

Banner Industrial Wireless Accessories

Instruction Manual

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: Fiberglass N-Type	6
1.2.4 Antennas: Yagi N-Type	6
1.2.5 Antennas: Cellular	6
1.2.6 Antenna Cables: RP-SMA to RP-SMA	6
1.2.7 Antenna Cables: RP-SMA to N-Type	7
1.2.8 Antenna Cables: N-Type	7
1.2.9 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	9
1.5 Sensors	9
1.6 Brackets and Mounting Options	10
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	16
1.7.5 Euro-Style Cordsets - Double Ended	17
1.7.6 Other Cables	17
1.8 Other Accessories	18
1.8.1 DX85 Modbus RTU Remote I/O Devices	18
1.8.2 Cable Glands and Plugs	18
1.8.3 Hardware and Replacement Parts	19
1.8.4 Metal Housing Accessories	19

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

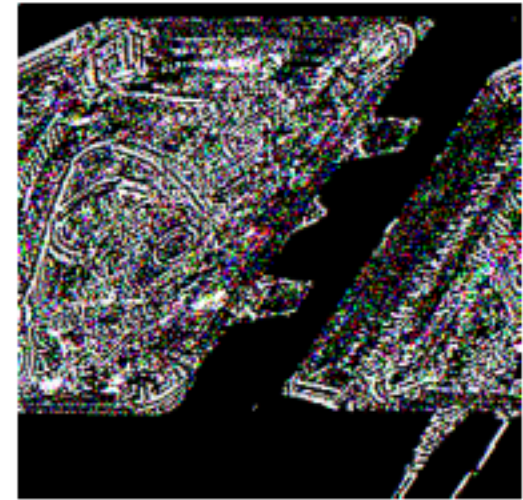
Select the enclosure size based on what you intend to mount inside it. Always select the largest enclosure you can to allow for future expansion.



6 × 6 inch: Fits a single DX80.



10 × 8 inch: Fits a power supply, surge suppressor, a single DX80, and a few relays.



12 × 10 inch (recommended): 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		Back Panel Kits	
Models	Description	Models	Description
BWA-AH66SPK	Swing Panel Kit, 6 x 6, includes mounts and screws	BWA-BP66A	Back Panel, Aluminum, 6 x 6
BWA-AH86SPK	Swing Panel Kit, 8 x 6, includes mounts and screws	BWA-BP86A	Back Panel, Aluminum, 8 x 6
BWA-AH108SPK	Swing Panel Kit, 8 x 10, includes mounts and screws	BWA-BP108A	Back Panel, Aluminum, 10 x 8
BWA-AH1210SPK	Swing Panel Kit, 12 x 10, includes mounts and screws	BWA-BP1210A	Back Panel, Aluminum, 12 x 10
BWA-AH1412SPK	Swing Panel Kit, 14 x 12, includes mounts and screws	BWA-BP1412A	Back Panel, Aluminum, 14 x 12
BWA-AH1614SPK	Swing Panel Kit, 16 x 14, includes mounts and screws	BWA-BP1614A	Back Panel, Aluminum, 16 x 14
BWA-AH1816SPK	Swing Panel Kit, 18 x 16, includes mounts and screws	BWA-BP1816A	Back Panel, Aluminum, 18 x 16

DIN Rail Kits (with Self-Threading Screws)		Enclosure Accessories	
Models	Description	Models	Description
BWA-AH6DR	DIN Rail Kit, 6", 2 trilobular/self-threading screws	BWA-AHAK	Accessory Kit, includes all screws, inserts, and mounting feet, for replacement only
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 x 0.375 PHL PH ZINC, 10 pack		

1.1.2 Fiberglass Enclosures

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

Omni-Directional Dome Antenna with RP-SMA Male Connection	
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 p. 10 section.

1.2.3 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	

1.2.4 Antennas: Yagi N-Type

Directional (Yagi) Antennas with an N-Type Female Connection	
BWA-9Y6-A 6.5 dBd, 6.8 x 13 inches Outdoor, 900 MHz - Datasheet: b_3145127	
BWA-9Y10-A 10 dBd, 6.8 x 24 inches Outdoor, 900 MHz - Datasheet: b_3145130	

1.2.5 Antennas: Cellular

Cellular Antenna	
BWA-CELLA-002 - Cellular multiband 2 dBi - RP-SMA male connection 6.3 inch blade style - Datasheet: b_4475176	

1.2.6 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-1MRSFRS B0.2	0.2	RG58, RP-SMA Male to RP-SMA Female Bulkhead	
BWC-1MRSFRS B1	1		
BWC-1MRSFRS B2	2		
BWC-1MRSFRS B4	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 - High performance, lightweight design - Outdoor rated; UV jacket	
BWC-2MRSFRS6	6		
BWC-2MRSFRS9	9		
BWC-2MRSFRS12	12		

1.2.7 Antenna Cables: RP-SMA to N-Type

Use these cables 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—LMR200 Type			
Model	Length (m)	Description	
BWC-1MRSMN05	0.5	LMR200 RP-SMA to N-Type Male	
BWC-1MRSMN2	2		

1.2.8 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		

1.2.9 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).



