

Features

This guide is designed to help you set up and install the R95C 8-Port Analog In to ModBus® Hub. For complete information on programming, performance, troubleshooting, dimensions, and accessories, please refer to the Instruction Manual at www.bannerengineering.com. Search for part number 233568 to view the Instruction Manual. Use of this document assumes familiarity with pertinent industry standards and practices.

Overview

When an analog input value is received by the R95C-8UI-MQ hub, the numerical representational value is represented via ModBus registers.

Analog Ranges

Voltage = 0 mV to 11,000 mV

Current = 0 µA to 24,000 µA

Mechanical Installation

Install the R95C to allow access for functional checks, maintenance, and service or replacement. Do not install the R95C 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 R95C accepts M4 (#8) hardware.



CAUTION: Do not overtighten the R95C's mounting screw during installation. Overtightening can affect the performance of the R95C.

Status Indicators

The R95C 8-Port Analog In to ModBus® Hub has matching amber LED indicators on both sides for each analog in 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 ModBus communication.

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

Modbus Communication Amber LED	
Indication	Status
Off	Modbus communications are not present
Flashing Amber (4 Hz)	Modbus communications are active
Solid Amber for 2 Seconds, Then to Off	Modbus communications are lost after connection
Solid Amber for 2 Seconds, Then to Flashing Amber (4 Hz)	Modbus communications momentarily lost, but then communication was reestablished

Analog In Amber LED	
Indication	Status
Off	Analog current value is less than setpoint SP1 OR analog value is greater than setpoint SP2
Solid Amber	Analog current value is between setpoint SP1 AND setpoint SP2
Default Current Values: <ul style="list-style-type: none"> • SP1 = 0.004 A • SP2 = 0.02 A 	Default Voltage Values: <ul style="list-style-type: none"> • SP1 = 0 V • SP2 = 10 V

Specifications

Supply Voltage

12 V DC to 30 V DC at 400 mA maximum

Power Pass-Through Current

500 mA per port maximum

Analog Input Impedance

Current version: Approximately 250 ohms

Voltage version: Approximately 14.3K ohms

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Leakage Current Immunity

400 µA

Indicators

- Green: Power
- Amber: ModBus communications
- Amber: Analog In status

Connections

- (8) Integral 4-pin M12 female quick-disconnect connector
- (1) Integral 5-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 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




Environmental Rating

- IP65, IP67, IP68
- 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 (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	1.0	30	0.5

Banner Engineering Corp Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp. Any misuse, abuse, or improper application or installation of this product or use of the product for personal protection applications when the product is identified as not intended for such purposes will void the product warranty. Any modifications to this product without prior express approval by Banner Engineering Corp will void the product warranties. All specifications published in this document are subject to change; Banner reserves the right to modify product specifications or update documentation at any time. Specifications and product information in English supersede that which is provided in any other language. For the most recent version of any documentation, refer to: www.bannerengineering.com.

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

Document title: R95C 8-Port Analog In to ModBus® Hub Quick Start Guide
Part number: 233567
Revision: A
Original Instructions
© Banner Engineering Corp. All rights reserved.

