



HAZARDOUS
LOCATION
TELEMETRY EQUIPMENT

A COMPANY DRIVEN BY INNOVATION,
REWARDED BY CUSTOMER SATISFACTION



COMPANY

SOLEXY specializes in devices and patented technology for radio and buss transmissions in hazardous classified areas such as refineries, chemical plants, mines, off shore rigs and other potentially hazardous rated areas.

SOLEXY has two Operation Centers:

- Cincinnati, Ohio, USA, where the Research and Development of components, and antennas are engineered. Manufacturing of standard components is also based here. Managed by Mr. Mark Peters, this location services the US, Canadian and Mexican markets.
- Desenzano del Garda, Italy, where the systems integration manufacturing is located. Managed by Mr. Giovanni Soldo, this location services European, Asian, African, Australian, Central America and South American markets.



We are known for the first wireless industrial products on the market. We originally specialized in limit switches, but eventually developed and sold other sensors. To enable this technology to be used in our typical markets of refineries, chemical plants and up-stream processes, we realized the need to develop products that would allow use of this wireless technology in classified areas. Our flameproof intrinsically safe barriers for radios and busses allowed transmission of RF signals into classified “Hazardous Areas”. Expanding on the need of this technology in industrial environments, we developed a line of industrial antennas that meets the demanding requirements and hostility of the process environment. Expanding our patented technology and realizing the demand to protect other signals, we developed a solution for Ethernet. It is now possible to transmit Ethernet signals from explosion proof enclosures or purge panel systems into a hazardous area with the use of our Passive Ethernet barrier, without the cost of additional sealing devices, area rated conduit systems, or additional power.



APPROVALS

Our product range is totally designed and manufactured according to the stringent specifications of both European and North American standards. Our technical department works with highly sophisticated systems, which include state-of-the-art 3D design software, finite element analysis, vector network analyzers, and other electronic equipment.

We also have an engineering test laboratory equipped with sophisticated equipment and instrumentation that allow us to study, analyze, simulate and verify mechanical/dimensional, circuit analysis and RF performance. For increased product dependability every process is controlled during all production phases according to specific standards and internal procedures.

This commitment to excellence has earned us the UL, MSHA, ATEX and IECEx certifications that make us a world-class company known for our high quality standards. From design to finished product and from sales to shipment, all procedures and processes are documented to give our customers reliable products, quick deliveries and the highest product service.

SOLEXY products are certified by North American and European independent approval agencies to the environment and hazardous area requirements required throughout the world. Our products are ATEX and IECEx certified for use in explosion proof and intrinsically safe applications, UL listed for general purpose, intrinsically safe and explosion proof applications. We are also MSHA approved for use in US mining operations.



WHEN PRODUCT SAFETY IS NOT AN OPTION,
YOU CAN COUNT ON SOLEXY



SOLVING A COMPLEX PROBLEM WITH
SIMPLE SOLUTIONS



PRODUCTS

EXPLOSION PROOF ANTENNA COUPLERS



AX series patented (7057577) explosion proof antenna couplers allow transmission of radio Frequency signals into hazardous areas by incorporating an intrinsically safe barrier circuit, encapsulated in an explosion proof housing, all internal to a seal-off fitting in a single compact package. Available with UL, ATEX, IECEx or MSHA certifications, making the AX Coupler a truly world-wide solution! AW series weather proof antenna couplers provide a robust weather proof connection between the radio and aggressive atmospheric conditions. Common applications include coastal, high wash down, pharmaceutical and chemical and food processing applications.

ETHERNET BARRIERS



BXF and BAF series patented (7507105) Ethernet couplers allow transmission of Ethernet into hazardous areas by incorporating an intrinsically safe barrier circuit and a seal-off fitting into a single package. BXF series Ethernet couplers include an explosion proof housing for use in hazardous areas, and BAF series Ethernet couplers include an aluminum housing with gasket ideal for use in purged panels and other non-hazardous areas. BXF and BAF series Ethernet couplers are for 10/100 Ethernet signals and operate with CAT5e cable. Available with UL, ATEX, IECEx or MSHA certifications.



ANTENNAS



ANH and ANF series antennas are hand built and tuned for the best performance. The rugged construction of the ANH will stand up to high levels of abuse, and the flexible design of the ANF “gives” to impacts to prevent damage and misalignment of the antenna. Their sealed UV and corrosion resistant housings and nickel plated fittings with gold contacts provide a reliable RF connection in hostile environments.

HAZARDOUS AREA WIRELESS SYSTEMS



WS and WA series hazardous area enclosures are available as Junction boxes, Wi-Fi hotspots configured as a master, client or repeater, Radio Modems that can be used to interface remote serial ports and digital and analog I/O from the field to remote locations and totally wire free transmission of RF signals. Optional Intrinsically Safe Ethernet signals can be added with minimal cost of installation. Radio modems with remote I/O can transmit and receive using Modbus protocol as a standard option. Available in either a stainless steel (WS) or powder coated aluminum (WA) explosion proof rated enclosure. All Approved for ATEX, IECEx and UL.

PRODUCTS THAT YOU CAN RELY ON,
SIGNALS YOU CAN COUNT ON

AXN & AXF EXPLOSION PROOF / INTRINSICALLY SAFE ANTENNA COUPLER

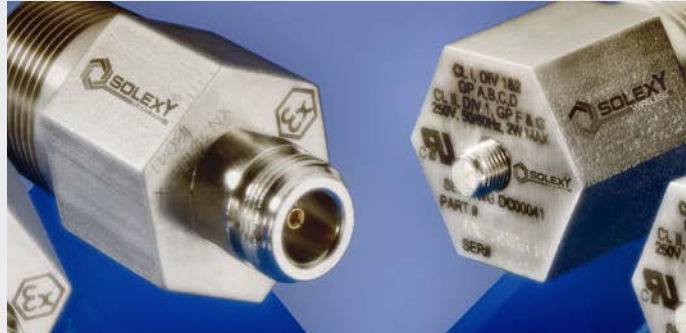
Solexy's patented (7,057,577) Explosion-Proof Antenna Coupler permits the installation of a passive antenna in hazardous areas.

This coupler is designed to be used directly with listed explosion proof housings or conduit fittings.

An integrated blocking circuit prevents potentially hazardous energy from reaching the antenna in case of radio, modem, or access point failure.

It also allows for antenna removal in hazardous areas.

The coupler's robust design allows for connection to practically any radio and antenna. It is a highly flexible and cost effective solution to hazardous area radio system deployment. The coupler can also be used as a cable bulkhead.



FEATURES

Short Circuit Protection

Includes integrated blocking circuitry.

No Sealing Fitting Required

Fitting is approved for hazardous locations and can be installed with a simple wrench.

Environmental Protection

300 series stainless steel construction and integral potting protects electronics from corrosive environments.

Flexibility

Permits a wide variety of passive antennas to be installed in hazardous areas.

Antennas may be removed and/or installed with power on.

Perfect for a cable bulkhead connection

Certification

Component certification simplifies the required radio system certification process by eliminating or significantly reducing the tests required for evaluation.



