-style connectors come in two primary varieties—5 position (5-pin linear plug) and 10 position (10-pin linear plug). Ten position connectors provide easier daisy-chaining because there is an independent wire chamber for each wire (entering and exiting cable).



10-Pin Linear Plug

Selection Guide

Number of Pins	Jack Screws	Catalog Number
5	No	**942153–05**
5	Yes	**942154–05**
10	Yes	**1787–PLUG10R**

Mini and MIcro Cap

Terminating Resistor

DeviceBox Accessory Kit

Description

A variety of accessories are available to complement the DeviceNet Media systems. Accessories include both mini and micro style caps for sealing unused connectors, standalone terminating resistors, and an installation accessory kit for DeviceBox.

Selection Guide

Description	Catalog Number
Mini Cap	**1485A–C1**
Resistor	**1485A–C2**
Micro Cap	**1485A–C3**
Kit for DeviceBox	**1485A–ACCKIT**

Notes




Description

Rockwell Automation/Allen-Bradley offers a variety of single- and multi-point I/O solutions for use with DeviceNet™. Suitable for use with round and KwikLink™ flat cable networks, these I/O products allow standard field devices to be interfaced to a DeviceNet network.

DeviceLink™, a single-point adaptor, is ideal for smaller installations that don't have dense concentrations of I/O. Serving as a gateway between a standard, off-the-shelf sensing device and the DeviceNet network, DeviceLink is compatible with any 2- or 3-wire 24V sensor with open collector sourcing output, any device with relay contacts or any mechanical sensing device. Each DeviceLink acts as a single node on the network.

For multiple field devices, especially in those installations requiring a few highly distributed I/O points in a remote location, the ArmorBlock™ product family offers optimal flexibility. ArmorBlock MaXum is a versatile hardened package that can be mounted directly on equipment without the need for enclosures. Its modular design allows plug-and-play installation and the interchangeable cable bases provide simple connection to round or flat cable networks. Other ArmorBlock models include Low Profile (ArmorBlock LP) for space-critical applications and high current versions capable of driving 5–10 amps per output. ArmorBlock products act as a single node on the DeviceNet network.

The low-cost POINT I/O™ communication interface acts as the gateway between the DeviceNet (or other fieldbus) network and the POINT I/O backplane (PointBus™). Unlike DeviceLink and ArmorBlock, each module attached to this adaptor is viewed as a separate node. As many as 12 modules can be connected to the POINT I/O™ communication interface with a maximum of 10A of field power.

The Flex I/O adaptor for DeviceNet powers as many as 8 I/O modules transfers the data back to a PLC™ or SLC™ controller via DeviceNet. For installations requiring higher density I/O, Allen-Bradley Compact I/O offers superior performance, functionality and ease of use in a unique new PLC-style platform. Using the latest design technology, the Compact I/O DeviceNet Adaptor is capable of supporting up to 30 I/O modules on a single DeviceNet node.

Features

- Allow connection of standard devices to DeviceNet
- Single and multiple I/O points
- Multiple connection options
- Plug-and-play operability
- Rugged industrial enclosures

DeviceNet Sensors

DeviceLink

Description

Serving as a gateway between a 24V DC sensing device and DeviceNet™, Rockwell Automation/Allen-Bradley introduces DeviceLink™. Each DeviceLink is a single node on the DeviceNet network. It communicates on the network per the DeviceNet protocol at 125kb, 250kb, and 500kb. DeviceLink is compatible with any 2-wire or 3-wire 24V sensor with open collector sourcing output, any device with relay contacts, and any mechanical sensing device.

Features

- Offered in a variety of cable lengths
- Contains debounce filtering configurable by user
- Offered in mini quick-disconnect, micro quick-disconnect, and Conductor
- Stainless steel connectors
- CSA, NRTL/C approved
- Network Status Indicator

Specifications

Electrical Requirements	
Supply Voltage	11V min to 25V max
Sensor Type Supported	24V DC with sourcing (PNP) output, 2-wire, 3-wire, or 4-wire
Sensor Input "O" Level	0V–1V, sourcing 0mA–1.65mA (with respect to ground)
Sensor Input "1" Level	3V to max supply voltage (with respect to ground)
Environmental Requirements	
Operational Temperature	–25°C to +70°C (–13°F to +158°F)
Storage Temperature	–40°C to +85°C (–40° to +185°F)
Vibration	5g, 150Hz, 3 mutually perpendicular planes
Sealing	1200PSI (8270 kPa) NEMA 6P, 4X, 12, and 13
Network	
Maximum Power Consumption	40mA + End Device
Messaging Type	Slave Mode
Exchange Method	Strobe
Strobe Format	Output—byte 1 bit 0

Factory Defaults

DeviceNet Address 63
DeviceNet Baud Rate . . . 125kb
On/Off Delay 0ms

Note: All parameters are configurable via the network.

Status Indicators

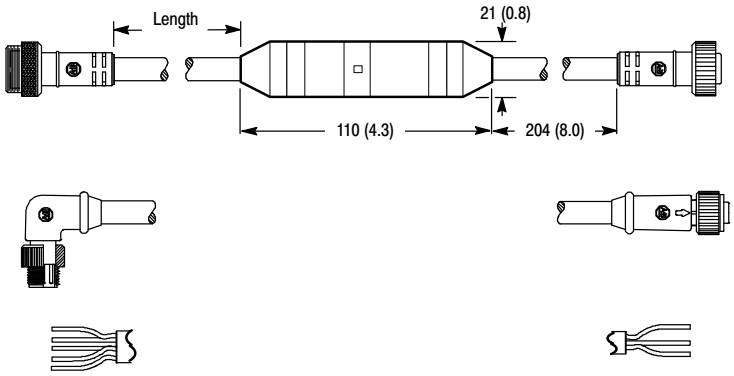
LED None . . . . . Indicates sensor not powered
Green On . . . . . Sensor active and allocated by a master
Flashing Green . Sensor active but not allocated by a master
Flashing Red . . Incorrect baud rate or communication lost
Red On . . . . . Misappropriating (possible duplicate address or communication error)

Selection Guide

DeviceNet Connection	Field DeviceNet Connection	Catalog Number❶—Length m (ft)		
		1 (3.3)	2 (6.5)	3 (9.8)
Straight Mini	Straight Mini	1485D–A1M5–N4	1485D–A2M5–N4	1485D–A3M5–N4
	Straight Micro	1485D–A1M5–R4	1485D–A2M5–R4	1485D–A3M5–R4
	Cable	1485D–A1M5–C	1485D–A2M5–C	1485D–A3M5–C
Right Angle Micro	Straight Mini	1485D–A1F5–N4	1485D–A2F5–N4	—
	Straight Micro	1485D–A1F5–R4	1485D–A2F5–R4	
	Cable	1485D–A1F5–C	1485D–A2F5–C	
Cable	Straight Mini	—	—	1485D–A3C3–N4
	Straight Micro			1485D–A3C3–R4
	Cable			1485D–A3C3–C

❶ For stainless steel connectors add an “S” to the catalog number: example 1485DS–A1M5–N4

Dimensions—mm (inches)



ArmorBlock MaXum with Mini Pass-Thru Trunk and Power Base

ArmorBlock MaXum with Flat Cable Base

Features

- Autobaud, change of state
- I/O heartbeat notification
- Compatible with sinking/sourcing/ 2-wire devices
- Select off-to-on or on-to-off input filters
- Point level diagnostics: open wire, output no load
- Selectable output fault latching
- Auxiliary power detection

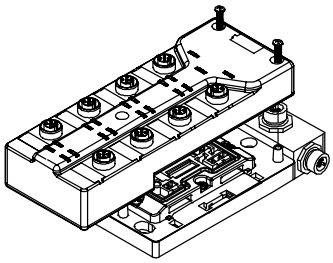
Specifications

For detailed specifications on ArmorBlock I/O, see Rockwell Automation/Allen-Bradley publication 1792–2.1 or DN2.5.

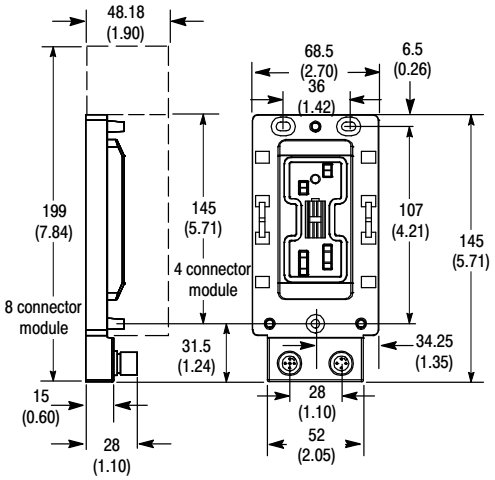
Description

ArmorBlock MaXum is a versatile hardened I/O package that can be mounted directly on equipment without the addition of enclosures. It is ideal for applications requiring highly distributed I/O in locations close to sensors and actuators. The MaXum module's I/O is exchanged with the master device through polled, change-of-state, or cyclic messaging. It also contains a hardwired watchdog circuit that places outputs in a known state in case of a block internal fault.

