Antennas

MultiPort Series

DATA SHEET

Multi-Band Ten-Port Antenna

DPA65R-BU8D

- Eight foot (2.4 m) internally multiplexed MultiBand, ten port antenna, with a 65° azimuth beamwidth covering 698-896 MHz and 1695-2400 MHz frequencies
- Four wide mid band ports covering 1695-2400 MHz, two wide low band ports covering 698-896 MHz and four frequency specific low band ports covering 717-728 MHz and 758-798 MHz (over distributed diplexing) in a single antenna enclosure
- Innovative Low and Mid Band Array configuration allows for independent 2T2R (2x2 MIMO) on B29 Low Band Array and 4T4R (4x4 MIMO) on B14/B12 Low Band Arrays and 4T4R (4x4 MIMO) Mid Band Array, using full length arrays, all in a 20.7" (525 mm) width enclosure
- Industry leading antenna topology and RET shielding techniques drastically mitigate PIM propagation from B12/B14/B29 operations, allowing for superior Network performance
- Full Spectrum Compliance for 698-896 MHz / 1695-2400 MHz operations
- LTE Optimized FBR and SPR performance, providing for an efficient use of valuable radio capacity
- LTE Optimized Boresight and Sector XPD and USL performance, essential for LTE Performance
- Exceeds minimum PIM performance requirements
- Internally Integrated RET Controllers (Type 17)
- Equipped with new 4.3-10 connector, which is 40% smaller than traditional 7/16 DIN connector

Overview

The CCI internally multiplexed MultiBand array is a ten port antenna, with four wide band ports covering 1695-2400 MHz, two wide low band ports covering 698-896 MHz and four frequency specific low band ports covering 717-728 MHz and 758-798 MHz (over distributed diplexing).

Innovative Low and Mid Band Array configuration allows for independent 2T2R (2x2 MIMO) on B29 Low Band Array and 4T4R (4x4 MIMO) on B14/B12 Low Band Arrays and 4T4R (4x4 MIMO) Mid Band Array, using full length arrays, all in a 20.7" (525 mm) width enclosure.

CCI antennas are designed and produced to ISO 9001:2008 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO for the Mid band ports and 2x2 MIMO on B29 ports and 4x4 MIMO on B14/B12 ports
- Ready for Network Standardization on 4.3-10 connectors
- With CCI's multiband antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs

SPECIFICATIONS

Multi-Band Ten-Port Antenna

DPA65R-BU8D

Electrical

Ports	2 x Low Band Ports for 717-728 MHz	2 x Low Band Ports for 758-798 MHz	2 x Low Band Ports for 698-896 MHz	
Frequency Range	717-728 MHz	758-798 MHz	698-806 MHz	824-896 MHz
Gain[1]	14.2 dBi	15.1 dBi	15.6 dBi	16.4 dBi
Gain (Average)	13.9 dBi	14.5 dBi	14.6 dBi	15.6 dBi
Azimuth Beamwidth (-3dB)	77°	74°	73°	65°
Elevation Beamwidth (-3dB)	9.9°	9.0°	9.5°	7.9°
Electrical Downtilt	2° to 12°	2° to 12°	2° to 12°	2° to 12°
Elevation Sidelobes (1st Upper)	<-15 dB	<-20 dB	<-18 dB	<-17 dB
Front-to-Back Ratio @180°	> 35 dB	> 30 dB	> 35 dB	> 35 dB
Front-to-Back Ratio ±20°	> 30 dB	> 30 dB	> 30 dB	> 32 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Discrimination at Sector[2]	7.1 dB	6.5 dB	8.2 dB	6.2 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground

[1]Peak gain across sub-bands.
[2]Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.

