

Sure Cross® Accessories List

Instruction Manual

Original Instructions
b_3147091 Rev. F
15 August 2018
© Banner Engineering Corp. All rights reserved



Contents

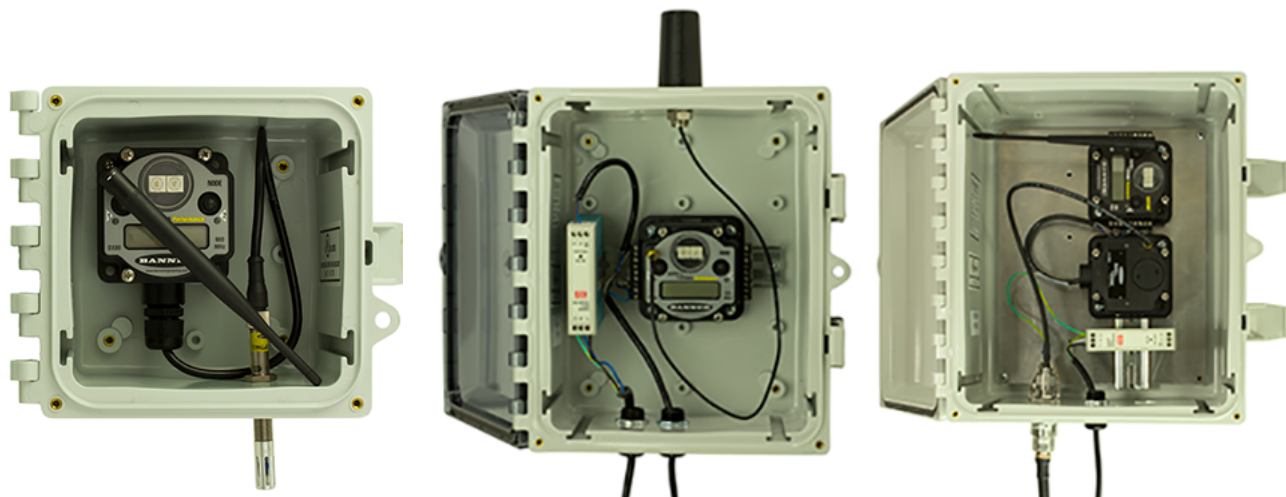
1 Accessories	3
1.1 Selecting an Enclosure	3
1.1.1 Polycarbonate Enclosures	3
1.1.2 Fiberglass Enclosures	4
1.2 Selecting an Antenna	4
1.2.1 Antennas: Rubber RP-SMA	5
1.2.2 Antennas: Dome	5
1.2.3 Antennas: Other	5
1.2.4 Antennas: Fiberglass N-Type	6
1.2.5 Antennas: Yagi N-Type	6
1.2.6 Antennas: Cellular	6
1.2.7 Antenna Cables: RP-SMA to RP-SMA	6
1.2.8 Antenna Cables: RP-SMA to N-Type	7
1.2.9 Antenna Cables: N-Type	7
1.2.10 Surge Suppressors	7
1.3 Power Supplies	7
1.3.1 DC Power Supplies	8
1.3.2 FlexPower Supplies and Replacement Batteries	8
1.4 Relays	8
1.5 Sensors	9
1.5.1 Sensors with a Serial Interface	9
1.5.2 Sensors with a Modbus Interface	10
1.5.3 Sensors - Other	11
1.5.4 Sensors for FlexPower Devices	12
1.6 Brackets and Mounting Options	12
1.7 Cables	13
1.7.1 Ethernet Cables	13
1.7.2 Adapter Cables	14
1.7.3 Splitter Cables	14
1.7.4 Euro-Style Cordsets - Single Ended	15
1.7.5 Euro-Style Cordsets - Double Ended	16
1.7.6 Other Cables	17
1.8 Other Accessories	17
1.8.1 DX85 Modbus RTU Remote I/O Devices	17
1.8.2 Cable Glands and Plugs	17
1.8.3 Hardware and Replacement Parts	18
1.8.4 Metal Housing Accessories	18

1 Accessories

The accessories list includes FCC approved antennas, antenna cabling, surge suppressors, power supplies, replacement batteries, enclosures, cables, and other hardware.

1.1 Selecting an Enclosure

Select the enclosure size based on what you intend to mount inside it. Always select the largest enclosure you can to allow for future expansion.



6 × 6 inch: Fits a single DX80.

10 × 8 inch: Fits a power supply, surge suppressor, a single DX80, and a few relays. This is a popular size but can get cramped.

12 × 10 inch: This is the recommended size; provides ample room for multiple radios and accessories.

