DATA SHEET

Outdoor AISG Bias-T

BTO-0627-xxx-x

- Integrated AISG modem for combining or breaking out DC/AISG and RF frequencies covering 614-2700 MHz
- Compact weatherproof housing rated at IP67 available with optional 7-16, 4.3-10 or N-type connectors
- High power 300 W per port with low insertion loss in a small, lightweight enclosure
- AISG 2.0/1.1 Compliant with integrated lightning protection

Overview

Communication Components, Inc. (CCI) Bias-T's are designed to combine the DC Bias and AISG compliant communication link provided by the "Site Control Unit" (SCU) with the RF signal from other equipment onto the center conductor of the feeder line. By providing control interfaces which are AISG 2.0 compatible to and from the "Site Control Unit," the Bias-T's can provide AISG control signals to AISG 2.0 compliant equipment including Tower Mounted Amplifiers (TMAs) and Antennas equiped with Remote Electrical Tilt Actuators via the RF Feeder Lines. The Bias-T also provides surge protection in case of lightning strikes or other sources of surges. The Bias-T offers a choice of either 7-16, 4.3-10 or N-Type RF connectors. The standard Bias-T has a Male RF connector at the RF Input port, an 8 pin AISG Compliant (per IEC 60130-9) male circular connector at the DC Input port, and a Female RF connector at the combined RF, DC and AISG Signal output port. The unit is fully rated for outdoor deployment.

Technical Description:

The standard Bias-T consists of Male BTS Input (RF) and a Female ANT Output (RF + DC+AISG signal) connector, as well as an 8-Pin AISG-compliant Female Circular connector for the DC Bias Input point. A reverse gender Bias-T is also available where the RF port genders are reversed (Female BTS Input (RF) to Male ANT (RF+DC+AISG signal). Similarly, a Female only RF port Bias-T (Female BTS Input (RF) to Female ANT Output (RF+DC_AISG signal) is also available. The 8-pin AISG connector supplies +10-30V DC, DC Return/Ground, RS485A, and RS485B to the Bias-T in order to provide the application of bias for the TMA, a power source for the RS485 Modem within the Bias-T, the appropriate RS485 signal paths and grounding/DC return as required. The unit also provides protection against lightning strikes via a surge protection circuit. The Bias-T is fully tested for outdoor applications, being housed in an IP67 rated enclosure with IP67 rated connectors suited to long-life indoor & outdoor mount.

An optional indoor Site Control Unit (SCU) is available to power up to 32 AISG modules per sector and to provide all the monitoring and alarm functions for the system. The SCU is housed in a single (1U) 1.75" x 19" rack and contains dual redundant power supplies that provide a regulated DC supply voltage for all AISG tower mounted components such as TMA's and Antenna's.

SPECIFICATIONS

Outdoor AISG Bias-T

BTO-0627-xxx-x

Electrical Specification

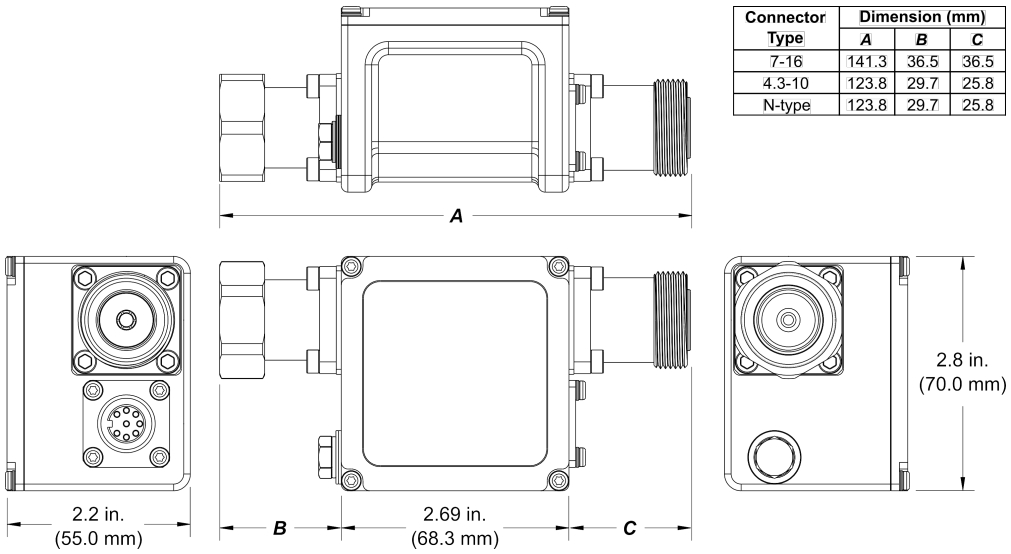
RF Parameters	Outdoor AISG Compliant Bias-T(BTO-0627-xxx-x) Typical Specifications
Frequency Range	614 - 2700Mhz
RF Impedance	50 ohms
Insertion Loss	0.1 dB
Return Loss	20 dB min. Input and Output
RF Power Handling	300 W
IMD (BTO-0627-xxx-1, BTO-0627-xxx-2 & BTO-0627-xxx-21)	<-112 dBm (-155 dBc) typical (2 × +43 dBm tones)
IMD (BTO-0627-xxx-3)	<-107 dBm (-150 dBc) typical (2 × +43 dBm tones)
Surge Protection	8/20us, ±10KA max., 10 strikes each(per IEC-801-5)
AISG Electrical Specifications	
Voltage Rating	10 - 30 VDC
Current Rating	2.5 A max.
Modem Carrier Frequency	2.176 MHz
Baud	9600
AISG Version	1.1 / 2.0