Dimensions—mm (in)



ArmorBlock MaXum with 1792D–CB18P Connection Base



1792D–CB12 Connection Base

Selection Guide

Trunk Connection	Device Connection	Number of Device Connectors	Number of Inputs	Number of Outputs	Catalog Number
—	4-pin DC micro	2	2	0	1792D–2BV0D
		4	4		1792D–4BV0D
			8		1792D–8BVT0D
		4	2	2	1792D–2BVA2D
			4	4	1792D–4BVT4D
			0		1792D–0B4D
		8	16	0	1792D–16BVT0D
			8	8	1792D–8BVT8D
					1792D–8B108E
			12	4	1792D–12BVT4D
			0	8	1792D–0B8D
				16 (sinking)	1792D–0VT16E
Micro Drop Connector					1792D–CB12
Mini Pass Through Connector					1792D–CB18
Mini Pass Through with Drop Aux Power					1792D–CB18P
Mini Pass Through Connector with Pass Through Aux Power					1792D–CB18PT
Flat Media Connector					1792D–FBCM

ArmorBlock High Current

Specifications

For detailed specifications, see Allen-Bradley ArmorBlock I/O publication 1792DIN005A–US–P.

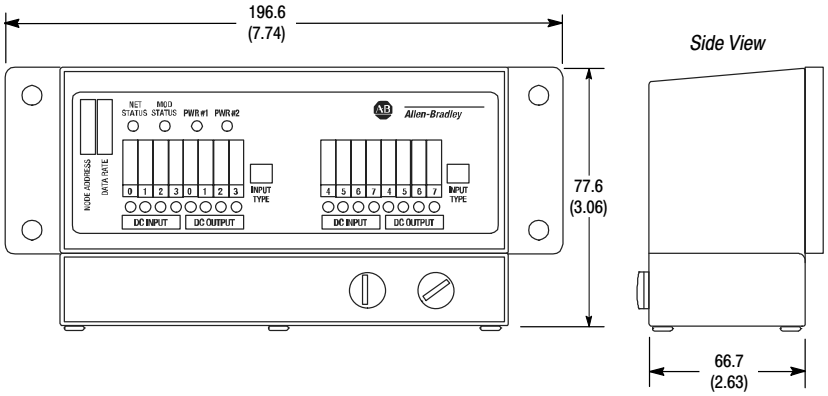
Description

This 8 input/8 output ArmorBlock module is capable of driving 5–10 amps per solid-state output, eliminating the need for interposing relays. These modules communicate over DeviceNet using polled, cyclic, or change-of-state messaging.

Features

- 5–10 amp solid-state outputs
- AutoBaud
- Selectable off-to-on or on-to-off input filters
- Inputs are configured for PNP (sourcing) or NPN (sinking) devices
- Point level diagnostics: output no load and short circuit/overcurrent
- Auxiliary power detection

Dimensions—mm (in)



Selection Guide

DeviceNet Connection	Field Device Connection	No. of Device Connectors	Number of Inputs	Number of Outputs	Catalog Number
Micro	Cables Below	8	8	8	**1792D–88HC**
Pre-made cable assembly (1 meter)					**1792D–88HCCBL**
Connector pieces (for customer assembly)					**1792D–88HCCON**

Point I/O

Features

- Wiring savings
  - Easily distributed
- Cost–effective
  - Highly granual, 1–4 points
  - Space savings on panel size
- Application breadth
  - Wide range of I/O types
- Installation and maintenance reduction
  - Removable terminals
  - Removal and Insertion Under Power (RIUP) I/O modules
  - Ease of assembly on DIN rail
- I/O types
  - DC, analog, and relay

Specifications

For detailed specifications see the Rockwell Automation/Allen-Bradley POINT I/O Technical Data, publication 1734–2.1.

Description

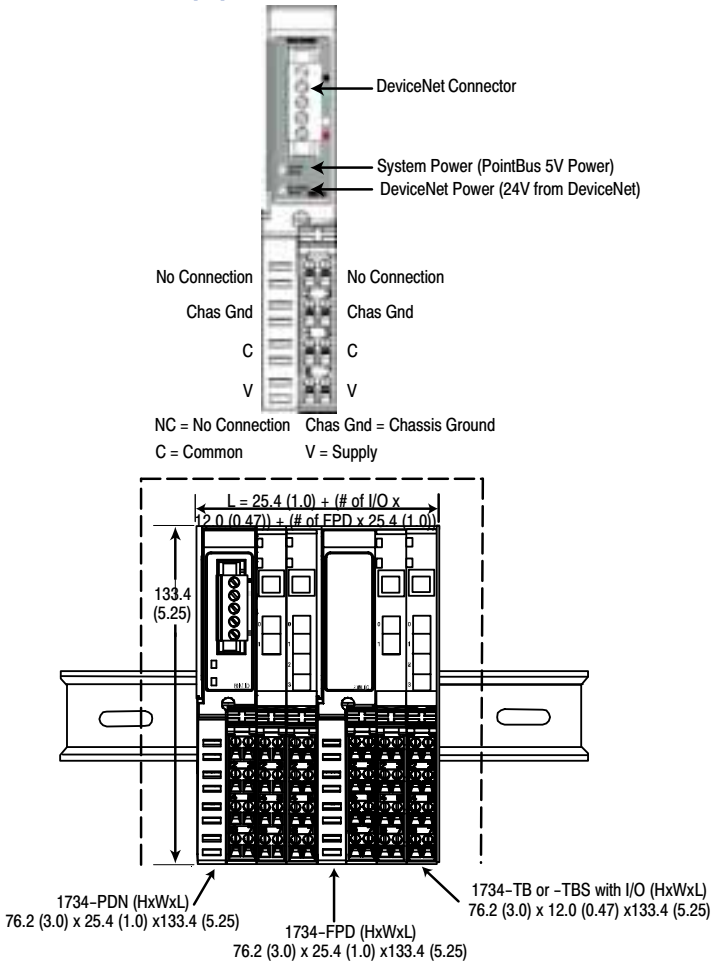
The POINT I/O™ communication interface provides the interface between a fieldbus network and the POINT I/O backplane (PointBus™).

This low-cost DeviceNet interface is not seen as a node on the DeviceNet network, yet each module attached to this adaptor is viewed as a separate node. The backplane power is derived from the DeviceNet network and is not isolated.

You can connect up to 12 modules to each 1734–PDN with a maximum of 10A of field power.

POINT I/O modules attach to the DeviceNet network using round media. Each adaptor interfaces the POINT I/O backplane with the DeviceNet network and supplies 5V logic power to the I/O modules.

Dimensions—mm (in)



Selection Guide

DeviceNet Connection	Field Device Connection	Number of I/O Modules	Catalog Number
—	Wiring Terminals	12	**1734–PDN**

For Point I/O modules ordering information, see publication 1734–2.1.

Compact I/O Adaptor

Features

- Modular, high density I/O
- Cost effective
  - No rack/backplane cost
  - Low point cost
- Installation ease
  - DIN rail or panel mount
  - Removable terminal block
  - Front (direct) insert/remove
- Network connectivity
  - DeviceNet network
- I/O types
  - AC, DC, and relay
  - Analog
- Thermocouple and RTD (available 4th quarter 2000)
- Multiple controller support
  - MicroLogix 1500 expansion
  - Network support
  - CompactLogix (available 4th quarter 2000)

Specifications

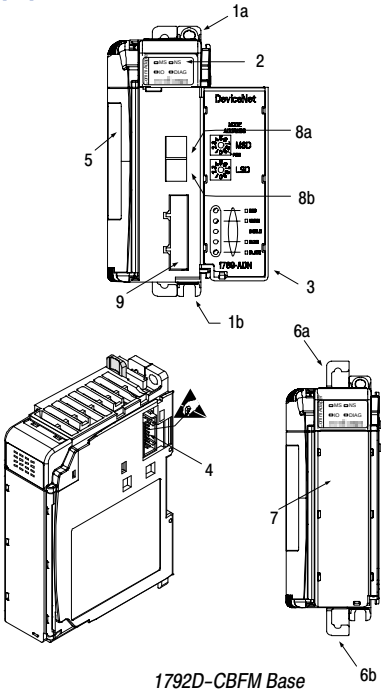
For detailed specifications see Rockwell Automation/Allen-Bradley Compact™ I/O 1769–ADN DeviceNet™ Adaptor User Manual, publication 1769–UM001A–US–P.