1.1.1 Polycarbonate Enclosures

Polycarbonate Enclosures with Opaque Covers		Polycarbonate Enclosures with Clear Covers	
Models	Description	Models	Description
BWA-AH664	Enclosure, Polycarbonate, with Opaque Cover, 6 × 6 × 4	BWA-AH664C	Enclosure, Polycarbonate, with Clear Cover, 6 × 6 × 4
BWA-AH864	Enclosure, Polycarbonate, with Opaque Cover, 8 × 6 × 4	BWA-AH864C	Enclosure, Polycarbonate, with Clear Cover, 8 × 6 × 4
BWA-AH1084	Enclosure, Polycarbonate, with Opaque Cover, 10 × 8 × 4	BWA-AH1084C	Enclosure, Polycarbonate, with Clear Cover, 10 × 8 × 4
BWA-AH12106	Enclosure, Polycarbonate, with Opaque Cover, 12 × 10 × 6	BWA-AH12106C	Enclosure, Polycarbonate, with Clear Cover, 12 × 10 × 6
BWA-AH14126	Enclosure, Polycarbonate, with Opaque Cover, 14 × 12 × 6	BWA-AH14126C	Enclosure, Polycarbonate, with Clear Cover, 14 × 12 × 6
BWA-AH16148	Enclosure, Polycarbonate, with Opaque Cover, 16 × 14 × 8	BWA-AH16148C	Enclosure, Polycarbonate, with Clear Cover, 16 × 14 × 8
BWA-AH181610	Enclosure, Polycarbonate, with Opaque Cover, 18 × 16 × 10	BWA-AH181610C	Enclosure, Polycarbonate, with Clear Cover, 18 × 16 × 10

Swing Panel Kits	
Models	Description
BWA-AH66SPK	Swing Panel Kit, 6 × 6, includes mounts and screws
BWA-AH86SPK	Swing Panel Kit, 8 × 6, includes mounts and screws
BWA-AH108SPK	Swing Panel Kit, 8 × 10, includes mounts and screws
BWA-AH1210SPK	Swing Panel Kit, 12 × 10, includes mounts and screws
BWA-AH1412SPK	Swing Panel Kit, 14 × 12, includes mounts and screws
BWA-AH1614SPK	Swing Panel Kit, 16 × 14, includes mounts and screws
BWA-AH1816SPK	Swing Panel Kit, 18 × 16, includes mounts and screws

Back Panel Kits	
Models	Description
BWA-BP66A	Back Panel, Aluminum, 6 × 6
BWA-BP86A	Back Panel, Aluminum, 8 × 6
BWA-BP108A	Back Panel, Aluminum, 10 × 8
BWA-BP1210A	Back Panel, Aluminum, 12 × 10
BWA-BP1412A	Back Panel, Aluminum, 14 × 12
BWA-BP1614A	Back Panel, Aluminum, 16 × 14
BWA-BP1816A	Back Panel, Aluminum, 18 × 16

DIN Rail Kits (with Self-Threading Screws)	
Models	Description
BWA-AH6DR	DIN Rail Kit, 6", 2 trilobular/self-threading screws
BWA-AH8DR	DIN Rail Kit, 8", 2 trilobular/self-threading screws
BWA-AH10DR	DIN Rail Kit, 10", 2 trilobular/self-threading screws
BWA-AH12DR	DIN Rail Kit, 12", 2 trilobular/self-threading screws
BWA-AH14DR	DIN Rail Kit, 14", 2 trilobular/self-threading screws
BWA-AH16DR	DIN Rail Kit, 16", 2 trilobular/self-threading screws
BWA-AH18DR	DIN Rail Kit, 18", 2 trilobular/self-threading screws
BWA-AHTBS	Trilobular/self-threading screws, #10-32 × 0.375 PHL PH ZINC, 10 pack

Enclosure Accessories	
Models	Description
BWA-AHAK	Accessory Kit, includes all screws, inserts, and mounting feet, for replacement only

1.1.2 Fiberglass Enclosures

Models	Description	
BWA-EF1086	Hinged fiberglass enclosure, 10" × 8" × 6"	
BWA-EF866	Hinged fiberglass enclosure, 8" × 6" × 6"	
BWA-PANEL-108	Panel, 10 × 8	
BWA-PANEL-86	Panel, 8 × 6	

1.2 Selecting an Antenna

Select your antenna based on your specific application needs. There are three basic antenna solutions:

- **Use the supplied rubber duck antenna inside the enclosure.** DX80 products come with a 2 dBi rubber duck antenna. Often simply attaching the supplied antenna to the radio provides enough radio range to meet your needs.
- **Mount a dome antenna to the enclosure.** The -D antennas can be mounted directly on the enclosure.
- **Use an N-type pole-mounted antenna, with surge suppressor.** The -A and -AS antennas can be mounted remotely from the enclosure and require the BWC-LFNBMN-DC surge suppressor.

1.2.1 Antennas: Rubber RP-SMA

The following rubber, or rubber duck, antennas have an RP-SMA male connection.

Omni-Directional Antennas with RP-SMA Male Connections	
BWA-902-C • 2 dBi, Rubber swivel, 900 MHz (ships with 900 MHz radios) • Datasheet: b_3145120 BWA-905-C • 5 dBi, Rubber swivel, 900 MHz • Datasheet: b_3145123 BWA-202-C • 2 dBi, Rubber swivel, 3 1/4 inches, 2.4 GHz (ships with 2.4 GHz radios) • Datasheet: b_3145114 BWA-205-C • 5 dBi, Rubber swivel, 6 1/2 inches, 2.4 GHz • Datasheet: b_3145116 BWA-207-C • 7 dBi, Rubber swivel, 9 1/4 inches, 2.4 GHz • Datasheet: b_3145118	BWA-902-RA • 2 dBi, Rubber fixed right angle • 900 MHz • Datasheet: b_4162828 BWA-902-RA2 • 2 dBi 1/2-wave, Rubber fixed right angle • 900 MHz • 160 mm tall BWA-201-001 • 1 dBi, Rubber, 1 inch tall • 2.4 GHz

1.2.2 Antennas: Dome

- BWA-902-D**
- Dome antenna, 2 dBi, 18-inch cable, 900 MHz
 - RP-SMA Box Mount
 - Datasheet: [b_314512](#)
- BWA-202-D**
- Dome antenna, 2 dBi, 18-inch cable, 2.4 GHz
 - RP-SMA Box Mount
 - Datasheet: [b_3145115](#)



For remote mounting options, use bracket SMBAMS18RA listed in the [Brackets and Mounting Options](#) on page 12 section.