Ports	4 x Mid Band Ports for 1695-2400 MHz			
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz
Gain[1]	17.7 dBi	17.7 dBi	18.0 dBi	18.1 dBi
Gain (Average)	16.7 dBi	17.0 dBi	17.2 dBi	17.1 dBi
Azimuth Beamwidth (-3dB)	70°	71°	71°	53°
Elevation Beamwidth (-3dB)	5.6°	5.0°	4.7°	4.1°
Electrical Downtilt	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobes (1st Upper)	<-18 dB	<-18 dB	<-18 dB	<-17 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Front-to-Back Ratio ±20°	> 32 dB	> 32 dB	> 32 dB	> 32 dB
Cross-Polar Discrimination at Peak	> 19 dB	> 18 dB	> 19 dB	> 20 dB
Cross-Polar Discrimination at Sector[2]	7.7 dB	6.1 dB	5.5 dB	6.5 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground

[1]Peak gain across sub-bands.
[2]Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.

SPECIFICATIONS

Multi-Band Ten-Port Antenna

DPA65R-BU8D

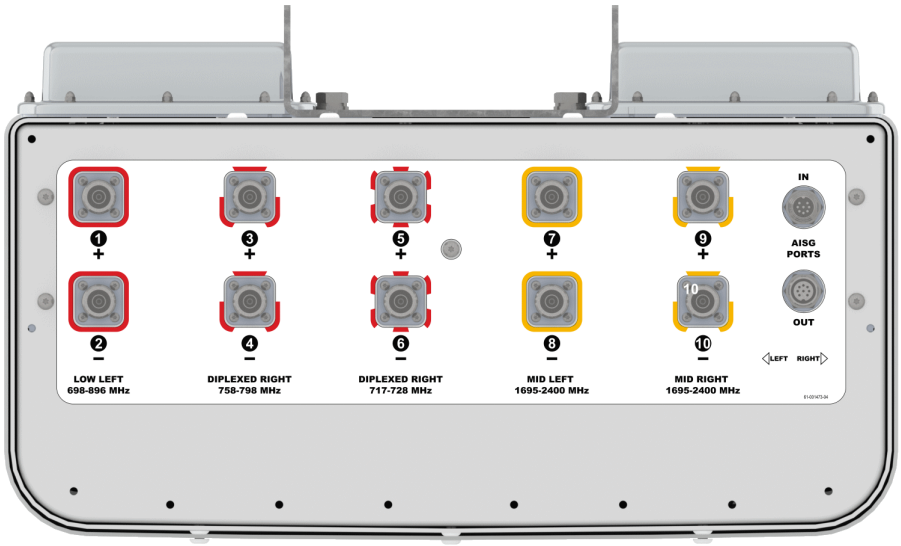
Mechanical

Dimensions (LxWxD)	96.0x20.7x9.7 in (2438x525x247 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load[1]	256 lbf @ 100 mph 1139 N @ 161 kph
Side Wind Load[1]	103 lbf @ 100 mph 459 N @ 161 kph
Effective Projective Area (EPA), Front[1]	10.2 ft^2 (0.9 m^2)
Weight*	109.3 lbs (49.6 kg)
Connector	10 x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

[1]Windload values calculated using CFD analysis
** Weight excludes mounting kit*