Important: Remote antenna configurations installed without a surge suppressor invalidate the manufacturer's warranty.

Surge Suppressors			
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 with wall plug, 100-240 V AC 50/60 Hz input, 24 V DC 1 A output, UL Listed Class 2	
PSD-24-4	DC power supply with wall plug, 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	
PSDINP-24-06	DC power supply, 0.63 Amps, 24 V DC, with DIN Rail Mount, Class I Division 2 (Groups A, B, C, D) Rated	
PSDINP-24-13	DC power supply, 1.3 Amps, 24 V DC, with DIN Rail Mount, Class I Division 2 (Groups A, B, C, D) Rated	
PSDINP-24-25	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

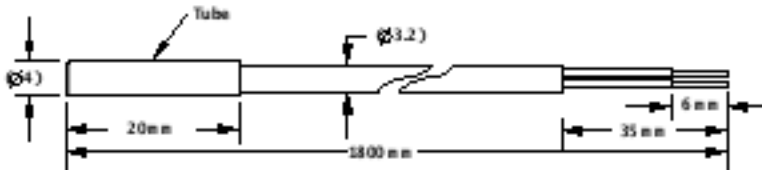
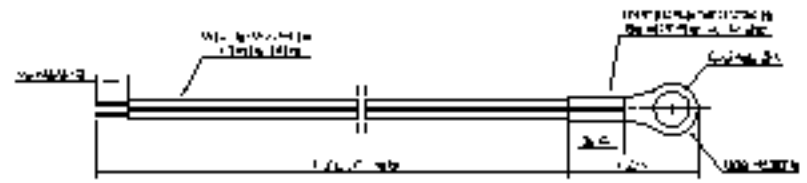
Power Supplies		
Models	Description	
DX81-LITH	Battery Supply Module with mounting hardware	
DX81H	Battery Supply Module with mounting hardware, for DX99 polycarbonate housing devices	
DX81P6	Battery Supply Module, six "D" cells, with mounting hardware	
BWA-SOLAR PANEL 3W	Solar Panel, 12 V, 3 W, Multicrystalline, 188 x 195 x 15, Wall/Pole clamp style mounting bracket included (does not include controller)	
BWA-SOLAR PANEL 5W	Solar Panel, 12 V, 5 W, Multicrystalline, 270 x 222 x 17, Wall/Pole clamp style mounting bracket included (does not include controller)	
BWA-SOLAR PANEL 20W	Solar Panel, 12 V, 20 W, Multicrystalline, 573 x 357 x 30, "L" style mounting bracket included (does not include controller)	
BWA-SOLAR CNTRL-12V	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	3.6 V Lithium D cell for DX81-LITH and DX81H Battery Supply Modules, and for hazardous or non-hazardous locations, 1 battery
BWA-BATT-011	3.6 V Lithium D cell for non-hazardous locations only, 1 battery
BWA-BATT-006	3.6 V Lithium AA cell for Wireless Q45 Sensors, 2 batteries
BWA-BATT-013	3.6 V Lithium C cell, 1 battery

1.4 Relays

Models	Description	
IB6RP	Interface Relay Box, 18 to 26 V DC inputs, isolated relay outputs (not shown)	
BWA-RELAY-12V	Relay, Blade Style with Base, 12 V	
BWA-RELAY-24V	Relay, Blade Style with Base, 24 V	
BWA-RH1B-UDC12V	Relay, Blade Style, No Base, 12 V (replacement part)	
BWA-RH1B-UDC24V	Relay, Blade Style, No Base, 24 V (replacement part)	
BWA-SH1B-05	Relay Base Only (replacement part)	

1.5 Sensors

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 	BWA-THERMISTOR-RING-LUG - Temperature sensor with thermistor PS103G2 - Beta Value (K) 0-50°C: 3575 - Base thermistor accuracy of 0.2 % - Operating Temperature Range: 0 °C to +75 °C - Maximum Power Rating: 30 mW at 25 °C; derated to 1 mW at 125 °C - Dissipation Constant: 1 mW/°C 

