







- General Information** Quick Selection Guide page 8–2
- DeviceNet Sensors**
 - RightSight™ DeviceNet page 8–4
 - SmartSight™ 9000 DeviceNet page 8–8
 - Inductive Proximity
 - DeviceNet page 8–12
 - Limit Switch DeviceNet page 8–14
 - Encoder DeviceNet page 8–16
 - DeviceLink™ page 8–18
- Indexes**
 - Catalog Number Index page 9–1
 - Comprehensive Product Index page 10–1

AB Drives

Quick Selection Guide

<p>Specifications</p>	 <p>RightSight™ Photoelectric Sensor</p>	 <p>SmartSight™ 9000 Photoelectric Sensor</p>	 <p>871TM Inductive Proximity Sensor</p>
<p>Features</p>	<ul style="list-style-type: none"> • DeviceNet Network compatibility • Patented 18mm housing design with 1200psi washdown rating • Selectable COS/Strobe • Advanced diagnostics, counter, and timers 	<ul style="list-style-type: none"> • DeviceNet Network compatibility • Harsh duty 30mm housing • 1200psi washdown • Advanced features such as teach, selectable COS/Strobe, counter, timers and diagnostics 	<ul style="list-style-type: none"> • DeviceNet Network compatibility, stainless steel face and barrel, 1200psi washdown rated, standard mounting, discrete or analog output, timing options, advanced diagnostics
<p>Output Type</p>	<ul style="list-style-type: none"> • DeviceNet 	<ul style="list-style-type: none"> • DeviceNet 	<ul style="list-style-type: none"> • DeviceNet
<p>Connections</p>	<ul style="list-style-type: none"> • 5-pin DC micro QD 	<ul style="list-style-type: none"> • 5-pin DC micro QD • 5-pin mini QD • 2m cable 	<ul style="list-style-type: none"> • 5-pin DC micro QD • 5-pin mini QD • 2m CPE cable
<p>Available Models</p>	<ul style="list-style-type: none"> • Polarized Retroreflective 8-6 • Standard Diffuse 8-6 • Sharp Cutoff Diffuse 8-6 • Background Suppression 8-6 • Infrared Fiber Optic 8-7 • Transmitted Beam 8-7 	<ul style="list-style-type: none"> • Retroreflective page 8-10 • Polarized Retroreflective page 8-10 • ClearSight™ page 8-10 • Standard Diffuse page 8-11 • Infrared Glass Fiber Optic page 8-11 • Visible Red Glass Fiber Optic page 8-11 • Transmitted Beam page 8-11 	<ul style="list-style-type: none"> • 18mm shielded 8-12 • 18mm unshielded 8-12 • 30mm shielded 8-12 • 30mm unshielded 8-12
<p>Additional Info</p>	<ul style="list-style-type: none"> • See page 8-4 	<ul style="list-style-type: none"> • See page 8-8 	<ul style="list-style-type: none"> • See page 8-12

<p>Specifications</p>	 <p>802DN Limit Switch</p>	 <p>842D Encoder</p>	 <p>DeviceLink™ Single Point I/O</p>
<p>Features</p>	<ul style="list-style-type: none"> • DeviceNet Network compatibility, NEMA 13 rated, standard mounting, discrete or analog output, dual setpoints, timing options, advanced diagnostics 	<ul style="list-style-type: none"> • DeviceNet Network compatibility, advanced diagnostics 	<ul style="list-style-type: none"> • DeviceNet Network compatibility, strobing only, 1200psi washdown rated, configurable debounce filtering
<p>Output Type</p>	<ul style="list-style-type: none"> • DeviceNet 	<ul style="list-style-type: none"> • DeviceNet 	<ul style="list-style-type: none"> • DeviceNet
<p>Connections</p>	<ul style="list-style-type: none"> • 5-pin DC micro QD • 5-pin mini QD • 2m CPE cable 	<ul style="list-style-type: none"> • 5-pin DC micro QD 	<ul style="list-style-type: none"> • 5-pin DC micro QD • 5-pin mini QD • CPE cable
<p>Available Models</p>	<ul style="list-style-type: none"> • Limit Switch without lever 8-14 • Limit Switch with wide belt roller 8-14 	<ul style="list-style-type: none"> • 26-bit absolute multi-turn 8-16 	<ul style="list-style-type: none"> • Mini DeviceNet connection 8-18 • Micro DeviceNet connection 8-18 • Cable DeviceNet connection 8-18
<p>Additional Info</p>	<ul style="list-style-type: none"> • See page 8-14 	<ul style="list-style-type: none"> • See page 8-16 	<ul style="list-style-type: none"> • See page 8-18



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.