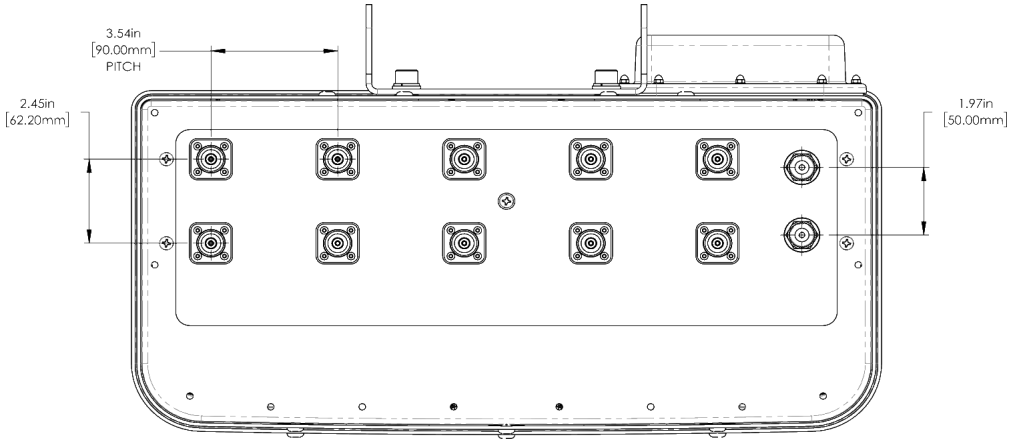
Bottom View

DPA65R-BU8DB



Connector Spacing

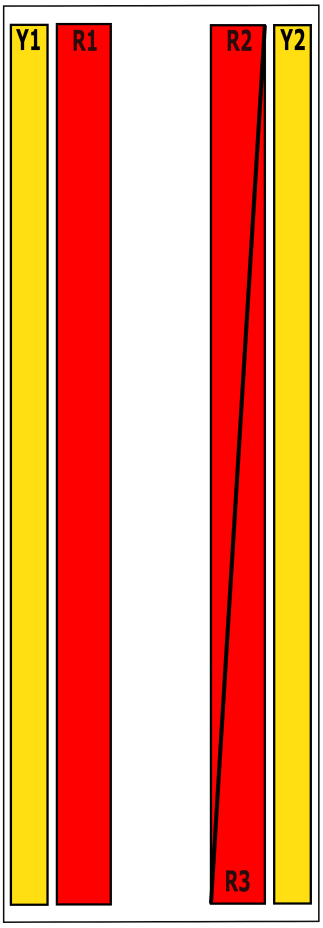
DPA65R-BU8DB (Type 17 Internal RET)



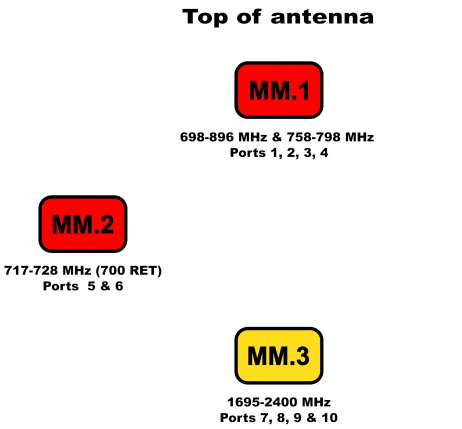
RET to Element Configuration

DPA65R-BU8DB Element and RET configuration (Type 17 Internal RET)

Top of antenna Viewed from rear



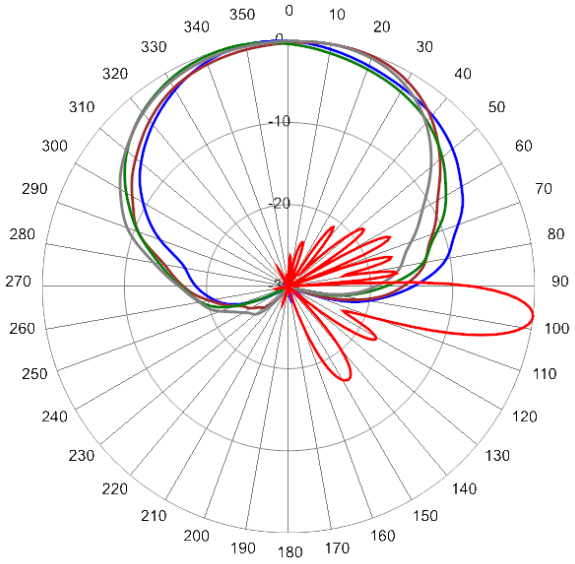
RET placement as viewed from rear of antenna