1.2.3 Antennas: Other

- BWA-205-M**
- Magnetic whip antenna, 5 dBi, 12 ft cable, 2.4 GHz
 - RP-SMA Male connection



1.2.4 Antennas: Fiberglass N-Type

The following fiberglass antennas are typically used outdoors.

Omni-Directional Fiberglass Antennas with N-Type Female Connections

BWA-906-A

- 6 dBd, Fiberglass, Full wave, 71.5 inches, 900 MHz
- Datasheet: [b_314512](#)

BWA-208-A

- 8.5 dBi, Fiberglass, 24 inches, 2.4 GHz
- Datasheet: [b_3145131](#)

BWA-206-A

- 6 dBi, Fiberglass, 16 inches (shown), 2.4 GHz
- Datasheet: [b_3145117](#)

BWA-906-AS

- 6 dBi, Fiberglass, 1/4 Wave, 23.6 inches (1.3 inch dia.), 900 MHz
- Datasheet: [b_3145125](#)

BWA-908-AS

- 8 dBi, Fiberglass, 3/4 Wave, 63 inches (1.5 inch dia.), 900 MHz
- Datasheet: [b_3145126](#)



1.2.5 Antennas: Yagi N-Type

Directional (Yagi) Antennas with an N-Type Female Connection

BWA-9Y6-A

- 6.5 dBd, 6.8 × 13 inches Outdoor, 900 MHz
- Datasheet: [b_3145127](#)

BWA-9Y10-A

- 10 dBd, 6.8 × 24 inches Outdoor, 900 MHz
- Datasheet: [b_3145130](#)



1.2.6 Antennas: Cellular

BWA-CELLA-002

- Cellular multiband
- 2 dBi
- RP-SMA male connection
- 6.3 inch blade style
- Datasheet: [b_4475176](#)

1.2.7 Antenna Cables: RP-SMA to RP-SMA

Use these cables to connect a radio to a bulkhead surge suppressor or a bulkhead surge suppressor to an RP-SMA antenna. These cables may be used inside an enclosure or without an enclosure.

RP-SMA to RP-SMA Antenna Cables—RG58 Type			
Model	Length (m)	Description	
BWC-1MRSFRSB0.2	0.2	RG58, RP-SMA Male to RP-SMA Female Bulkhead	
BWC-1MRSFRSB1	1		
BWC-1MRSFRSB2	2		
BWC-1MRSFRSB4	4		

RP-SMA to RP-SMA Antenna Cables—LMR200 Type			
Model	Length (m)	Description	
BWC-2MRSFRS3	3	LMR200, RP-SMA Male to RP-SMA Female Bulkhead	
BWC-2MRSFRS6	6		
BWC-2MRSFRS9	9		
BWC-2MRSFRS12	12		

1.2.8 Antenna Cables: RP-SMA to N-Type

Use an LMR100 cable to connect a radio to an N-type antenna, N-type antenna extension cable, or N-type surge suppressor. These cables may be used inside or outside the enclosure or without an enclosure.

RP-SMA to N-Type Cables—LMR100 Type			
Model	Length (m)	Description	
BWC-1MRSMN05	0.5	LMR100 RP-SMA to N-Type Male	
BWC-1MRSMN2	2		

1.2.9 Antenna Cables: N-Type

These LMR400 cables are antenna extension cables, connecting an N-type antenna to another N-type antenna cable. These cables are usually used outside the enclosure.

N-Type to N-Type Cables—LMR400 Type			
Model	Length (m)	Description	
BWC-4MNFN3	3	LMR400 N-Type Male to N-Type Female	
BWC-4MNFN6	6		
BWC-4MNFN15	15		
BWC-4MNFN30	30		

1.2.10 Surge Suppressors

Always install and properly ground a qualified surge suppressor when installing a remote antenna system (antenna not directly connected to the Sure Cross radio). Remote antenna configurations installed without a surge suppressor invalidate the manufacturer's warranty.