Description

The 1769 Compact I/O is a unique, new PLC-style I/O platform, offering industry leading features like: rackless design, a patented bus connected and either DIN rail or panel-mounting options. It uses the latest design technology for superior performance, functionality, and ease of use.

The 1769–ADN DeviceNet communication adaptor is capable of supporting up to 30 I/O modules on a single DeviceNet node.

Dimensions—mm (in)



1792D–CBFM Base

Item	Description	Item	Description	Item	Description
1a	Upper panel mounting tab	4	Stationary bus connector with male pins	7	Write-on label (user I.D. tag)
1b	Lower panel mounting tab	5	Nameplate label	8a	DeviceNet node address rotary selection switches—Most Significant Digit (MSD)
2	I/O diagnostic LEDs	6a	Upper DIN–rail latch	8b	DeviceNet node address rotary selection switches—Least Significant Digit (LSD)
3	Module door with terminal identification label	6b	Lower DIN–rail latch	9	Removable DeviceNet terminal connector

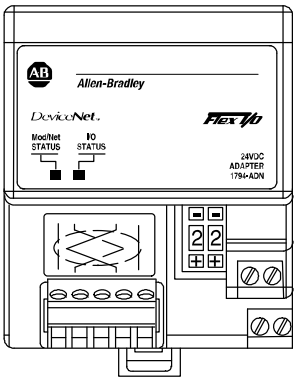
Selection Guide

DeviceNet Connection	Field Device Connection	Number of I/O Modules	Catalog Number
—	Wiring Terminals	30	**1769–ADN**

For Compact I/O modules ordering information, see publication 1769–UM001A–US–P.

Distributed I/O

FLEX I/O DeviceNet™ Adaptor



DeviceNet Flex I/O Adaptor

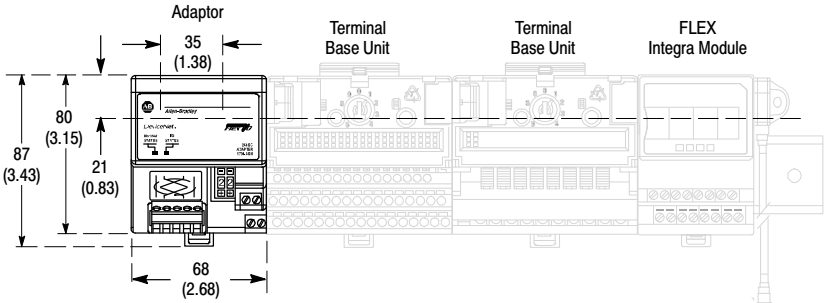
Specifications

For detailed specifications see the Rockwell Automation/Allen-Bradley Flex I/O™ Technical Data publication 1794–2.1

Description

The 1794–ADN adaptor powers the internal logic for as many as eight I/O modules and transfers the I/O data back to a PLC™ processor or a SLC™ processor via the DeviceNet™ network.

Dimensions—mm (in)



Features

- Wiring savings
  - Easily distributed
  - Reduce terminations to 4 per I/O device
- Cost–effective
  - Removal and Insertion Under Power (RIUP)
  - Flexibility in control, communication, I/O and terminations
  - Space savings on panel size
- Ease of use
  - Mix or match multiple I/O to multiple devices
  - Plug-n-Play operability

Selection Guide

DeviceNet Connection	Field Device Connection	Number of I/O Modules	Catalog Number
Wiring Terminals		8	**1794–ADN**

For Flex I/O modules ordering information, see publication 1794–2.1.

Sensors

Description

Rockwell Automation/Allen-Bradley DeviceNet sensors interface directly to this industry standard plant floor network without the need for additional I/O blocks or adaptors. In addition to the standard On/Off indication, DeviceNet compatible sensors provide advanced logic and diagnostic functions not available in competitive DeviceNet models. Logic functions include counters, timers and motion detection while the diagnostics warn of unstable application characteristics. For example, the 871TM DeviceNet proximity sensor will produce a diagnostic output when the target is too close to the sensor face or at the outside edge of the sensing range. Further, Allen-Bradley DeviceNet sensors may be configured for either strobing or change-of-state (COS) operating modes, normally open or normally closed outputs (light operate or dark operate for photoelectric sensors) and discrete or analog output. This flexibility allows a single sensor to be configured for a variety of applications.

DeviceNet sensors may be assigned any node address between 0 and 63. While a sensor's baud rate is determined automatically as it is added to the network (autobaud), it may also be manually programmed to 125, 250, or 500kb/s. Configuration of all network and sensor parameters can be done over the network with Rockwell Software's RSNetWorx package and for field configuration or diagnostics, the DeviceView Hand-Held Configurator (2707–DNC) is available.

Features

- Direct interface to DeviceNet network
- Strobing and COS protocols
- Autobaud detect
- Operating parameters configurable over the network
- Advanced diagnostics
- Integral timing and counting functions
- Mini, micro, or cable connection options

DeviceNet Sensors

Catalog Number Index

Catalog Number Index

Catalog Number Index

Catalog Number Index

Sensors

RightSight™ DeviceNet PHOTOSWITCH® Photoelectric Sensors

RightSight DeviceNet

General Specifications

Network Interface	DeviceNet
Protocol	Selectable Change-of-state (COS) and Strobing
Operating Mode	Selectable light/dark operate
Autobaud Detect	Selectable On/Off
Communication Rate	Selectable 125kb/s, 250kb/s, 500kb/s or autobaud
Supported Node Address	Selectable 0 to 63
Timer	On Delay and Off Delay/One-Shot (0 to 65,535ms, 1 or 10ms time base)
Counter	Adjustable with output bit (0 to 65,535 counts)
Motion Detect	Adjustable with output bit (0 to 65,535ms, 1ms time base)
Margin Diagnostic	Selectable with dual thresholds (0.7 to 1.5 and 0.7 to 2.5)
Margin Diagnostic Type	Selectable static or dynamic
Output Protection	False pulse, reverse polarity, overload, short circuit
Supply Voltage	24V DC
Current Consumption	60mA
Housing Material	Noryl™ 190X
Lens Material	Acrylic
Cover Material	Udel P1700NT
LED Indicators	See table below
QD Construction	5-pin micro QD
Supplied Accessories	Two 18mm mounting nuts
Optional Accessories	Rockwell Software RSNetWork for configuration
Operating Environment	NEMA 4X, 6P, IP67 (IEC529) 1200psi (8270kPa) washdown
Vibration	10–55Hz, 1mm amplitude, Meets or exceeds IEC 60947–5–2
Shock	30G with 1ms pulse duration, Meets or exceeds IEC 60947–5–2
Operating Temperature	–25°C to +70°C (–13°F to +158°F) @ 24V DC
Relative Humidity	5% to 95%
Approvals	UL listed, CSA certified, and CE marked for all applicable directives

Label	Color	State	Status
Output	Yellow	On	Target detected
Margin	Orange	Off	Margin < 2.0
		On	Margin > 2.0
Status	Red/Green	Off	Sensor not powered
		Green On Steady	Sensor active and allocated by a Master
		Green Flashing	Sensor active but not allocated by a Master
		Red Flashing	Minor correctable fault (baud rate)
		Red On Steady	Major fault (possible duplicate address)

Description

RightSight DeviceNet photoelectric sensors interface directly to this industry standard plant floor network without the need for additional I/O blocks or adaptors.

Features

- Compact RightSight housing
- 1200psi (8270kPa) washdown rating
- Direct interface to DeviceNet network
- Strobing and COS protocols
- On delay and off delay/one-shot timers
- Adjustable counter with output
- Adjustable motion detection
- Dual margin threshold diagnostics
- Autobaud

Sensing Modes

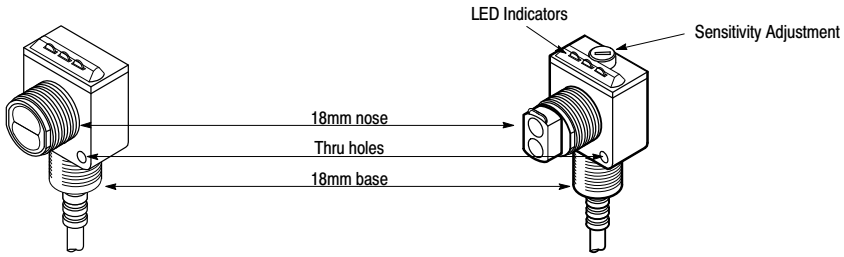
I/O Data Byte 1

	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
	Output	**Diagnostic**	**Margin 1**	**Margin 2**	**Motion Detect**	**Counter Output**	**Not Used**	**Not Used**
0	OFF	OK	OK	OK	Motion	Less Than Preset		
1	ON	ALARM	Margin Unstable	Margin Unstable	No Motion	Preset Reached		

