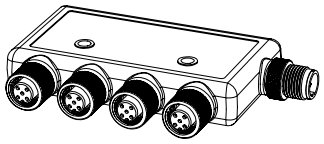
R90C 4-Port Discrete Bimodal to IO-Link Hub

Quick Start Guide

This guide is designed to help you set up and install the R90C 4-Port Discrete Bimodal to IO-Link Hub. For complete information on programming, performance, troubleshooting, dimensions, and accessories, please refer to the Instruction Manual at www.bannerengineering.com. Search for p/n 221279 to view the Instruction Manual. Use of this document assumes familiarity with pertinent industry standards and practices.



- Compact bimodal to IO-Link device converter that connects discrete inputs and sends the value to the IO-Link Master
- Enabled Delay Modes: ON/OFF Delay, 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 four ports can be mirrored to any of the four ports, Discrete Out, or the host white wire output
- Outputs a discrete value as received from IO-Link Master Process Data Out
- Discrete input/output can be independently configured as NPN or PNP
- Rugged over-molded design meets IP65, IP67, and IP68
- Connects directly to a sensor or anywhere in-line for ease of use
- R90C IO-Link hubs are a quick, easy, and economical way to integrate non-IO-Link devices into an IO-Link system

Overview

The R90C-4B21-KQ hub connects two discrete channels to each of the four 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.

IO-Link®

IO-Link® is a point-to-point communication link between a master device and a sensor and/or light. It can be used to automatically parameterize sensors or lights and to transmit process data. For the latest IO-Link protocol and specifications, please visit www.io-link.com.

For the latest IODD files, please refer to the Banner Engineering Corp website at: www.bannerengineering.com.

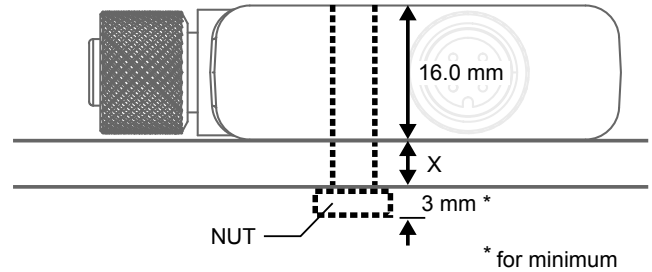
Resources

For more information, see P/N 221282 *R90C-4B21-KQ IO-Link Data Reference Guide* and P/N 221283 *R90C-4B21-KQ IODD Files*.

Mechanical Installation

Install the R90C 4-Port Hub to allow access for functional checks, maintenance, and service or replacement.

All mounting hardware is supplied by the user. Fasteners must be of sufficient strength to guard against breakage. 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 R90C 4-Port Hub accepts M4 (#8) hardware. See the figure below to help in determining the minimum screw length.



Screw Length = 16.0 mm + “X” mm + 3 mm

CAUTION: Do not overtighten the R90C 4-Port Hub's mounting screw during installation. Overtightening can affect the performance of the R90C 4-Port Hub.

Status Indicators

The R90C 4-Port Discrete Bimodal to IO-Link Hub has matching amber LED indicators on both sides for each discrete device port to allow for installation needs and still provide adequate indication visibility. There is also an additional amber LED indicator on both sides of the converter, which is specific to the IO-Link communication.

Discrete Device Amber LEDs	
Indication	**Status**
Off	Discrete OUT is inactive
Solid Amber	Discrete OUT is active

IO-Link Communication Amber LED	
Indication	**Status**
Off	IO-Link communications are not present
Flashing Amber (900 ms On, 100 ms Off)	IO-Link communications are active

Power Indicator Green LED	
Indication	**Status**
Off	Power off
Solid Green	Power on

Specifications

Supply Voltage
18 V DC to 30 V DC at 100 mA maximum

Power Pass-Through Current
1 A per port maximum

Discrete Output Load Rating
100 mA

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Leakage Current Immunity
400 µA

Indicators
Green: Power
Amber: IO-Link communications
Amber: Discrete OUT status

Connections
(4) Integral 4-pin M12 female quick disconnect
(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)

Certifications

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

Turck Banner LTD Blenheim House, Blenheim Court, Wickford, Essex SS11 8YT, Great Britain

Environmental Rating
IP65, IP67, IP68
NEMA/UL Type 1

Operating Conditions
Temperature: –40 °C to +70 °C (–40 °F to +158 °F)
90% at +70 °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 (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

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For patent information, see www.bannerengineering.com/patents.

FCC Part 15

This device complies with Part 15 of the FCC Rules. 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 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.

Industry Canada

This device complies with CAN ICES-3 (B)/NMB-3(B). 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(B). 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.