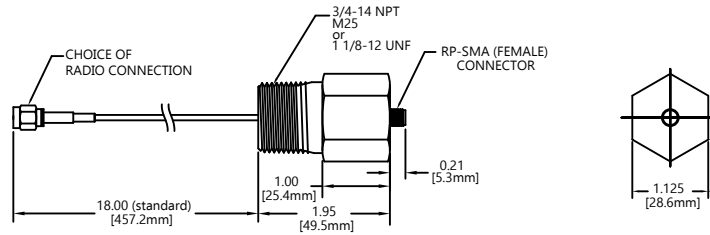
SPECIFICATIONS

<ul style="list-style-type: none"> IECEX / ATEX Component Certification UL Component Certification Maximum Fault Voltage Maximum Antenna Power Output Approximate Signal Attenuation ⁽¹⁾ Frequency Range Minimum Dielectric Strength Approximate Weight Ambient Temperature Range 	<ul style="list-style-type: none"> <ul style="list-style-type: none"> I M2 (M1) Ex d mb [ia Ma] I Mb II 2 (1) G Ex d mb [ia Ga] IIC Gb II 2 (1) D Ex mb [ia Da] IIIC Db IECEX certificate nr. IECEx DNV 11.0015U ATEX certificate nr. DNV 06 ATEX 0183U Class I, II Div I Group A,B,C,D,F,G (UL File nr. E358609) Gas Group IIA, IIB & IIC A, B, C, D, F, G A, B, C, D, F, G IEC Gas Group NEC 500 Class I, II Group Threshold Power Limit Frequency AXF AXN AXZ Impedance Housign Material 	<ul style="list-style-type: none"> 250VDC, 250VAC 50-60Hz 250VDC, 250VAC 50-60Hz 250VDC, 250VAC @ 60 Hz max I and III F, G 6W 6W 3.5W 2W IIA D 6W 6W 3.5W IIB C 3.5W 3.5W IIC A,B 2W 50 Ω 300 series stainless steel
---	--	---

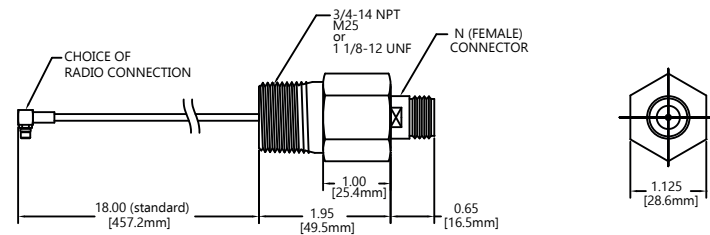
⁽¹⁾ Values shown for 18" (457 mm) coaxial cable and standard RP-SMA connectors (no adapter)

DIMENSIONAL DRAWING

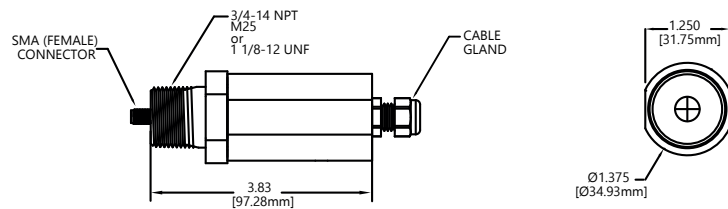
AXF



AXN



AXZ



NOMENCLATURE

AXF	3	S	01	06	A	N	18
aaa	b	c	dd	ee	f	g	hh

aaa	Antenna Coupler	AXF AXN AXZ	Antenna coupler with RP-SMA Female antenna connection Antenna coupler with N Female antenna/cable connection Antenna coupler suitable for 6 to 7 GHz (only IECEx and Atex certified with 3/4" npt thread connection)
b	Thread Connection	3 M S	3/4" NPT (available only for UL, IECEx, Atex and AXZ series) M25x1.5 (IECEx and Atex only) 1 1/8"-12 UNF (MSHA only)
c	Housing Material	S	300 series stainless steel
dd	Coaxial Connector	**	see ordering guide
ee	Coax cable length	00 06 12 18 24	no cable with SMA Female connector on body (only AXZ series) 6" (152.4 mm) 12" (304.8 mm) 18" (457.2 mm) 24" (609.6 mm)
f	Frequency range	A J T	full frequency range optimized from 169 MHz to 2.5 GHz optimized from 2 GHz to 6 GHz
g	Approval	N X M	cURus Recognized Component Marking IECEx and ATEX Component Marking MSHA Evaluation Marking
hh	Antenna Adapter	blank **	No adapter required see ordering guide

HEAVY DUTY AND FLEXIBLE ANTENNA

The range and performance of a RF link is critically dependent upon the antenna and it is one of the more complex aspects of on RF design.

An antenna can make or break a wireless network.

The proper antenna can optimize the range, reliability and performance of a radio network.



FEATURES

Hybrid™ technology

Embedded Hybrid™ circuitry allows for maximum performance and unmatched durability

ANH Heavy Duty series

Rugged construction allows the use of our antennas in hostile environments where weather and abuse are a factor.

ANF Flexible series

ANF flexible construction permits the use of our antenna in installations where the risk of damage from impact is possible.

Antenna configuration

1/2 Wave Dipole or J-Pole with performance of a collinear but compact as a dipole

Frequency

Available for 900 MHz (ANF and ANH series) and 2.4 GHz (ANH series only)