BWC-LMRSFRPB

- Surge Suppressor, Bulkhead, RP-SMA Type
- RP-SMA to RP-SMA



BWC-LFNBMN-DC

- Surge Suppressor, bulkhead, N-Type, dc Blocking
- N-Type Female, N-Type Male



1.3 Power Supplies

1.3.1 DC Power Supplies

Models	Description	
PSW-24-1	DC Power Supply, 100-240 V ac 50/60 Hz input, 24 V dc 1 A output, UL Listed Class 2	
<i>PSD-24-4</i>	DC Power Supply, 90-264 V ac 50/60 Hz input, 24 V dc output, US-style wall plug input, 4-pin M12/Euro-style output; 2 m (6 ft) cable, UL Listed Class 2	
<i>PSDINP-24-06</i>	DC Power Supply, 0.63 Amps, 24 V dc, with DIN Rail Mount, Class I Division 2 (Groups A, B, C, D) Rated	
<i>PSDINP-24-13</i>	DC Power Supply, 1.3 Amps, 24 V dc, with DIN Rail Mount, Class I Division 2 (Groups A, B, C, D) Rated	
<i>PSDINP-24-25</i>	DC Power Supply, 2.5 Amps, 24 V dc, with DIN Rail Mount, Class I Division 2 (Groups A, B, C, D) Rated	

1.3.2 FlexPower Supplies and Replacement Batteries

Power Supplies		
Models	Description	
<i>DX81-LITH</i>	Battery Supply Module with mounting hardware	
<i>DX81H</i>	Battery Supply Module with mounting hardware, for DX99 polycarbonate housing devices	
<i>DX81P6</i>	Battery Supply Module, six "D" cells, with mounting hardware	
<i>BWA-SOLAR PANEL 3W</i>	Solar Panel, 12 V, 3 W, Multicrystalline, 188 × 195 × 15, Wall/Pole clamp style mounting bracket included (does not include controller)	
<i>BWA-SOLAR PANEL 5W</i>	Solar Panel, 12 V, 5 W, Multicrystalline, 270 × 222 × 17, Wall/Pole clamp style mounting bracket included (does not include controller)	
<i>BWA-SOLAR PANEL 20W</i>	Solar Panel, 12 V, 20 W, Multicrystalline, 573 × 357 × 30, "L" style mounting bracket included (does not include controller)	
<i>BWA-SOLAR CNTRL-12V</i>	Solar Controller, 6 A Load Current, 12 V System Voltage, recommended for 20 W or less solar panel and a Sealed Lead Acid Battery (sold separately)	

Replacement Batteries	
Model	Description
BWA-BATT-001	Lithium "D" cell for DX81-LITH and DX81H Battery Supply Module, 1 battery
BWA-BATT-006	Lithium "AA" cell for Wireless Q45 Sensors, 2 batteries

1.4 Relays

Models	Description
<i>IB6RP</i>	Interface Relay Box, 18 to 26 V dc inputs, isolated relay outputs (not shown)

Models	Description	
<i>BWA-RELAY-12V</i>	Relay, Blade Style with Base, 12 V	
<i>BWA-RELAY-24V</i>	Relay, Blade Style with Base, 24 V	
<i>BWA-RH1B-UDC12V</i>	Relay, Blade Style, No Base, 12 V (replacement part)	
<i>BWA-RH1B-UDC24V</i>	Relay, Blade Style, No Base, 24 V (replacement part)	
<i>BWA-SH1B-05</i>	Relay Base Only (replacement part)	

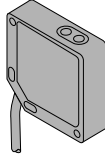
1.5 Sensors

1.5.1 Sensors with a Serial Interface

The following sensors are designed to be used with any of the 1-Wire Serial Interface Nodes.

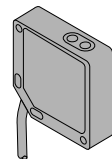
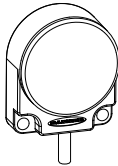
K50UX1RA - U-GAGE Ultrasonic Sensor with 1-wire serial interface - Datasheet: 191599 	M12FTH4Q - Temperature and Humidity Sensor, $\pm 2\%$ Accuracy, 1-wire serial interface (Requires a 5-pin threaded M12/Euro-style double-ended cordset less than 3 meters long, such as model DEE2R-5xD.) - Datasheet: 162669 M12FT4Q - Temperature Sensor with 1-wire serial interface (Requires a 5-pin threaded M12/Euro-style double-ended cordset less than 3 meters long, such as model DEE2R-5xD.) - Datasheet: 162669 
---	---

QM42VT1 - Vibration and temperature sensor with 1-wire serial interface - Detects dual-axis vibration - Zinc alloy housing 3 m cable with a 5-pin M12/Euro-style male quick disconnect (QD) - Datasheet: 186209 QM42VT1QP - Vibration and temperature sensor with 1-wire serial interface - Detects dual-axis vibration - Zinc alloy housing 150 mm (6 in) PVC cable with a 5-pin M12/Euro-style male quick disconnect (QD) - Datasheet: 186209	QS30WEQ - WORLD-BEAM Photoelectric Emitter, QS30 (Max Range: 100 feet, 10x excess gain at 50 feet), 1-wire serial interface - Datasheet: 140987 QS30WRQ - WORLD-BEAM Photoelectric Receiver, QS30 (Max Range: 100 feet, 10x excess gain at 50 feet), 1-wire serial interface - Datasheet: 140987
---	--