For applications requiring many sensors and simple On/Off indication only, Allen-Bradley DeviceLink is the ideal solution. 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.

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

RightSight™ DeviceNet page 8-4
 SmartSight™ 9000 page 8-8
 Inductive Proximity DeviceNet page 8-12
 Limit Switch DeviceNet page 8-14
 Encoder DeviceNet page 8-16
 DeviceLink™ page 8-18



DeviceNet RightSight



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
- Strobging 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

- Dimensions page 8–5
- Polarized Retroreflective page 8–6
- Standard Diffuse page 8–6
- Sharp Cutoff Diffuse page 8–6
- Background Suppression page 8–6
- Infrared Glass Fiber Optic page 8–7
- Transmitted Beam page 8–7

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	Mindel
Lens Material	Acrylic
Cover Material	Udel
LED Indicators	See table below
QD Construction	5-pin micro QD
Supplied Accessories	18mm mounting nut
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
		Off	Margin < 2.0
Margin	Orange	On	Margin > 2.0
		Off	Sensor not powered
Status	Red/Green	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)

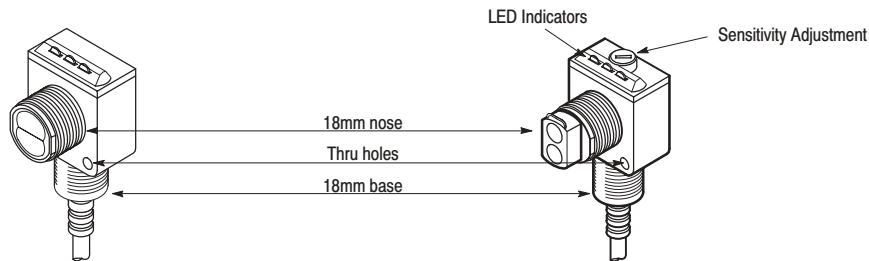
I/O Data Byte 1

	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

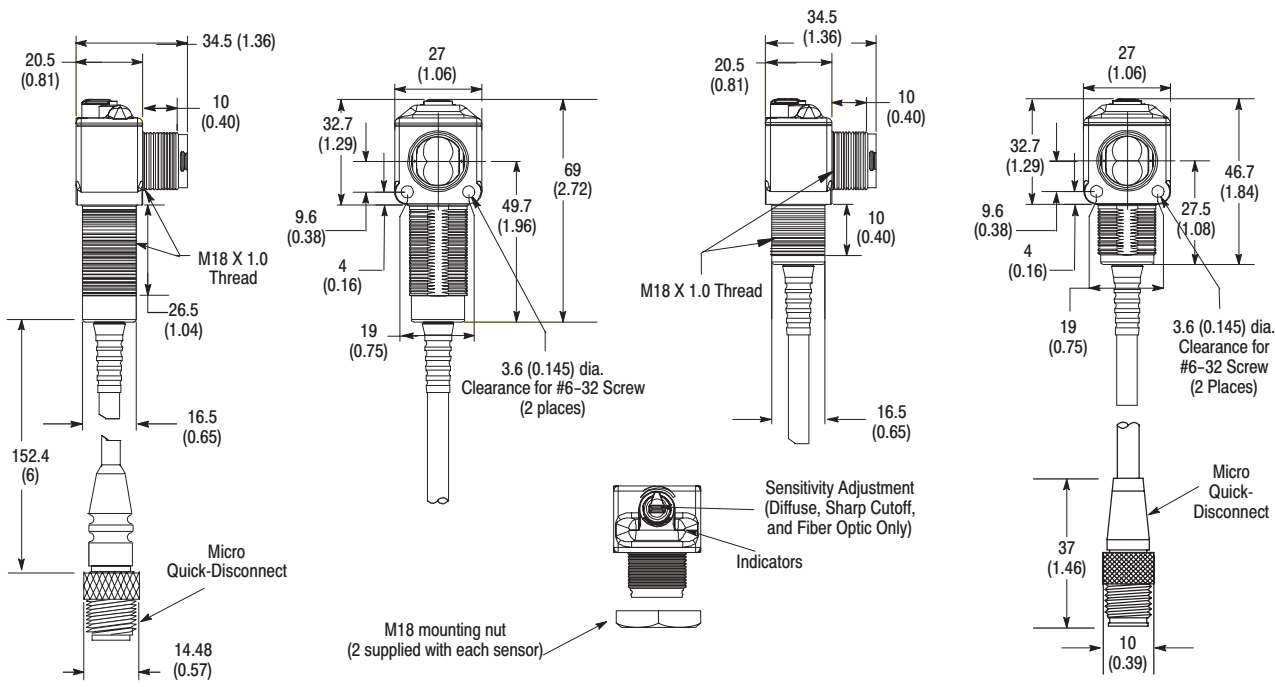
RightSight Adjustable Sensor



Dimensions—mm (inches)