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

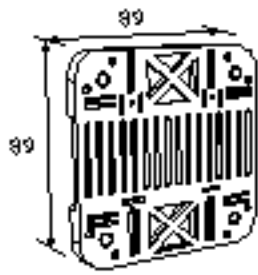
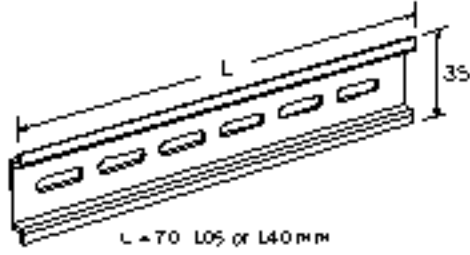
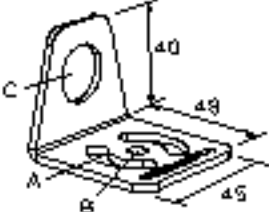
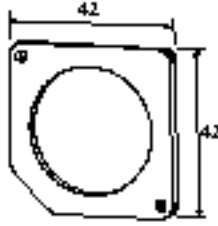
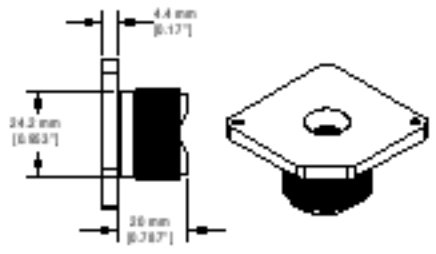
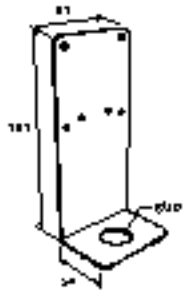
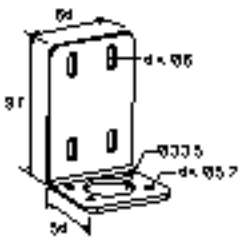
Pressure Sensors	
BWA-625-10000-1-1-8-25 • NoShok Series 625 Intrinsically Safe Pressure Transmitter, model 625-10000-1-1-8-25, 0 to 10000 psig, 4-20 mA • 1/2" NPT, M12 QD • FM and CSA approved	
BWA-PRESSURE-SENSOR-50 • 0-50 PSIG • 1 meter tying leads • 1/4"-18 NPT port	BWA-PRESSURE-SENSOR-150 • 0-150 PSIG • 1 meter tying leads
BWA-PRESSURE-SENSOR-500 • 0-500 PSIS • 1 meter tying leads	BWA-PRESSURE-SENSOR-3000 • 0-3000 PSIS • 1 meter tying leads

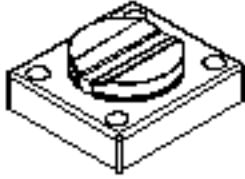
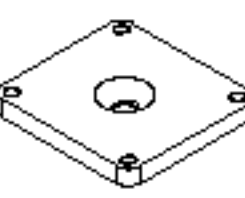
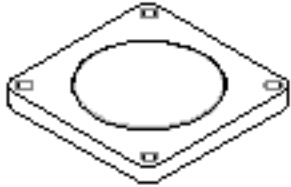
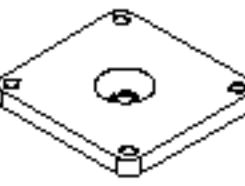
Moisture Sensors	
BWA-ACC-SEN-SDI • Acclima SDI-12 Soil Moisture Transducer	

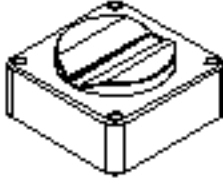
Current Transformers (CT)	
BWA-CURRENT-TRANSFORMER-20A • Split-Core Current Transformer • 20 A Input • 0-50 mA/0.333 V Output	BWA-CURRENT-TRANSFORMER-150A • Split-Core Current Transformer • 150 A Input • 0-100 mA/0.333 V Output

1.6 Brackets and Mounting Options

BWA-HW-001 Mounting Hardware Kit • Four screws, M5-0.8 x 25 mm, SS • Four screws, M5-0.8 x 16 mm, SS • Four hex nuts, M5-0.8 mm, SS • Four bolts, #8-32 x 3/4", SS