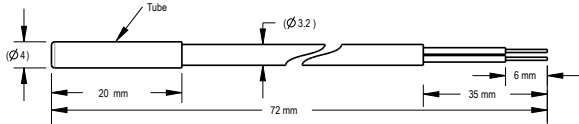


1.5.2 Sensors with a Modbus Interface

GPS50M - Global Positioning System using Modbus RTU to communicate data 2 meter integral cable - Datasheet:	K50UX2RA - U-GAGE K50U Ultrasonic, RS-485 Modbus interface - Datasheet: 195214
M12FTH3Q - Temperature and Humidity Sensor, RS-485 Modbus interface - Datasheet: 163751 M12FT3Q - Temperature Sensor, RS-485 Modbus interface - Datasheet: 163751	QM42VT2 - Vibration and temperature sensor, RS-485 Modbus interface - Detects dual-axis vibration - Zinc alloy housing 3 m cable with a 5-pin M12/Euro-style male quick disconnect (QD) - Datasheet: 193182 QM42VT2QP - Vibration and temperature sensor, RS-485 Modbus interface - Detects dual-axis vibration - Zinc alloy housing 150 mm (6 in) PVC cable with a 5-pin M12/Euro-style quick disconnect - Datasheet: 193182



1.5.3 Sensors - Other

Temperature Sensors - Thermistors	
BWA-THERMISTOR-001 - NTC Thermistor, 2.2 KOhms, +/-0.2°C, blue bead - For models: DX80N9X2S2N2T/C, DX99N9X2S2N0T4X0A0, and DX99N9X1S2N0T4X0D0	BWA-THERMISTOR-002 - NTC Thermistor, 10 KOhms, +/-0.2°C, black bead - For Performance models -P1/C/E, and MultiHop models M-H1/C/E 2 pack
BWA-THERMISTOR-PROBE-001 - Temperature sensor with thermistor PS103G2 - Beta Value(K) 0 ~50°C: 3575 - Base thermistor accuracy of 0.2% - Operating Temperature Range: -20 °C to +105 °C - Maximum Power Rating: 30 mW at 25 °C; derated to 1 mW at 125 °C - Dissipation Constant: 1 mW/°C - Plated nickel finish; PVC insulation 	

Pressure Sensors	
BWA-S612-15-100 - NoShok Series 612 Submersible Level Transmitter, model 612-15-1-1-N-100, 0 to 15 psig 100 ft cable	BWA-625-5000-1-1-8-25 - NoShok Series 625 Intrinsically Safe Pressure Transmitter, model 625-5000-1-1-8-25, 0 to 5000 psig, 4-20 mA 1/2" NPT, M12 QD
BWA-625-10000-1-1-8-25 - NoShok Series 625 Intrinsically Safe Pressure Transmitter, model 625-10000-1-1-8-25, 0 to 10000 psig, 4-20 mA 1/2" NPT, M12 QD	BWA-P-RKGV 5.33T-1727-2.0 - Cable, female M12 4-pin, blue PVC, SS connector - For NoShok Series 625 IS Pressure Transmitter

Moisture Sensors	
BWA-ACC-SEN-SDI Acclima SDI-12 Soil Moisture Transducer	

1.5.4 Sensors for FlexPower Devices

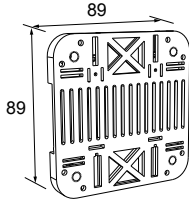
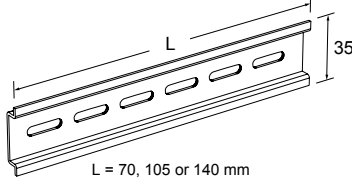
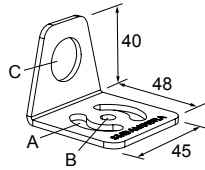
The following sensors are power-optimized for use with Sure Cross FlexPower devices.

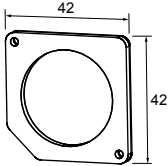
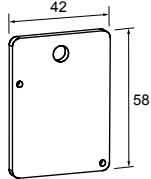
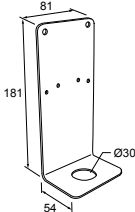
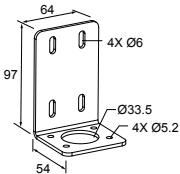
SM312LPQD-78447 - MINI-BEAM, Low Power, 5V, Polarized Retroreflective, 3 m - Datasheet: 134420 SM312DQD-78419 - MINI-BEAM, Low Power, 5V, Diffuse, 38 cm - Datasheet: 134420		QT50ULBQ6-75390 U-GAGE QT50U Ultrasonic, 200 mm to 8 m Range	
--	---	--	---

1.6 Brackets and Mounting Options

BWA-HW-001 Mounting Hardware Kit

- Screw, M5-0.8 x 25 mm, SS (4)
- Screw, M5-0.8 x 16 mm, SS (4)
- Hex nut, M5-0.8 mm, SS (4)
- Bolt, #8-32 x 3/4", SS (4)

Brackets									
SMBDX80DIN - Black reinforced thermoplastic - Bracket for mounting on a 35 mm DIN rail 	DIN-35-.. 35 mm DIN Rail <table border="1"> <thead> <tr> <th>Model</th><th>Length</th></tr> </thead> <tbody> <tr> <td>DIN-35-70</td><td>70</td></tr> <tr> <td>DIN-35-105</td><td>105</td></tr> <tr> <td>DIN-35-140</td><td>140</td></tr> </tbody> </table>  L = 70, 105 or 140 mm Hole center spacing: 35.1 Hole size: 25.4 x 5.3	Model	Length	DIN-35-70	70	DIN-35-105	105	DIN-35-140	140
Model	Length								
DIN-35-70	70								
DIN-35-105	105								
DIN-35-140	140								
Use to mount DX80 board-level devices, such as DX80Nx-PBx or DX80DRx-HBx models. BWA-HW-034 DIN rail clip, black plastic 	This standard Banner bracket can also be used to remotely mount dome antennas. SMBAMS18RA - Right-angle SMBAMS series bracket with 18 mm hole - Articulation slots for 90+° rotation 12-ga. (2.6 mm) cold-rolled steel  Hole center spacing: A = 26.0, A to B = 13.0 Hole size: A = 26.8 x 7.0, B = ø 6.5, C = ø 19.0								