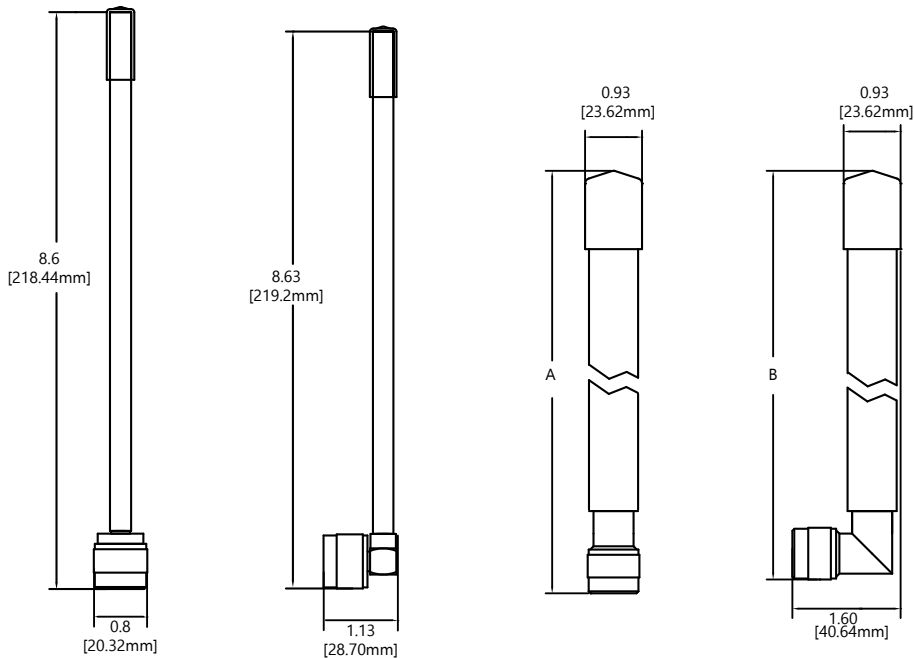
N Male connector

Available for vertical or 90° mounting

SPECIFICATIONS

	ANH52	ANH72	ANF52	ANH53	ANH73
Frequency Range	902 - 928 MHz	2.35 - 2.5 GHz	902 - 928 MHz	2.35 - 2.5 GHz	902 - 928 MHz
Impedance (nominal)	50Ω @ 908 MHz	50Ω @ 2.4 GHz	50Ω @ 916 MHz	50Ω @ 2.45 GHz	50Ω @ 908 MHz
VSWR (average)	1.14 : 1	1.13 : 1	1.15 : 1	1.15 : 1	1.12 : 1
Gain	2.65 dBi	2.65 dBi	4.5 dBi	4.5 dBi	2.8 dBi
Radiation	Omni	Omni	Omni	Omni	Omni
Polarization	Vertical	Vertical	Vertical	Vertical	Vertical
Wave	1/2	1/2	J-Pole	J-Pole	1/2
Connector	N Male Brass nickel plated	N Male Brass nickel plated	N Male Brass nickel plated	N Male Brass nickel plated	N Male Brass nickel plated
Material	UV resistant ABS	UV resistant ABS	UV resistant Polymer	UV resistant ABS	UV resistant ABS
Ambient temp. range	-50°C +90°C	-50°C +90°C	-50°C +90°C	-50°C +90°C	-50°C +90°C

DIMENSIONAL DRAWING



Model	A inch [mm]
ANH52-__NSU	6.38 [162.05]
ANH72-__NSU	3.85 [97.80]
ANH53-__NSU	6.38 [162.05]
ANH73-__NSU	11.5 [292.10]

Model	B inch [mm]
ANH52-__NRU	6.24 [158.52]
ANH72-__NRU	3.75 [92.25]
ANH53-__NRU	6.24 [158.52]
ANH73-__NRU	11.38 [289.06]

- ◆ ANF52-__NSU
- ◆ ANF52-__NRU
- ◆ ANH52-__NSU
 ANH72-__NSU
 ANH53-__NSU
 ANH73-__NSU
- ◆ ANH52-__NRU
 ANH72-__NRU
 ANH53-__NRU
 ANH73-__NRU

NOMENCLATURE

ANH 5 2 - C N S U

 aaa b c d e f

<ul style="list-style-type: none"> ◆ aaa ◆ b ◆ c ◆ d ◆ e ◆ f 	<p>Antenna series</p> <p>Frequency</p> <p>Wave form</p> <p>Antenna connection</p> <p>Connector material</p> <p>Antenna mounting</p>	<p>ANH ANF</p> <p>5 7</p> <p>2 3</p> <p>3 C</p> <p>N</p> <p>S R</p>	<p>Heavy duty antenna Flexible antenna</p> <p>900 MHz 2.4 GHz (only ANH series)</p> <p>1/2 wave J-Pole</p> <p>N Female N Male</p> <p>Nickel brass contact gold plated</p> <p>Straight (vertical) Elbow (90°)</p>
--	---	--	--

AW™ WEAATHE-PROOF ANTENNA COUPLER SAFE ANTENNA COUPLER

Solexy's Weather-Proof Antenna Coupler permits the installation of passive antennas in outdoor and hose down areas.

This coupler is designed to be used directly with any weatherproof (IP67, Nema 4, or 4X) housings or conduit fittings. An internal epoxy encapsulate ensures no moisture ingress from the external environment.

The coupler's robust design allows for connection to practically any radio and antenna.

It is a highly flexible and cost effective solution to environmentally challenging radio installations.



FEATURES

Environmental Protection

300 series stainless steel construction and integral potting protects electronics from corrosive environments.

Flexibility

Permits a wide variety of passive antennas to be installed.

Antenna Connection

Type "N" female or "RP-SMA Female" connection available for antenna connection.

Radio Connection

Most all 50 Ω connections are available (see ordering guide)

Housing Connection

Rugged 3/4" npt-m or M25x1,5 external threads are available for connection into housing or enclosure

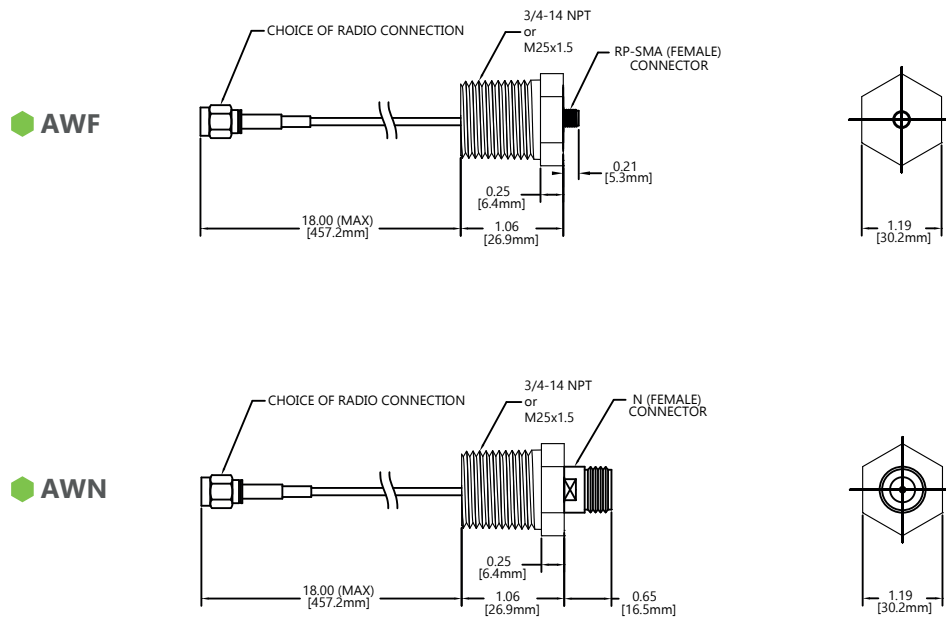
SPECIFICATIONS

● Approximate weight	0.09 kg		
● Housing material	300 Series Stainless Steel		
● Ambient Temperature Range	-40°C +85°C		
● Rating	IP67, Nema 4, 4X ⁽¹⁾		
● Maximum Wattage	6 W		
● Frequency Range	100 MHz to 6 GHz		
● Impedance	50 Ω		
● Approximate Signal Attenuation ⁽²⁾	Frequency	AWF	AWN
	425 MHz	0.3 dB	0.3 dB
	915 MHz	0.4 dB	0.6 dB
	2.4 GHz	0.3 dB	0.5 dB
	5.8 GHz	0.8 dB	0.9 dB

⁽¹⁾ IP67 antenna required (see our antenna series ANH, ANF or ANJ)

⁽²⁾ Values shown for 18" (457 mm) coaxial cable and standard RP-SMA connectors (no adapter)

DIMENSIONAL DRAWING



NOMENCLATURE

AWN 3 S 01 06 - 18
 aaa b c dd ee - ff

aaa	Antenna Coupler	AWF	Antenna coupler with RP-SMA Female antenna connection
		AWN	Antenna coupler with N Female antenna/cable connection
b	Thread Connection	3	3/4" NPT
		M	M25x1.5
c	Housing Material	S	300 series stainless steel
dd	Coaxial Connector	**	see ordering guide
ee	Coax cable length	00	no cable with SMA Female connector on body
		06	6" (152.4 mm)
		12	12" (304.8 mm)
		18	18" (457.2 mm)
		24	24" (609.6 mm)
ff	Antenna Adapter	blank	No adapter required
		**	see ordering guide

BXF & BAF EXPLOSION PROOF / INTRINSICALLY SAFE ETHERNET COUPLER

Solexy's patented (7,057,105) Explosion-Proof / Intrinsically Safe Ethernet Coupler allows for transmissions of Ethernet into hazardous areas with a standard RJ45 connector.

