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BANNER R50C-L-B22AOU-MQ Motor Driven Roller Controller

BANNER R50C-L-B22AOU-MQ Motor Driven Roller Controller Owner's Manual

Contents

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BANNER R50C-L-B22AOU-MQ Motor Driven Roller Controller

Product Information

Specifications

- **Model Name:** R50C-L-B22AOU-MQ
- **Function:** Control
- **Connectors:**
    - (1) Pair of integral 5-pin M12 A-Code male/female quick-disconnect connectors
    - (1) Pair of integral 5-pin M12 L-Code male/female quick-disconnect connectors
- **Analog Voltage Output:** 0 V DC to 18 V DC
- **Power Input/Output:** L-Code ports with bimodal function
- **Current Capacity:** Up to 16 amps

Product Usage Instructions

Chapter 2: Configuration Instructions
To configure the Motor Driven Roller Controller, follow these steps:

1. Download the SNAP SIGNAL Configuration Software from the Banner Engineering website.
2. Configure the Modbus settings as per the provided table with Modbus Register Addresses.
3. Set the I/O range and values for Channel 1, Channel 2, and Analog Out as required.
4. Adjust the Port Configuration settings using the provided Modbus Register Addresses.

Chapter 3: Mechanical Installation
The Motor Driven Roller Controller can be installed by following these mechanical installation steps:

1. Connect the integral 5-pin M12 connectors for power input/output.
2. Ensure proper wiring according to the wiring diagram provided in the manual.
3. Mount the controller securely in the desired location on the conveyor system.

Chapter 4: Status Indicators
The status indicators on the controller provide information about the operational status of the device. Refer to Chapter 4 of the manual for detailed information on interpreting the status indicators.

Chapter 6: Accessories
The Motor Driven Roller Controller supports Cordsets for additional connectivity. Refer to Chapter 6 of the manual

for more information on compatible accessories.

FAQ

- **Q: What is the maximum voltage output supported by the controller?**
  A: The controller supports an analog voltage output ranging from 0 V DC to 18 V DC.
- **Q: How many discrete Input/Output channels can be connected to the controller?**
  A: The controller allows for the connection to two discrete Input/Output channels.

Chapter 1 Features

- Efficiently control motor driven rollers from a PLC using Modbus communication
- Simplify installation of multiple R50Cs on a conveyor using M12 connectors and motor power connections in series
- Compact bimodal to Modbus® device converter that reports and controls two channels of discrete inputs/outputs, and an analog output voltage value (0 V DC to 18 V DC) via register settings on a Modbus RTU server
- Enabled Delay Modes: ON/OFF Delay, ON/OFF One-shot, ON/OFF/Retriggerable One-shot, ON/OFF Pulse-stretcher and Totalizer Measurement Metrics: Count, Counts Per Minute (CPM), and Duration
- Discrete Mirroring: Discrete signals (In/Out) from a channel can be mirrored to the other channel's output
- Discrete input/output can be independently configured as NPN or PNP L-Code power pass-through
- Rugged over-molded design meets IP65, IP67, and IP68
- Connects directly to a sensor or anywhere in-line for ease of use R50C hubs are a quick, easy, and economical way to integrate non-Modbus devices into a Modbus system

Model

Model Name	Function	Control	Connectors
R50C-L-B22AOU-MQ	L-Code ports with bimodal function: 2 inputs, 2 outputs, and an analog voltage output	Modbus®	(1) Pair of integral 5-pin M12 A-Code male/female quick- disconnect connectors and (1) Pair of integral 5-pin M12 L-Code male/female quick-disconnect connectors

Overview

The R50C-L-B22AOU-MQ Motor Driven Roller Controller allows for the connection to two discrete Input/Output channels, and also provides an analog voltage output control from 0 V DC to 18 V DC. This hub also supports L-Code power input/output.

With two discrete channels that can be configured as inputs or outputs, the R50C allows for precise control over start/stop functions, direction, and error conditions. The 0–18 volt analog output ensures accurate speed control for both standard and high-speed motor driven roller systems. LED indicators provide clear status monitoring and facilitate troubleshooting, ensuring smooth and efficient operation.