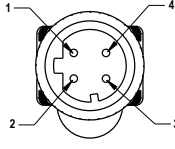
Brackets	
Use to mount vibration sensor models QM42VT1 and VT2. BWA-BK-001 Includes magnetic mounting bracket SMB42FLM12 and 2 mounting screws 	Use to mount vibration sensor models QM42VT1 and VT2. BWA-BK-002 Includes SMB42FL stainless steel bracket, 1/4"-28 screw mount, and 1 piece of 3M™ thermally conductive adhesive transfer tape 
BWA-BK-004 Mounts both the K50U Ultrasonic sensor and a Wireless Q45U Node or DX80 Node 	BWA-BK-006 Mounts both the K50U Ultrasonic sensor and a Wireless Q45U Node 

Adhesive Mounts	
BWA-HW-057 3M™ Thermally Conductive Adhesive Transfer Tape 8820 - Provides a heat-transfer path between heat-generating components and heat sinks or other cooling devices 3 pieces per pack - Tape is 20 mils (0.50 mm) thick; liner is 1.5-2 mil (37.5-50 µm) thick - Thermally conductive ceramic filler - Dual liner using silicone-treated polyester: easy-release PET liner is clear, tight side PET liner is blue	

1.7 Cables

1.7.1 Ethernet Cables

Use a crossover cable to connect the GatewayPro or DX83 Ethernet Bridge to a host system without using an Ethernet switchbox or hub. When using a switchbox or hub, use a straight cable.

RSCD RJ45 Ethernet to 4-Pin M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
BWA-E2M	2 m (6.6 ft)	Straight RSCD RJ45 440		  1 = White/orange (+Tx) 2 = Orange (-Tx) 3 = White/blue (+Rx) 4 = N/C 5 = N/C 6 = Blue (-Rx) 7 = N/C 8 = N/C 1 = White/Orange (+Tx) 2 = White/Blue (+Rx) 3 = Orange (-Tx) 4 = Blue (-Rx)
BWA-E8M	8 m (26.2 ft)			
BWA-EX2M	2 m (6.6 ft)	Crossover RSCD RJ45CR 440		

1.7.2 Adapter Cables

BWA-HW-006

- Adapter cable, USB to RS-485
- For use with the User Configuration Tool software (UCT)
- Datasheet: [140377](#)

BWA-UCT-900 (shown)

- Adapter cable with power, USB to RS-485
- For use with the User Configuration Tool software (UCT)
- Supplies power to 1 Watt radios
- Datasheet: [140377](#)



BWA-USB1WIRE-001

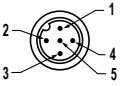
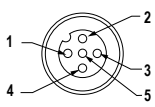
- PC USB to 1-wire serial interface converter
- Use with the Sensor Configuration Tool software to communicate directly with 1-wire serial interface sensors
- Datasheet: [170020](#)

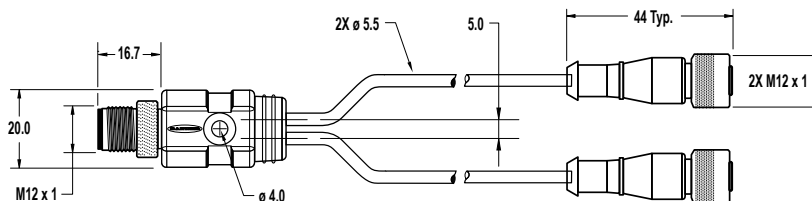


1.7.3 Splitter Cables

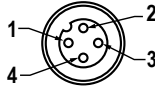
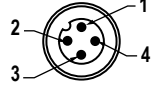
Use **CSRB-M1250M125.47M125.73** to split power between two *FlexPower* or solar powered devices. DO NOT use this cable to connect a *FlexPower* devices to a 10 to 30 V dc powered device.

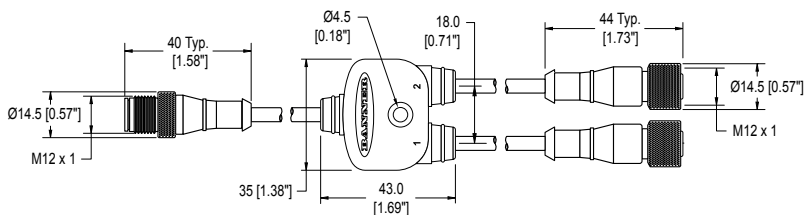
Use **CSRB-M1253.28M1253.28M1253.28** to connect one *FlexPower* device (data radio, *FlexPower* Gateway, etc) to two power sources, such as the *FlexPower* Solar Supply and DX81P6 Battery Pack.