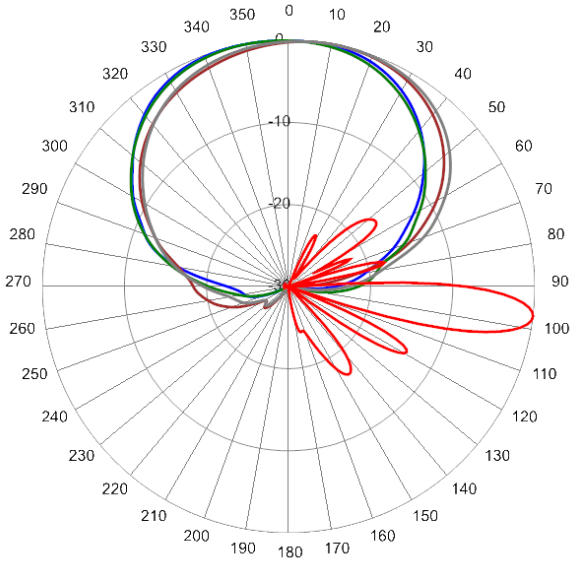
Array	Ports	Freq (MHz)	Ports controlled by dedicated RET	AISG RET UID
R1	1, 2	698-896	1, 2, 3, 4	CIxxxxxxMM.1
R2	3, 4	758-798		
R3	5, 6	717-728	5, 6	CIxxxxxxMM.2
Y1	7, 8	1695-2400	7, 8, 9, 10	CIxxxxxxMM.3
Y2	9, 10	1695-2400		

Typical Antenna Patterns

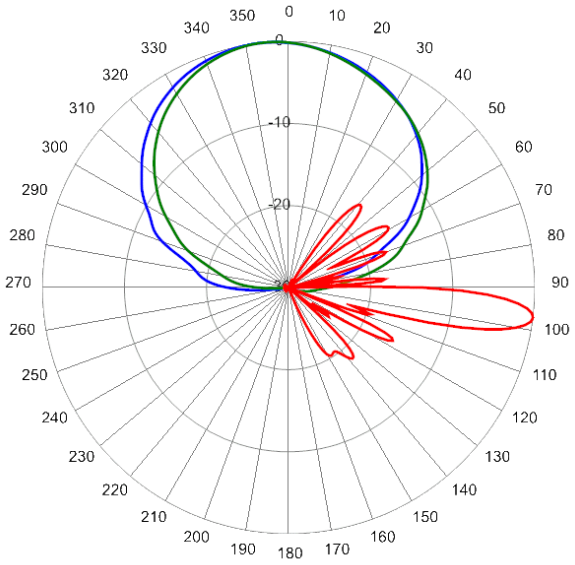
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



