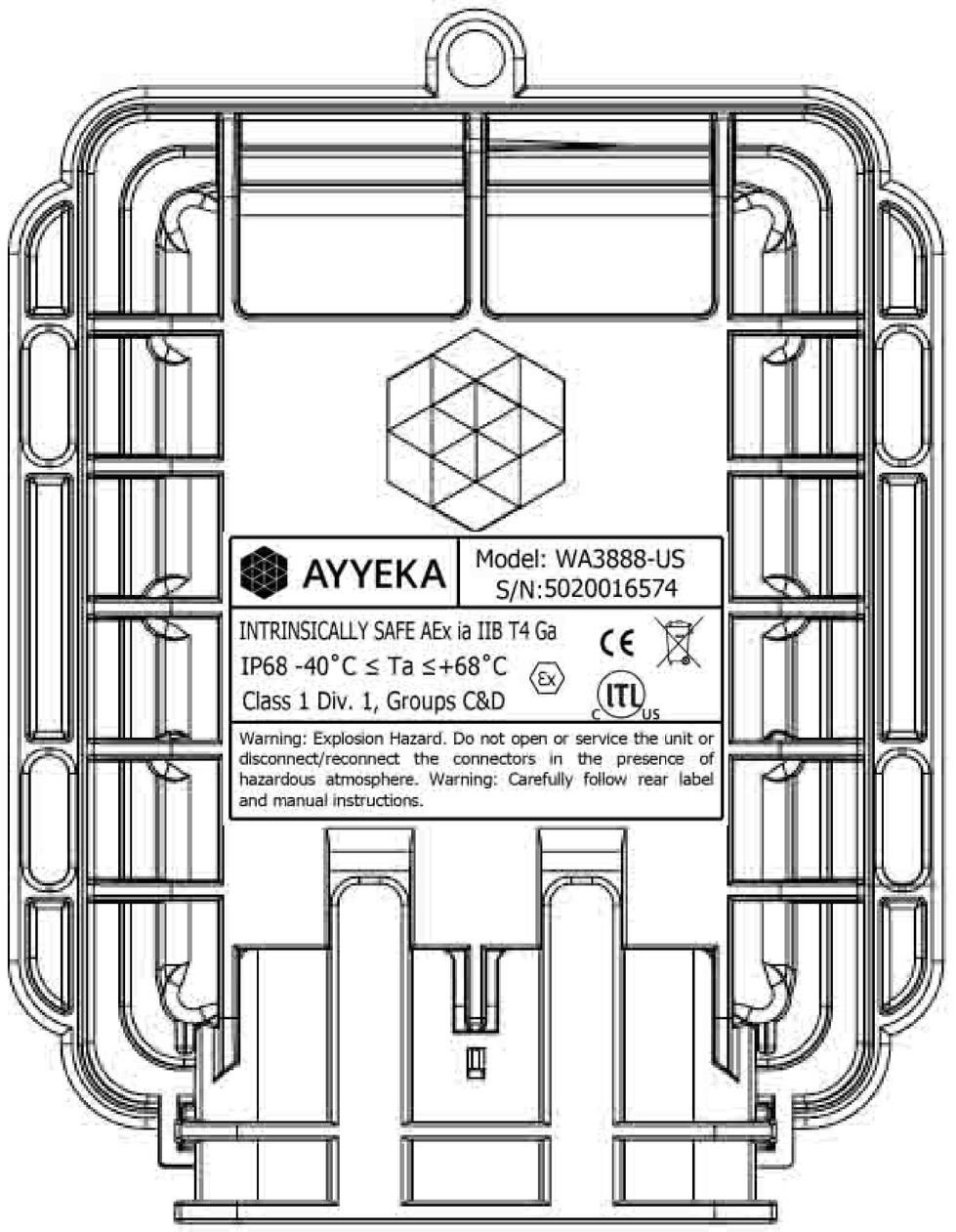
Wavelet Ex

WA3888-xx

QUICK START

GUIDE



AYYEKA | SEE FAR

Feb 1, 2021
P/N0100706

It is important that you read the QuickStart Guide in a controlled environment prior to installation.

Set up, activate, and successfully test the entire system (Wavelet Ex, sensors, and antenna connection) indoors, in a controlled environment, before going to the field for installation.

IMPORTANT

Contact the **Ayyeka Support Team** for technical assistance:
support@ayyeka.com

+1 (310) 876-8040 (US)
+31-40-209-1001 (EMEA)
+972-2-624-3732 (IL)

Always coordinate the installation with the local authority before starting installation. Installation should be completed by trained and authorized personnel. If assistance from Ayyeka Support is needed, schedule a request in advance, and **make sure that you get confirmation before the installation.**

The Ayyeka Limited **Warranty** covers only Ayyeka-supplied hardware and software for the duration of the warranty period as per the warranty terms and conditions.

Ayyeka is **not liable** for damage or injury as a result of handling, installation, or maintenance of its supplied systems.

Do **not** throw away the device because it contains a lithium battery. Dispose of the battery properly according to local laws and regulations.

4G (LTE)/3G/2G cellular network signal is required for proper communication.

Operating temperature range: -40°C to +68°C (-40°F to +154°F)

SAFETY MESSAGE

This manual applies Hazard Severity Levels to the safety alerts. These three levels are described in the sample alerts below.

⚠ CAUTION

Cautions identify a potential hazard, which if not avoided, may result in minor or moderate injury. This category can also warn you of unsafe practices, or conditions that may cause equipment or property damage.

⚠ WARNING

Warnings identify a potentially hazardous condition, which if not avoided, could result in death or serious injury.

⚠ DANGER

Warnings identify a potentially hazardous condition, which if not avoided, could result in death or serious injury

SAFETY MESSAGE

Procedures and instructions in this manual may require special precautions to ensure the safety of the personnel performing the operations. Refer to the safety messages listed at the beginning of each section before performing an operation preceded by this symbol.

Failure to follow installation guidelines could result in serious injury or death. Make sure only qualified personnel perform this installation.

Use the equipment only as specified in this manual. Failure to do so may impair the protection provided by the equipment.

Before installing, operating, or maintaining this equipment, it is imperative that all hazards and preventive measures are fully understood. While specific hazards may vary according to location and application, take heed in the following general warnings.