With the Solexy Ethernet coupler it's possible to connect any standard ethernet device located in a classified or safe area. The BXF explosion proof and intrinsically safe barrier is certified for installation in classified areas and BAF intrinsically safe barrier is suitable for installation in safe areas and purged systems.

The BXF is designed to be used with any UL, CSA, MSHA, ATEX or IECEx listed explosion proof housing without the need of a seal fitting, taking up no internal space.

The BAF is designed to be used in safe area directly with any CAT5 or CAT5e cable system. The BAF can also be remote mounted up to 70 meters away with minimal loss of signal. The BAF is also designed to be used with air purge panel systems.

A BXF and/or BAF coupler is required on each end of a cable installation for full protection of both the RX and TX lines.



FEATURES

◆ No Sealing Fitting Required

Fitting is pre-approved for hazardous locations and can be installed with no potting compounds and a simple wrench. Eliminates the need for costly seal fittings, and reduces the chance of error associated with field installed sealing practices.

◆ Corrosion Resistant

300 series stainless steel of BXF series protects the fitting from corrosive environments, sealing fittings are typically constructed of aluminium or galvanized steel, neither being well suited for the process industry.

◆ Environmental Protection

All required circuitry is recessed into fitting and encapsulated against harsh environments; this is impossible with conventional sealing methods.

◆ Interchangeability

Ethernet cables can be connected/disconnected without powering down the system, and can be run in traditional cable trays.

◆ Industrial M12 "D" coded connection

With this secure weather proof industrial connection, cable installation and removal can be accomplished without removing power.

SPECIFICATIONS

IECEX / ATEX Certification:

BAF I (M1) [Ex ia Ma] I
 II (1) G [Ex ia Ga] IIC
 II (1) D [Ex ia Da] IIIC

BXF3S & BXFMS I M2 (M1) Ex d mb [ia Ma] I Mb
 II 2 (1) G Ex d mb [ia Ga] IIC T5 Gb
 II 2 (1) D Ex mb [ia Da] IIIC T100°C Db

ATEX certificate nr. DNV 14 ATEX 4192X
 IECEx certificate nr. IECEx DNV 14.0024X

cULus Certification:

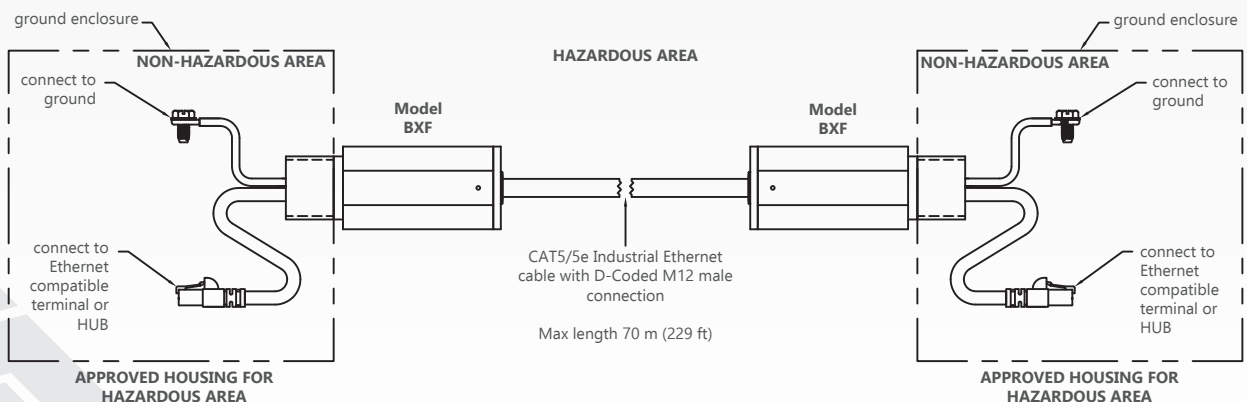
BAF3S & BXF3S Class I, Group A,B,C,D, Class II, Group F,G (UL File nr. E305231)

- Maximum Fault Voltage RMS 250 V
- Current Protection 50 mA
- Frequency Range up to 100 MHz
- Total impedance < 100 Ohm
- Protection 3.6 V
- Ambient Temperature Range -20°C +60°C
- Ethernet connection IEEE 802.3 - 100BaseTX - 100 Mbps
- Data connector (hazardous side) M12 Industrial "D" coded connector
- Housing Material BXF = 300 SST (approximate weight 0.38 kg)
 BAF = T6 Aluminum nickel plated (approximate weight 0.2 kg)

INSTALLATION SCHEME

DEVICES INSTALLED IN A CLASSIFIED AREA

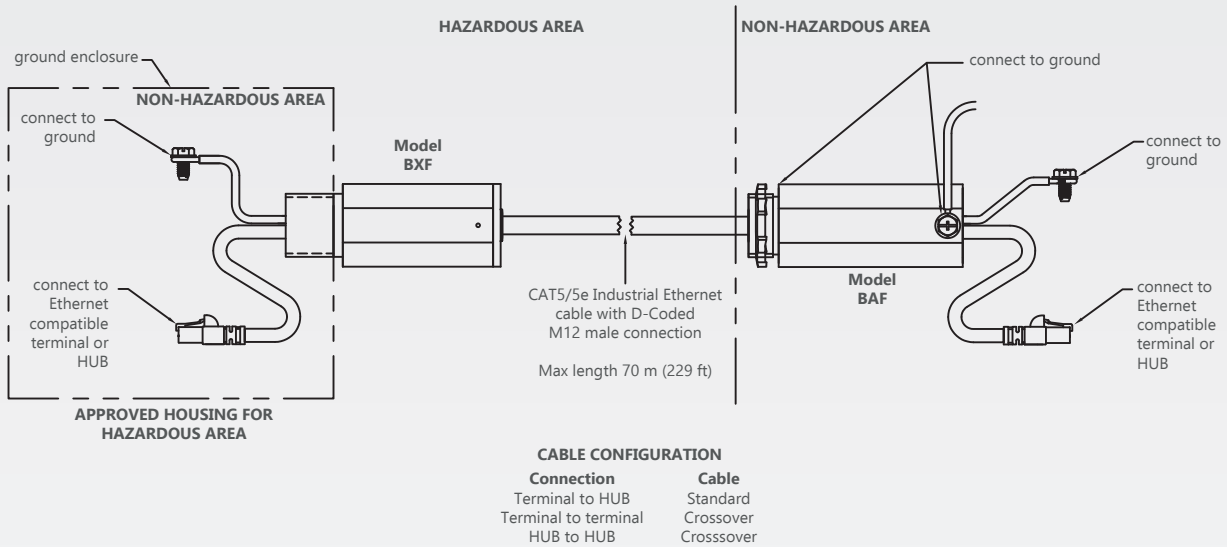
A BXF Coupler must be used at either end of the Ethernet cable to ensure the safety of this system. The BXF must be securely mounted and grounded within a UL/CSA, MSHA or ATEX/IECEX approved explosion proof enclosure.