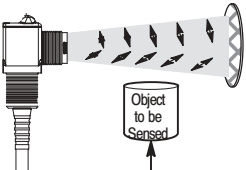
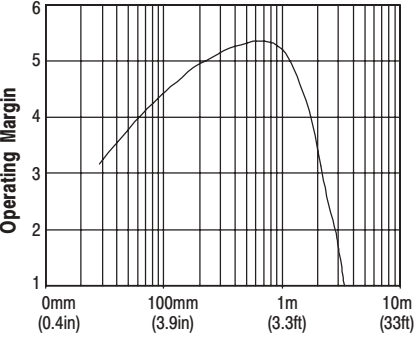
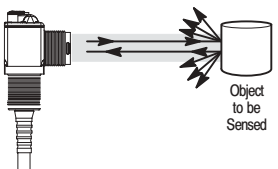
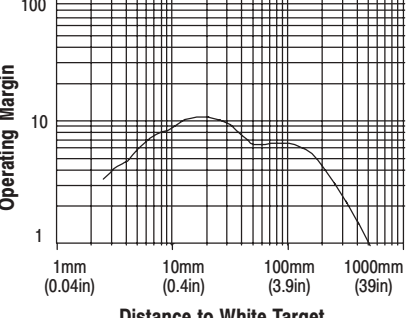
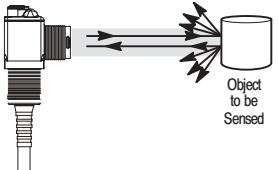
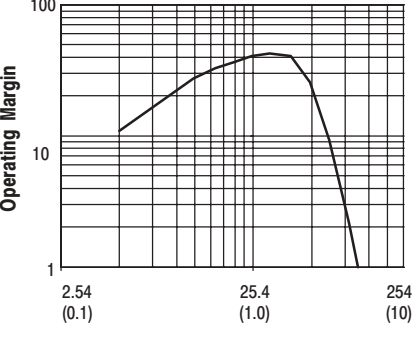
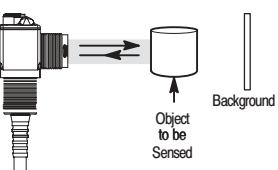
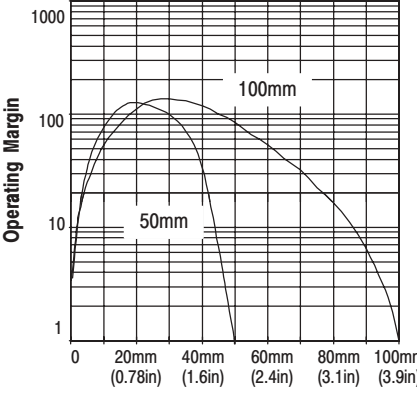
DeviceNet Models

DC Light Source Models

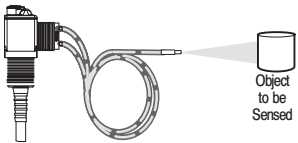
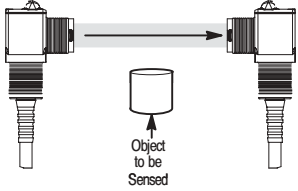
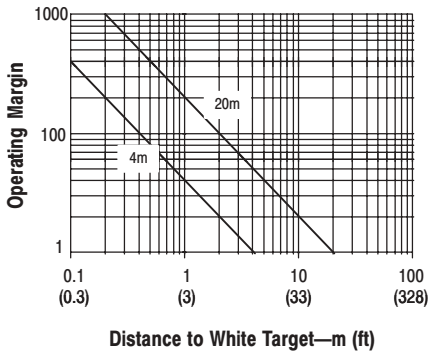
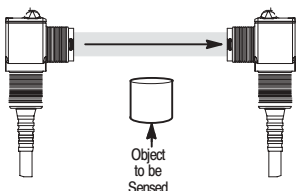


AB Drives

Product Selection

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

Product Selection (continued)

Sensing Mode	Min/Max Sensing Distance	Connection Type	Catalog Number	Typical Response Curve
 <p><i>Infrared Glass Fiber Optic</i></p>	Depends on fiber optic cable selected	5-pin DC micro QD	42EF-G1LDA-F5	Depends on fiber optic cable selected
 <p><i>Transmitted Beam Light Source</i></p>	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	
 <p><i>Transmitted Beam Receiver</i></p>	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 page 1-374.

AB Drives



Operation

SmartSight 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.