General Specifications (continued)

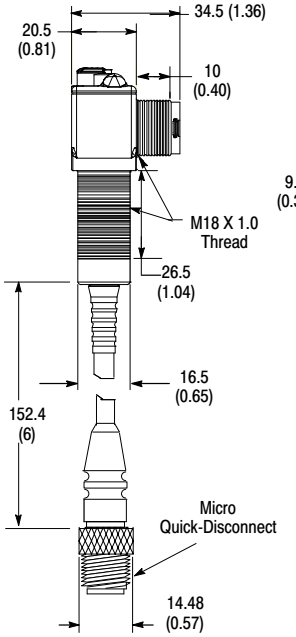
RightSight Nonadjustable Sensor

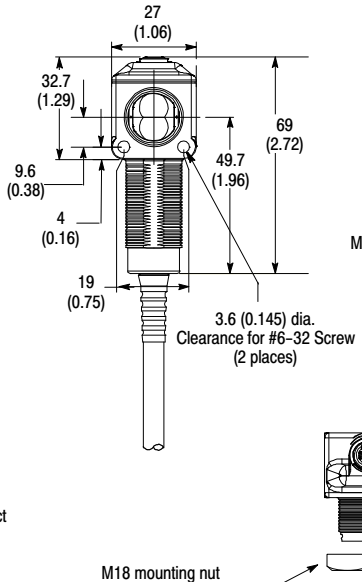
RightSight Adjustable Sensor



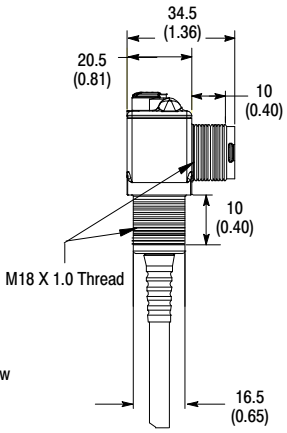
Dimensions—mm (inches)

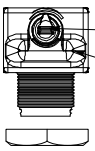
DeviceNet Models

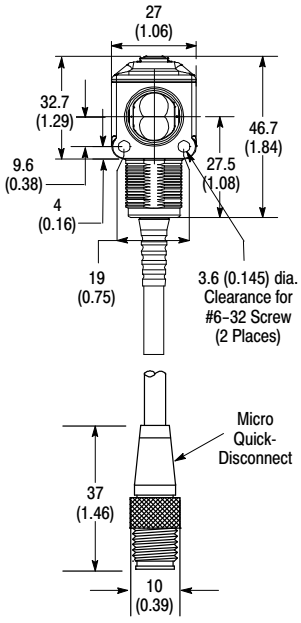




DC Light Source Models





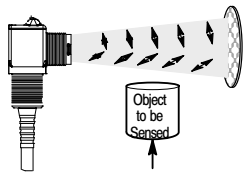
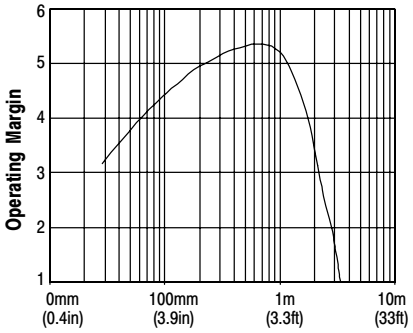
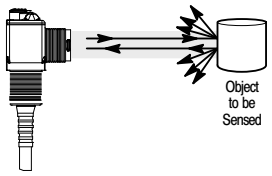
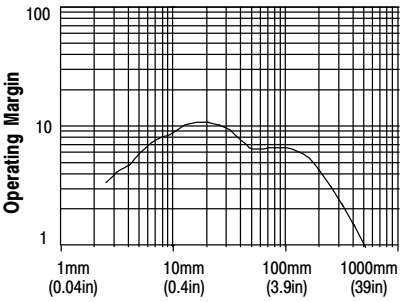
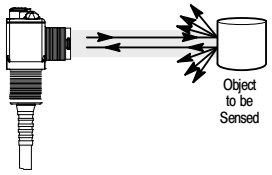
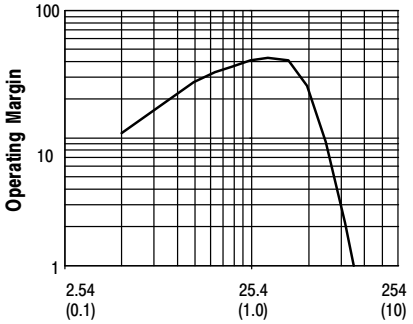
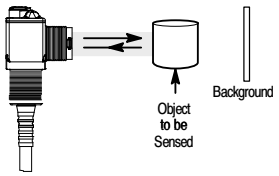
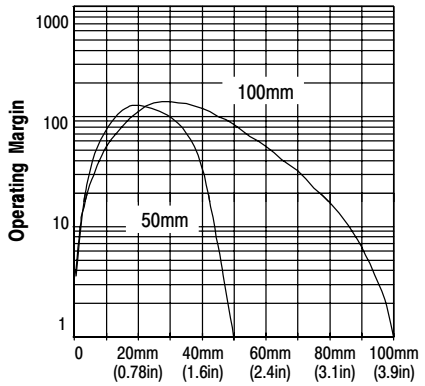


M18 mounting nut
(2 supplied with each sensor)

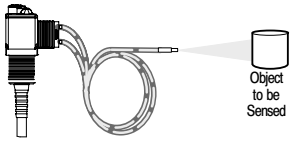
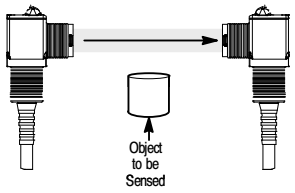
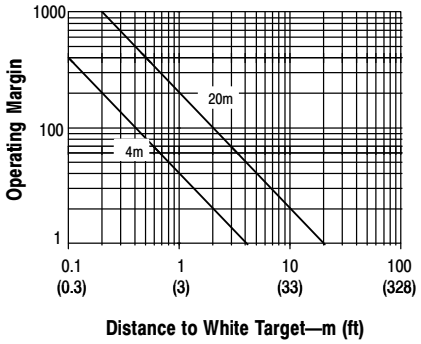
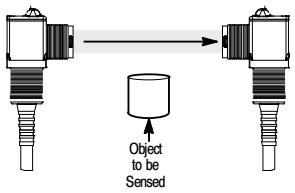
Sensors

RightSight™ DeviceNet PHOTOSWITCH® Photoelectric Sensors

Selection Guide

Sensing Mode	Min/Max Sensing Distance	Connection Type	Catalog Number	Typical Response Curve
 *Polarized Retroreflective*	25mm (1.0in)/ 3m (9.8ft)	5-pin DC micro QD	42EF-P2LDB-F5	 Distance to 76mm Reflector—92-39
 *Standard Diffuse*	3mm (0.12in)/ 500mm (20in		42EF-D1LDAK-F5	 Distance to White Target
 *Sharp Cutoff Diffuse*	<130mm (5in) 40mm (1.5in) @ 30x margin		42EF-S1LDA-F5	 Distance to White Target—mm (in)
 *Background Suppression*	3mm (0.12in)/ 50mm (2in)		42EF-B1LDBC-F5	 Distance to White Target
	3mm (0.12in)/ 100mm (4in)		42EF-B1LDBE-F5	

Selection Guide (continued)

Sensing Mode	Min/Max Sensing Distance	Connection Type	Catalog Number	Typical Response Curve
 *Infrared Glass Fiber Optic*	Depends on fiber optic cable selected	5-pin DC micro QD	**42EF-G1LDA-F5**	Depends on fiber optic cable selected
 *Transmitted Beam Light Source*	See receiver models below	5-pin DC micro QD	**42EF-E1EDZB-F5**	
		4-pin DC micro QD	**42EF-E1EZB-F4**	
		2m 300V cable	**42EF-E1EZB-A2**	
 *Transmitted Beam Receiver*	25mm (1in)/ 4m (13ft)	5-pin DC micro QD	**42EF-R9LDBV-F5**	
	25mm (1in)/ 20m (60ft)		**42EF-R9LDB-F5**	

Accessories

Description	Catalog Number
Reflector, 76mm (3in) Diameter with Center Mount Hole	**92-39**
Reflector, 32mm (1.25in) Diameter	**92-47**
Mounting Bracket Swivel/Tilt	**60-2649**

For additional mounting brackets and accessories, see the *Sensors* catalog.

Sensors

Series 9000 DeviceNet PHOTOSWITCH® Photoelectric Sensors

Series 9000 DeviceNet

Operation

Series 9000 DeviceNet photoelectric sensors interface directly to this industry standard plant floor network without the need for additional I/O blocks or adaptors. They combine the benefits of the Series 9000 mechanical and optical package with the DeviceNet bus system.