The use of compact sealed M12 connectors and motor power connections in series simplifies the installation process, making it easy to set up multiple R50Cs on a conveyor. The M12 L-coded connections support higher current demands and share up to 16 amps of power, delivering more power while occupying less space than traditional connectors.

The IP67-rated fully-sealed housing and -40° C to 70° C operating range make the R50C suitable for use in challenging environments without the need for additional protective enclosures. This robustness ensures reliability and longevity in harsh conditions.

Compatible Motor Driven Rollers

The R50C is compatible with the following motor driven rollers:

- Itoh Denki PM- XE, XP
- Itoh Denki PM- XC
- Interoll EC310
- Interoll EC5000
- PulseRoller Senergy IDC
- Lenze MDR o450

- Rulmeca BL3

Chapter 2 Configuration Instructions

SNAP SIGNAL® Configuration Software

The SNAP SIGNAL® Configuration Software offers an easy way to manage converter Modbus® settings, retrieve data, and visually show converter data. The SNAP SIGNAL Configuration Software runs on any Windows machine and uses an adapter cable (BWA-UCT-900, p/n 19970) to connect the converter to the computer.

Download the most recent version of the SNAP SIGNAL Configuration Software from the Banner Engineering website: **https://www.bannerengineering.com/sg/en/products/software/snap-signal-configuration-software.html**.

Modbus Configuration

Device Port States

Modbus Register Address	Description	I/O range	Comments	Default	Access	Notes
40001	Pin 4 – Channel 1	0..1	Black wire discrete output	0	RW	0 = Inactive, 1 = Active
40002	Pin 2 – Channel 2	0..1	White wire discrete output	0	RW	0 = Inactive, 1 = Active

Analog Out Value

Modbus Register Address	Description	I/O range	Comments	Default	Access	Notes
40003	Pin 5 – Analog Out	0..10200	Voltage = mV	0	RW	Max. Voltage = 18000 mV

Port Configuration

Modbus Register Address	Description	I/O range	Comments	Default	Access	Notes
40004	Pin 4 IO Selection	0..5	0 = NPN Input 1 = PNP Input 2 = NPN Output with Pull Up 3 = PNP Output with Pull Down 4 = NPN Output Push Pull 5 = PNP Output Push Pull	3	RW	PNP output
40005	Pin 2 IO Selection	0..5	0 = NPN Input 1 = PNP Input 2 = NPN Output with Pull Up 3 = PNP Output with Pull Down 4 = NPN Output Push Pull 5 = PNP Output Push Pull	3	RW	PNP output
40006	L-Code Auxiliary Power Status	0..1	0 = Off, 1 = On	–	RO	APwr LED Status

Modbus Configuration

Modbus Register Address	Description	I/O range	Comments	Default	Access
40601	Baud Rate	0 = 9.6k 1 = 19.2k 2 = 38.4k	0 = 9.600 1 = 19200 2 = 38400	1	RW
40602	Parity	0 = None 1 = Odd 2 = Even	0 = None 1 = Odd 2 = Even	0	RW
40603	Address	1-254	–	1	RW
40604	Reserved (cannot be read or written)	None	–	–	–
40605	Restore Factory Configuration	0 = No Operation, 1 = Restore	–	–	WO

Device Information

Modbus Register Address	Description	I/O range	Comments	Default	Access	Notes
40606-40615	Banner Name	0..65535	–	Banner Engineering	RO	(9 words/18 Characters)
40616-40631	Product Name	0..65535	–	R50C-L- B22AOU-MQ	RO	(16 words/32 Characters)
40632	Item H	0..65535	816907 split into two 16-bit registers	12	RO	Banner Item Number
40633	Item L	0..65535	–	30475	RO	–
40634	Serial Number H	0..65535	–	–	RO	Serial Number is split into
40635	Serial Number	0..65535	–	–	RO	(4) 16-bit registers
40636	Serial Number	0..65535	–	–	RO	–
40637	Serial Number L	0..65535	–	–	RO	–
40644-40659	User Define Tag	0..65535	User Writable Space	More Sensors. More Solutions.	RW	(16 words/32 Characters)
40680	Discovery	0..1	0 = Disabled, 1 = Enabled	–	RW	Flash all LEDs to find hub
40681	All-Time Run Time H	0..65535	–	–	RO	Upper 16 of 32 bits
40682	All-Time Run Time L	0..65535	–	–	RO	Lower 16 of 32 bits
40683	Resettable Run Time H	0..65535	–	–	RW	Upper 16 of 32 bits
40684	Resettable Run Time L	0..65535	–	–	RW	Lower 16 of 32 bits