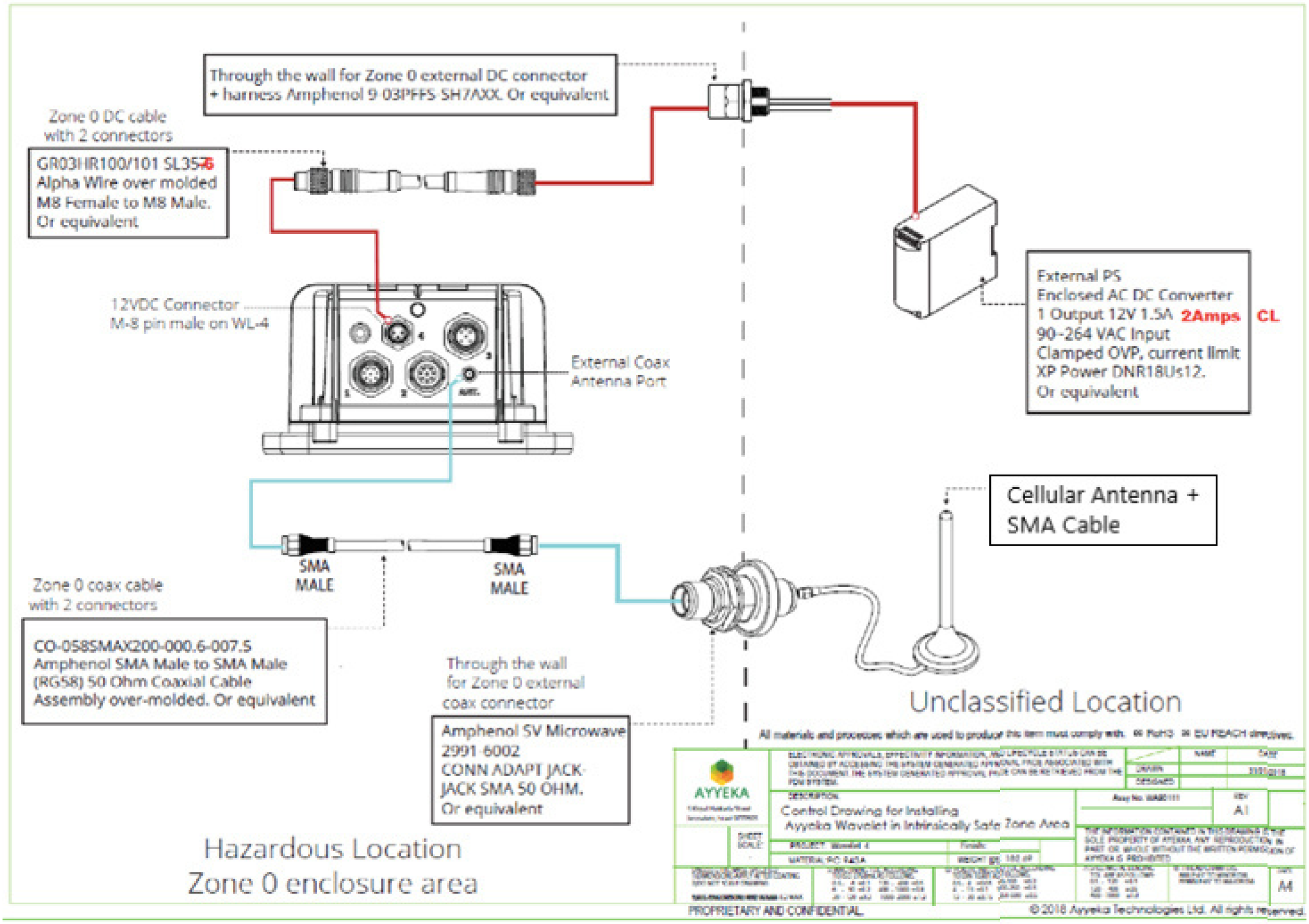
WARNING
Do not open unit or service the unit in the presence of a hazardous atmosphere.

WARNING
Do not disconnect/reconnect the unit after installation while power is on internally and/or externally.

WARNING
Read and follow all instructions for operation and installation to maintain safety in hazardous area locations.
As an “X” marked product, special attention is needed to written manufacturer procedures for specific installation instructions to comply with Ex restrictions.

CONTROL DRAWING

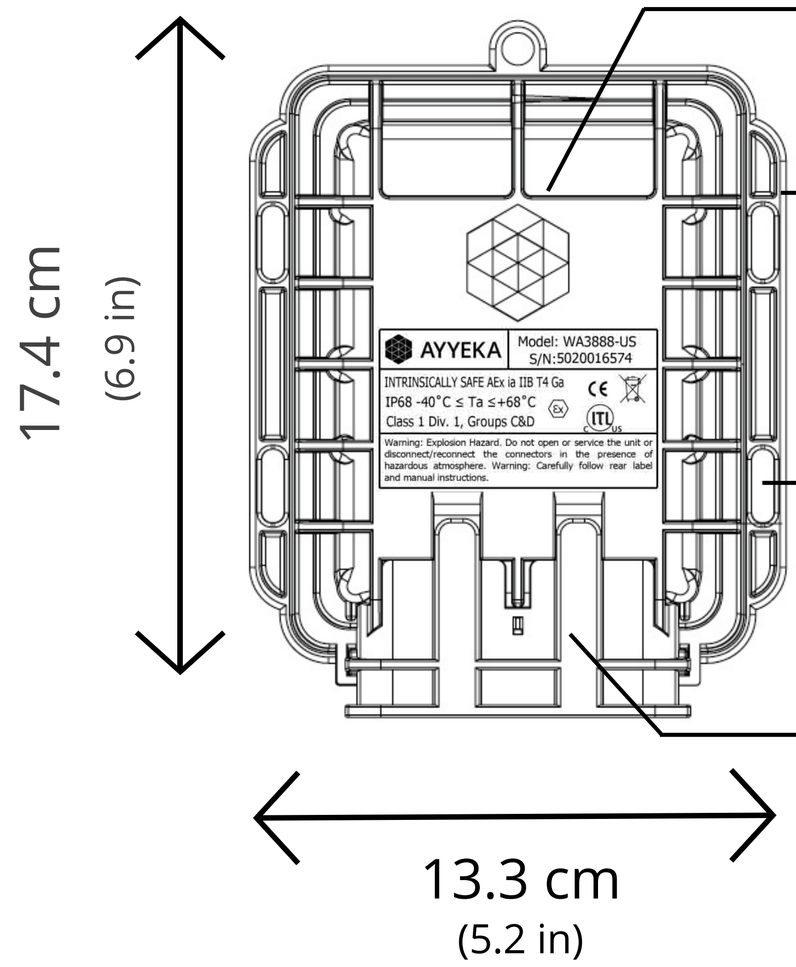
The control drawing Assembly No. WA90111 depicted below provides the recommended electrical layout for the installation.