Brackets													
SMBDX80DIN - Black reinforced thermoplastic - Bracket for mounting on a 35 mm DIN rail 	DIN-35-... 35 mm DIN Rail <table border="1" data-bbox="1109 381 1485 701"> <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> <tr> <td>DIN-35-180</td><td>180</td></tr> <tr> <td>DIN-35-220</td><td>220</td></tr> </tbody> </table>  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	DIN-35-180	180	DIN-35-220	220
Model	Length												
DIN-35-70	70												
DIN-35-105	105												
DIN-35-140	140												
DIN-35-180	180												
DIN-35-220	220												
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 = ϕ 6.5, C = ϕ 19.0												
Use to mount vibration sensor models QM42VT1 and VT2 sensor BWA-BK-001 Includes magnetic mounting bracket SMB42FLM12 and 2 mounting screws 	Used to mount vibration sensor models QM42VT1 and VT2 BWA-BK-008 - Magnetic coaxial mount for round objects - Includes SMB42FLAT stainless steel bracket, 1/4"-28 screw mount, and 1 piece of 3M™ thermally conductive adhesive transfer tape 42 mm x 42 mm 												
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 												

Brackets	
Used to mount the Q45VA sensor BWA-BK-009 - Mounts the device to a surface using adhesive - Alignment mark indicates the front of device - Includes a base plate, two screw retainers, four mounting screws, a set screw, and a mounting disc 44.5 mm x 49.5 mm - For installation instructions, see Q45VA Bracket Assembly Quick Start Guide (p/n 208986) 	Used to mount the Q45 sensor BWA-BK-010 - Includes a magnetic mounting bracket and four mounting screws 44.5 mm x 49.5 mm - SmCo magnet with a 40 lb pull strength - For use on flat or curved surfaces 
BWA-BK-011 - Backside magnetic mount for the Q45 Sensors - Includes one bracket, three screws, and a magnetic cup 60 mm x 40 mm - For use on a flat surface 	BWA-BK-012 - Use when measuring high frequency vibrations or when mounting the sensor to curved surfaces - Includes SMBQM30 stainless steel bracket, four mounting screws, one M4 x 0.7 screw mount, and one piece of 3M™ thermally conductive adhesive transfer tape 30 mm x 30 mm - Refer to the Bracket Assembly Quick Start Guide for installation instructions (p/n 213323) 
BWA-BK-013 - Includes magnetic mounting bracket SMBQM30 and four mounting screws (two sets of mounting screws for both the aluminum and stainless steel models) 30 mm x 30 mm - Refer to the Bracket Assembly Quick Start Guide for installation instructions (p/n 213323) 	BWA-BK-014 - Use when measuring high frequency vibrations or when mounting the sensor to curved surfaces - Includes SMBQM30 aluminum bracket, four mounting screws, one M4 x 0.7 screw mount, and one piece of 3M™ thermally conductive adhesive transfer tape 30 mm x 30 mm - Refer to the Bracket Assembly Quick Start Guide for installation instructions (p/n 213323) 

Brackets	
BWA-BK-019 • Magnet mount for curved surfaces • 30 mm x 30 mm, 14.4 mm thick • Includes four M2.5 x 16 mm socket head cap screws • Refer to the Bracket Assembly Quick Start Guide for installation instructions (p/n 213323)	
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

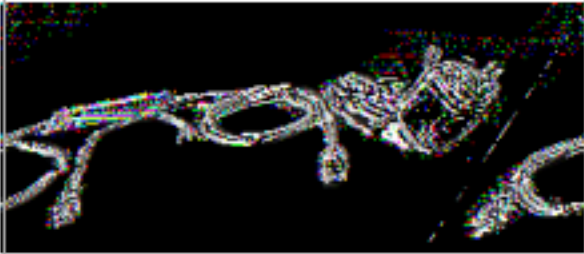
Use a crossover cable to connect the GatewayPro or DX83 Ethernet Bridge to a host system without using an Ethernet switchbox or hub. When using a switchbox or hub, use a straight cable.

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

1.7.2 Adapter Cables

Use the following adapter cables to connect your device to your computer during configuration.