Measurement Reads

Modbus Register Address	Description	I/O Range	Comments	Default	Access	Notes
41001	Pin 4 Active State	0..1	0 = Inactive, 1 = Active	–	RO	–
41002	Pin 2 Active State	0..1	0 = Inactive, 1 = Active	–	RO	–
41003	Pin 4 Count H	0..65535	Pin 4 Count Value Upper	–	RO	Upper 16 of 32 bits = Running count of the received input pulses
41004	Pin 4 Count L	0..65535	Pin 4 Count Value Lower	–	RO	Lower 16 of 32 bits = Running count of the received input pulses

Modbus Register Address	Description	I/O Range	Comments	Default	Access	Notes
41005	Pin 4 Duration H	0..65535	Pin 4 Duration Value Upper	–	RO	Upper 16 of 32 bits = Duration of the last input pulse in µs with 50 µs granularity
41006	Pin 4 Duration L	0..65535	Pin 4 Duration Value Lower	–	RO	Lower 16 of 32 bits = Duration of the last input pulse in µs with 50 µs granularity
41007	Pin 4 Events Per Minute H	0..65535	Pin 4 Events Per Minute Value Upper	–	RO	Upper 16 of 32 bits = Running count of the number of pulses received averaged over one minute. Range 1 to 37,500

41008	Pin 4 Events Per Minute L	0..65535	Pin 4 Events Per Minute Value Lower	–	RO	Lower 16 of 32 bits = Running count of the number of pulses received averaged over one minute. Range 1 to 37,500
41009	Pin 4 Totalizer Count H	0..65535	Pin 4 Totalizer Count Upper	–	RO	Upper 16 of 32 bits = Totalizer count
41010	Pin 4 Totalizer Count L	0..65535	Pin 4 Totalizer Count Lower	–	RO	Lower 16 of 32 bits = Totalizer count
41011	Pin 2 Count H	0..65535	Pin 2 Count Value Upper	–	RO	Upper 16 of 32 bits = Running count of the received input pulses
41012	Pin 2 Count L	0..65535	Pin 2 Count Value Lower	–	RO	Lower 16 of 32 bits = Running count of the received input pulses
41013	Pin 2 Duration H	0..65535	Pin 2 Duration Value Upper	–	RO	Upper 16 of 32 bits = Duration of the last input pulse in µs with 50 µs granularity
41014	Pin 2 Duration L	0..65535	Pin 2 Duration Value Lower	–	RO	Lower 16 of 32 bits = Duration of the last input pulse in µs with 50 µs granularity
41015	Pin 2 Events Per Minute H	0..65535	Pin 2 Events Per Minute Value Upper	–	RO	Upper 16 of 32 bits = Running count of the number of pulses received averaged over one minute. Range 1 to 37,500
41016	Pin 2 Events Per Minute L	0..65535	Pin 2 Events Per Minute Value Lower	–	RO	Lower 16 of 32 bits = Running count of the number of pulses received averaged over one minute. Range 1 to 37,500

Modbus Register Address	Description	I/O Range	Comments	Default	Access	Notes
41017	Pin 2 Totalizer Count H	0..65535	Pin 2 Totalizer Count Upper	–	RO	Upper 16 of 32 bits = Totalizer count
41018	Pin 2 Totalizer Count L	0..65535	Pin 2 Totalizer Count Lower	–	RO	Lower 16 of 32 bits = Totalizer count

Metric Count Presets

Modbus Register Address	Description	I/O Range	Comments	Default	Access	Notes
41100	Pin 4 Count H	0..65535	Pin 4 Count Value Upper	–	RW	Upper 16 of 32 bits
41101	Pin 4 Count L	0..65535	Pin 4 Count Value Lower	–	RW	Lower 16 of 32 bits
41102	Pin 2 Count H	0..65535	Pin 2 Count Value Upper	–	RW	Upper 16 of 32 bits
41103	Pin 2 Count L	0..65535	Pin 2 Count Value Lower	–	RW	Lower 16 of 32 bits