General Specifications

Network Interface	DeviceNet
Messaging	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—via network or local
Margin Diagnostic	Selectable static or dynamic
Margin Diagnostic Type	Selectable with dual thresholds (0.7-1.5 and 0.7-2.0)
Output Protection	False pulse, reverse polarity, overload, short circuit
Supply Voltage	11-25V DC
Current Consumption	80mA
Housing Material	Valox™
Lens Material	Acrylic
Gasket Cover Material	Neoprene
LED Indicators	See table on page 8-9
Connection Type	5-pin micro QD, 5-pin mini QD, 2m drop cable
Supplied Accessories	#129-130 hardware kit
Optional Accessories	Rockwell Software RSNetworkx 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

Features

- Local and remote self-teach operation ❶
- 1200psi washdown rating
- Selectable strobing and COS ❶
- Low margin diagnostics
- Adjustable motion detect ❶
- ON/OFF time delay ❶
- Adjustable counter with output ❶

General Information

I/O Data page 8-9
 Indicators page 8-9
 Dimensions page 8-9

Sensing Modes

Retroreflective page 8-10
 Polarized Retroreflective page 8-10
 ClearSight™ page 8-10
 Standard Diffuse page 8-11
 Infrared Glass Fiber Optic page 8-11
 Visible Red Glass
 Fiber Optic page 8-11
 Transmitted Beam page 8-11

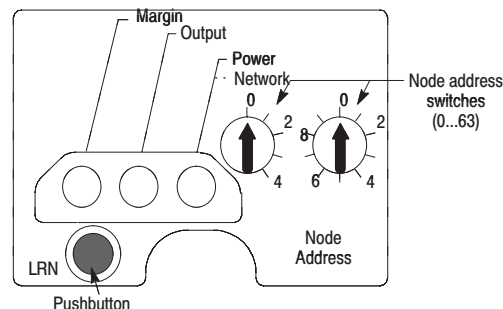
❶ Not in transmitted beam and ClearSight models.

I/O Data

	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		

Indicators (refer to illustration)

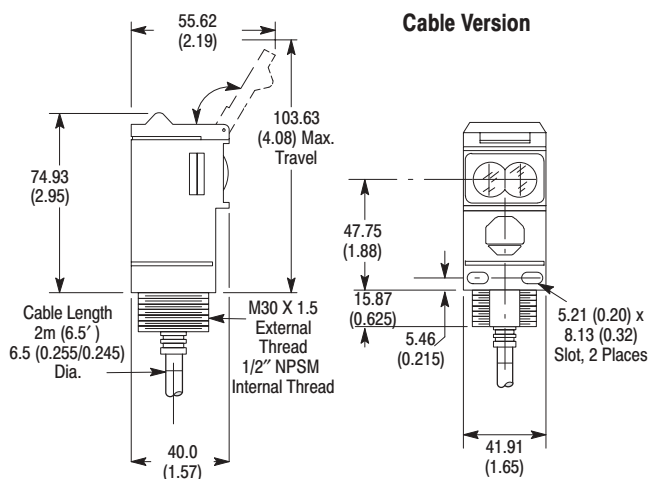
Label	Color	State	Status
Output	Yellow	ON	Target detected
Margin	Orange	OFF	Margin < 2.0
		ON	Margin > 2.0
Status	Red/Green	OFF	Sensor not powered or auto baud
		Green ON Steady	Sensor active and allocated by master
		Green Flashing	Sensor active but not allocated by master
		Red Flashing	Minor correctable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



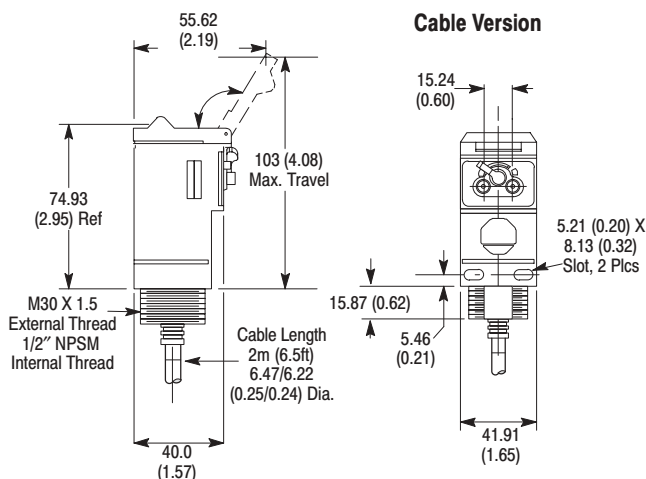
NOTE: LED indicators are used during the *Self-Teach* operation of the sensor. Refer to publication 75025-284-01 for complete instructions on using this feature.