CABLE CONFIGURATION	
Connection	Cable
Terminal to HUB	Standard
Terminal to terminal	Crossover
HUB to HUB	Crossover

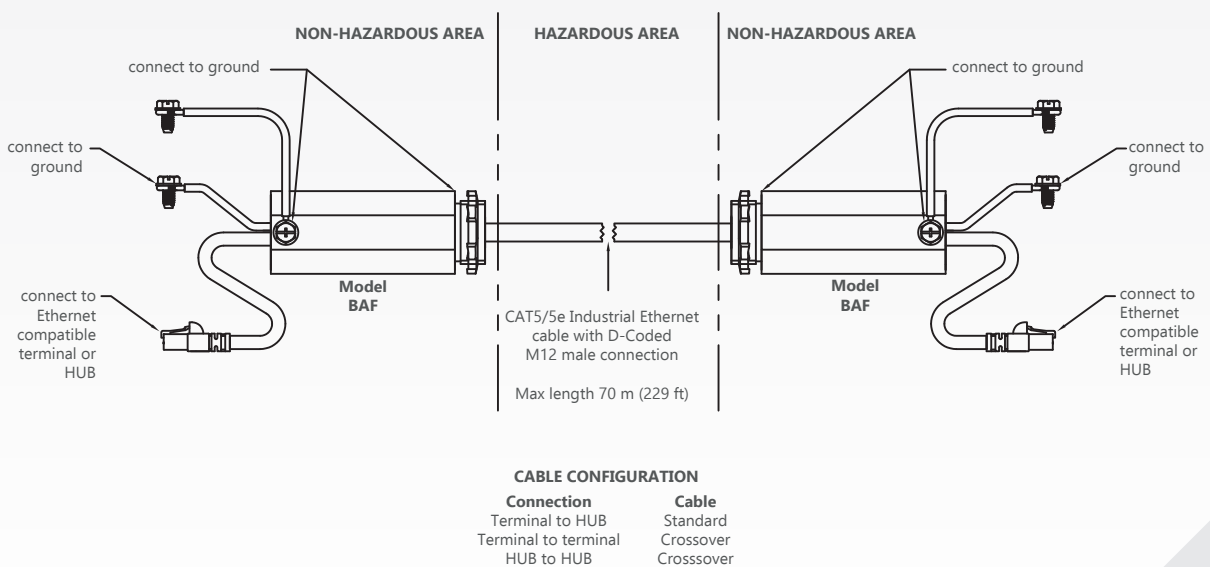
DEVICES INSTALLED IN BOTH A CLASSIFIED AND A SAFE AREA

One BAF and one BXF Coupler must be used at opposite ends of the Ethernet cable to ensure the safety of this system. The BXF must be securely mounted and grounded within a UL/CSA, MSHA or ATEX/IECEx approved explosion proof enclosure.



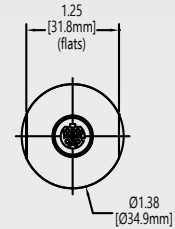
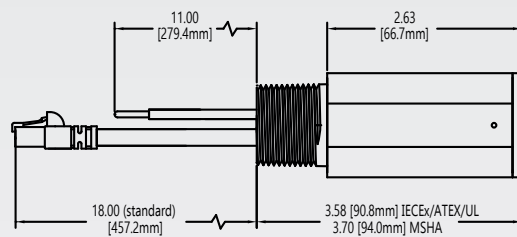
DEVICES INSTALLED IN A SAFE AREA (CABLE IN A CLASSIFIED AREA)

A BAF Coupler must be used at either end of the Ethernet cable to ensure the safety of this system.

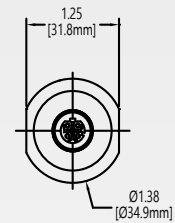
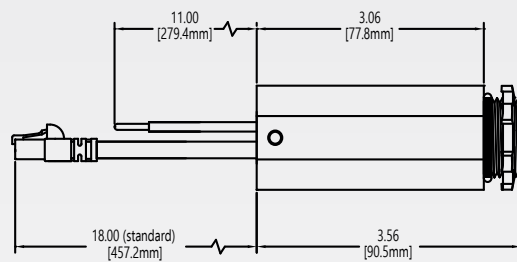


DIMENSIONAL DRAWING

● BXF



● BAF



NOMENCLATURE

BXF	3	S	01	01	N	018
aaa	b	c	dd	ee	f	ggg

● aaa	Barrier Type	BXF BAF	Explosion Proof / Intrinsically Safe suitable for classified area Intrinsically Safe suitable for safe area and UL purge panels
● b	Thread Connection	3 M S	3/4" NPT (available only for cULus, IECEx and Atex) M25x1.5 (IECEx and Atex only) 1 1/8"-12 UNF (MSHA only)
● c	Housing Material	A S	Aluminum T6 Nickel Plated (BAF only) 300 series stainless steel (BXF only)
● dd	Housing Connector	01	Shielded M12 Female "D" coded
● ee	Cable Connector	01 02 03	RJ45 Plug Male Shielded M12 Male "D" coded Shielded M12 Female "D" coded
● f	Approval	N X M	cULus IECEx and ATEX MSHA
● ggg	Cable Length	018 ***	18" (457 mm) CAT5e (included in the 70 meters max) to be defined

EXPLOSION PROOF RADIOMODEMS VHF/UHF



Solexy radiomodem is a VHF/UHF simplex/half-duplex high quality radiomodem operating on 12,5 kHz or 25 kHz channels available in 169 MHz, 433 MHz and 868 MHz band in accordance with European Decision 2005/928/CE.

These products were developed as a free use device.

Solexy radiomodems are supplied complete with a RS232 / RS485 interface, optoisolated input and relay output installed in our explosion proof housing WA and WS series that allows

a serial data transmission in classified area Ex.

Solexy radiomodems are fully transparent to the user and configurable from the PC by means of a dedicated software for the desired functions.

