R130C 8-Port 2-Channel NPN IO-Link Hub Product Manual

Original Instructions
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Chapter 1 Features



- Compact IO-Link hub that connects discrete inputs as Process Data In, and outputs a discrete value as received as Process Data Out
- Enabled Delay Modes: ON/OFF Delay, ON/OFF One-shot, ON/OFF/Retriggerable One-shot, ON/OFF Pulse-stretcher and Totalizer
- Measurement Metrics: Count, Events Per Minute (EPM), and Duration
- Discrete Mirroring: Discrete signals (In/Out) from all eight ports can be mirrored to any of the eight ports, Discrete Out, or the host white wire output
- Discrete input/output are configured as NPN only
- Rugged overmolded design meets IP65, IP66, and IP67
- Connects directly to a sensor or anywhere in-line for ease of use
- R130C IO-Link hubs are a quick, easy, and economical way to integrate non-IO-Link devices into an IO-Link system

Models

Model	Function	Type	Control	Connector
R130C-8N22-KQ	Converter	8 ports, NPN, with 2 inputs/outputs per port	IO-Link	Integral 4-pin M12 quick-disconnect connectors

Overview

The R130C-8N22-KQ hub connects two discrete Input/Output channels to each of the eight unique ports, providing access to monitoring and configuring those ports with an IO-Link master. Host mirroring is available where a selected port input/output discrete signal can be routed to Pin 2 (male) on the PLC/Host connection.

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Chapter 2 Specifications

Supply Voltage

18 V DC to 30 V DC at 400 mA maximum (exclusive of load)

Use only with a suitable Class 2 power supply (UL) or Limited Power Supply (CE)

Power Pass-Through Current

4 amps maximum total for up to 24 V DC

3.3 amps maximum total for up to 30 V DC

Discrete Output Load Rating

180 mA maximum at 60 °C

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Leakage Current Immunity

400 µA

Indicators

Green: Power

Amber: IO-Link communications

Amber: 2x Discrete In/Out statuses per 8 ports

Connections

(8) Integral 4-pin M12 female quick-disconnect connectors

(1) Integral 4-pin M12 male quick-disconnect connector

Construction

Coupling Material: Nickel-plated brass

Connector Body: PVC translucent black

Vibration and Mechanical Shock

Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 0.5 mm amplitude, 5 minutes sweep, 30 minutes dwell)

Meets IEC 60068-2-27 requirements (Shock: 15G 11 ms duration, half sine wave)

Environmental Rating

IP65, IP66, IP67

UL Type 1

Operating Conditions

Temperature: –40 °C to +60 °C (–40 °F to +140 °F)

90% at +60 °C maximum relative humidity (non-condensing)

Storage Temperature: –40 °C to +80 °C (–40 °F to +176 °F)

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

Certifications

Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

Product Identification

FCC Part 15 Class A for Unintentional Radiators

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Industry Canada ICES-003(A)

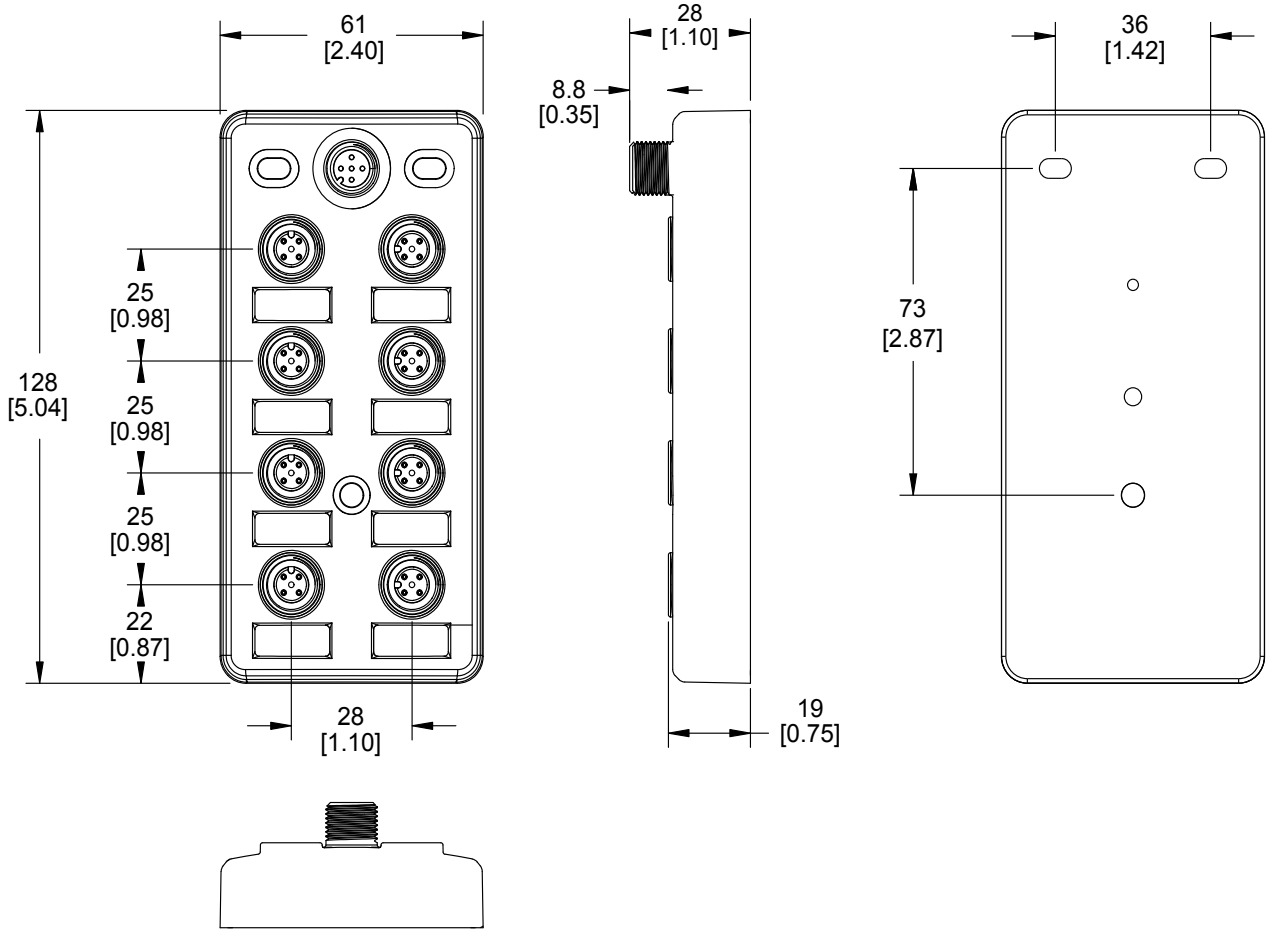
This device complies with CAN ICES-3 (A)/NMB-3(A). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(A). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