Use the equipment only as specified in this manual and according to the intrinsic safety control drawing. Failure to do so may impair the protection provided by the equipment.

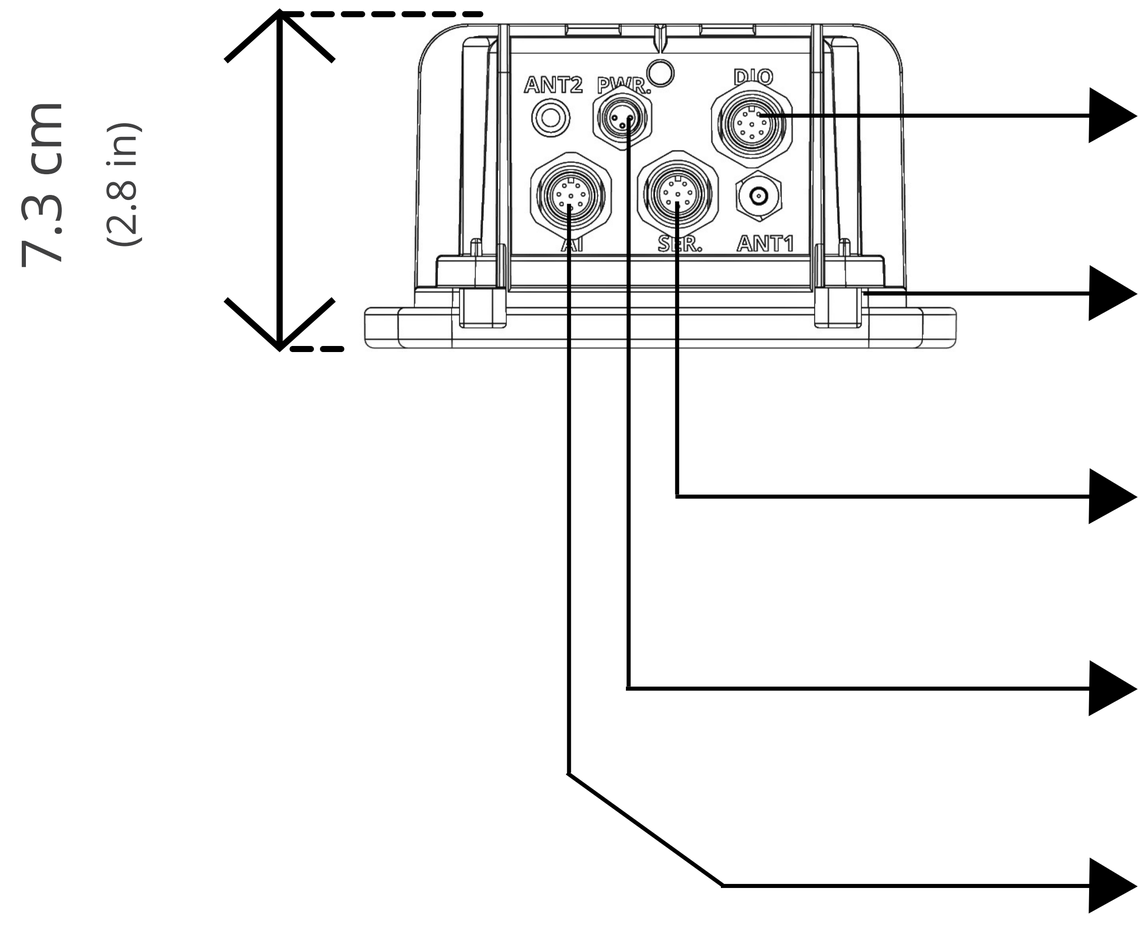
SCHEMATIC

FRONT



- Magnetic activator key
- IP 68/ NEMA 6P Wavelet Ex mechanical enclosure
- Slots for zip ties and/or bolts for mounting
- Panel connectors protector

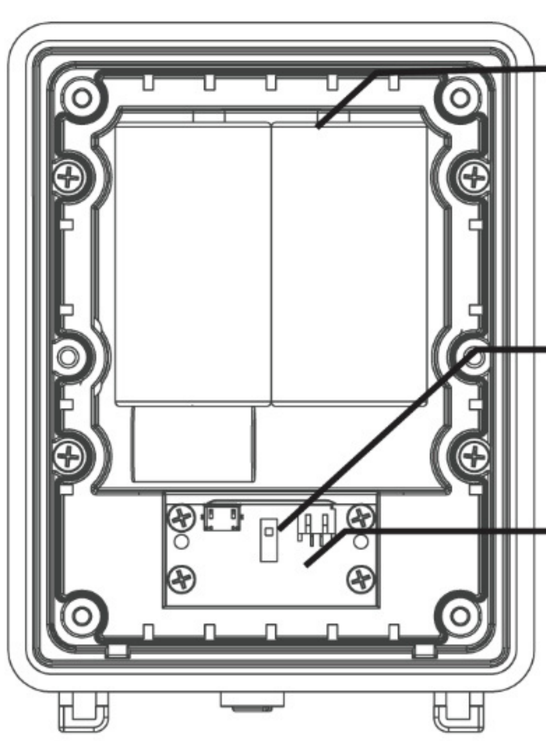
BOTTOM



- Sensor port #3
- Cellular antenna port
- Sensor port #2
- External power port
- Sensor port #1