Features

- Harsh duty housing
- 1200psi washdown rating
- Direct interface to DeviceNet network
- Strobing and COS models
- Low margin diagnostics
- Autobaud

Sensing Modes

General Specifications

Network Interface	DeviceNet
Protocol	Change-of-state (COS) and strobing models
Operating Mode	Selectable light/dark operate
Autobaud Detect	Selectable On/Off
Communication Rate	Selectable 125kb, 250kb, 500kb
Supported Node Address	Selectable 0 to 63
Margin Diagnostic	Output ON (2.5 < margin > 1)
Margin Diagnostic Type	Selectable static or dynamic
Output Protection	False pulse, reverse polarity, overload, short circuit
Supply Voltage	24V DC
Current Consumption	70mA
Housing Material	Valox™
Lens Material	Acrylic
Gasket Cover Material	Neoprene
LED Indicators	See table below
Connection Type	5-pin micro QD, 5-pin mini QD, 2m drop cable
Supplied Accessories	#129–130 hardware kit
Optional Accessories	Rockwell Software RSNetWork for configuration
Operating Environment	NEMA 3, 4X, 6P, 12, 13, IP67 (IEC529) 1200psi (8270kPa) Washdown
Vibration	10–55Hz, 1mm amplitude, Meets or exceeds IEC 60947–5–2
Shock	30G with 1ms pulse duration, Meets or exceeds IEC 60947–5–2
Operating Temperature	–25°C to +70°C (–13°F to +158°F)
Relative Humidity	5% to 95%
Approvals (Ordinary Locations)	UL listed, CSA certified, and CE marked for all applicable directives

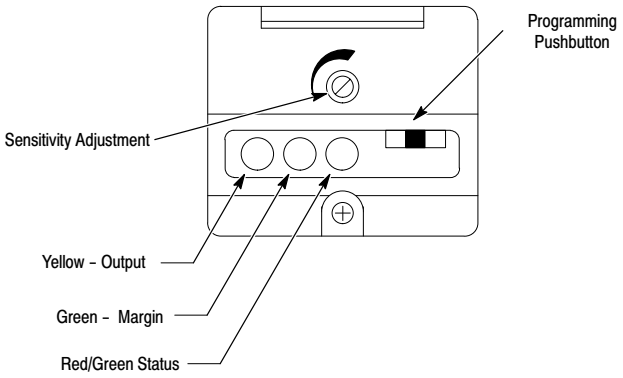
Indicators (refer to illustration)

Label	Color	State	Status
Output	Yellow	On	Target detected
Margin	Green	Off	Margin < 2.5
		On	Margin > 2.5
Status	Red/Green	Off	Sensor not powered
		Green On Steady	Sensor active and allocated by a Master
		Green Flashing	Sensor active but not allocated by a Master
		Red Flashing	Minor correctable fault (baud rate)
		Red On Steady	Major fault (possible duplicate address)

I/O Data

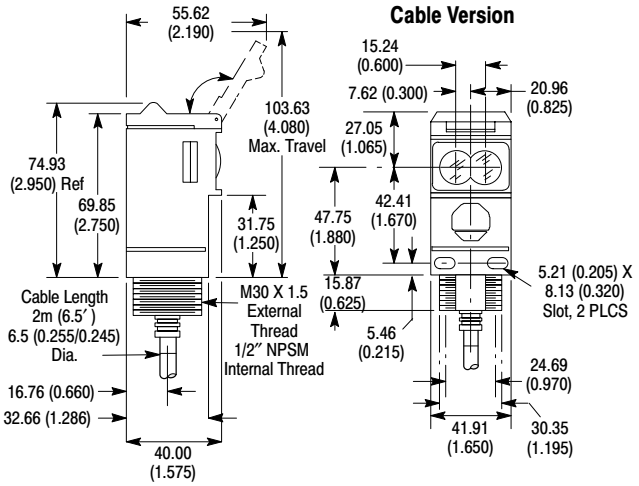
	Bit 0	Bit 1
	Output	Margin
0	Off	Ok
1	On	Low

General Specifications (continued)

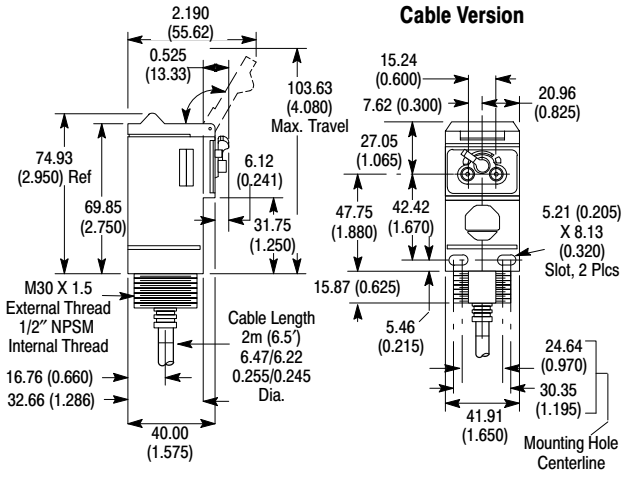


Dimensions—mm (inches)

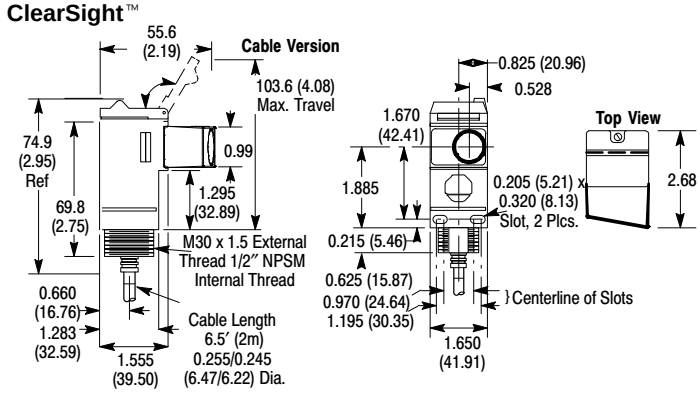
All Versions Except Fiber Optic



Fiber Optic



ClearSight™



Connector Version

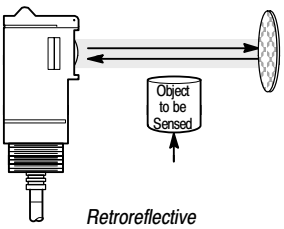
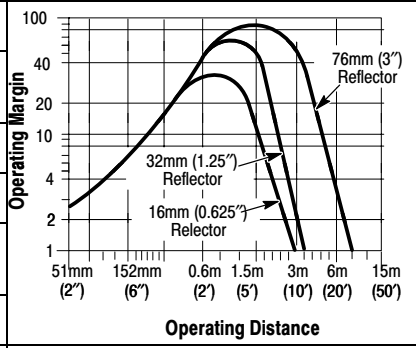
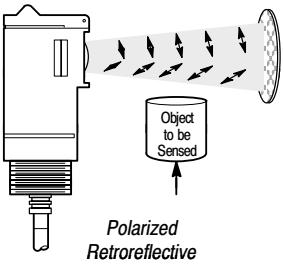
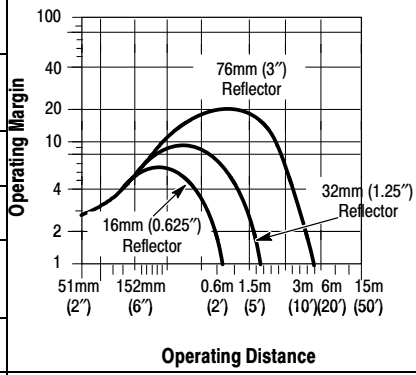
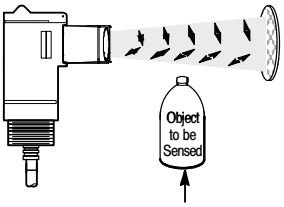
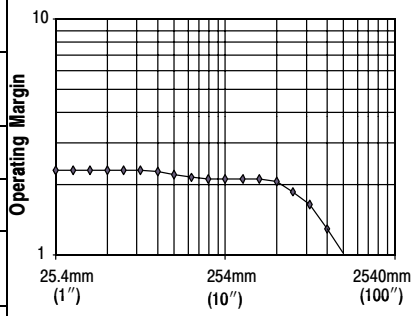
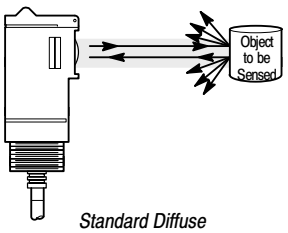
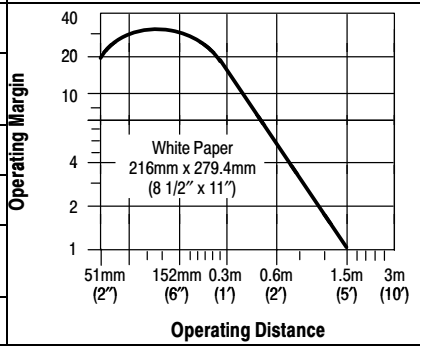
Thread Size