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Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.



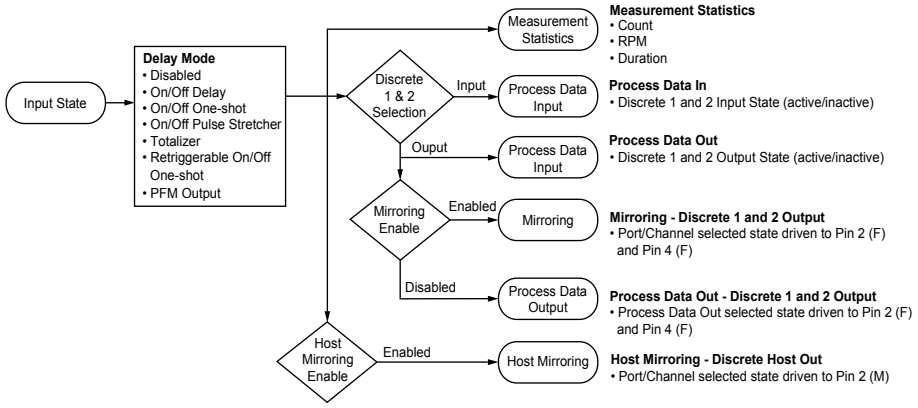
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Chapter 3 Configuration

The figure below details the logic flow for each of the eight ports, while the tables define the configuration for each pin.

For more information, see "IO-Link Overview" on page 10 and "Supporting Files" on page 33.

Logic Flow



Measurements – Female Pins

Port 1-Port 8 Pin Number: Description	IO Metric	Description
Pin 4 – Discrete 1 **Pin 2 – Discrete 2**	Count Value	Running count of the received input pulses
	Duration Value	Duration of the last input pulse in µs with 500 µs granularity
	Events per Minute Value	Running count of the number of pulses received averaged over one minute Range: 1 to 37,500
	Reset Metrics	• Do Not Reset • Reset

Pin Configuration – Female Input

Port 1-Port 8 Pin Number: Description	Name	Values
Pin 4 – Discrete 1 **Pin 2 – Discrete 2**	Discrete I/O Selection	• NPN Input • NPN Output with Pull Down
	Discrete Delay Mode	• Disabled • On/Off Delay • On One-shot • Off One-shot • On Pulse-stretcher • Off Pulse-stretcher • Totalizer • Retriggerable On One-shot • Retriggerable Off One-shot
	Discrete Delay Timer 1	Discrete On Delay, One-shot, Pulse-Stretcher Time, or Totalizer Count
	Discrete Delay Timer 2	Discrete Off Delay or Totalizer Time
	Mirroring Enable	• Disabled • Enabled

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Port 1-Port 8 Pin Number: Description	Name	Values
	Mirroring Port Selection	• Port 1 • Port 2 • Port 3 • Port 4 • Port 5 • Port 6 • Port 7 • Port 8
	Mirroring Channel Selection	• Pin 4 – Discrete 1 • Pin 2 – Discrete 2
	Mirroring Inversion	• Not Inverted • Inverted

Pin Configuration – Male Output

Pin Number: Description	Name	Values
Pin 2 – Discrete Host Out	Host Mirroring Enable	• Disabled • Enabled
	Host Mirroring Port Selection	• Port 1 • Port 2 • Port 3 • Port 4 • Port 5 • Port 6 • Port 7 • Port 8
	Host Mirroring Channel Selection	• Pin 4 – Discrete 1 • Pin 2 – Discrete 2
	Host Mirroring Inversion	• Not Inverted • Inverted
	Host Mirroring Polarity	• PNP • NPN
	Host Mirroring Output Type	• Open Collector • Push/Pull

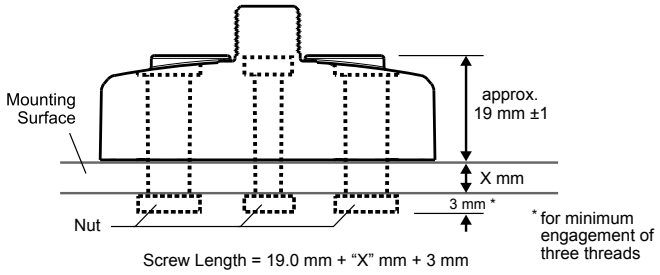
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Chapter 4 Mechanical Installation

Install the R130C to allow access for functional checks, maintenance, and service or replacement. Do not install the R130C in such a way to allow for intentional defeat.

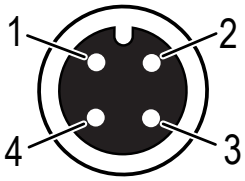
Fasteners must be of sufficient strength to guard against breakage. The use of permanent fasteners or locking hardware is recommended to prevent the loosening or displacement of the device. The mounting hole (4.5 mm) in the R130C accepts M4 (#8) hardware.