SCHEMATIC

INTERNAL
UPPER ENCLOSURE



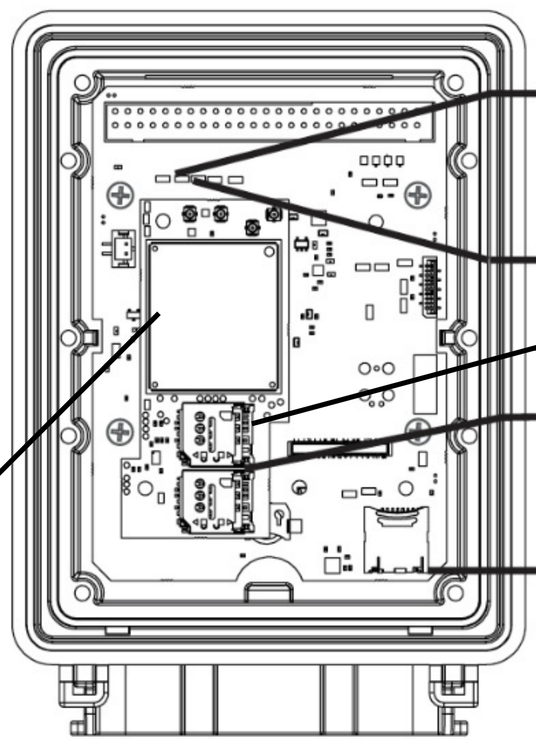
Military-grade, potted lithium battery pack (field replaceable, non-rechargeable)