FEATURES

Low power

Low power consumption in both RX and TX mode with selectable power saving mode by software and on/off switching controlled via DTR criteria

Store and Forward

Store & Forward mode with 448 byte maximum buffer size

Adaptive Frequency Agility

Adaptive Frequency Agility on 2 or 3 channels

Software configuration

Complete configuration by means of a PC through dedicated software

Advanced Protocol

Point to point, Point to Multipoint, Broadcasting mode or Adresses management, Adresses stored in configuration or from DTE, Digipeater mode, Remote configuration through radio network, Adresses reversing for the answer, Echo function

Transparent Serial transmission data plus extra digital input / output

Serial transmission RS232 or RS485 transparent to the user plus optoisolated input and relay output may be used for alarms and/or actuation

Heavy duty construction

Explosion proof Ex d IIC enclosure made in alluminum (WA series) or stainless steel (WS series) weather proof IP66/68

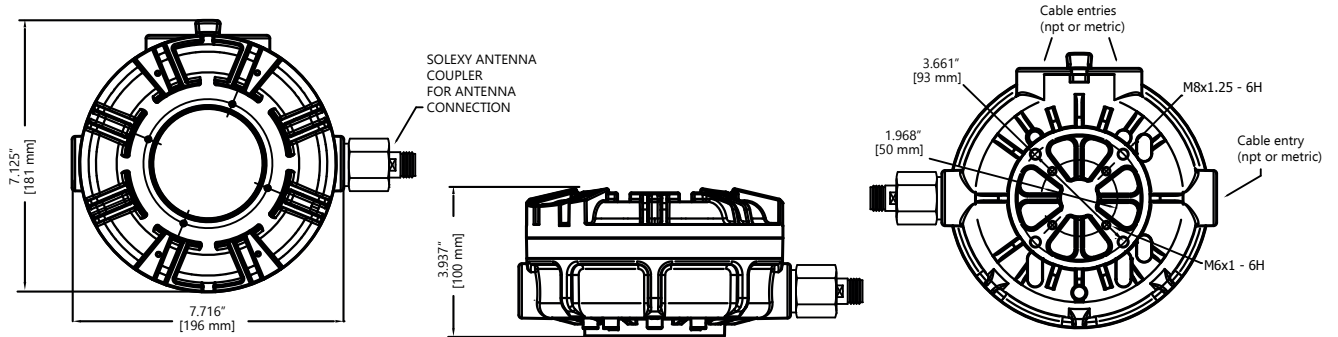


RS232 / RS485
plus Digital Input
and Relay Output



RS232 / RS485
plus Digital Input
and Relay Output


DIMENSIONAL DRAWING



SPECIFICATIONS

ATEX / IECEx Certification
(pending)

Ambient Temperature Range
Housign Material

 II 2G Ex dIIC T4...T6
II 2D Ex tb IIC T110°C/110°C/140°C
I M2 Ex d I Mb (WS only)

-20°C +70°C (-30°C available on request)
WA series : die cast aluminium polyester powder coated
WS series: AISI 316 electropolish

GENERAL

Operating band

Channel number

Canalization

Modulation

Radio data rate (Tx/Rx)

Frequency stability

Supply voltage

Rx consumption

Tx consumption

Consumption DTR OFF

Antenna

Reference Directives

Relay output rating

Digital Input

TRANSMITTER

Output power

Frequency deviations

Output power stability

Adjacent channel power

Ch. adjacent transitory power

RECEIVER

Sensitivity @ BER < 10⁻²

Adjacent channel attenuation
Blocking

INTERFACE

Data rate (interface)

Data format (standard)

Operative modality

169 MHz version

169.400 - 169.475

3 @ CH25 kHz
6 @ CH12.5 kHz

9K00F1D or 18K0F1D

4800 bps @ 12.5 kHz or 9600 bps @ 25 kHz

±500 Hz

8-36 VDC with limited source power

≈ 30 mA@12VDC (RS232/485 really off)

≈ 300 mA

< 1 mA

λ/4, λ/2 or

Yagi 3 elements

EN 300 220-1 v.2.3.1

EN 300 220-2 v.2.3.1

28VAC@0.5A or 60VDC@1A (Normally Open)

5-24VDC or 3.5-20VAC Z_{INP} 2.2 kΩ

200 mW_{ERP}

max 500 mW_{ERP} (with Yagi 3 elements)

± 1.8 kHz @ 12.5 kHz

± 3.6 kHz @ 25 kHz

± 1.5 dB

compliant to EN 300 220-1 v.2.3.1

compliant to EN 300 220-1 v.2.3.1

CLASS 2 - LBT and AGILITY

< -110 dBm @ 12.5 kHz

< -107 dBm @ 25 kHz

compliant to EN 300 220-1 v.2.3.1

compliant to EN 300 220-1 v.2.3.1

RS232 and RS485

from 1200 to 38400 bps

Asynchronous 8, N, 1-8,E,1-8,O,1

Simplex or half-duplex

433 MHz version

433.0875 - 434.7375

66 SW selectable

±1000 Hz

≈ 100 mA

(about 500 mA @ 500 mW)

λ/4, λ/2 or

Yagi 3 elements

EN 300 200-1 v.2.3.1

EN 300 200-2 v.2.3.1

10 mW_{ERP}

± 3.6 kHz

± 1.5 dB

< -107 dBm

868 MHz version

868 - 868.6 | 868.7 - 869.2

869.4 - 869.65

12.5 kHz step

± 1 ppm

≈ 75 mA

λ/4, λ/2 or

Yagi 6 elements

EN 300 220-1 v.2.3.1

25/150/500 mW_{ERP}

auto setting

± 1.8 kHz @ 12.5 kHz

± 3 kHz @ 25 kHz

± 1.5 dB

< -107 dBm @ 25 kHz

EXPLOSION PROOF MODBUS RTU RADIOMODEMS

The Solexy MODBUS RTU radiomodem is a VHF/UHF high quality 500 mW radiomodem operating on 12,5 / 25 kHz channels available in 169 MHz and 868 MHz band in according to European Decision 2005/928/CE.

These products are develop in order to be a free use device. The Solexy MODBUS RTU radiomodems are supply complete with 4 digital input, 2 digital output plus 2 analog input and 2 analog output 4-20 mA that allows to has an Modbus RTU nodule.

The RS485 interface permit also the connection up to 4 Modbus module.

The WA and WS enclosure thanks to its rugged construction combined to Atex and IECEx certificate (pending) achieves to have an Modbus RTU data transmission in classified area Ex.



FEATURES

Modbus RTU

The Solexy MODBUS RTU radiomodem can be used on all Modbus RTU application

Wide range of transmission option

Mirror (point to point), Modbus RTU, Modbus multi master and standard Radiomodem option completely transparent to the user also in case of complex route

Modbus RTU Nodule

4 PNP digital input combinete to 2 relay output plus 2 analg input and 2 optoisolated analog output 4-20 mA allows to use the radiomodem as a complete Modbus RTU nodule.