Environmental Specification

Operating Temperature	-40˚C to +70˚C
Ingress Protection	IP67
MTBF	>500,000 hours

Mechanical Specification

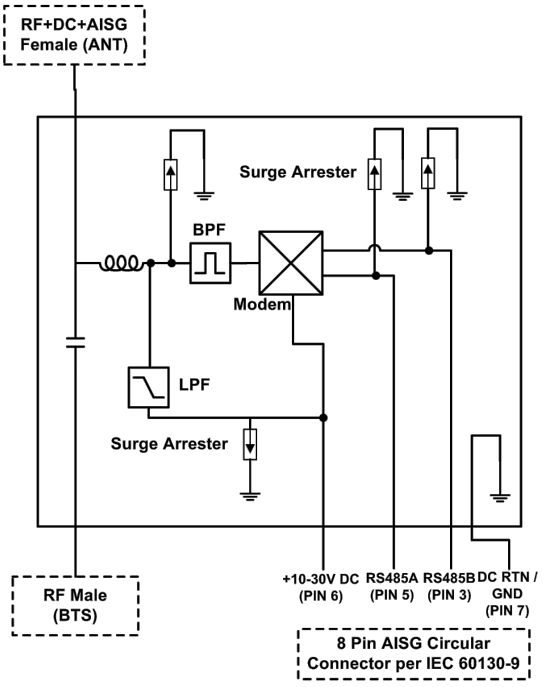
Model	BTO-0627-MFg-x	BTO-0627-FMg-x	BTO-0627-FFg-x
Gender RF Port	Male	Female	Female
Gender RF+DC/AISG Port	Female	Male	Female
Connector DC/AISG Port	"AISG Compliant" 8 pin circular connector per IEC 60130-9 Male, *g* = M Female, *g* = F		
RF Connector type	7-16 DIN connector, *x* = 1 4.3-10 Connector, *x* = 2 N-type connector, *x* = 3		
Dimensions (housing)	2.2 × 2.7 × 2.8 in.(55.0 × 68.3 × 70.0 mm)		



Connector Type	Dimension (mm)		
	A	*B*	*C*
7-16	141.3	36.5	36.5
4.3-10	123.8	29.7	25.8
N-type	123.8	29.7	25.8

Outdoor Bias-T Outline Drawing (BTO-0627-xxx-x)

Block Diagram



Outdoor Bias-T Block Diagram (BTO-0627-xxx-x)

ORDERING

Outdoor AISG Bias-T

BTO-0627-xxx-x

Parts & Accessories

BTO-0627-MFg-x	AISG 2.0 Compliant Bias-T with RF Port (Male), RF+DC+AISG Port (Female)
BTO-0627-FMg-x	AISG 2.0 Compliant Bias-T with RF Port (Female), RF+DC+AISG Port (Male)
BTO-0627-FFg-x	AISG 2.0 Compliant Bias-T with RF Port (Female), RF+DC+AISG Port (Female)

AISG Gender Option (-g)	Description
-F	Female 8 pin AISG port
-M	Male 8 pin AISG port

RF Connector Option (-x)	Description
-1	7-16 DIN connectors on the RF Port and the RF+DC+AISG Port
-2	4.3-10 connectors on the RF Port and the RF+DC+AISG Port
-3	N-type connectors on the RF Port and the RF+DC+AISG Port
-21	4.3-10 connector on the RF Port and 7-16 connector on the RF+DC+AISG Port

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, IEC61000-4-5, GR-63-CORE 4.3.1, EN 60529 IP67

Certifications

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