RS-485 to USB Adapter with Wall Plug — Use with the User onfiguration Software; works with all radios, including 1 Watt; datasheet: [140377](#)

4-Pin Threaded M12/Euro-Style 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

RS-485 to USB Adapter — Use with the User onfiguration Software; requires BWA-HW-026 to work with 1 Watt Radios; datasheet: [140377](#)

4-Pin Threaded M12/Euro-Style RS-485 to USB Adapter Cordset				
Model	Length	Style	Dimensions	Pinout (Female)
BWA-HW-006	1 m (3.28 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black

USB to 1-Wire Serial Interface Adapter — Use with the Sensor onfiguration Tool software to communicate directly with 1-wire serial interface sensors; datasheet: [170020](#)

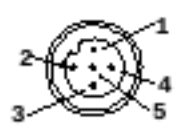
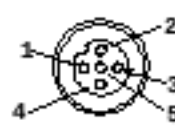
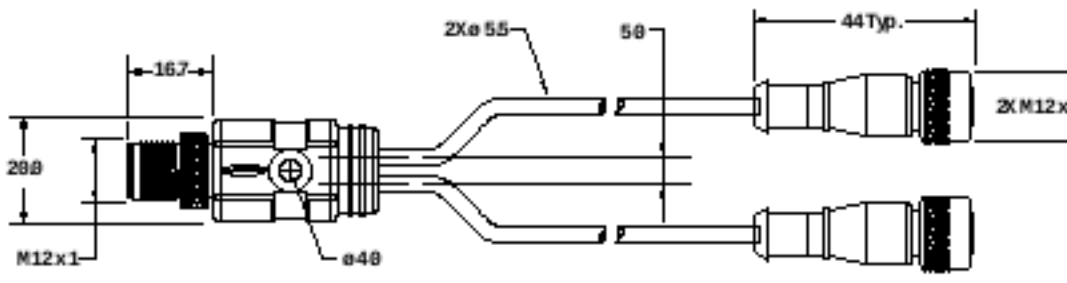
5-Pin Threaded M12/Euro-Style 1-Wire Serial to USB Adapter Cordset				
Model	Length	Style	Dimensions	Pinout (Female)
BWA-USB1WIRE-001	1 m (39 in)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray

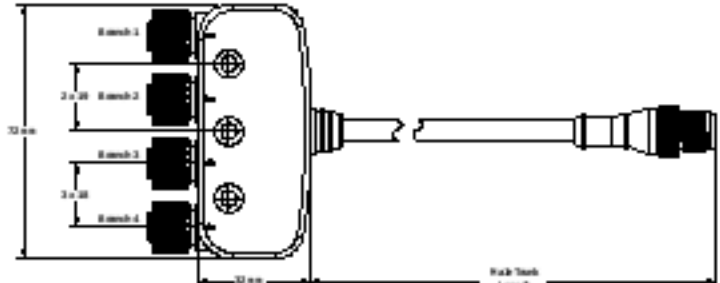
1.7.3 Splitter Cables

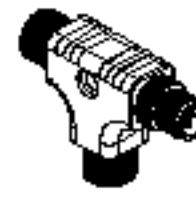
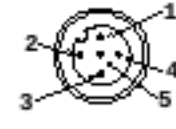
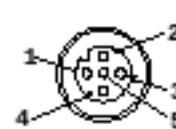
The 4-pin, 5-pin, and DB9 splitter cables all have specific functions. Using the incorrect cable for your application can damage the radios.

5-pin Splitter Cables—Use splitter cable CSRB-M1250M125.47M125.73 to split from one power source to two FlexPower or solar powered devices. DO NOT use this cable to connect a FlexPower device to a 10 to 30 V DC powered device. (Refer to the wiring diagrams for each radio to avoid damaging the radios.)

Use splitter cable 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 with Rounded Junction—Double Ended				
Model	Length	Style	Pinout (Male)	Pinout (Female)
CSRB-M1250M125.47M125.73	Trunk (male): 0 m Branches (female): 0.14 m (0.46 ft) and 0.22 m (0.72 ft)	Straight		
CSRB-M1253.28M1253.28M1253.28	Trunk (female): 1 m (3.28 ft) Branches (male): 1 m (3.28 ft)			
			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray	

5-Pin Threaded M12/Euro-Style Splitter Cordset with Flat Junction—Double Ended				
Model	Trunk (Male)	Branches (Female)	Pinout (Male)	Pinout (Female)
CSB4-M1251M1250	0.3 m (0.98 ft)	Four (no cable)		
			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray	

5-Pin Threaded M12/Euro-Style Splitter Tee				
Model	Description		Pinout (Male)	Pinout (Female)
CSB-M1250M1250-T	Female trunk, 1 female branch, 1 male branch		 1 = Brown 2 = White 3 = Blue	 4 = Black 5 = Green/Yellow