Dimensions—mm (inches)

All Models Except Fiber Optic and ClearSight



Fiber Optic Models



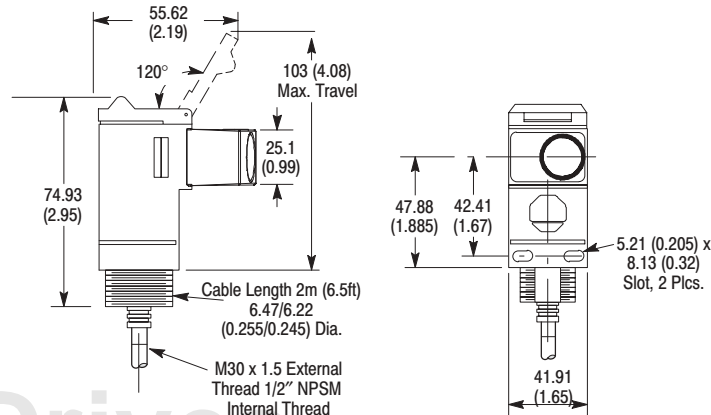
Connector Version



Thread Size

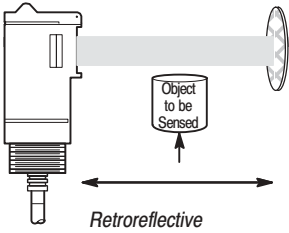
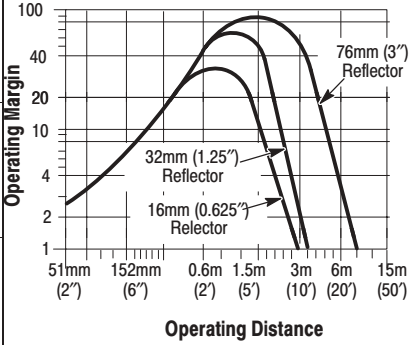
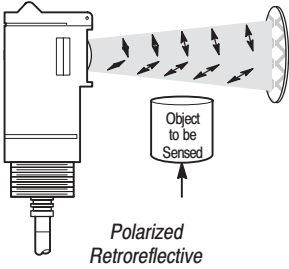
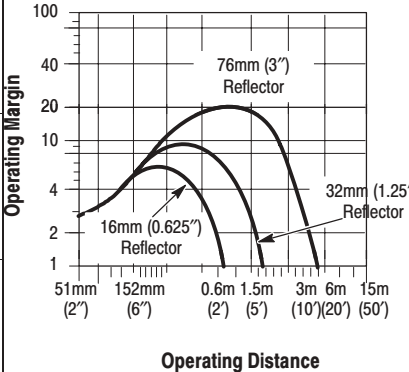
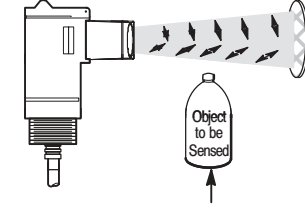
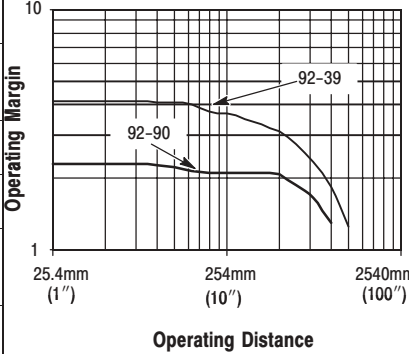
Micro Style	M12 x 1 1 Keyway
Mini Style	7/8-16 UN 1 Keyway

ClearSight Models

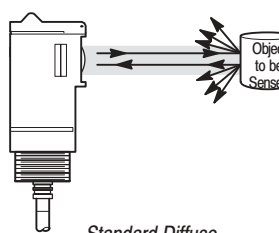
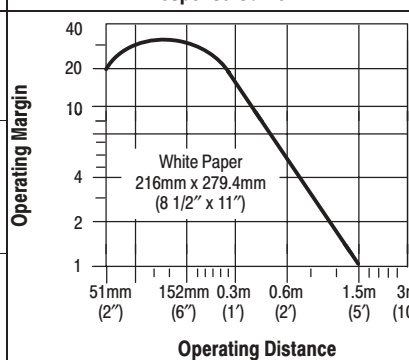
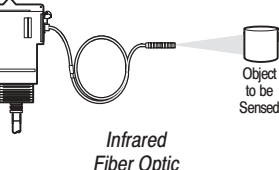
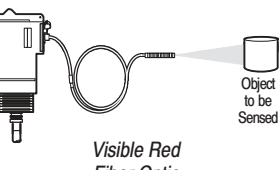
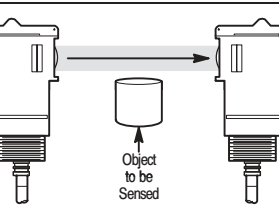
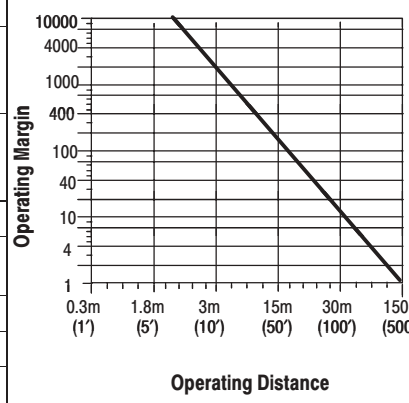
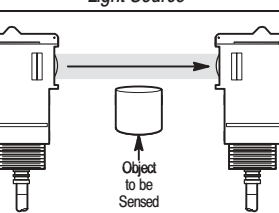