Interface board ON/OFF switch

Indicator LEDs

INTERNAL
LOWER ENCLOSURE

NOTE: Potted



GSM antenna

GPS antenna

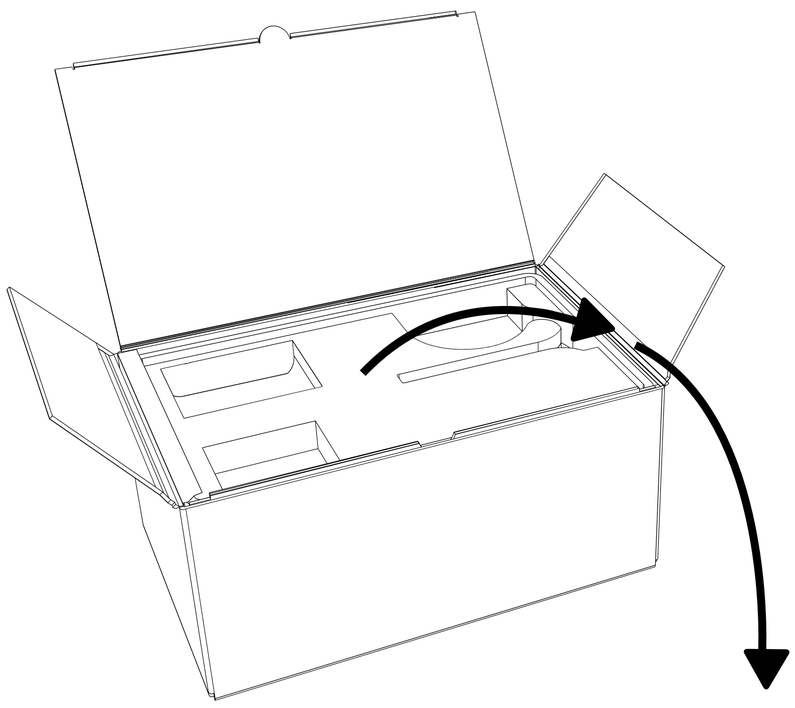
SIM card slot #1

SIM card slot #2

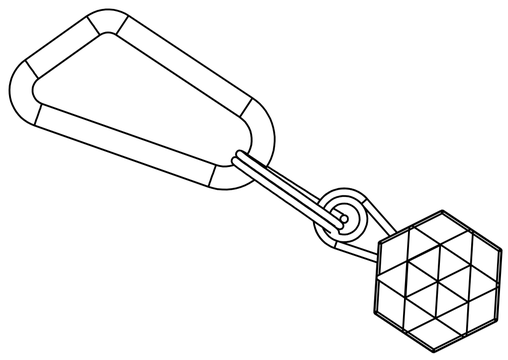
Memory card

Cellular modem

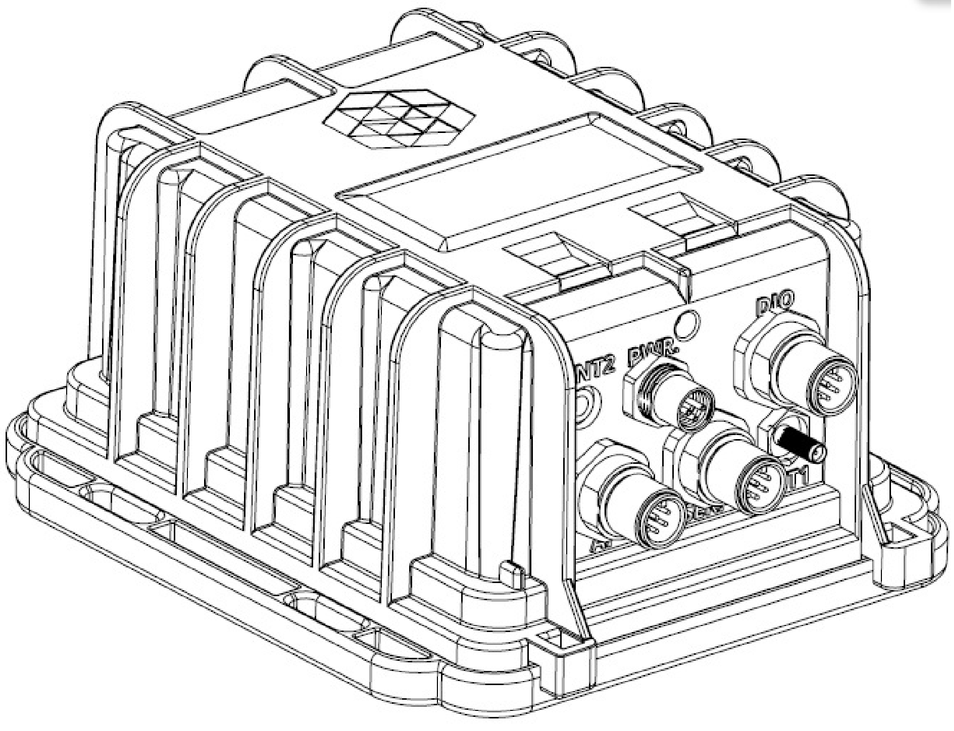
COMPONENTS



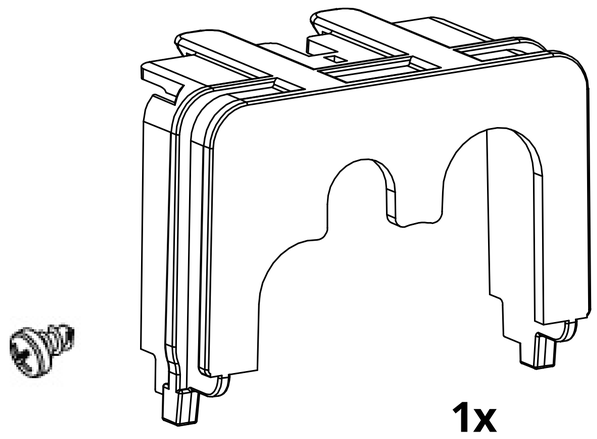
Magnet Activator Key



Wavelet Ex Device



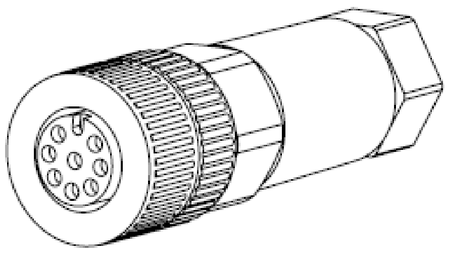
Panel connectors protector and and security screw



1x

M12 8-pin female field attachable sensor connectors

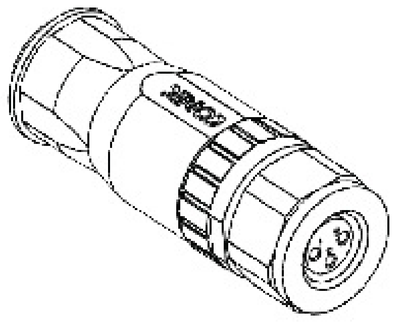
(optional; ordered separately)



3x

M8 female field attachable power connector

(optional; ordered separately)

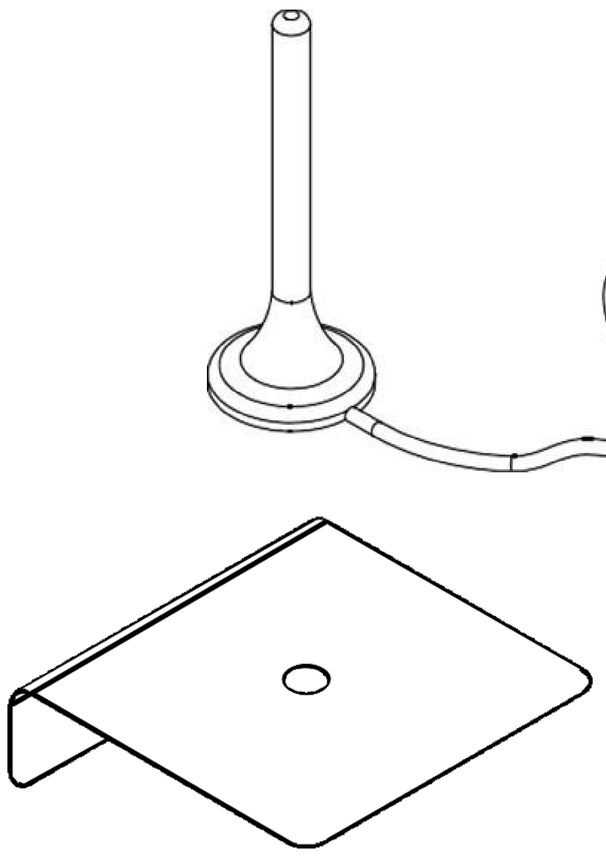


1x

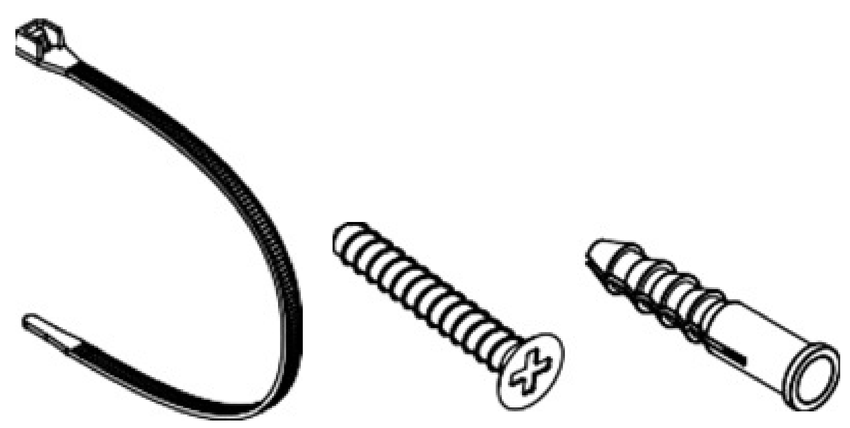
COMPONENTS

Cellular antenna and mounting bracket

(REQUIRED and sold separately)