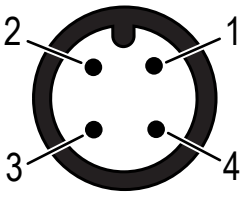
See the figure below to help in determining the minimum screw length.



CAUTION: Do not overtighten the R130C's mounting screw during installation. Overtightening can affect the performance of the R130C.

Wiring

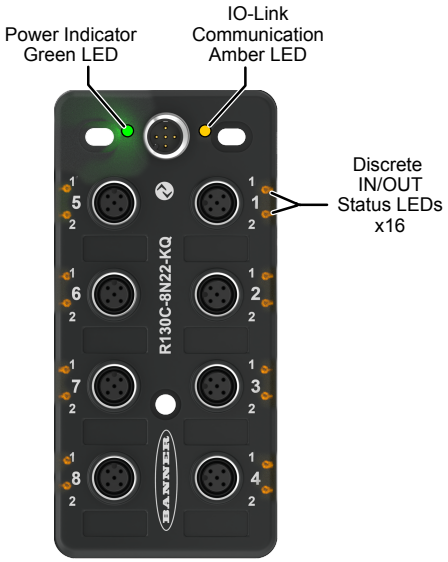
Port 1-Port 8 — Female	Pin	Signal Description
	1	18 V DC to 30 V DC
	2	Discrete 2 (IN/OUT)
	3	Ground
	4	Discrete 1 (IN/OUT)

Male	Pin	Signal Description
	1	18 V DC to 30 V DC
	2	Banner-specific
	3	Ground
	4	IO-Link

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Chapter 5 Status Indicators

The R130C 8-Port 2-Channel NPN IO-Link Hub has two matching amber LED indicators. There is also an additional amber LED specific to the IO-Link communications and a green power indication LED.



LED	Indication	Status
Discrete Device Amber LEDs	Off	Discrete In and Out are inactive
	Solid Amber	Discrete In or Out is active
IO-Link Communication Amber LED	Off	IO-Link communications are not present
	Flashing Amber (900 ms On, 100 ms Off)	IO-Link communications are active
Power Indicator Green LED	Off	Power off
	Solid Green	Power on

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Chapter 6 IO-Link Overview

IO-Link®[1] is an open standard serial communication protocol that allows for the bi-directional exchange of data from IO-Link-supported devices, such as sensors, that are connected through IO-Link. For the latest IO-Link protocol and specifications, please visit http://www.io-link.com.

Advantages to an IO-Link system include standardized wiring, remote configuration, simple device replacement, advanced diagnostics, and increased data availability. Because IO-Link is an open standard, the devices can be integrated in almost any fieldbus or automation system.

An IO-Link system consists of an IO-Link master and an IO-Link device such as a sensor, lighting product, IO-Link hub, or actuator.

The functions and parameters of the IO-Link devices are represented in a device description file (IODD). IODD files contain information about identification, device parameters, process and diagnostic data, communication properties, and other details. The IODD files for Banner IO-link devices can be downloaded for free on www.bannerengineering.com. For a list of supporting files, please refer to "Supporting Files" on page 33.

IO-Link Data Map

This document refers to the following IODD file: Banner_Engineering-R130C-8N22-KQ-20260805-IODD1.1.xml.

The IODD file and support files can be found on www.bannerengineering.com under the download section of the product family page.

Communication Parameters

The following communication parameters are used.

Parameter	Value
IO-Link revision	V1.1
Process Data In length	16-bits
Process Data Out length	16-bits
Bit Rate	38400 bps
Minimum cycle time	3.3 ms
Device ID	659488 (0x0a1020)
Port class	A
SIO mode	Yes
Smart Sensor Profile	No
Block parameterization	Yes
Data Storage	Yes

IO-Link Process Data In (Device to Master)

.Process Data Grouping = 0 (Default)

Subindex	Name	Number of Bits	Data Values
1	Port 1 Discrete1 Input State	1	False = Inactive, True = Active
2	Port 1 Discrete2 Input State	1	False = Inactive, True = Active
3	Port 2 Discrete1 Input State	1	False = Inactive, True = Active

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[1] IO-Link® is a registered trademark of PROFIBUS Nutzerorganisation e.V.

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Subindex	Name	Number of Bits	Data Values
4	Port 2 Discrete2 Input State	1	False = Inactive, True = Active
5	Port 3 Discrete1 Input State	1	False = Inactive, True = Active
6	Port 3 Discrete2 Input State	1	False = Inactive, True = Active
7	Port 4 Discrete1 Input State	1	False = Inactive, True = Active
8	Port 4 Discrete2 Input State	1	False = Inactive, True = Active
9	Port 5 Discrete1 Input State	1	False = Inactive, True = Active
10	Port 5 Discrete2 Input State	1	False = Inactive, True = Active
11	Port 6 Discrete1 Input State	1	False = Inactive, True = Active
12	Port 6 Discrete2 Input State	1	False = Inactive, True = Active
13	Port 7 Discrete1 Input State	1	False = Inactive, True = Active
14	Port 7 Discrete2 Input State	1	False = Inactive, True = Active
15	Port 8 Discrete1 Input State	1	False = Inactive, True = Active
16	Port 8 Discrete2 Input State	1	False = Inactive, True = Active

Octet 0								
Subindex	8	7	6	5	4	3	2	1
Bit offset	15	14	13	12	11	10	9	8
Value	1	1	1	1	1	1	0	1

Octet 1								
Subindex	16	15	14	13	12	11	10	9
Bit offset	7	6	5	4	3	2	1	0
Value	1	1	1	0	1	1	1	0

Example Based Upon the Value Above:

Subindex	Description	Value
1	Port 1 Discrete1 Input State	Active
2	Port 1 Discrete2 Input State	Inactive
3	Port 2 Discrete1 Input State	Active
4	Port 2 Discrete2 Input State	Active
5	Port 3 Discrete1 Input State	Active
6	Port 3 Discrete2 Input State	Active
7	Port 4 Discrete1 Input State	Active
8	Port 4 Discrete2 Input State	Active
9	Port 5 Discrete1 Input State	Inactive
10	Port 5 Discrete2 Input State	Active
11	Port 6 Discrete1 Input State	Active
12	Port 6 Discrete2 Input State	Active
13	Port 7 Discrete1 Input State	Inactive
14	Port 7 Discrete2 Input State	Active
15	Port 8 Discrete1 Input State	Active
16	Port 8 Discrete2 Input State	Active

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.Process Data Grouping = 1

Subindex	Name	Number of Bits	Data Values
1	Port 1 Discrete1 Input State	1	False = Inactive, True = Active
2	Port 2 Discrete1 Input State	1	False = Inactive, True = Active
3	Port 3 Discrete1 Input State	1	False = Inactive, True = Active
4	Port 4 Discrete1 Input State	1	False = Inactive, True = Active
5	Port 5 Discrete1 Input State	1	False = Inactive, True = Active
6	Port 6 Discrete1 Input State	1	False = Inactive, True = Active
7	Port 7 Discrete1 Input State	1	False = Inactive, True = Active
8	Port 8 Discrete1 Input State	1	False = Inactive, True = Active
9	Port 1 Discrete2 Input State	1	False = Inactive, True = Active
10	Port 2 Discrete2 Input State	1	False = Inactive, True = Active
11	Port 3 Discrete2 Input State	1	False = Inactive, True = Active
12	Port 4 Discrete2 Input State	1	False = Inactive, True = Active
13	Port 5 Discrete2 Input State	1	False = Inactive, True = Active
14	Port 6 Discrete2 Input State	1	False = Inactive, True = Active
15	Port 7 Discrete2 Input State	1	False = Inactive, True = Active
16	Port 8 Discrete2 Input State	1	False = Inactive, True = Active

Octet 0								
Subindex	8	7	6	5	4	3	2	1
Bit offset	15	14	13	12	11	10	9	8
Value	1	1	1	1	1	1	0	1

Octet 1								
Subindex	16	15	14	13	12	11	10	9
Bit offset	7	6	5	4	3	2	1	0
Value	1	1	1	0	1	1	1	0

Example Based Upon the Value Above:

Subindex	Description	Value
1	Port 1 Discrete1 Input State	Active
2	Port 2 Discrete1 Input State	Inactive
3	Port 3 Discrete1 Input State	Active
4	Port 4 Discrete1 Input State	Active
5	Port 5 Discrete1 Input State	Active
6	Port 6 Discrete1 Input State	Active
7	Port 7 Discrete1 Input State	Active
8	Port 8 Discrete1 Input State	Active
9	Port 1 Discrete2 Input State	Inactive
10	Port 2 Discrete2 Input State	Active
11	Port 3 Discrete2 Input State	Active
12	Port 4 Discrete2 Input State	Active

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Subindex	Description	Value
13	Port 5 Discrete2 Input State	Inactive
14	Port 6 Discrete2 Input State	Active
15	Port 7 Discrete2 Input State	Active
16	Port 8 Discrete2 Input State	Active

IO-Link Process Data Out (Master to Device)

.Process Data Grouping = 0 (Default)

Subindex	Name	Number of Bits	Data Values
1	Port 1 Discrete1 Ouput State	1	False = Off/Inactive, True = On/ Active
2	Port 1 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
3	Port 2 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
4	Port 2 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
5	Port 3 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
6	Port 3 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
7	Port 4 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
8	Port 4 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
1	Port 5 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
2	Port 5 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
3	Port 6 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
4	Port 6 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
5	Port 7 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
6	Port 7 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
7	Port 8 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
8	Port 8 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active

Octet 0								
Subindex	8	7	6	5	4	3	2	1
Bit offset	15	14	13	12	11	10	9	8

Octet 1								
Subindex	16	15	14	13	12	11	10	9
Bit offset	7	6	5	4	3	2	1	0

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.Process Data Grouping = 1

Subindex	Name	Number of Bits	Data Values
1	Port 1 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
2	Port 2 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
3	Port 3 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
4	Port 4 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
5	Port 5 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
6	Port 6 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
7	Port 7 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
8	Port 8 Discrete1 Output State	1	False = Off/Inactive, True = On/ Active
1	Port 1 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
2	Port 2 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
3	Port 3 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
4	Port 4 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
5	Port 5 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
6	Port 6 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
7	Port 7 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active
8	Port 8 Discrete2 Output State	1	False = Off/Inactive, True = On/ Active

Octet 0								
Subindex	8	7	6	5	4	3	2	1
Bit offset	15	14	13	12	11	10	9	8

Octet 1								
Subindex	16	15	14	13	12	11	10	9
Bit offset	7	6	5	4	3	2	1	0

Parameters Set Using IO-Link

These parameters can be read from and/or written to the R130C 8-Port 2-Channel NPN IO-Link Hub. Also included is information about whether the variable in question is saved during Data Storage and whether the variable came from the IO-Link Smart Sensor Profile.

Unlike Process Data In, which is transmitted from the IO-Link device to the IO-Link master cyclically, these parameters are read or written acyclically as needed.