5-Pin Threaded M12/Euro-Style Splitter Cordsets—Rounded Junction			
Model	Length	Style	Pinout
CSRB-M1250M125.47M125.73	Trunk: 0 m (male) Branches: 0.14 m and 0.22 m (female)	Straight	Male  Female  1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray
CSRB-M1253.28M1253.28M1253.28	Trunk: 1 m (female) Branches: 1 m (male)		



Use the following 4-pin splitter cables to split power between two 10 to 30 V dc powered devices, such as a data radio and Gateway, or between a DX85 and Gateway.

4-Pin Threaded M12/Euro-Style Splitter Cordsets—Flat Junction			
Model	Branches (Female)	Trunk (Male)	Pinout
CSB-M1240M1240	No branch	No trunk	Female  Male  1 = Brown 2 = White 3 = Blue 4 = Black
CSB-M1240M1241	2 x 0.30 m (1 ft)	No trunk	
CSB-M1241M1241		0.30 m (1 ft)	
CSB-M1248M1241		2.50 m (8 ft)	
CSB-M12415M1241		4.57 m (15 ft)	
CSB-M12425M1241		7.60 m (25 ft)	
CSB-UNT425M1241		7.60 m (25 ft) unterminated	



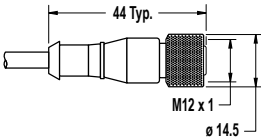
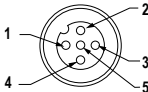
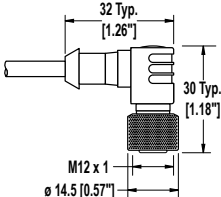
BWA-DRSPLITTER

- Splitter cable, DB9 Female (RS232) trunk to 5-pin M12/Euro-style male and female
- Datasheet: [155284](#)

1.7.4 Euro-Style Cordsets - Single Ended

When facing the Node or Gateway toward you and the quick disconnect connection is facing down, the right-angle cables exit to the right.

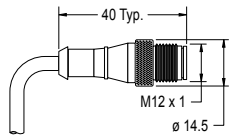
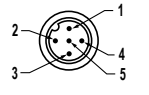
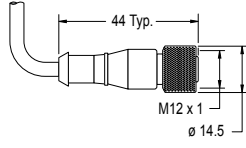
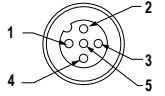
Right-angle cordsets are not compatible with the DX70 devices. When using the FlexPower Node with integrated battery, use a double ended cordset. For a FlexPower Node with external power supply, use a single ended cordset. **If using the communication lines, the cable length cannot exceed 3 meters, or 10 feet.**

5-Pin Threaded M12/Euro-Style Cordsets—Single Ended					
Model	Length	Style	Dimensions	Pinout (Female)	
MQDC1-501.5	0.50 m (1.5 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray	
MQDC1-506	1.83 m (6 ft)				
MQDC1-515	4.57 m (15 ft)				
MQDC1-530	9.14 m (30 ft)				
MQDC1-506RA	1.83 m (6 ft)	Right-Angle			
MQDC1-515RA	4.57 m (15 ft)				
MQDC1-530RA	9.14 m (30 ft)				

Models	Description
BWA-QD5.5	Prewired 5-pin M12/Euro-style quick disconnect (QD), 1/2-14 NBSM
BWA-QD8.5	Prewired, 8-pin M12/Euro-style quick disconnect (QD), 1/2-14 NBSM
BWA-QD12.5	Prewired 12-pin M12/Euro-style quick disconnect (QD), 1/2-14 NBSM
FIC-M12F4	4-pin M12/Euro-style straight female field-wireable connector
MQDMC-401	300 mm (12 in) cordset with a 4-pin M12/Euro-style straight male quick disconnect (QD), single ended, longer for DX80...C models

1.7.5 Euro-Style Cordsets - Double Ended

When using the FlexPower Node with integrated battery, use a double ended cordset. When using a FlexPower Node with external power supply, use a single ended cordset. **If using the communication lines, the cable length cannot exceed 3 meters (10 ft).**

5-Pin Threaded M12/Euro-Style Cordsets—Double Ended and Less Than 3 m Long				
Model	Length	Style	Dimensions	Pinout
DEE2R-51D	0.31 m (1 ft)	Female Straight/ Male Straight		Male
DEE2R-53D	0.91 m (3 ft)			
DEE2R-58D	2.44 m (8 ft)			Female
				 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Green/Yellow

1.7.6 Other Cables

BWA-RIBBON-001

- Ribbon cable, 20-pin DBL socket

BWA-HW-010

- Cable, FlexPower Current Monitoring

1.8 Other Accessories

1.8.1 DX85 Modbus RTU Remote I/O Devices

These remote I/O devices have a Modbus interface and are used to expand the I/O of the Gateway or the Modbus host.