Zip ties, screws, and anchors



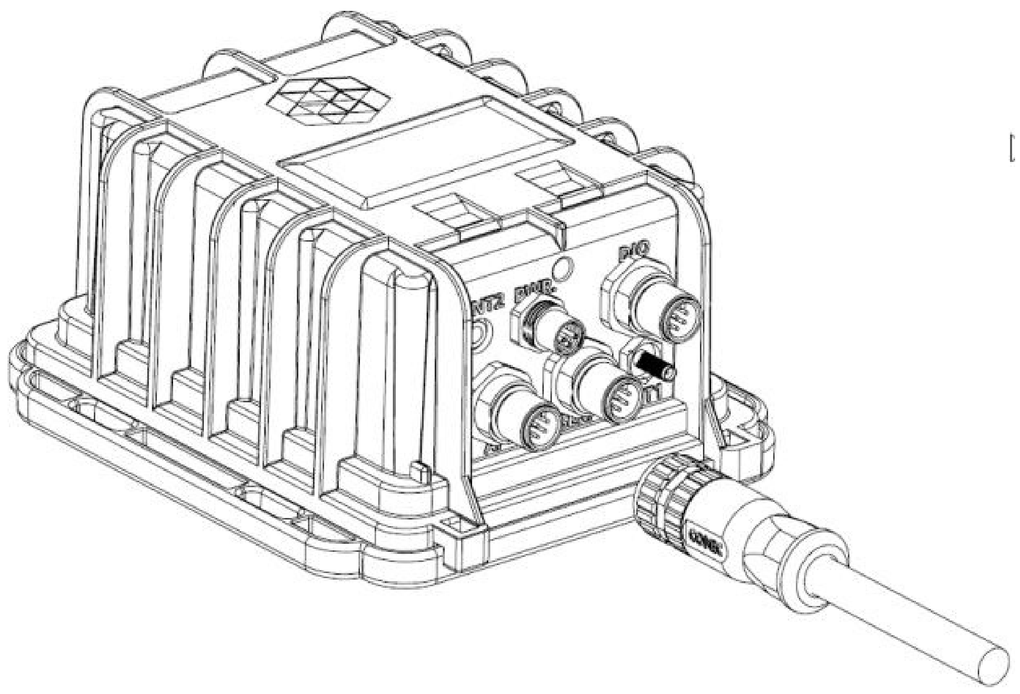
2x **4x** **4x**

SENSOR CONNECTION

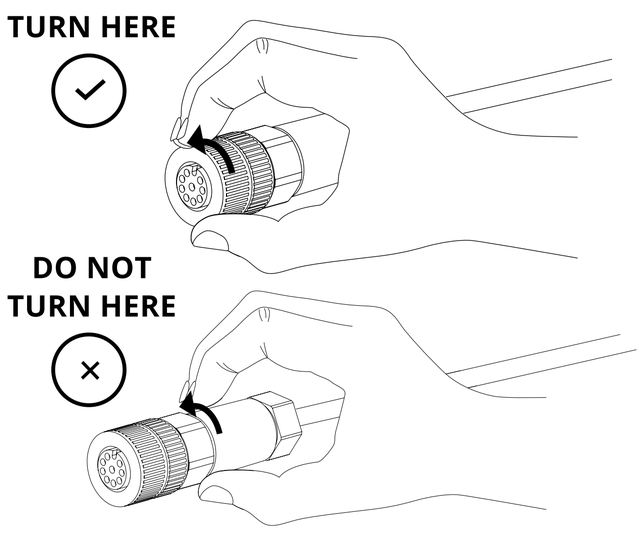
WARNING
Connection of sensor(s) to the device must be done in an unclassified zone. Failure to perform this action in an unclassified zone may cause dangerous conditions.

1. Connect the sensor cable(s) assembly with the field attachable connector to the mating panel connector on the device. Turn the adjustable stainless-steel end piece to secure the field attachable connector to the device.

IMPORTANT: Use the DEVICE PINOUT sheet at the end of this Guide to know which device port to plug the sensor into.
All device ports look identical, but their internal wiring is different. Consequently, the sensor will not work if it is plugged into the wrong port.



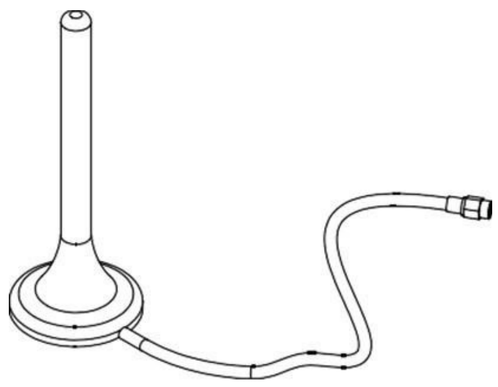
CAUTION: Do not turn the black plastic hood of the connector. Turning the black hood may cause the wires to disconnect, break, and/or damage the connector pins.



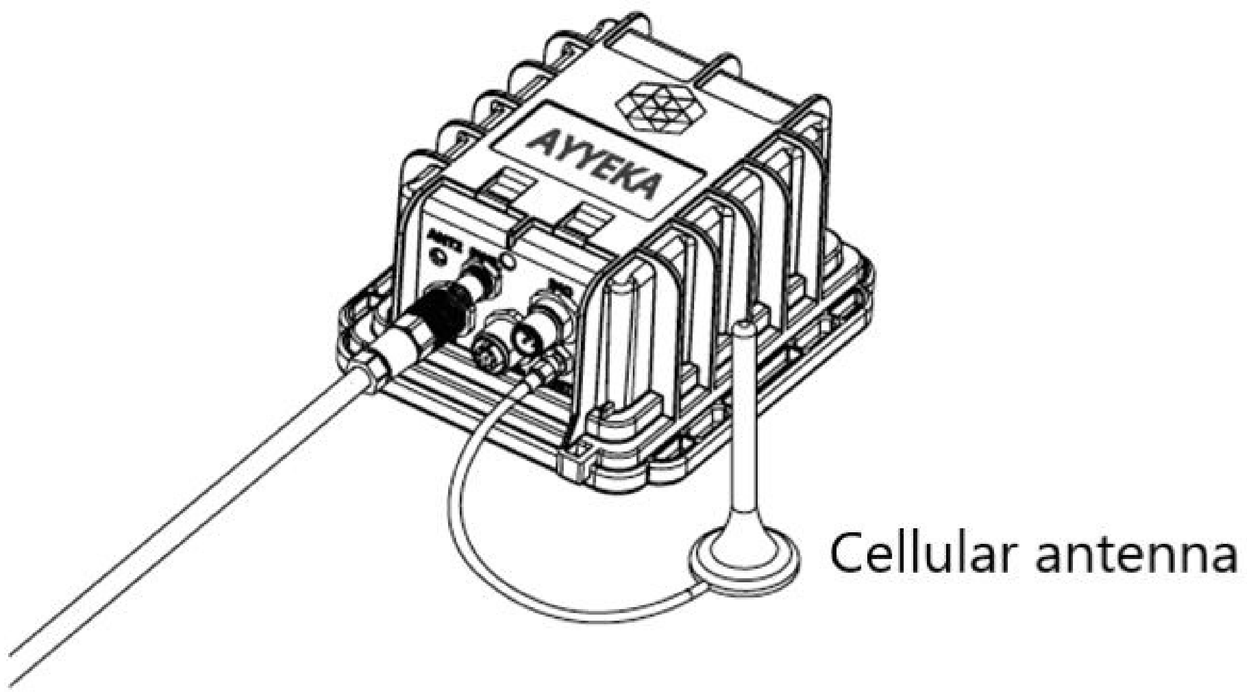
EXTERNAL ANTENNA ASSEMBLY & TESTING

WARNING
The external antenna mounting and testing with direct antenna connection **must** be done in an unclassified zone. Failure to perform this action in an unclassified zone may cause dangerous conditions

2 Mount the external cellular antenna inside the unclassified zone. The antenna should be mounted as near, or as practical, as possible to the barrier or wall of the unclassified zone.