722 MHz Azimuth with Elevation 7° (Ports 1, 2, 5 & 6)

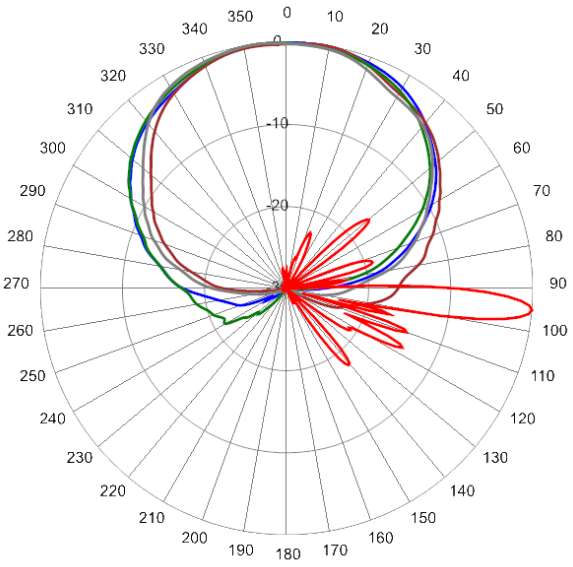


788 MHz Azimuth with Elevation 7° (Ports 1, 2, 3 & 4)

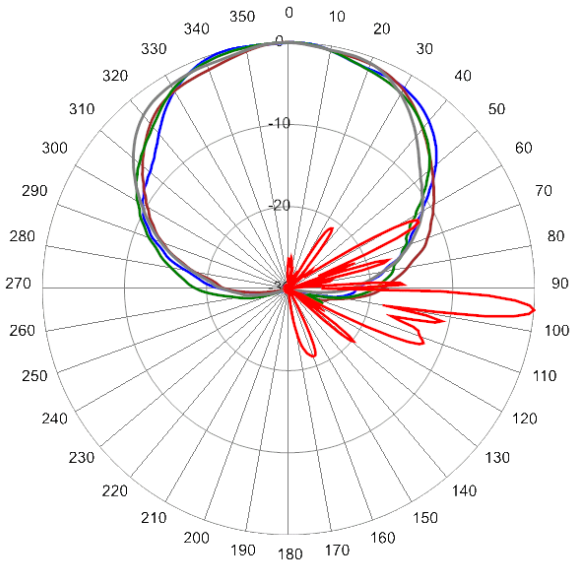


896 MHz Azimuth with Elevation 7° (Ports 1 & 2)

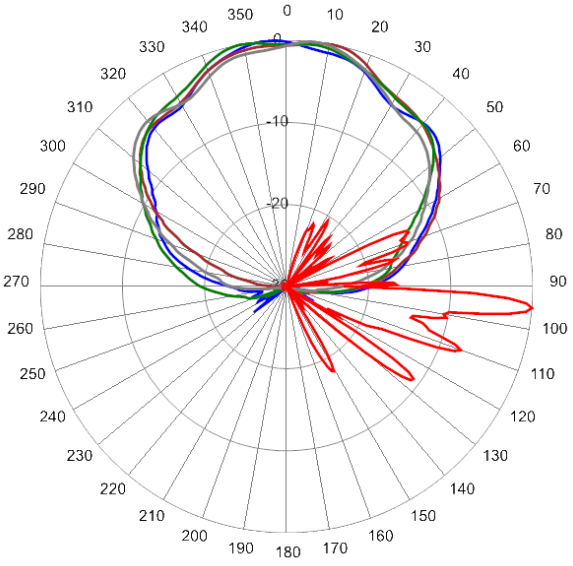
Typical Antenna Patterns



1755 MHz Azimuth with Elevation 4° (Ports 7, 8, 9 & 10)



2155 MHz Azimuth with Elevation 5° (Ports 7, 8, 9 & 10)



2360 MHz Azimuth with Elevation 4° (Ports 7, 8, 9 & 10)

ORDERING

Multi-Band Ten-Port Antenna

DPA65R-BU8D

Parts & Accessories

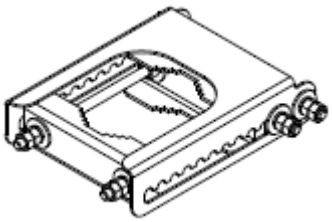
DPA65R-BU8DB-K	Eight foot (2.4 m) antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 3 factory installed BSA-RET400 RET actuators (Type 17 internal) and MBK-16 mounting bracket
MBK-01	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
MBK-16	Mounting Kit with fixed 0° mechanical tilt
BSA-RET400	Type 17 Internal Remote Electrical Tilt System (RET)
AISGC-M-F-10FT	10 Ft (3 m) Male/Female RRU to Antenna AISG cable

Mounting Bracket Kit

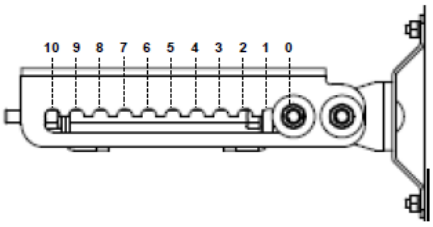
MBK-01

Mechanical

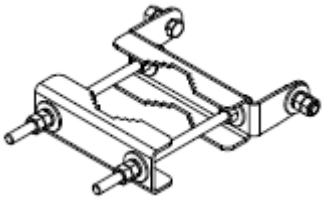
Weight	12.6 lbs (5.7 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lb (54 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