Models	Description	
DX85M6P6	DX85 Modbus RTU Remote I/O, 6 Discrete IN, 6 Discrete OUT	 IP67 Housing  IP20 Housing
DX85M4P4M2M2	DX85 Modbus RTU Remote I/O, 4 Discrete IN, 4 Discrete OUT, 2 Analog IN, 2 Analog OUT (0 to 20 mA)	
DX85M4P8	DX85 Modbus RTU Remote I/O, 4 Discrete IN, 8 Discrete OUT	
DX85M8P4	DX85 Modbus RTU Remote I/O, 8 Discrete IN, 4 Discrete OUT	
DX85M0P0M4M4	DX85 Modbus RTU Remote I/O, 4 Analog IN, 4 Analog OUT (0 to 20 mA)	
DX85M-P7	DX85 Modbus RTU Remote I/O, Up to 12 sinking inputs or up to 12 NMOS sinking outputs (for a total of 12 I/O)	
DX85M-P8	DX85 Modbus RTU Remote I/O, Up to 12 sourcing inputs or up to 12 sourcing outputs (for a total of 12 I/O)	

Note: Add a "C" to the end of any DX85 model to order that I/O mix with an IP20 housing. The IP20 models are Class I, Division 2 certified when installed in a suitable enclosure.

1.8.2 Cable Glands and Plugs

Models	Description	
BWA-HP.5-10	Dummy Hole Plug Pack: 1/2-inch NPT, qty 10	
BWA-HW-031	Vent Plug, 1/2-inch NPT, IP67	
BWA-HW-059	Vent Plug Pack (Plastic): Includes one 1/2-inch NPT vent plug and one strain-relief fitting and o-ring for 0.2 to 0.35 dia cable	
BWA-HW-053	Vent Plug Pack (Plastic): Includes one 1/2-inch NPT vent plug and one cordgrip for 1.2 to 2.5 mm dia cable	
BWA-HW-052	Cable Gland and Vent Plug Pack: includes 1/2-inch NPT gland, 1/2-inch NPT multi-cable gland, and 1/2-inch NPT vent plug, qty 1 each	

Models	Description	
BWA-CG.5-10	Cable Gland Pack: 1/2-inch NPT, Cordgrips for cable diameters 0.17 to 0.45 inch, qty 10	
BWA-CG.5-3X5.6-10	Cable Gland Pack: 1/2-inch NPT, Cordgrip for 3 holes of 2.8 to 5.6 mm diam, qty 10	
BWA-CG.5-2X2.5-10	Cable Gland Pack: 1/2-inch NPT, Cordgrip for 2 holes of 1.2 to 2.5 mm diam, qty 10	
BWA-CG.5-6X4.0-10	Cable Gland Pack: 1/2-inch NPT, Cordgrip for 6 holes of 2 to 4 mm diam, qty 10	
BWA-CG.5-6X3.0-10	Cable Gland Pack: 1/2-inch NPT, Cordgrip for 6 holes of 1.5 to 3 mm diam, qty 10	

1.8.3 Hardware and Replacement Parts

Models	Description
BWA-HW-002	DX80 Access Hardware Kit Plastic threaded plugs, PG-7 (4) Nylon gland fittings, PG-7 (4) Hex nuts, PG-7 (4) Plug, 1/2-inch NPT Nylon gland fitting, 1/2-inch NPT
BWA-HW-003	PTFE Tape, 1/4 inches wide, 600 inches long
BWA-HW-004	Replacement Seals O-ring, rotary access cover, PG21 (2) O-ring, body gasket (2) Access cover, rotary dials, clear plastic (2)
BWA-HW-009	Solar assembly hardware pack, includes brackets, bolts, and set screws
BWA-HW-007	Housing Kit, DX80, top and bottom, 10 pieces
BWA-HW-008	Housing Kit, DX81, top and bottom, 10 pieces
BWA-HW-044	Terminal header for the MultiHop Ethernet Data Radio
BWA-HW-011	Terminal Block Headers, IP20, 2 pack
BWA-HW-012	DX99 Antenna Extension Pack Screw, M4-0.7 x 20, pan head, black steel Flexible Antenna Cable, 12 inches, SMA male to SMA female
BWA-HW-032	Access hardware for the E housing, one 1/2-inch plug, one 1/2-inch gland
BWA-HW-037	Clear plastic retaining ring for DX99 metal housings, 10 pack

1.8.4 Metal Housing Accessories

BWA-902-001 - Dome antenna 2 dBi, 18-inch cable, 1/2" SS NPT Port, 900 MHz - Datasheet: b_4475175		BWA-202-001 - Dome antenna 2 dBi, 18-inch cable, 1/2" SS NPT Port, 2.4 GHz - Datasheet: b_4475174	
BWA-902-002 - Dome antenna 2 dBi, 18-inch cable, 3/4" SS NPT Port, 900 MHz - Datasheet: b_4475175		BWA-202-002 - Dome antenna 2 dBi, 18-inch cable, 3/4" SS NPT Port, 2.4 GHz - Datasheet: b_4475174	

¹ Shown with PTFE tape wrapping

BWA-HW-016 • Antenna Feedthrough, Stainless Steel • 1/2" NPT BWA-HW-017 • Antenna Feedthrough, Stainless Steel • 3/4" NPT	BWA-AXFS0130 • AXF™ Explosion-Proof Antenna Coupler
BWA-HW-012 • DX99 Antenna Extension Pack • M4-0.7 × 20 black steel pan head screw • Flexible antenna cable 12" SMA male to SMA female	BWA-HW-037 • Clear plastic retaining ring for DX99 metal housings • Qty: 10