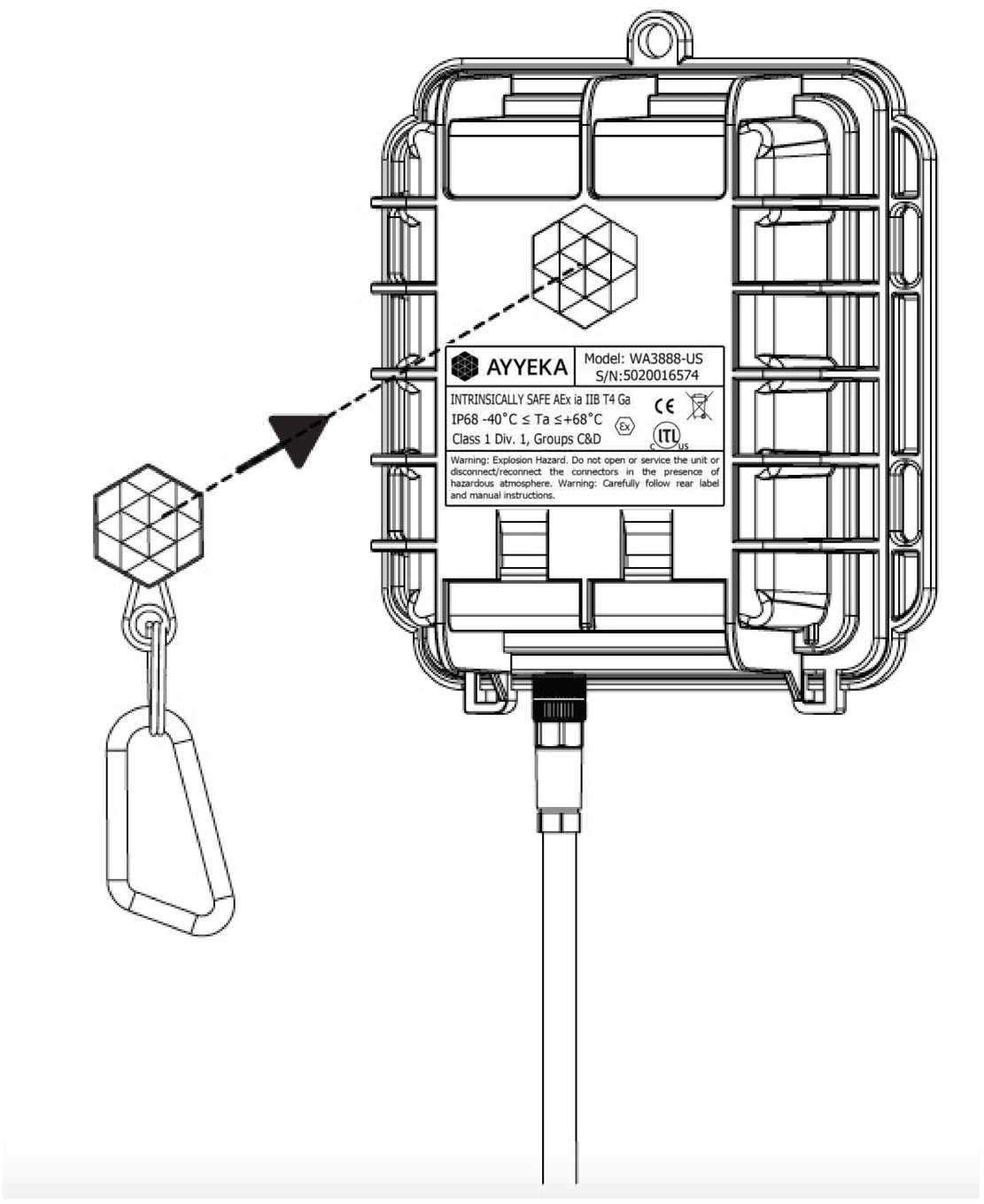
3 Although it is not required, you may for ***testing purposes only*** connect the external cellular antenna directly to the device ***inside the unclassified zone.*** The SMA antenna connector is secured to the antenna panel connector (ANT 1) on the device.



DEVICE ACTIVATION

WARNING
The device should first be tested in an unclassified zone.
Failure to perform this initial testing action in an unclassified zone may cause dangerous conditions.

4 Place the magnetic device activator key on the embossed logo on the front of the device enclosure. Device will initiate a 15-minute test mode of high frequency sampling and transmission. The device will then return to its default configuration.



DEVICE ACTIVATION

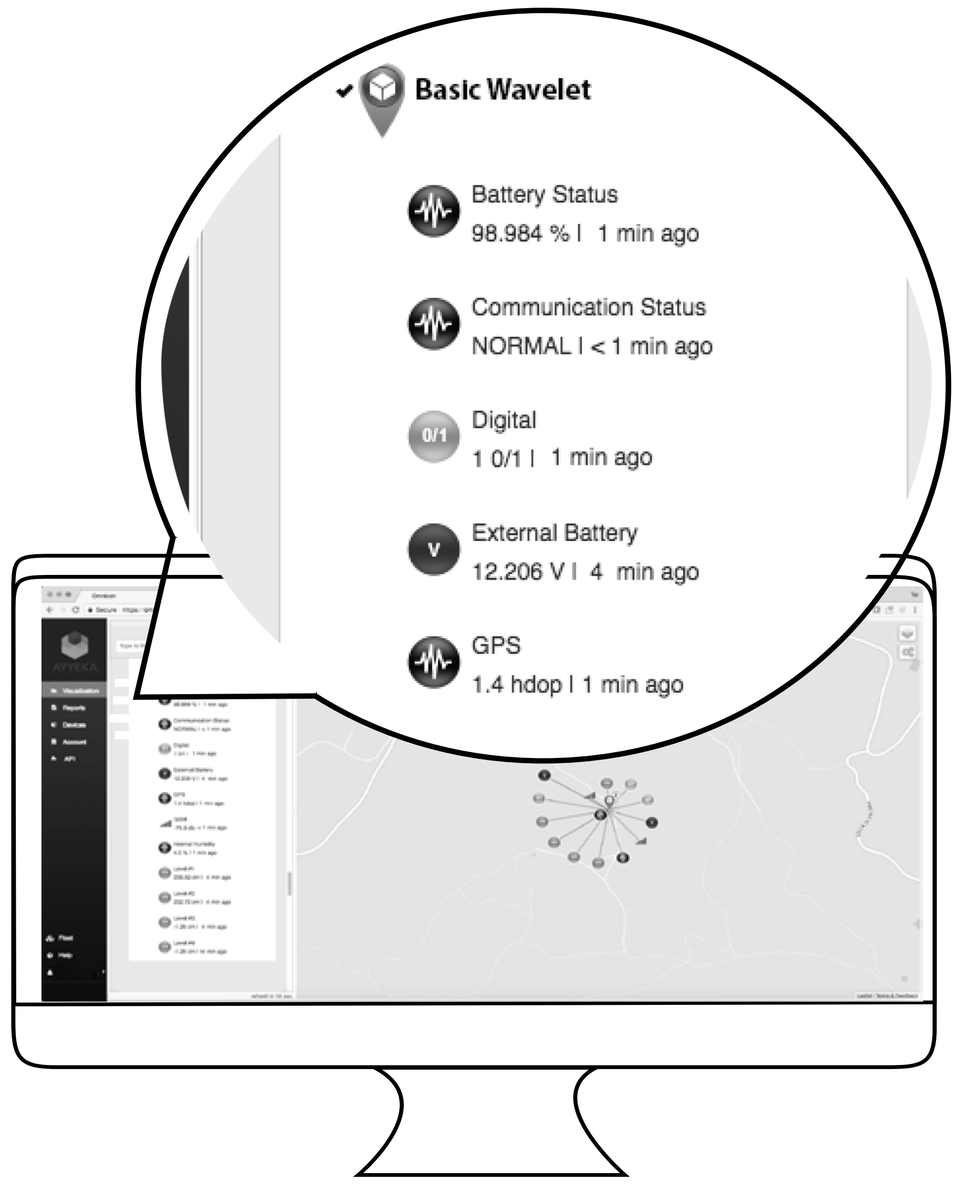
The LED light on the back cover of the device indicates the device status.