Pin 4 Port **Configuration** (Black – Female, Discrete 1)

Modbus Register Address	Description	I/O Range	Comments	Default	Access	Notes
41201	Pin 4 Mode	0..8	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	–
						Upper 16 of 32 Bits:
41202	Pin 4 Delay Timer 1 Upper	0..65535	Pin 4 On Delay, One-shot, Pulse- stretcher time, Totalizer Count	0	RW	Mode 1, 2, 3, 4, 5, 7, 8 = Milliseconds
						Mode 6 = Count
						Lower 16 of 32 Bits:
41203	Pin 4 Delay Timer 1 Lower	0..65535	Pin 4 On Delay, One-shot, Pulse- stretcher time, Totalizer Count	0	RW	Mode 1, 2, 3, 4, 5, 7, 8 = Milliseconds
						Mode 6 = Count
41204	Pin 4 Delay Timer 2 Upper	0..65535	Pin 4 Off Delay or Totalizer time	0	RW	Upper 16 of 32 Bits = Milliseconds
41205	Pin 4 Delay Timer 2 Lower	0..65535	Pin 4 Off Delay or Totalizer time	0	RW	Lower 16 of 32 Bits = Milliseconds
41206	Pin 4 Mirroring Enable	0..1	0 = Disabled, 1 = Enabled	0	RW	Enable mirroring of Pin 2 input
41207	Pin 4 Mirroring Inversion	0..1	0 = Not inverted, 1 = Inverted	0	RW	Invert Pin 2 input state

## Pin 2 Port Configuration (White – Female, Discrete 2)

Modbus Register Address	Description	I/O Range	Comments	Default	Access	Notes
41301	Pin 2 Mode	0..6	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	–
						Upper 16 of 32 Bits:
41302	Pin 2 Delay Timer 1 Upper	0..65535	Pin 2 On Delay, One-shot, Pulse- stretcher time, or Totalizer Count	0	RW	Mode 1, 2, 3, 4, 5, 7, 8 = Milliseconds
						Mode 6 = Count
						Lower 16 of 32 Bits:
41303	Pin 2 Delay Timer 1 Lower	0..65535	Pin 2 On Delay, One-shot, Pulse- stretcher time, or Totalizer Count	0	RW	Mode 1, 2, 3, 4, 5, 7, 8 = Milliseconds
						Mode 6 = Count
41304	Pin 2 Delay Timer 2 Upper	0..65535	Pin 2 Off Delay or Totalizer time	0	RW	Upper 16 of 32 Bits = Milliseconds
41305	Pin 2 Delay Timer 2 Lower	0..65535	Pin 2 Off Delay or Totalizer time	0	RW	Lower 16 of 32 Bits = Milliseconds
41306	Pin 2 Mirroring Enable	0..1	0 = Disabled, 1 = Enabled	0	RW	Enable mirror of Pin 4 input
41307	Pin 2 Mirroring Inversion	0..1	0 = Not Inverted, 1 = Inverted	0	RW	Invert Pin 4 input state

Chapter 3 Mechanical Installation

Install the R50C to allow access for functional checks, maintenance, and service or replacement. Do not install the R50C 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 R50C accepts M4 (#8) hardware.
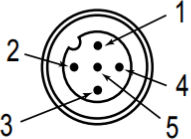
See the figure below to help in determining the minimum screw length.