	DC
Micro Style	M12 x 1 1 Keyway
Mini Style	7/8-16 UN 1 Keyway

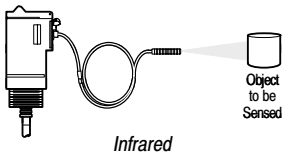
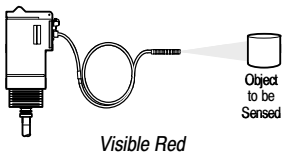
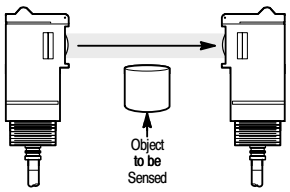
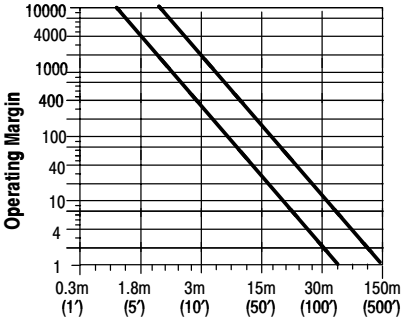
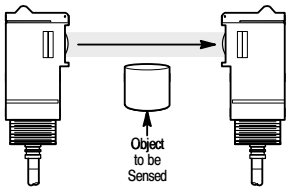
Sensors

Series 9000 DeviceNet PHOTOSWITCH® Photoelectric Sensors

Selection Guide

Sensing Mode	Min/Max Sensing Distance	Protocol	Connection Type	Catalog Number	Typical Response Curve
 *Retroreflective*	50.8mm (2in)/ 9.14m (30ft) with 76mm (3″) Reflector	Strobing	2m CPE cable	**42GNU-9000**	
			5-pin DC micro QD	**42GNU-9000-QD**	
			5-pin mini QD	**42GNU-9000-QD1**	
		COS	2m CPE cable	**42GNU-9010**	
			5-pin DC micro QD	**42GNU-9010-QD**	
			5-pin mini QD	**42GNU-9010-QD1**	
 *Polarized Retroreflective*	50.8mm (2in)/ 4.87m (16ft) with 76mm (3″) Reflector	Strobing	2m CPE cable	**42GNU-9200**	
			5-pin DC micro QD	**42GNU-9200-QD**	
			5-pin mini QD	**42GNU-9200-QD1**	
		COS	2m CPE cable	**42GNU-9210**	
			5-pin DC micro QD	**42GNU-9210-QD**	
			5-pin mini QD	**42GNU-9210-QD1**	
 *ClearSight ™*	0–1.22m (0–48in)/ 1.22m (48in)	Strobing	2m CPE cable	**42GNC-9200**	
			5-pin DC micro QD	**42GNC-9200-QD**	
			5-pin mini QD	**42GNC-9200-QD1**	
		COS	2m CPE cable	**42GNC-9210**	
			5-pin DC micro QD	**42GNC-9210-QD**	
			5-pin mini QD	**42GNC-9210-QD1**	
 *Standard Diffuse*	50.8mm (2in)/ 1.52m (5ft) with White Paper 216mm x 279.4mm (8.5″ x 11″)	Strobing	2m CPE cable	**42GNP-9000**	
			5-pin DC micro QD	**42GNP-9000-QD**	
			5-pin mini QD	**42GNP-9000-QD1**	
		COS	2m CPE cable	**42GNP-9010**	
			5-pin DC micro QD	**42GNP-9010-QD**	
			5-pin mini QD	**42GNP-9010-QD1**	

Selection Guide (continued)

Sensing Mode	Min/Max Sensing Distance	Protocol	Connection Type	Catalog Number	Typical Response Curve
 *Infrared Fiber Optic*	5.08mm (0.2in)/ Depends on fiber optic cable selected	Strobing	2m CPE cable	**42GNF-9000**	Range varies with fiber optic selected
			5-pin DC micro QD	**42GNF-9000-QD**	
			5-pin mini QD	**42GNF-9000-QD1**	
		COS	2m CPE cable	**42GNF-9010**	
			5-pin DC micro QD	**42GNF-9010-QD**	
			5-pin mini QD	**42GNF-9010-QD1**	
 *Visible Red Fiber Optic*	5.08mm (0.2in)/ Depends on fiber optic cable selected	Strobing	2m CPE cable	**42GNF-9100**	Range varies with fiber optic selected
			5-pin DC micro QD	**42GNF-9100-QD**	
			5-pin mini QD	**42GNF-9100-QD1**	
		COS	2m CPE cable	**42GNF-9110**	
			5-pin DC micro QD	**42GNF-9110-QD**	
			5-pin mini QD	**42GNF-9110-QD1**	
 *Transmitted Beam Light Source*	25.4mm (1in) 61m (200ft)	—	2m 300V cable	**42GNL-9000**	
			5-pin DC micro QD	**42GNL-9000-QD**	
			5-pin DC mini QD	**42GNL-9002-QD**	
	25.4mm (1in) 152m (500ft)		2m CPE cable	**42GNL-9040**	
			5-pin DC micro QD	**42GNL-9040-QD**	
			5-pin DC mini QD	**42GNL-9042-QD**	
 *Transmitted Beam Receiver*	See Light Sources Above	Strobing	2m CPE cable	**42GNR-9000**	
			5-pin DC micro QD	**42GNR-9000-QD**	
			5-pin mini QD	**42GNR-9000-QD1**	
		COS	2m CPE cable	**42GNR-9010**	
			5-pin DC micro QD	**42GNR-9010-QD**	
			5-pin mini QD	**42GNR-9010-QD1**	

Accessories

Description	Catalog Number
Reflector, 76mm (3in) Diameter with Center Mount Hole	**92-39**
Reflector, 32mm (1.25in) Diameter	**92-47**
Mounting Bracket Swivel/Tilt	**60-2439**

For additional mounting brackets and accessories, see the *Sensors* catalog.

Sensors

871TM DeviceNet Inductive Proximity Sensors

871TM DeviceNet Cable Style
18, 30mm
page 69

871TM DeviceNet Mini
Quick-Disconnect Style
18, 30mm
page 69

871TM DeviceNet Micro
Quick-Disconnect Style
18, 30mm
page 69

Features

- Connects directly to DeviceNet networks
- Autobaud
- Discrete and Analog output
- Diagnostic capabilities available
  - Object too close
  - Sensor operational
  - Object too far
- Timing functions: On, Off, and One-Shot Delay configuration
- Configurable normally open/normally closed
- Motion detection
- Teach/learn target capabilities
- UL listed, c-UL certified, and CE marked for all applicable directives

Specifications

Current Drain	≤60mA
Operating Voltage	11–25V DC
Repeatability	≤1% at constant temperature
Hysteresis	10% typical
Approvals	UL listed, c-UL certified, and CE marked for all applicable directives
Enclosure	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC 529), 1200psi (8270kPa) washdown Stainless steel face and barrel
Connections	Cable: 2m (6.5ft) length Quick-Disconnect: 5-pin mini style 5-pin micro style
LEDs	Bicolor Red/Green: DeviceNet Network/Status Amber: Output energized
Operating Temperature	–25°C to +70°C (–13°F to +158°F)
Shock	30g, 11ms
Vibration	55Hz, 1mm amplitude, 3 planes

Correction Factors

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.9–1.0
Brass	0.3–0.5
Aluminum	0.1–0.4
Aluminum ≤0.020 Thick	0.9–1.1
Copper	0.4–0.6

Indicators (refer to illustration)

Label	Color	State	Status
Output	Yellow	On	Target detected
Status	Red/Green	Off	Sensor not powered
		Green On Steady	Sensor active and allocated by a Master
		Green Flashing	Sensor active but not allocated by a Master
		Red Flashing	Minor correctable fault (baud rate)
		Red On Steady	Major fault (possible duplicate address)

I/O Data

Strobe and Change-of-State Output:

	Bit 0	Bit 1	Bit2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Byte 1	Sensor Output	Diagnostic	Coil Operational	Too Close	Too Far	Always In	Motion Detect	Counter Output

	Bit 0	Bit 1	Bit2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Byte 2	Analog Output (Strobe Only)							

Selection Guide

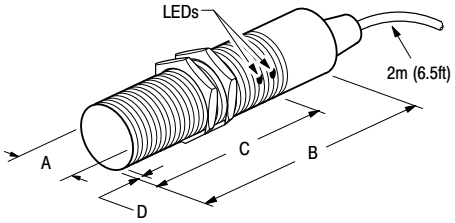
Barrel Dia.	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Catalog Number		
				Cable Style	Mini QD Style	Micro QD Style
18mm	5 (0.20)	Y	Programmable N.O./N.C.	871TM-D5ED18-S2	871TM-D5ED18-N5	871TM-D5ED18-D5
	8 (0.31)	N		871TM-D8ED18-S2	871TM-D8ED18-N5	871TM-D8ED18-D5
30mm	10 (0.39)	Y		871TM-D10ED30-S2	871TM-D10ED30-N5	871TM-D10ED30-D5
	15 (0.59)	N		871TM-D15ED30-S2	871TM-D15ED30-N5	871TM-D15ED30-D5

Accessories

For mounting brackets and accessories, see the *Sensors* catalog.