AB Drives

Product Selection

Sensing Mode	Min/Max Sensing Distance	Protocol	Connection Type	Catalog Number	Typical Response Curve
 <p>Retroreflective</p>	51mm (2in) 9.14m (30ft) with 76mm (3") Reflector	Strobing and COS	2m CPE cable	42GNU-9020	
			5-pin DC micro QD	42GNU-9020-QD	
			5-pin mini QD	42GNU-9020-QD1	
 <p>Polarized Retroreflective</p>	51mm (2in) 4.87m (16ft) with 76mm (3") Reflector	Strobing and COS	2m CPE cable	42GNU-9220	
			5-pin DC micro QD	42GNU-9220-QD	
			5-pin mini QD	42GNU-9220-QD1	
 <p>ClearSight™</p>	0mm (0in) to 1.2m (48in)	Strobing and COS	2m CPE cable	42GNC-9200	
			5-pin DC micro QD	42GNC-9200-QD	
			5-pin mini QD	42GNC-9200-QD1	
			2m CPE cable	42GNC-9210	
			5-pin DC micro QD	42GNC-9210-QD	
			5-pin mini QD	42GNC-9210-QD1	

Product Selection (continued)

Sensing Mode	Min/Max Sensing Distance	Protocol	Connection Type	Catalog Number	Typical Response Curve
 <p>Standard Diffuse</p>	50.8mm (2in) 1.52m (5ft) to White Paper	Strobing and COS	2m CPE cable	42GNP-9020	
			5-pin DC micro QD	42GNP-9020-QD	
			5-pin mini QD	42GNP-9020-QD1	
 <p>Infrared Fiber Optic</p>	Depends on fiber optic cable selected	Strobing and COS	2m CPE cable	42GNF-9020	<p>Range varies with fiber optic selected. Refer to standard Series 9000 in C114 Sensors catalog for typical response curves.</p>
			5-pin DC micro QD	42GNF-9020-QD	
			5-pin mini QD	42GNF-9020-QD1	
 <p>Visible Red Fiber Optic</p>	Depends on fiber optic cable selected	Strobing and COS	2m CPE cable	42GNF-9120	
			5-pin DC micro QD	42GNF-9120-QD	
			5-pin mini QD	42GNF-9120-QD1	
 <p>Transmitted Beam Light Source</p>	152m (500ft)	—	2m 300V cable	42GNL-9040	
			5-pin DC micro QD	42GNL-9040-QD	
			5-pin DC mini QD	42GNL-9040-QD1	
 <p>Transmitted Beam Receiver</p>	152m (500ft)	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	Description	Catalog Number	Description	Catalog Number
2m (6.5ft) mini QD Cordset	1485R-P2N5-C	RS-232 PC Interface Module	1770-KFD	Reflector, 3" Diameter	92-39
2m (6.5ft) mini QD Patchcord	1485R-P2N5-M5	RS Network Software	9357DNETL3	Reflector, 1.5" Diameter	92-47
2m (6.5ft) micro QD Cordset	1485R-P2R5-C	PCMCIA DeviceNet Interface Card	1784-PCD1	Other DeviceNet Products	See Publication DN2.5
2m (6.5ft) micro QD Patchcord, 90°	1485R-P2R5-F5	DeviceNet Hand-Held Configurator	2707-DNC		

AB Drives

871TM DeviceNet Sensors

Inductive Proximity Sensors



871TM DeviceNet Cable Style
18, 30mm
page NO TAG



871TM DeviceNet Mini
Quick-Disconnect Style
18, 30mm
page NO TAG



871TM DeviceNet Micro
Quick-Disconnect Style
18, 30mm
page NO TAG



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:

Byte 1	Bit 0	Bit 1	Bit2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Sensor Output	Diagnostics	Coil Operational	Too Close	Too Far	Always In	Motion Detect	Counter Output	
Byte 2	Bit 0	Bit 1	Bit2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Analog Output (Strobe Only)								