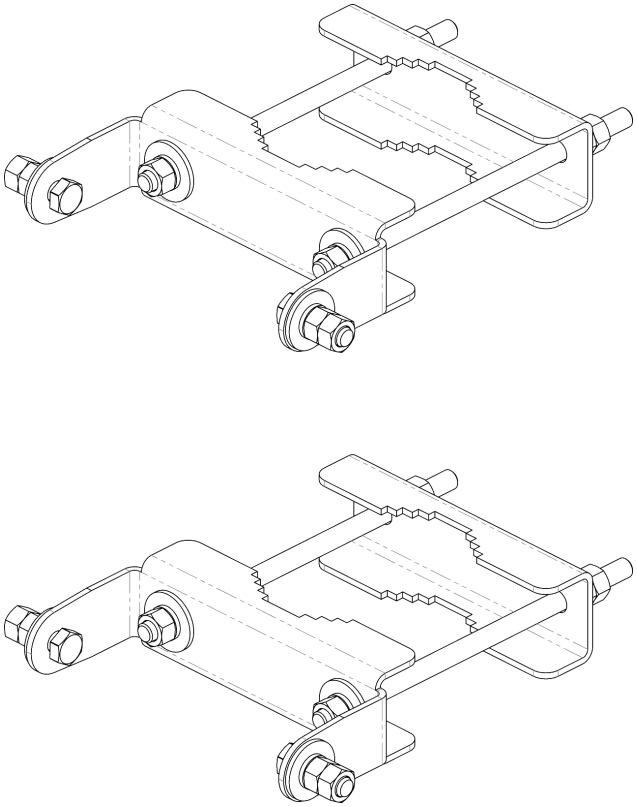
MBK-01 Bottom Fixed Bracket

Mounting Bracket Kit

MBK-16

Mechanical

Weight	9.9 lbs (4.5 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lbs (54 N·m)
Mechanical Tilt	0°



MBK-16 Top and Bottom Bracket

MultiPort Series

Internal Remote Electrical Tilt (iRET)

BSA-RET400

General Specifications

Part Number	BSA-RET400
Protocols	AISG 2.0
RET Type	Type 17
Adjustment Cycles	>10,000 cycles
Tilt Accuracy	±0.1°
Temperature Range	-40° C to 70° C

Electrical

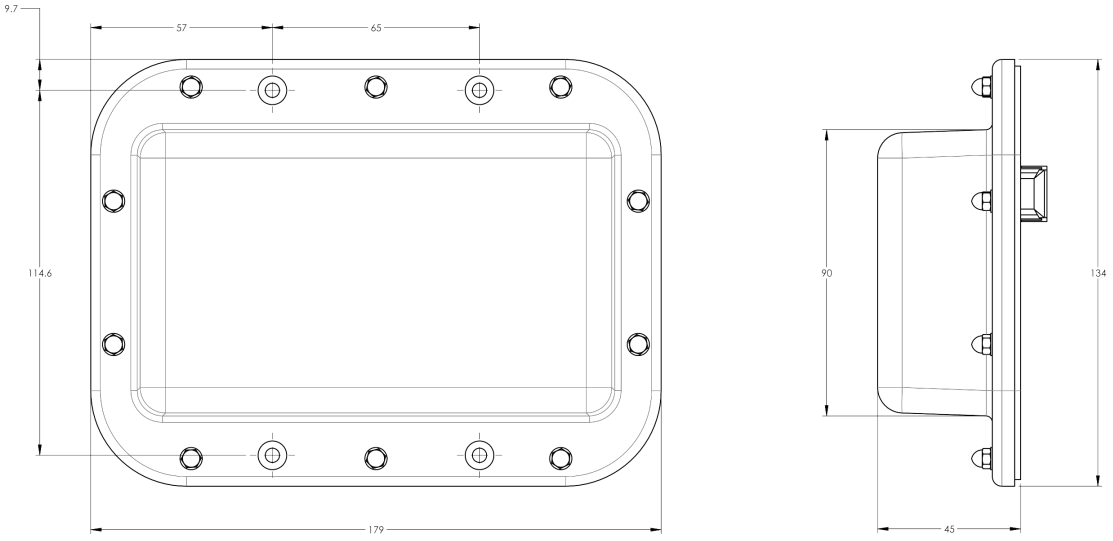
Data Interface Signal	DC
Input Voltage	10-30 Vdc
Current Consumption Tilt	100 mA at V_{in}=24 (500 mA MAX)
Current Consumption Idle	10 mA at V_{in}=24