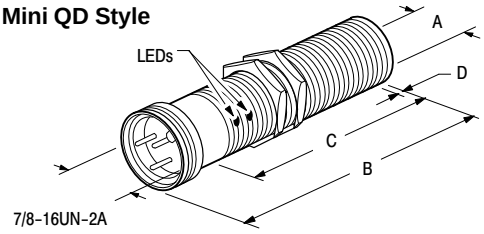
Dimensions—mm (inches)

Cable Style

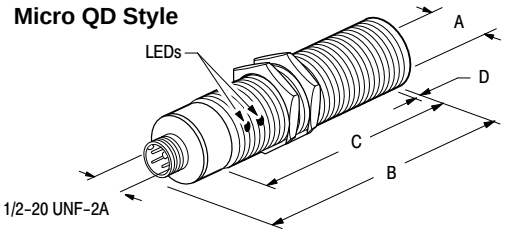


Cable Style					
Thread Size	Shielded	mm (inches)			
		A	B	C	D
M18 x 1	Y	18.0 (0.71)	74.7 (2.94)	60.0 (2.36)	2.5 (0.10)
	N			48.2 (1.90)	14.4 (0.56)
M30 x 1.5	Y	30.0 (1.18)	77.2 (3.04)	61.3 (2.41)	2.5 (0.10)
	N			41.6 (1.64)	17.9 (0.70)

Mini QD Style



Micro QD Style



Mini QD Style						Micro QD Style					
Thread Size	Shielded	mm (inches)				Thread Size	Shielded	mm (inches)			
		A	B	C	D			A	B	C	D
M18 X 1	Y	18.0 (0.71)	76.6 (3.02)	54.9 (2.16)	2.5 (0.10)	M18 X 1	Y	18.0 (0.71)	84.3 (3.32)	60.0 (2.36)	2.5 (0.10)
	N			43.1 (1.70)	14.4 (0.56)		N	18.0 (0.71)	84.3 (3.32)	48.2 (1.90)	14.4 (0.56)
M30 X 1.5	Y	30.0 (1.18)	86.4 (3.40)	61.3 (2.41)	2.5 (0.10)	M30 X 1.5	Y	30.0 (1.18)	85.7 (3.37)	61.3 (2.41)	2.5 (0.10)
	N			41.6 (1.64)	17.9 (0.70)		N	30.0 (1.18)	85.7 (3.37)	46.1 (1.81)	17.9 (0.70)

Sensors

802DN Lever Type with DeviceNet Output • Spring Return NonPlug-In Style Oiltight Switches

NonPlug-In Style 802DN–AD5 without Lever

Specifications

Enclosure Rating	NEMA 1, 4, 6P, 13 and IP67 (IEC 529)
Approvals	UL listed, CSA certified, and CE marked for applicable directives
Ambient Temperature	NonPlug-In limit switches are designed to operate in an ambient temperature range of –18°C to +54°C (0°F to +130°F).

Description

Bulletin 802DN DeviceNet limit switches have been designed with the same rugged features of our 802T NEMA limit switches with the features and benefits of DeviceNet built in. These limit switches utilize DeviceNet technology to address the primary customer needs. The three most common needs are increased information flow, an inexpensive way to connect limit switches to a DeviceNet network, and finally, reduction of down time by using the advanced diagnostic capabilities only available though DeviceNet. 802DN limit switches are configured using RSNetWorx for DeviceNet. On line configuration help is available using the parameter help feature.

Features

- Direct connection to DeviceNet network
- Autobaud
- Dual outputs with distinct programmable angles to operate
- Teach and learn angle
- Each output programmable to N.O. or N.C.
- Programmable travel to reset (hysteresis)
- Configurable counters with resets on each output

Features (continued)

- Multiple timing functions

  Programmable in 1ms increments
  - On delay timer
  - Off delay timer
  - One shot timer
- User-selectable discrete or analog output
- Multiple maintenance warnings
  - Overtravel alarm
  - Motion detection
  - Slow lever return alarm
  - Jam detect
- User defined counter preset used for Tracking total operations and maintenance alarming
- Supports change of state (COS) or strobing protocol

High Degree of Versatility

Bulletin 802DN limit switches can be mounted in any position, with operating heads that can be rotated and fastened in any one of four positions 90° apart. Most operating levers are interchangeable and can be rotated and clamped in any position through 360°.

NEMA Type 13 Construction

802DN limit switches feature NEMA Type 13 construction with synthetic rubber seals to protect the operating parts against entry of oil, dust, abrasives, water and coolant, within the limits of NEMA-specified tests.

Easy Mounting and Wiring

Each switch base has four mounting holes: two “through” holes for front mounting and two tapped holes in the back for rear mounting. Three different wiring styles are available for ease of installation. Each of the models is available for order with one of the following: a five-pin micro quick-disconnect, a five-pin mini quick-disconnect, or a prewired two meter cable.

Lever Type Switches

These switches are operated by means of a lever which is clamped to a knurled shaft extending from the operating head.

Lever type switches can be equipped with a variety of operating levers: roller lever, adjustable roller lever, micrometer adjustment roller lever, rod lever, one-way rod or roller lever and fork lever. These can be used interchangeably on all lever type switches.

The micrometer adjustment roller lever, catalog number **802T–W6**, is designed especially for installations where the exact position of the roller is critical. This lever has a pivoted roller which can be turned laterally. After clamping the lever to the switch shaft, the position of the roller can be precisely adjusted through an arc of 7.5° on either side of the center or straight-line position.

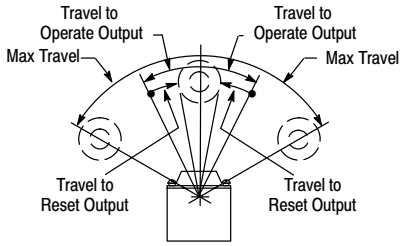
Wide Belt Roller

The **802DN–WBR–XX** limit switches come packaged with a special lever arm. This limit switch has been specifically designed for precise position detection of conveyor belts. By using the advanced features of DeviceNet, this limit switch is ideal for this application.

Operating Levers

See the *Sensors* catalog.

Range of Operation



Switch Without Lever

Selection Guide

Lever Movement	Torque to Operate (Max)	Travel to Operate Output #1	Travel to Operate Output #2	Max Travel	Travel to Reset	Lever	Connection Type	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	Programmable	Programmable	54°	Programmable (5° min)	None	2m cable	**802DN–AS2**
							5-pin mini	**802DN–AN5**
							5-pin micro	**802DN–AD5**
						Wide belt roller	2m cable	**802DN–WBRS2**
							5-pin mini	**802DN–WBRN5**
							5-pin micro	**802DN–WBRD5**

I/O Data

Byte 1

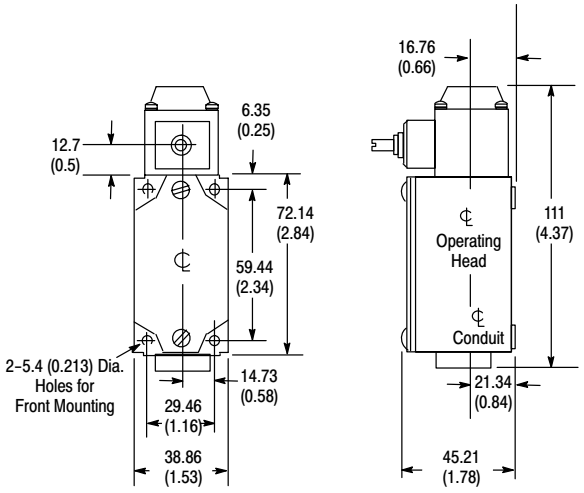
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Output 1	Output 2	Maintenance Diagnostic	Over Travel	Slow Return	Counter 1 Output	Counter 2 Output	Not Used

Byte 2

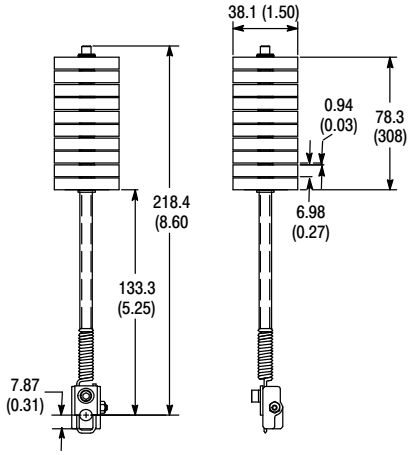
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Analog Output (Strobe Only)							

Outputs 1 and 2 are programmable N.O./N.C.
See electronic data sheet for programming instructions.