Product Selection

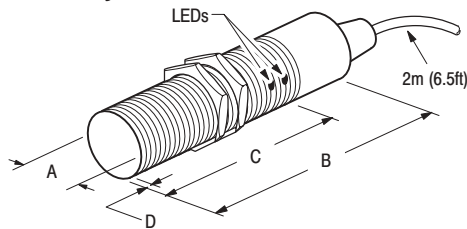
Barrel Dia.	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Catalog Number		
				Cable Style	Mini QD Style	Micro QD Style
18mm	5 (0.20)	Y	Programmable N.O./N.C.	871TM-D5ED18-S2	871TM-D5ED18-N5	871TM-D5ED18-D5
	8 (0.31)	N		871TM-D8ED18-S2	871TM-D8ED18-N5	871TM-D8ED18-D5
30mm	10 (0.39)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

Accessories

Description	Page Number
Terminal Chambers	7-20
Mounting Brackets	2-186 - 2-190
End Caps	2-195, 2-196
Mounting Nuts	2-197 - 2-198

Dimensions—mm (inches)

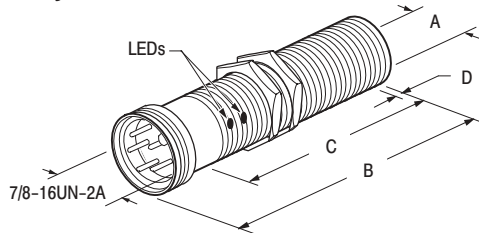
Cable Style



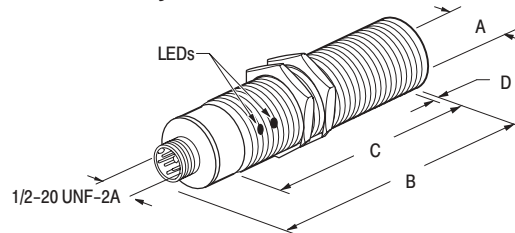
Cable Style

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			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)

AB Drives

802DN Lever Type with DeviceNet Output • Spring Return

NonPlug-In Style Oiltight Switches



NonPlug-In Style
802DN-AD5 without
Lever



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 through 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

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).

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.

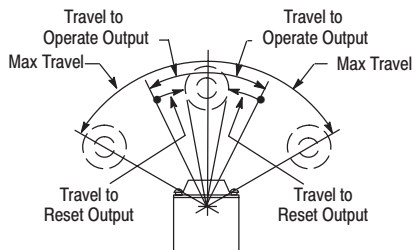
Operating Levers

See pages 6–91 through 6–96.

802DN Lever Type with DeviceNet Output • Spring Return

NonPlug-In Style Oiltight Limit Switches

Range of Operation



Switch
Without Lever

Product Selection

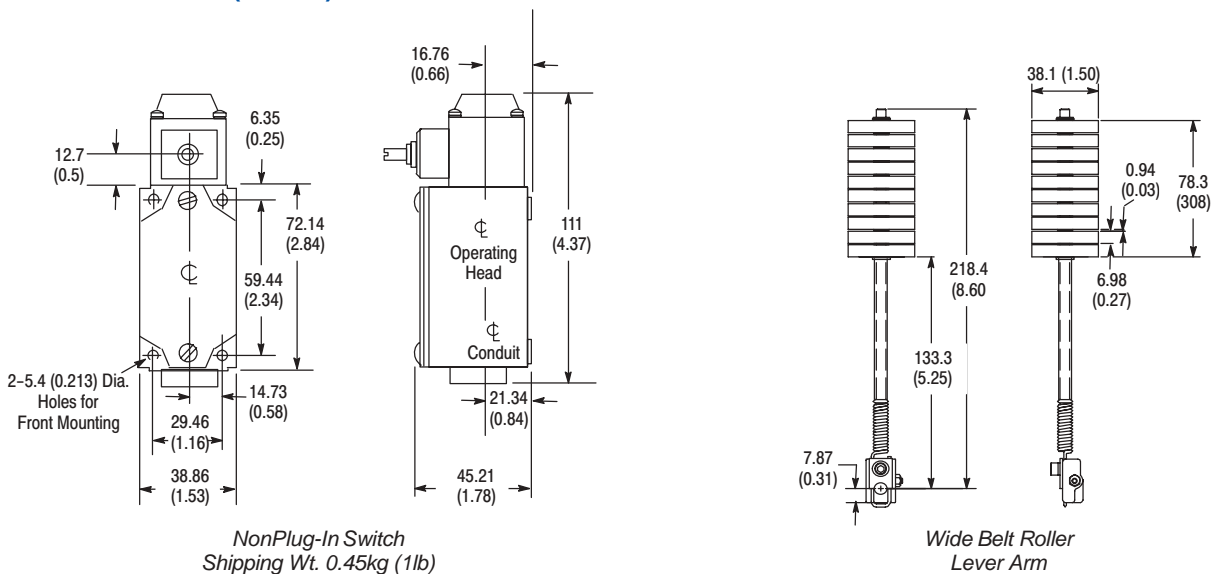
Lever Movement	Torque to Operate (Max)	Travel to Operate Output #1	Travel to Operate Output #2	Max Travel	Travel to Reset	Lever	Connection Type	Catalog Number
Clockwise or Counterclockwise	0.34N.m (3lb in)	Programmable	Programmable	54°	Programmable (5° min)	None	2m cable	802DN-AS2
							5-pin mini	802DN-AN5
							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								Byte 2							
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	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	Analog Output (Strobe Only)							