Screw Length = 18.0 mm + "X" mm + 3 mm
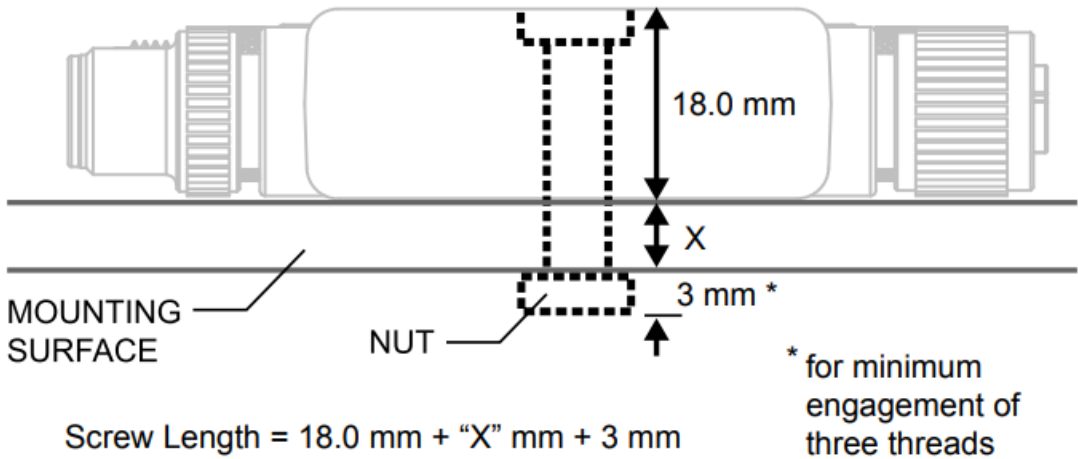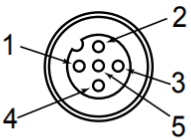
CAUTION: Do not overtighten the R50C's mounting screw during installation. Overtightening can affect the performance of the R50C.
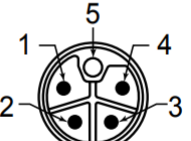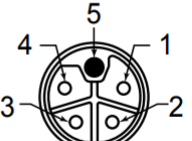
Wiring
A-Code Male and Female Pinouts

Modbus - Male	Pin	Signal Description
	1	12 V DC to 30 V DC
	2	RS485/D1/B+
	3	GND
	4	RS485/D0/A-
	5	BannerBus

Motor Driven Roller (MDR) - Female	Pin	Signal Description
	1	12 V DC to 30 V DC
	2	Channel 2
	3	GND
	4	Channel 1
	5	Analog Out

L-Code Male and Female Pinouts (16A)

| Male Pinout	Female Pinout	Pin	Wire Color	Signal Description
		1	Brown	+24 V DC
		2	White	GND
		3	Blue	GND
		4	Black	+24 V DC
		5	Gray	FE

Chapter 4 Status Indicators

The R50C has matching LED indicators on both sides of the converter to allow for installation needs, while still providing adequate indication visibility.
There are two pairs of green LEDS:

- PWR: A-Code power indication
- APwr: L-Code power indication

Additionally, there are four pairs of amber LEDs:

- C: Modbus communications
- AO: Analog Out
- D1: Discrete Channel 1 (Pin 4)
- D2: Discrete Channel 2 (Pin 2)

front   back
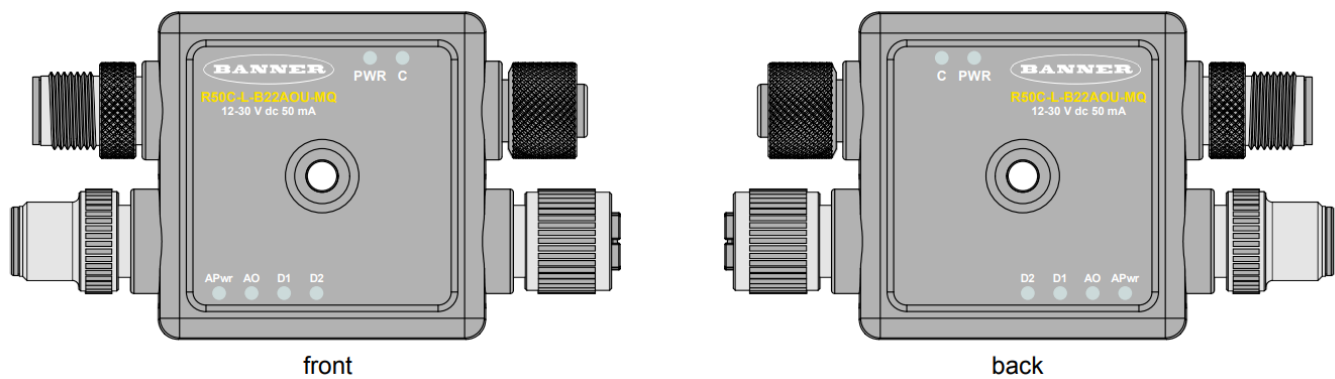
A-Code Power Indicator Green LEDs