Low power

Low power consumption in both RX and TX mode and bistable relay on digital output allows the HPDL Solexy radiomodem suitable to battery operation

Adaptive Frequency Agility

Adaptive Frequency Agility on 2 or 3 channels

Software configuration

Complete configuration by PC through dedicated software

Encryption transmission data

Secure transmission data thanks to AES (Advanced Encryption Standard) at 128 bit

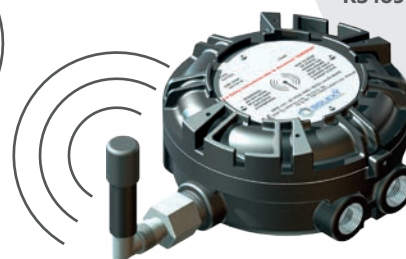
Heavy duty constrution

Explosion proof Ex d IIC enclosure made in alluminum (WA series) or stainless steel (WS series) weather proof IP66/68



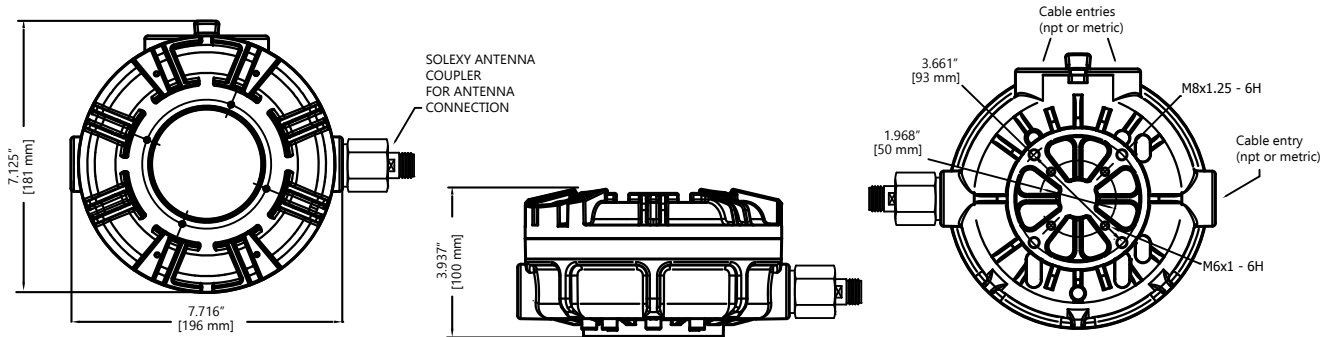
4 digital IN
2 digital OUT
2 analog IN 4-20 mA
2 analog OUT 4-20 mA
RS485 Modbus RTU port

Modbus




4 digital IN
2 digital OUT
2 analog IN 4-20 mA
2 analog OUT 4-20 mA
RS485 Modbus RTU port

DIMENSIONAL DRAWING



SPECIFICATIONS

ATEX / IECEx Certification
(pending)

 II 2G Ex dIIC T5-T4
II 2D Ex tb IIC T110°C/140°C
I M2 Ex d I Mb (WS only)

Ambient Temperature Range
Housign Material

-20°C +70°C (-40°C available on request)
WA series : die cast aluminium polyester powder coated
WS series: AISI 316 electropolish

GENERAL

Operating band
Channel number

169 MHz version
169.400 - 169.475
3 @ CH25 kHz
6 @ CH12.5 kHz

868 MHz version

868 - 868.6 / 868.7 - 869.2 / 869.4 - 869.65
12.5 / 25 kHz step

Canalisation
Modulation
Radio data rate (Tx/Rx)
Frequency stability
Supply voltage
Rx consumption
Tx consumption
Consumption DTR OFF

12.5 or 25 kHz
9K00F1D or 18K0F1D
4800 bps @ 12.5 kHz or 9600 bps @ 25 kHz
±500 Hz ± 1 ppm
8-36 VDC with limited source power
≈ 30 mA
max 500 mA
< 1 mA

Reference Directives

EN 300 220-1 v.2.3.1
EN 300 220-2 v.2.3.1

Relay output rating

28VAC@0.5A or 60VDC@1A (Normally Open)

Digital Input

5-24VDC or 3.5-20VAC Z_{INP} 2.2 kΩ

Analog Input / Output

4-20 mA

TRANSMITTER

Output power
Frequency deviations

Output power stability
Adjacent channel power
Ch. adjacent transitory power

500 mW_{ERP}
± 1.8 kHz @ 12.5 kHz
± 3.6 kHz @ 25 kHz

± 1.5 dB
compliant to EN 300 220-1 v.2.3.1
compliant to EN 300 220-1 v.2.3.1

500 mW_{ERP}
± 1.8 kHz @ 12.5 kHz
± 3.6 kHz @ 25 kHz
± 1.5 dB

RECEIVER

Sensitivity @ BER < 10⁻²
Adjacent channel attenuation
Blocking

CLASS 1 - LBT and AGILITY
< -118 dBm @ 9600 bps
compliant to EN 300 220-1 v.2.3.1
compliant to EN 300 220-1 v.2.3.1

INTERFACE

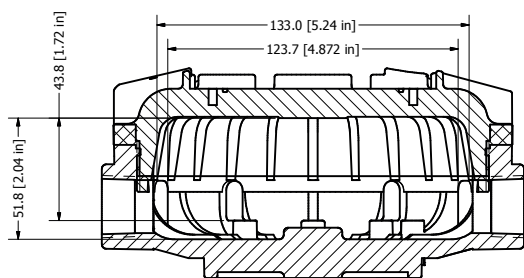
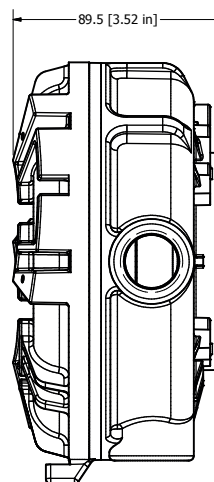
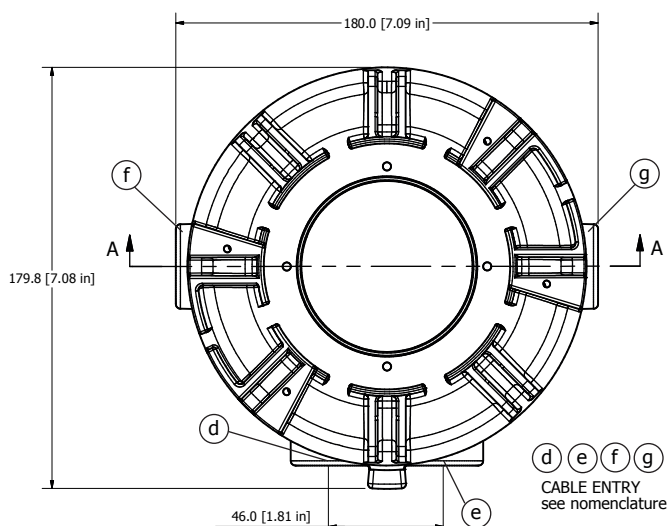
Data rate