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
0	1-16	Direct Parameter Page 1 (incl. Vendor ID & Device ID)				RO	
1	1-16	Direct Parameters Page 2				RW	
2		System Command		126 = Locator Start 127 = Locator Stop 129 = Application Reset 131 = Back-to-box 164 = Reset All Metrics		WO	
3		Data Storage Index (device-specific list of parameters to be stored)				RW	
4-11		*reserved by IO-Link Specification*					
12		**Device Access Locks**					
12	1	Parameter Write Access Lock		0 = Off, 1 = On	0	RW	Y
12	2	Data Storage Lock		0 = Off, 1 = On	0	RW	Y
12	3	Local Parameterization Lock		0 = Off, 1 = On	0	RW	Y
12	4	Local User Interface Lock		0 = Off, 1 = On	0	RW	Y
16		Vendor Name string		Banner Engineering Corporation		RO	
17		Vendor Text string		More Sensors. More Solutions.		RO	
18		Product Name string		R130C		RO	
19		Product ID string		R130C-8N22-KQ		RO	
20		Product Text string				RO	
21		Serial Number				RO	
23		Firmware Version				RO	
24		App Specific Tag (user defined)				RW	Y
36		Device Status	8-bit integer	0 = Device is OK 1 = Maintenance required 2 = Out of specification 3 = Functional check 4 = Failure 5..255 Reserved		RO	
37		Detailed Device Status	Array[6] of 3-octet			RO	
38-39		*reserved*					
40		Process Data Input		*see Process Data In*		RO	
41		Process Data Output		*see Process Data Out*		RO	
42-57		*unused/reserved*					
69		**All-Time Run Time**					
69	1	Run counter	32-bit Uinteger	0..2147483647		RO	Y
70		**Resettable Run Time**					
70	1	Run counter	32-bit Uinteger	0..2147483647	0	RW	
76		**Vendor Specific Configuration**					

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
76	1	Process Data Grouping	8-bit Uinteger	0 = Group by Port, 1 = Group by Channel	0	RW	Y
78		**All-Time Run Time Event Time**					
78	1	Event Time	32-bit Uinteger	0..2147483647	0	RW	Y
79		**Resettable Run Time Event Time**					
79	1	Event Time	32-bit Uinteger	0..2147483647	0	RW	Y
80		**IO Metrics Ports 1 to 4**					
80	1	Port 1 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
80	2	Port 1 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	3	Port 1 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
80	4	Port 1 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	5	Port 1 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
80	6	Port 1 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	7	Port 1 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
80	8	Port 1 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	9	Port 2 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
80	10	Port 2 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	11	Port 2 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
80	12	Port 2 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	13	Port 2 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
80	14	Port 2 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	15	Port 2 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
80	16	Port 2 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	17	Port 3 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
80	18	Port 3 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	19	Port 3 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
80	20	Port 3 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	21	Port 3 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
80	22	Port 3 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	

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80	23	Port 3 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
80	24	Port 3 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	25	Port 4 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
80	26	Port 4 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	27	Port 4 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
80	28	Port 4 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
80	29	Port 4 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
80	30	Port 4 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
80	31	Port 4 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
80	32	Port 4 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81		**IO Metrics Ports 5 to 8**					
81	1	Port 5 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
81	2	Port 5 Discrete1 Duration -	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	3	Port 5 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
81	4	Port 5 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81	5	Port 5 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
81	6	Port 5 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	7	Port 5 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
81	8	Port 5 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81	9	Port 6 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
81	10	Port 6 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	11	Port 6 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
81	12	Port 6 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81	13	Port 6 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
81	14	Port 6 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	15	Port 6 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
81	16	Port 6 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	

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81	17	Port 7 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
81	18	Port 7 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	19	Port 7 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
81	20	Port 7 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81	21	Port 7 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
81	22	Port 7 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	23	Port 7 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
81	24	Port 7 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81	25	Port 8 Discrete1 Count	32-bit Uinteger	0..2147483647		RO	
81	26	Port 8 Discrete1 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	27	Port 8 Discrete1 Events per Minute	32-bit Uinteger	1..37500		RO	
81	28	Port 8 Discrete1 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
81	29	Port 8 Discrete2 Count	32-bit Uinteger	0..2147483647		RO	
81	30	Port 8 Discrete2 Duration	32-bit Uinteger	0..2147483647, 50 µS resolution		RO	
81	31	Port 8 Discrete2 Events per Minute	32-bit Uinteger	1..37500		RO	
81	32	Port 8 Discrete2 Totalizer Counter	32-bit Uinteger	0..2147483647		RO	
82		**Selectable Metric Reset**					
82	1	Port 1 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	2	Port 1 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	3	Port 2 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	4	Port 2 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	5	Port 3 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	6	Port 3 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	7	Port 4 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	8	Port 4 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	9	Port 5 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	10	Port 5 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	11	Port 6 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	12	Port 6 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	13	Port 7 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	14	Port 7 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	15	Port 8 Discrete1	Boolean	False = Do Not Reset, True = Reset	False	RW	
82	16	Port 8 Discrete2	Boolean	False = Do Not Reset, True = Reset	False	RW	

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82	17	Port 1 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	18	Port 1 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	19	Port 2 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	20	Port 2 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	21	Port 3 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	22	Port 3 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	23	Port 4 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	24	Port 4 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	25	Port 5 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	26	Port 5 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	27	Port 6 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	28	Port 6 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	29	Port 7 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	30	Port 7 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	31	Port 8 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
82	32	Port 8 Discrete1 Reset Count	32-bit Uinteger	0..2147483647	0	RW	
87		**Port 1 Configuration**					
87	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
87	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
87	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
87	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
87	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
87	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
87	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
87	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
87	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
87	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
87	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
87	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
87	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
87	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
87	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
87	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
88		**Port 2 Configuration**					
88	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
88	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
88	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
88	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
88	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
88	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
88	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
88	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
88	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
88	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
88	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
88	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
88	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
88	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
88	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
88	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
89		**Port 3 Configuration**					
89	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
89	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
89	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
89	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
89	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
89	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
89	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
89	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
89	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
89	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
89	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
89	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
89	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
89	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
89	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
89	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
90		**Port 4 Configuration**					
90	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
90	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
90	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
90	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
90	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y

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90	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
90	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
90	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
90	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
90	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
90	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
90	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
90	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
90	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
90	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
90	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
91		**Port 5 Configuration**					
91	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y

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91	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
91	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
91	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
91	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
91	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
91	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
91	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
91	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
91	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
91	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
91	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
91	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y

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91	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
91	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
91	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
92		**Port 6 Configuration**					
92	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
92	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
92	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
92	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
92	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
92	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
92	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
92	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
92	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y