Indication	Status
Off	Power off
Solid Green	Power on

L-Code Power Indicator Green LEDs

Indication	Status
Off	L-Code power is off or not attached
Solid Green	L-Code power is on or active

Modbus Communications Amber LEDs

Indication	Status
Off	Modbus communications are not present
Flashing Amber (4 Hz)	Modbus communications are active
Solid Amber for 2 seconds, then off	Modbus communications are lost after connection
Solid Amber for 2 seconds, then to flashing amber (4 Hz)	Modbus communications are momentarily lost, but then communication is reestablished

Analog Out Amber LEDs

Indication	Status
Off	Analog output value is outside the allowable output range (0 V DC to 18 V DC)
Solid Amber	Analog output value is inside the allowable output range (0 V DC to 18 V DC)

Discrete Channel 1 and Discrete Channel 2 Amber LEDs

Indication	Status
Off	Discrete is inactive
Solid Amber	Discrete is active

Chapter 5 Specifications

- **Supply Voltage**

  12 V DC to 30 V DC at 400 mA maximum
- **Power Pass-Through Current**

  16 A maximum
- **Discrete Output Load Rating**

  200 mA
- **Analog Output Load Requirements**

  Resistance > 1000 Ω
- **Supply Protection Circuitry**

  Protected against reverse polarity and transient voltages
- **Leakage Current Immunity**

  400 µA
- **Indicators**

  See Status Indicators
- **Connections**

  (1) Integral 5-pin M12 A-Code female quickdisconnect connector

(1) Integral 5-pin M12 A-Code male quickdisconnect connector

(1) Integral 5-pin M12 L-Code female quickdisconnect connector

(1) Integral 5-pin M12 L-Code male quickdisconnect 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)g

Certifications

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

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

Product Identification

- **Environmental Rating**

  IP65, IP67, IP68

- **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

FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(b)) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

(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(B)
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.

Dimensions
All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.
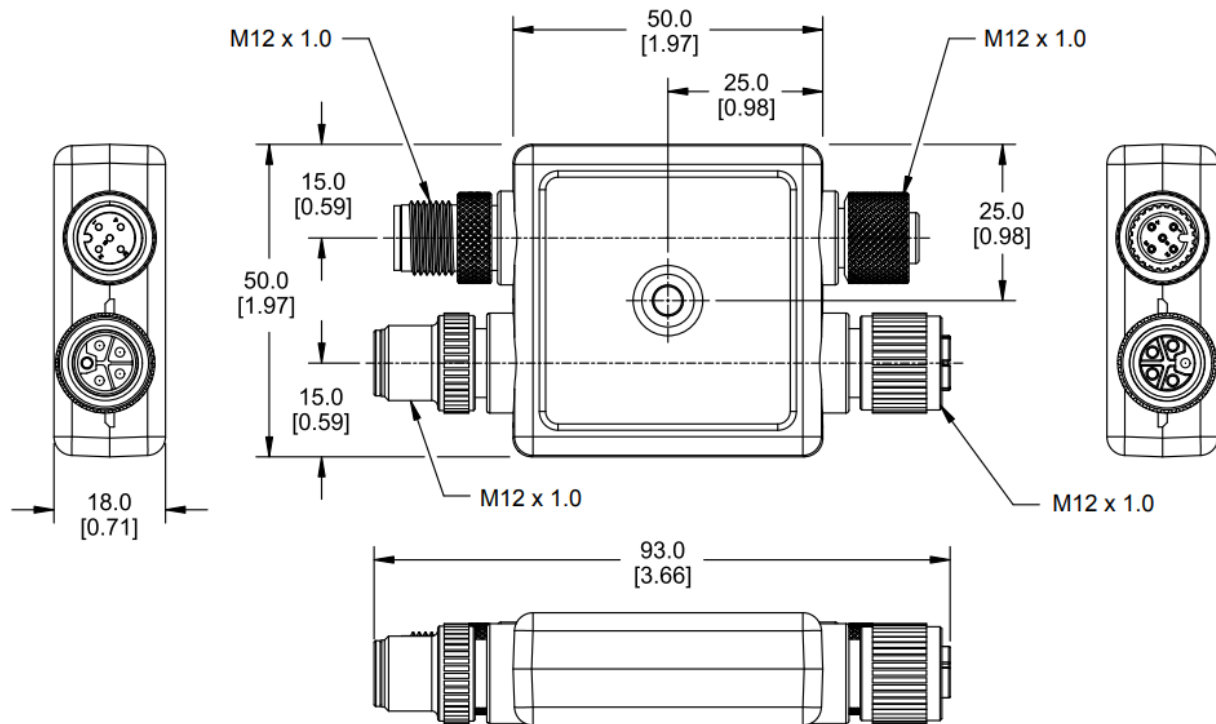
Chapter 6 Accessories