4-pin Splitter Cables—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 0.3 m (1 ft)	No trunk	
CSB-M1241M1241		0.30 m (1 ft)	
CSB-M1248M1241		2.44 m (8 ft)	
CSB-M12415M1241		4.57 m (15 ft)	
CSB-M12425M1241		7.60 m (25 ft)	
CSB-UNT425M1241		7.60 m (25.0 ft) Unterminated	

Technical drawing details:
 - Left connector: 40 Typ [L 98"], Ø4.5 [Ø 57"], M12 x L
 - Central body: Ø4.5 [Ø 57"], L8.0 [Ø 71"], 35 [L 38"], 48.0 [L 69"]
 - Right connector: 44 Typ [L 73"], Ø4.5 [Ø 57"], M12 x L

DB9 Splitter Cable—Use this cable to connect a Sure Cross device to power and to a 9-pin serial port on a computer or other industrial device.

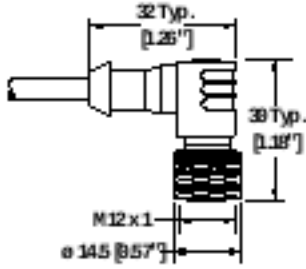
BWA-DRSPLITTER • Splitter cable, DB9 Female (RS232) trunk to 5-pin M12/Euro-style male and female • The trunk and each branch is 0.3 meters long • Datasheet: 155284	
--	---

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.

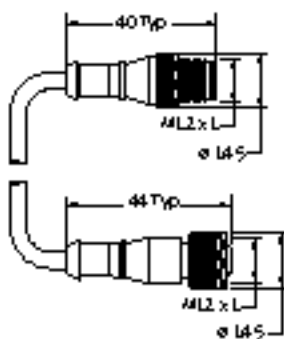
5-Pin Threaded M12/Euro-Style Cordsets — Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC1-501.5	0.5 m (1.5 ft)	Straight		1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray
MQDC1-506	2 m (6.5 ft)			
MQDC1-515	5 m (16.4 ft)			
MQDC1-530	9 m (29.5 ft)			

5-Pin Threaded M12/Euro-Style Cordsets – Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC1-506RA	2 m (6.5 ft)	Right-Angle		
MQDC1-515RA	5 m (16.4 ft)			
MQDC1-530RA	9 m (29.5 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 Less Than 3 m Long – Double Ended					
Model	Length	Style	Dimensions	Pinout (Male)	Pinout (Female)
DEE2R-51D	0.3 m (1 ft)	Female Straight/ Male Straight			
DEE2R-53D	0.91 m (3 ft)			1 = Brown 2 = White 3 = Blue	4 = Black 5 = Green/Yellow
DEE2R-58D	2.44 m (8 ft)				

1.7.6 Other Cables

BWA-HW-026 • Splitter cable with a wall plug to supply external power to a MultiHop Radio operating at 1 Watt while it is connected to a computer • The wall plug splits to 5-pin Euro-style male and 5-pin Euro-style female ends • The male end plugs into the USB to RS-485 adapter cable (model number BWA-HW-006) and the female end plugs into the MultiHop radio	
--	---

BWA-RIBBON-001	
Ribbon cable, 20-pin DBL socket	

BWA-HW-010 - Cable, FlexPower Current Monitoring - Connects a battery supply and FlexPower radio device to an averaging fluke meter to determine the current draw of the Node/sensor combination - Based on the current draw, battery life estimates can be made	 Averaging Fluke Meter DX85 Battery Supply Module FlexPowerNode with M38EAM 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. 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.

Model	Description	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)		
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)		

1.8.2 Cable Glands and Plugs

Models	Description	
BWA-HP-5-10	Dummy Hole Plug Pack: 1/2-inch NPT, 10 pack	
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, one each	

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

1.8.3 Hardware and Replacement Parts

Model	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-027	8-pin quick disconnect, female, 1/2-inch NPT (FK8-0.5/14.5/NPT)
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-9O2-001 - Dome antenna 2 dBi, 18-inch cable, 1/2" SS NPT Port, 900 MHz - Datasheet: b_4475175 BWA-9O2-002 - Dome antenna 2 dBi, 18-inch cable, 3/4" SS NPT Port, 900 MHz - Datasheet: b_4475175		BWA-2O2-001 - Dome antenna 2 dBi, 18-inch cable, 1/2" SS NPT Port, 2.4 GHz - Datasheet: b_4475174 BWA-2O2-002 - Dome antenna 2 dBi, 18-inch cable, 3/4" SS NPT Port, 2.4 GHz - Datasheet: b_4475174	
---	---	---	---

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 x 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