Dimensions—mm (inches)



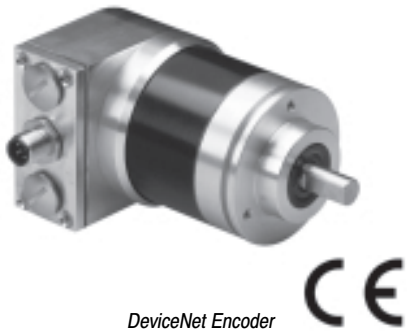
NonPlug-In Switch
Shipping Wt. 0.45kg (1lb)



Wide Belt Roller
Lever Arm

Sensors

Bulletin 842D DeviceNet™ Absolute Multi-Turn Magnetic Encoder



DeviceNet Encoder

Description

Bulletin 842D is a 26-bit absolute multi-turn shaft encoder. It can provide up to maximum of 8192 pulses per turn or a maximum of 8192 turns.

Features

- Greatly reduced wiring cost and complexity
- Greatly improved noise immunity achieved via differential communication format
- Decreased hardware cost
- Simplified start up

Typical Applications

- Steel mills
- Overhead cranes
- Punch press
- Transfer lines
- Oil rigs
- Wind mills
- Machine Tool
- Packaging

Specifications

Electrical	
Code Format	Natural Binary
Code Direction	CW or CCW (programmable)
Electrical Interface	DeviceNet specification release 2.0
Operating Voltage	10–30V DC (24V DC recommended)
Power Requirements	1.8W
Max # of Steps/Revolution	8192
Max # of Revolutions	8192
Position Forming Time	0.5msec
Delay on Power Up	1050msec
Reset	Via covered rear button
Mechanical	
Angular Acceleration	5×10^5 radians/sec^2
Moment of Inertia	35gcm^2 (5.0×10^{-4}oz-in-sec^2)
Operating Speed	6000 RPM at max shaft loading
Maximum Working Speed	12,000 RPM
Starting Torque	2.5Ncm (3.5oz-in)
Shaft Loading	Axial 11lb (50N) Radial 67lb (300N)
Environmental	
Housing	Aluminum
Temperature	-20°C to 85°C (-4°F to +185°F)—Operating -40°C to 100°C (-40°F to +212°F)—Storage
Humidity	98% non-condensing
Protection	NEMA Type 4, 13, IP66 (IEC 529)
Shock	100g/6msec
Vibration	20g/10-2000Hz
Approximate Weight	0.91kg (2lbs)

Accessories

For mounting brackets and accessories, see the *Sensors* catalog.

Indicators

LED	Status
Off	Not connected not on-line
Green Blinking	Device is active and on-line but not configured by the master
Green Steady	Device is active and on-line and configured by the master
Red Blinking	Minor fault and/or connection interrupt
Red Steady	Minor fault, critical communication fault

IMPORTANT NOTICE

The 842D was not available for purchase at the time this catalog was printed. For current availability, please visit the Rockwell Automation/Allen-Bradley website at:
http://www.ab.com/sensors/products/productlines/encoders/encoders.html

Selection Guide

Electrical Connection	Catalog Number
One 5-pin male micro QD	**842D–60131331BDA**
Two 5-pin micro QDs (One male and one female)	**842D–6013133BXA**

IMPORTANT NOTICE
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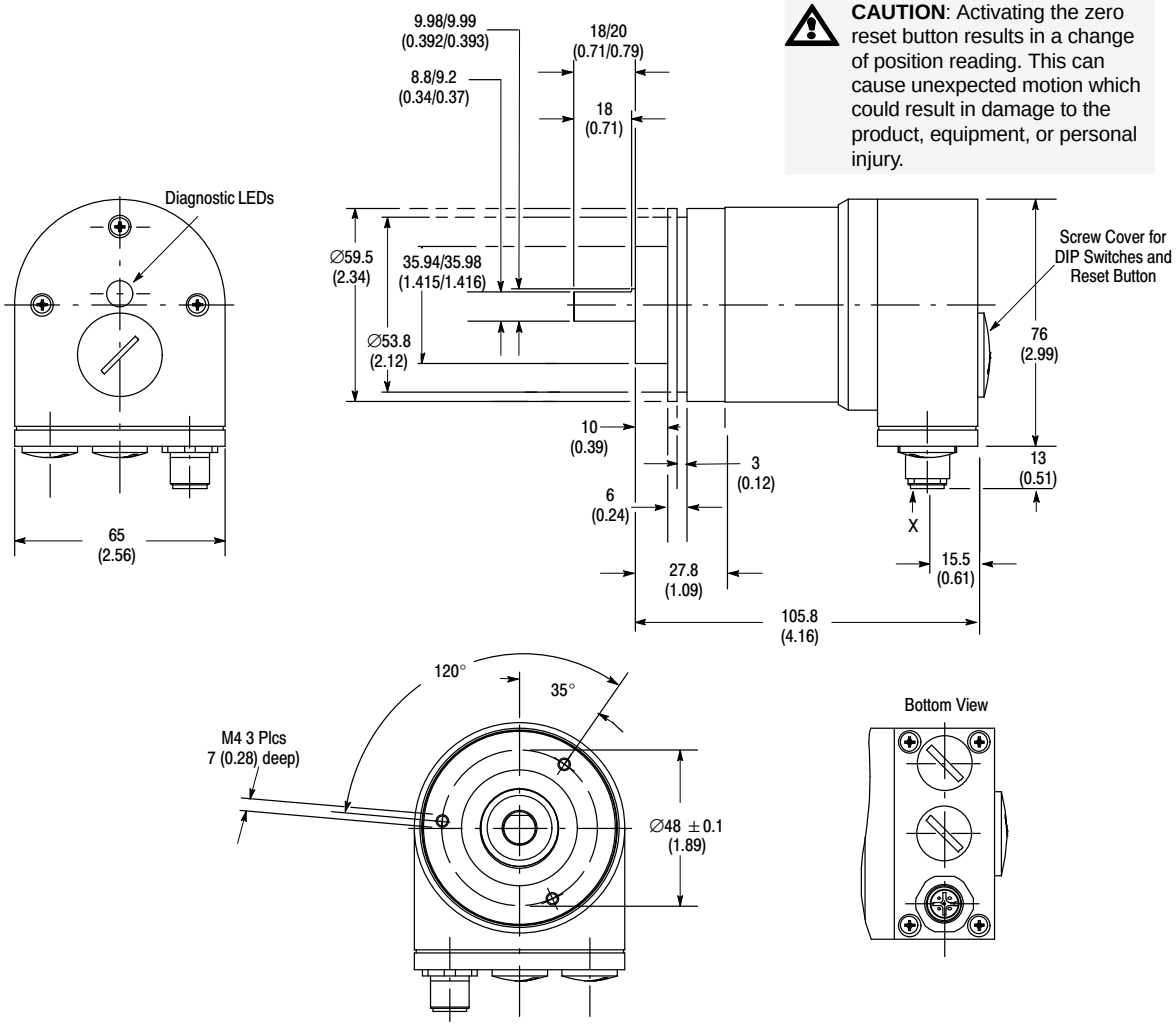
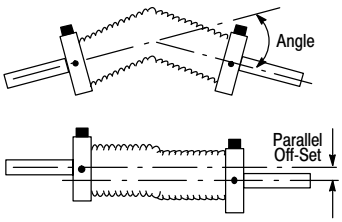
http://www.ab.com/sensors/products/productlines/encoders/encoders.html

Dimensions—mm (inches)

CAUTION: Activating the zero reset button results in a change of position reading. This can cause unexpected motion which could result in damage to the product, equipment, or personal injury.



Flexible Shaft Couplings



ATTENTION: Rigidly coupling the encoder shaft to the machine shaft **will cause a failure** in either the bearings of the encoder or the bearings of the machine shaft.

Notes

Allen-Bradley

Visit our web site at:
http://www.ab.com/sensors

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