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

Dimensions—mm (inches)



AB Drives

Bulletin 842D DeviceNet Absolute Multi-Turn Magnetic Encoder



DeviceNet Encoder



Description

The Bulletin 842D offers direct connection to DeviceNet for advanced functionality with reduced wiring cost. The following is a partial feature list:

General Features

- Magnetic design withstands 100g shock and temperature extremes
- 26 bit multi-turn absolute encoder retains position data if power is lost
- Up to 8192 PPR & 8192 turns
- Connects via 5 pin micro QD
- Slotted rear cover allows address and baud rate selection
- Position Reset Button
- NEMA 4 / IP66 Housing

Programmable Features

- Current position (0 to 67,108,864)
- Counts per revolution (1 to 8192)
- Revolutions (1 to 8192)
- Eight Programmable Cams with high/low limits & hysteresis
- Position change required for COS communication
- Counting direction (cw/ccw)

Diagnostic Features

- Red & Green LEDs
- Cumulative operating time
- Min/Max acceleration & velocity
- Maximum velocity warning flag
- Current velocity (RPM, RPS or STEPS/SEC)

Specifications

Electrical	
Code Format	Natural Binary
Code Direction	CW or CCW (programmable)
Electrical Interface	DeviceNet specification release 2.0
Operating Voltage	11–25V DC (24V DC recommended)
Power Requirements	1.8W
Max # of Steps/Revolution	8192
Max # of Revolutions	8192
Position Forming Time	0.3msec
Delay on Power Up	1050msec
Preset Position	Via covered rear button or DeviceNet
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
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 125°C (-40°F to +257°F)—Storage
Humidity	98% noncondensing
Protection	NEMA Type 4, 13, IP66 (IEC 529)
Shock	100g/6msec
Vibration	20g/10–2000Hz
Approximate Weight	0.91kg (2lbs)

Accessories

Description	Page Number
Flexible Couplings	6–52
Servo Clamps	6–53
Mating Connectors	7–36 and 7–63
Mounting Plates	6–57

Indicators

LED	Status
Off	Not connected not on-line
Green Blinking	Active but not allocated by master
Green Steady	Active and allocated by master
Red Blinking	Minor fault and/or connection interrupt
Red Steady	Critical communication fault



DeviceLink



NRTL/C

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 “0” 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

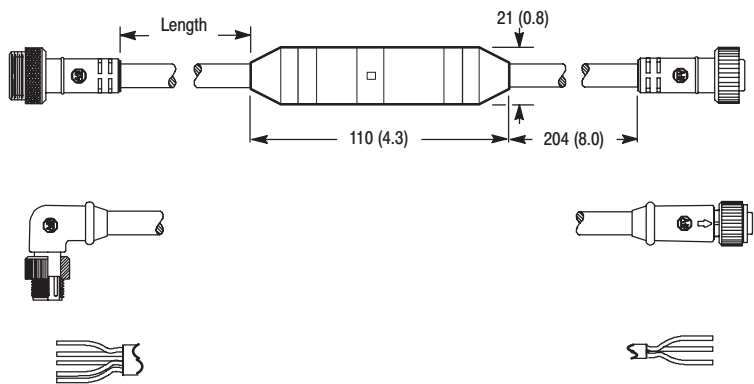
LED	Status
None	Indicates sensor not powered
Green On	Sensor active and allocated by a master
Flashing Green	Sensor active but not allocated by a master
Flashing Red	Incorrect baud rate or communication lost
Red On	Misappropriating (possible duplicate address or communication error)

Product Selection

DeviceNet Connection	Field Device Connection	Catalog Number ^① —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

① For stainless steel connectors add an "S" to the catalog number: example 1485DS-A1M5-N4

Dimensions—mm (inches)



AB Drives