Mechanical

Dimensions (LxWxD)	7.0x5.3x1.8 in. (179x134x45 mm)
Housing	ASA/ABS/Aluminum
Weight	1.3 lbs (0.6 kg)

ASA= Acrylic Styrene Acrylonitrile

ABS=Acrylonitrile Butadiene Styrene



AISG Cable

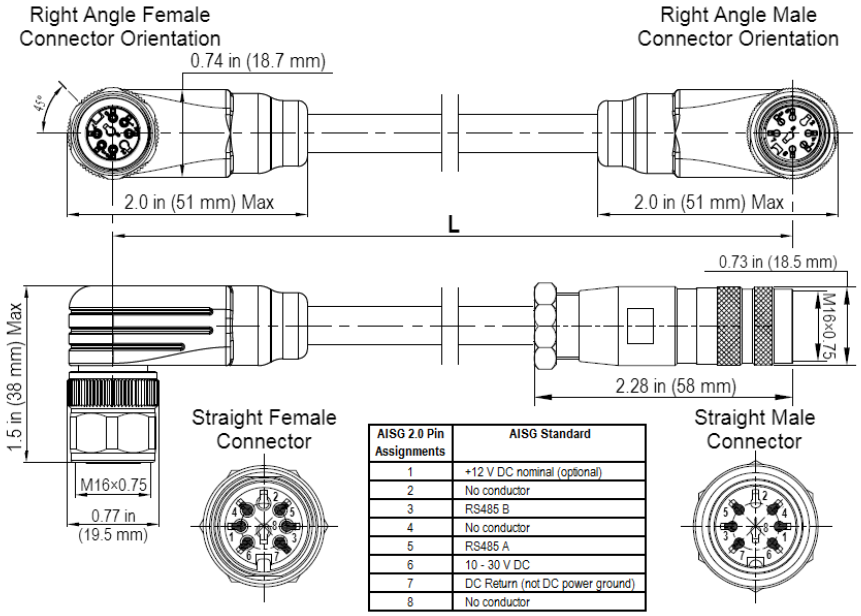
AISGC-M-F-xFT

Electrical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cable style	UL2464
Protocol	AISG 1.1 and AISG 2.0
Maximum voltage	300 V
Rated current	5 A at 104° F (40° C)

Mechanical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cables per kit	1
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 Nm)
Construction	Shielded (Tinned Copper Braid)
Braid coverage	85%
Jacket Material	Matte Polyurethane (Black)
Conductors	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464
Cable Diameter	0.307 in (7.8 mm)
Length	See order details
Minimum bend radius	3.15 in (80 mm)



AISG 2.0 Pin Assignments	AISG Standard
1	+12 V DC nominal (optional)
2	No conductor
3	RS485 B
4	No conductor
5	RS485 A
6	10 - 30 V DC
7	DC Return (not DC power ground)
8	No conductor

AISG-Male to AISG-Female Jumper Cable

Environmental Specifications

Individual Cable Part Number	AISGC-M-F-xFT
Temperature Range	-40° to 80° C
Flammability	UL 1581 VW-1
Ingress Protection	IEC 60529:2001, IP67

Standards & Compliance

Safety	EN 60950-1, UL 60950-1
Emission	EN 55022
Immunity	EN 55024
Environmental	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN 60529, IP 24

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001