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92	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
92	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
92	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
92	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
92	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
92	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
92	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
93		**Port 7 Configuration**					
93	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
93	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
93	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
93	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
93	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
93	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
93	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
93	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
93	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
93	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
93	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
93	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
93	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
93	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
93	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
93	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
94		**Port 8 Configuration**					
94	1	Discrete1 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
94	2	Discrete1 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
94	3	Discrete1 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete1 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
94	4	Discrete1 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete1 Off Delay or Totalizer time)ms	0	RW	Y
94	5	Discrete1 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
94	6	Discrete1 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
94	7	Discrete1 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
94	8	Discrete1 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
94	9	Discrete2 IO Selection	8-bit Uinteger	0 = NPN Input, 2 = NPN Output with Pull Up	0	RW	Y
94	10	Discrete2 Delay Mode	8-bit Uinteger	0 = Disabled 1 = On Off Delay 2 = On One-shot 3 = Off One-shot 4 = On Pulse-stretcher 5 = Off Pulse-stretcher 6 = Totalizer 7 = Retriggerable On One-shot 8 = Retriggerable Off One-Shot	0	RW	Y
94	11	Discrete2 Delay Timer 1	32-bit Uinteger	0..2147483647 [Discrete2 On Delay, One-shot, Pulse-stretcher time(ms) or Totalizer Count]	0	RW	Y
94	12	Discrete2 Delay Timer 2	32-bit Uinteger	0..2147483647 (Discrete2 Off Delay or Totalizer time)ms	0	RW	Y
94	13	Discrete2 Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y

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Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?
94	14	Discrete2 Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
94	15	Discrete2 Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
94	16	Discrete2 Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
95		**Discrete Host Mirroring Configuration**					
95	1	Mirroring Enable	8-bit Uinteger	0 = Disabled, 1 = Enabled	0	RW	Y
95	2	Mirroring Port Selection	8-bit Uinteger	0 = Port 1 1 = Port 2 2 = Port 3 3 = Port 4 4 = Port 5 5 = Port 6 6 = Port 7 7 = Port 8	0	RW	Y
95	3	Mirroring Channel Selection	8-bit Uinteger	0 = Discrete1, 1 = Discrete2	0	RW	Y
95	4	Mirroring Inversion	8-bit Uinteger	0 = Not Inverted, 1 = Inverted	0	RW	Y
95	5	Mirroring Polarity	8-bit Uinteger	0 = NPN Output, 1 = PNP Output	1	RW	Y
95	6	Mirroring Output Type	8-bit Uinteger	0 = Output with Internal Pull Up/Down, 1 = Output Open Collector	0	RW	Y

IO-Link Events

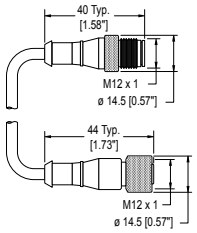
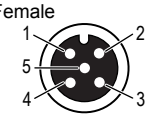
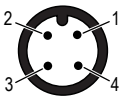
Events are acyclic transmissions from the IO-Link device to the IO-Link master. Events can be error messages and/or warning or maintenance data.

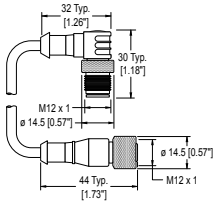
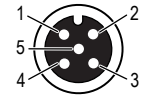
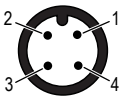
Code	Type	Name	Description
25376 (0x6320)	Error	Parameter error	Check data sheet and values
36000 (0x8CA0)	Warning	All-time Run Time Event	Event indicating the corresponding configured running time has elapsed.
36001 (0x8CA1)	Warning	Resettable Run Time Event	Event indicating the corresponding configured running time has elapsed.

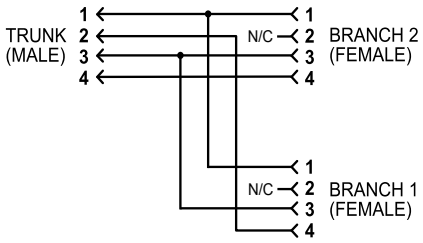
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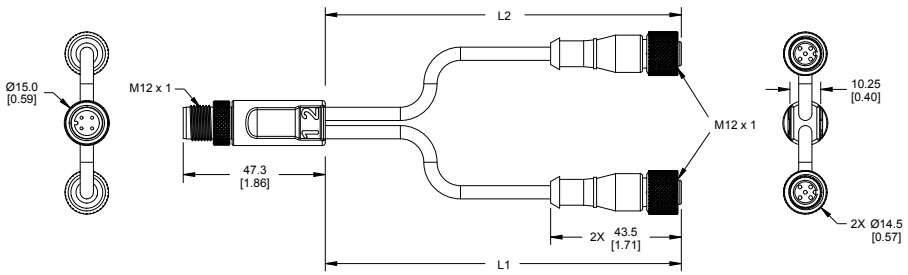
Chapter 7 Accessories

Cordsets

4-Pin A-Code Double-Ended M12 Female to M12 Male Cordsets (datasheet p/n 236186)				
Model	**Length**	**Dimensions (mm)**	**Pinouts**	
BC-M12F4-M12M4-22-1	1 m (3.28 ft)		Female  Male 	1 = Brown 2 = White 3 = Blue 4 = Black 5 = Unused c UL us LISTED
BC-M12F4-M12M4-22-2	2 m (6.56 ft)			
BC-M12F4-M12M4-22-3	3 m (9.84 ft)			
BC-M12F4-M12M4-22-4	4 m (13.12 ft)			
BC-M12F4-M12M4-22-5	5 m (16.4 ft)			
BC-M12F4-M12M4-22-10	10 m (30.81 ft)			
BC-M12F4-M12M4-22-15	15 m (49.2 ft)			