RS485
from 2400 to 57600 bps

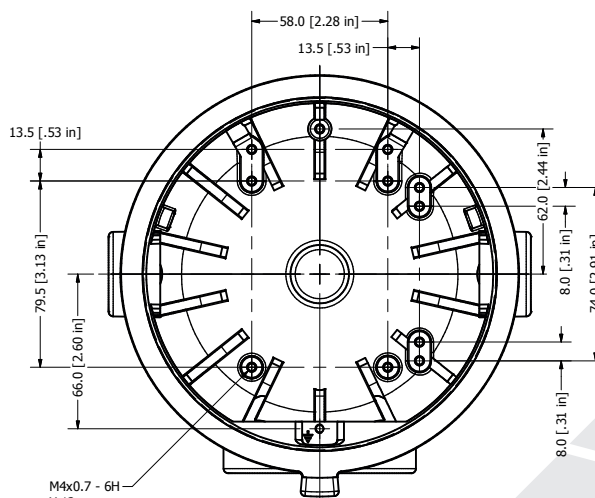
FEATURES

- WA series made in aluminum polyester powder coated (black as standard, other colour available on request)
- WS series made in electropolish stainless steel AISI 316 (CF8M)
- Water proof IP66 / IP68 (ATEX and IECEx version) or Nema 4, 4X (UL version)
- Up to four cable entries M20x1,5 and M25x1,5 (ATEX and IECEx version only) or 1/2" npt-f, 3/4" npt-f
- Temperature range from -60°C to +105°C (ATEX and IECEx version) or +80°C (UL version)
- ATEX and IECEx certificate II 2G Ex d IIC T6...T4 Gb
 II 2D Ex tb IIIC T110°C / T110°C / T140°C
 I M2 Ex d I Mb (WS only)
 (certification specifically for radio and electronic apparatus)
- UL certified for Class I Group B, C, D and Class II Group E, F, G (certified as junction box complete up to 24 terminals)

WA DIMENSIONAL DRAWING mm [inch]

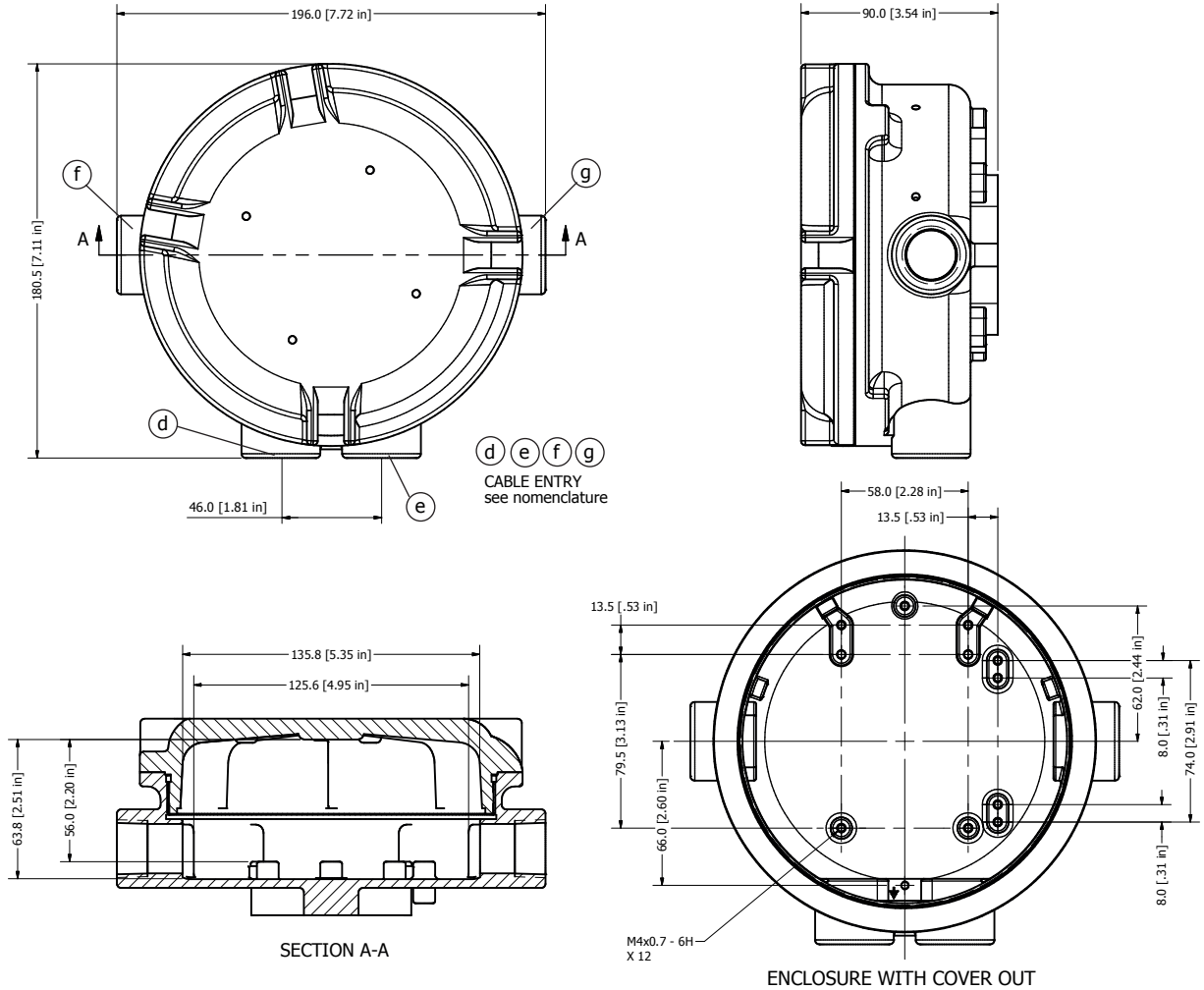


SECTION A-A



ENCLOSURE WITH COVER OUT

WS DIMENSIONAL DRAWING mm [inch]



NOMENCLATURE ATEX and IECEx version

WA 0 00 A E

aa b c d e

- ◆ aa **Enclosure Series**
WA Aluminum polyester powder coated
WS Stainless steel AISI 316 (CF8M)
- ◆ b **Mounting plate inside**
0 no mounting plate
1 mouning plate
- ◆ cc **Number of terminals**
00 no terminals
1 ... 24 from 1 to 24
- ◆ d **Colour**
A black
- ◆ e **Cable entry**
E n° 2 1/2" npt-f
F n° 4 1/2" npt-f
G n° 2 3/4" npt-f
H n° 4 3/4" npt-f

NOMENCLATURE UL version

WA 0 00 - 0 0 0 0

aa b c d e f g

- ◆ aa **Enclosure Series**
WA Aluminum polyester powder coated
WS Stainless steel AISI 316 (CF8M)
- ◆ b **Colour**
0 black
E electropolish (WS series)
- ◆ cc **Marking**
00 ATEX / IECEx
- ◆ d/e/f/g **Cable entry**
1 1/2 npt-f
2 3/4" npt-f
3 M20x1.5
4 M25x1.5



SOLEXY SRL

via Enrico Fermi, 2
25015 Desenzano del Garda (BS) Italy
Phone +39 030 787.0.787
Fax. +39 030 787.0.777

SOLEXY USA, LLC

10178 International Blvd.
Cincinnati, OH 45246 USA
Phone +1-513-860-5465
Fax +1-513-860-5464

www.solexy.net - info@solexy.net