A-Code connectivity accessories are listed below. For L-Code connectivity accessories, please reach out to Banner Application Support at 1-888-3-SENSOR (736767).

Cordsets

4-pin Double-Ended M12 Female to M12 Male Cordsets				
Model	Length	Dimensions (mm)	Pinouts	
BC-M12F4-M12M4-22-1	1 m (3.28 ft)		Female	
BC-M12F4-M12M4-22-2	2 m (6.56 ft)			
BC-M12F4-M12M4-22-5	5 m (16.4 ft)			1 = Brown
BC-M12F4-M12M4-22-8	8 m (26.25 ft)			2 = White
BC-M12F4-M12M4-22-10	10 m (30.81 ft)		Male	3 = Blue
				4 = Black
BC-M12F4-M12M4-22-15	15 m (49.2 ft)			

4-pin Double-Ended M12 Female to M12 Male Right-Angle Cordsets				
Model	Length	Dimensions (mm)	Pinouts	
BC-M12F4-M12M4A-22-1	1 m (3.28 ft)		Female	
BC-M12F4-M12M4A-22-2	2 m (6.56 ft)			
BC-M12F4-M12M4A-22-5	5 m (16.4 ft)			1 = Brown
BC-M12F4-M12M4A-22-8	8 m (26.25 ft)			2 = White
BC-M12F4-M12M4A-22-10	10 m (30.81 ft)		Male	3 = Blue
				4 = Black
BC-M12F4-M12M4A-22-15	15 m (49.2 ft)			

4-pin Double-Ended M12 Female Right-Angle to M12 Male Right-Angle Cordsets				
Model	**Length**	**Dimensions (mm)**	**Pinouts**	
BC-M12F4A-M12M4A-22-1	1 m (3.28 ft)		Female	
BC-M12F4A-M12M4A-22-2	2 m (6.56 ft)			
BC-M12F4A-M12M4A-22-5	5 m (16.4 ft)			1 = Brown
BC-M12F4A-M12M4A-22-8	8 m (26.25 ft)			2 = White
BC-M12F4A-M12M4A-22-10	10 m (30.81 ft)		Male	3 = Blue
BC-M12F4A-M12M4A-22-15	15 m (49.2 ft)			4 = Black

4-Pin M12 Female RS-485 to USB Adapter Cordset, with Wall Plug				
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**
BWA-UCT-900	1 m (3.28 ft)	Straight		1 = Brown 2 = White 3 = Blue 4 = Black

Chapter 7 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.

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

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Documents / Resources

	BANNER R50C-L-B22AOU-MQ Motor Driven Roller Controller [pdf] Owner's Manual R50C-L-B22AOU-MQ, R50C-L-B22AOU-MQ Motor Driven Roller Controller, R50C-L-B22AOU-MQ, Motor Driven Roller Controller, Driven Roller Controller, Roller Controller, Controller

References

- **Banner Engineering | Smarter Automation. Better Solutions.**
- **Patents**
- **Banner Engineering | Smarter Automation. Better Solutions.**
- **Snap Signal Configuration Software**
- **User Manual**