4-Pin A-Code Double-Ended M12 Female to M12 Male Right-Angle Cordsets (datasheet p/n 236186)				
Model	**Length**	**Dimensions (mm)**	**Pinouts**	
BC-M12F4-M12M4A-22-1	1 m (3.28 ft)		Female  Male 	1 = Brown 2 = White 3 = Blue 4 = Black 5 = Unused c UL us LISTED
BC-M12F4-M12M4A-22-2	2 m (6.56 ft)			
BC-M12F4-M12M4A-22-5	5 m (16.4 ft)			
BC-M12F4-M12M4A-22-8	8 m (26.25 ft)			
BC-M12F4-M12M4A-22-10	10 m (30.81 ft)			
BC-M12F4-M12M4A-22-15	15 m (49.2 ft)			

4-Pin M12 Male to 5-Pin M12 Female Splitter Cordset (datasheet p/n 234098)		
Model	**Branches (Female)**	**Wiring**
S15YA4-M124-M124-0.2M	**L1, L2** 2 × 0.2 m (7.9 in)	

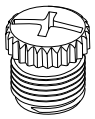


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Quick-Disconnect Caps

ACC-CAP M12-10

- 10 caps
- Polybutylene Terephthalate
- Seal and protect exposed, unterminated M12 quick-disconnect connectors



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Chapter 8 Product Support and Maintenance

Supporting Files

The following files are available at www.bannerengineering.com.

Part Number	Document Name
260285	R130C-8N22-KQ IODD File

Clean with Mild Detergent and Warm Water

Wipe down the device with a soft cloth dampened with a mild detergent and warm water solution. Do not use any other chemicals for cleaning.

Repairs and Translations (No Field-Replaceable Parts)

English

Contact Banner Engineering for troubleshooting of this device. **Do not attempt any repairs to this Banner device; it contains no field-replaceable parts or components.** If the device, device part, or device component is determined to be defective by a Banner Applications Engineer, they will advise you of Banner's RMA (Return Merchandise Authorization) procedure.

```
IMPORTANT: If instructed to return the device, pack it with care. Damage that occurs in return
shipping is not covered by warranty.
```

Obtain assistance with product repairs by contacting your local Banner Engineering Corp distributor or by calling Banner directly at (763) 544-3164. Access literature translated into your native language on the Banner website at www.bannerengineering.com or contact Banner directly at (763) 544-3164.

Deutsch

Wenden Sie sich zur Fehlerbehebung dieses Geräts an Banner Engineering. **Versuchen Sie nicht, Reparaturen an diesem Banner-Gerät vorzunehmen. Das Gerät enthält keine am Einsatzort auszuwechselnden Teile oder Komponenten.** Wenn ein Banner-Anwendungstechniker zu dem Schluss kommt, dass dieses Gerät, ein Teil oder eine Komponente davon defekt ist, erhalten Sie von dem Techniker Erläuterungen zu Banners RMA-Verfahren (Return Merchandise Authorization) für die Warenrückgabe.

```
WICHTIG: Wenn Sie der Techniker anweist, das Gerät zurückzusenden, verpacken Sie es bitte
sorgfältig. Transportschäden bei der Rücksendung werden von der Garantie nicht abgedeckt.
```

Unterstützung bei Produktreparaturen erhalten Sie von Ihrem örtlichen Banner Engineering Corp Händler oder direkt von Banner unter Tel. (763) 544-3164. Die in Ihre Muttersprache übersetzte Literatur finden Sie auf der Banner-Website unter www.bannerengineering.com oder kontaktieren Sie Banner direkt unter Tel. (763) 544-3164.

Français

Pour plus d'informations sur le dépannage du produit, contactez Banner Engineering. **Ne tentez pas de réparer ce dispositif Banner. Il ne contient aucun composant ou pièce qui puisse être remplacé sur place.** Si un ingénieur de Banner conclut que le dispositif ou l'une de ses pièces ou composants est défectueux, il vous informera de la procédure à suivre pour le retour des produits (RMA).

```
Important : Si vous devez retourner le dispositif, emballez-le avec soin. Les dégâts
occasionnés pendant le transport de retour ne sont pas couverts par la garantie.
```

Pour vous aider lors de la réparation de produits, contactez votre distributeur Banner local our appelez directement Banner au (763) 544-3164. La documentation traduite dans votre langue est disponible sur le site internet de Banner www.bannerengineering.com ou contactez directement Banner au (763) 544-3164.

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Italiano

Per le procedure di individuazione e riparazione dei guasti di questo dispositivo, contattare Banner Engineering. **Non tentare di riparare questo dispositivo Banner, in quanto non contiene parti o componenti sostituibili dall'utente.** Se il dispositivo, una parte del dispositivo o un componente del dispositivo viene riscontrato difettoso da un tecnico Banner, il nostro personale vi comunicherà la procedura da seguire per ottenere l'autorizzazione al reso.

Importante: Se si ricevono istruzioni di rispedire il dispositivo al produttore, imballarlo con cura. I danni dovuti al trasporto non sono coperti dalla garanzia.

Per assistenza nelle riparazioni dei prodotti, contattare il distributore locale Banner Engineering Corp o contattare direttamente Banner al numero (763) 544-3164. È possibile accedere alla documentazione tradotta nella propria lingua madre sul sito Web Banner all'indirizzo www.bannerengineering.com o contattare direttamente Banner al numero (763) 544-3164.

Español

Comuníquese con Banner Engineering para solucionar de problemas de este dispositivo. **No intente ninguna reparación a este dispositivo de Banner, contiene piezas o componente que no se pueden cambiar en terreno.** Si algún ingeniero de aplicaciones de Banner determina que el dispositivo, alguna de las piezas o alguno de los componentes del dispositivo está defectuoso, le informará el procedimiento de autorización de devolución de mercancía (RMA, por sus siglas en inglés) de Banner.

Importante: Si se le solicita devolver el dispositivo, empáquelo con cuidado. Puede haber daños durante el envío de devolución que no estén cubiertos por la garantía.

Para reparaciones de productos, por favor contacte a su distribuidor local de Banner Engineering o llame a Banner directamente al 00 1 (763) 544-3164. Vea la literatura traducida en su idioma en el sitio web Banner en www.bannerengineering.com o comuníquese con Banner directamente al 00 1 (763) 544-3164.

中国人

如需对本装置进行故障排查，请联系邦纳。**请勿尝试自行维修该邦纳装置；本装置不包含任何可在现场更换的部件或组件。** 若经邦纳应用工程师确认设备、设备部件或组件存在缺陷，他们将告知您邦纳退货授权 (RMA) 流程。

重要注意事项： 如被要求退回装置，请妥善包装后寄回。退货运输过程中发生的损坏不在保修范围内。

请联系当地的 Banner Engineering Corp 经销商或直接致电 Banner +1 (763) 544-3164，以获得产品维修帮助。请访问邦纳网站 www.bannerengineering.com 或直接拨打 +1 (763) 544-3164 联系邦纳，获取翻译成您母语的资料。

한국인

이 장치의 문제를 해결하려면 Banner Engineering에 문의하십시오. **이 Banner 장치에는 현장에서 교체할 수 있는 부품 또는 구성품이 없으므로 수리를 시도하지 마십시오.** Banner 애플리케이션 엔지니어가 장치, 장치 부품 또는 장치 구성품에 결함이 있는 것으로 판정하면, Banner의 RMA(제품 반송 승인)절차에 대해 안내해 드립니다.

중요: 제품을 반송하도록 안내 받으셨다면 잘 포장해주십시오. 반송 도중에 발생한 손상은 보증 서비스가 적용되지 않습니다.

제품 수리에 대한 지원은 지역 Banner Engineering Corp 대리점에 문의하거나 Banner에 직접 (763) 544-3164로 문의하실 수 있습니다. 사용자의 모국어로 번역된 자료는 Banner 웹사이트 www.bannerengineering.com에서 액세스하거나 Banner에 직접 (763) 544-3164로 문의하실 수 있습니다.

日本語

この装置のトラブルシューティングについては、バナーエンジニアリングにお問い合わせください。**このバナー装置には、現場では交換できない部品またはコンポーネントが含まれているため、修理を試みてはいけません。** バナーのアプリケーションエンジニアが装置、装置の部品、または装置のコンポーネントに欠陥があると判断した場合、バナーのRMA（返品承認）手続きについてお知らせします。

重要 ： 返品を指示された場合は、装置を丁寧に梱包してください。返品時に発生した破損は保証の対象外となります。

製品の修理については、最寄りのBanner Engineering Corp代理店にお問い合わせいただくか、米国+1 (763) 544-3164まで直接お電話でお問い合わせください。バナーのウェブサイト（www.bannerengineering.com）でお客様の言語に翻訳された資料にアクセスするか、米国+1 (763) 544-3164まで直接お電話でお問い合わせください。

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čeština

Pro řešení problémů se zařízením kontaktujte společnost Banner Engineering. **Neprovádějte žádné opravy zařízení Banner. Neobsahují žádné komponenty nebo části, které by byly vyměnitelné.** Pokud je zařízení, jeho část nebo díl označen technikem společnosti Banner jako poškozený, bude Vám doporučeno vyplnit reklamační RMA protokol.

```
Důležité: Pokud byl vydán požadavek na vrácení zařízení, pečlivě ho zabalte. Poškození vzniklé
při dopravě není považováno za záruční opravu.
```

Pokud produkt potřebuje opravu, vyžádejte si pomoc od místního distributora společnosti Banner Engineering Corp nebo přímo na telefonním čísle (763) 544-3164. Dokumentaci přeloženou do vašeho jazyka si vyhledejte na webových stránkách společnosti Banner na adrese www.bannerengineering.com nebo se obraťte přímo na společnost Banner na telefonním čísle (763) 544-3164.

Polski

W celu rozwiązania problemów z urządzeniem należy skontaktować się z działem technicznym firmy Banner Engineering. **Pod żadnym pozorem nie próbuj naprawiać tego urządzenia firmy Banner; nie zawiera ono części ani elementów, które można wymieniać samodzielnie.** Jeśli urządzenie, jego część lub element zostaną uznane za wadliwe przez inżyniera technicznego Banner, poinformuje on użytkownika o firmowej procedurze zwrotu towaru (RMA) firmy Banner.

```
Ważne: Jeśli urządzenie ma zostać zwrócone, należy je starannie zapakować. Uszkodzenia powstałe
podczas odsyłki nie są objęte gwarancją.
```

Aby uzyskać pomoc w zakresie naprawy produktu, należy skontaktować się z lokalnym dystrybutorem Banner Engineering Corp lub zadzwonić bezpośrednio do firmy Banner pod numer (763) 544-3164. Dostęp do literatury przetłumaczonej na swój język ojczysty można uzyskać na stronie internetowej firmy Banner pod adresem www.bannerengineering.com lub kontaktując się bezpośrednio z firmą Banner pod numerem (763) 544-3164.

Português

Entre em contato com a Engenharia da Banner para a solução de problemas deste dispositivo. **Não tente fazer nenhum reparo neste dispositivo Banner; ele não contém peças ou componentes substituíveis em campo.** Se um técnico de aplicações da Banner determinar que o dispositivo, peça ou componente do dispositivo está com defeito, ele o informará sobre o procedimento de RMA (Autorização de Devolução de Mercadoria) da Banner.

```
Importante: Se for instruído a devolver o dispositivo, embale-o com cuidado. Os danos ocorridos
no transporte de devolução não são cobertos pela garantia.
```

Obtenha assistência para reparos do produto entrando em contato com o distribuidor local da Banner Engineering Corp ou ligando diretamente para a Banner no telefone (763) 544-3164. Acesse a literatura traduzida para seu idioma nativo no site da Banner em www.bannerengineering.com ou entre em contato diretamente com a Banner pelo telefone (763) 544-3164.

Türkçe

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