Function	Description
All LEDs are off	Not connected to network. The LED lights do not blink when the device is sampling. Note: Device may be powered down (power switch is in the OFF position), in Hibernate mode, or have insufficient battery strength.
Green-Red-Blue-Red-Green LEDs blink sequentially 5x	Device is activated using the magnetic activator key.
Green LED is blinking	Attempting to connect to GSM network.
Green LED remains on	Transmission of data is in progress via GSM. The LED will turn off when the transmission is complete.
Green-Red LEDs blink 5x	GSM communication error. The device failed to transmit.

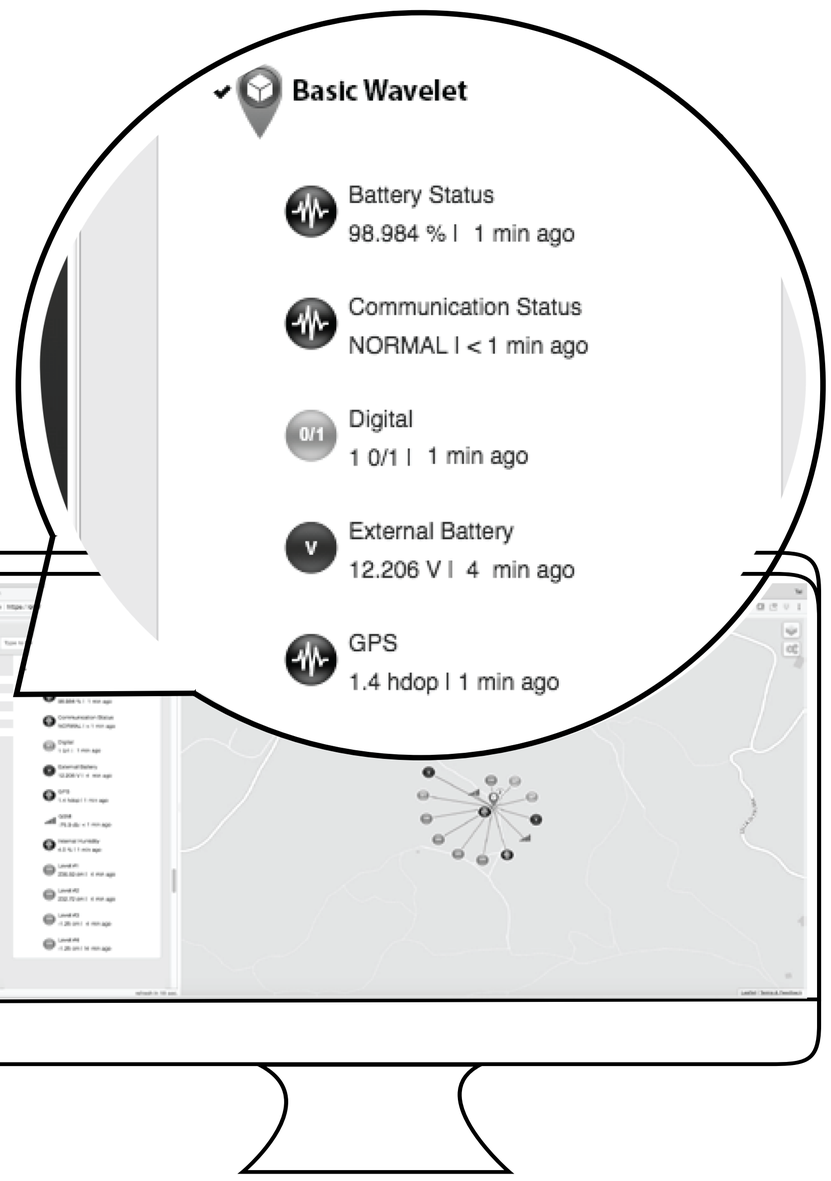
5 Access the user interface at https://home.ayyeka.com using your credentials. Expect data to appear within 15 minutes after the test mode is initiated.

DEVICE ACTIVATION

The screen display should resemble the following:



If the device transmits properly, you have completed the installation successfully and can begin collecting and viewing your data!



If data does not transmit properly, change the device installation location and activate again.

If the problem persists, contact the Ayyeka Support Team for help:

support@ayyeka.com

+1 (310) 876-8040 (US)

+31-40-209-1001 (EMEA)

+972-2-624-3732 (IL)

AyyekaGo MOBILE APP

If you haven’t already done so, download the AyyekaGo mobile app for iOS or for Android. Search the App Store or Google Play for “AyyekaGo” or use the QR codes below.

There are two ways to pair your phone with your Wavelet:

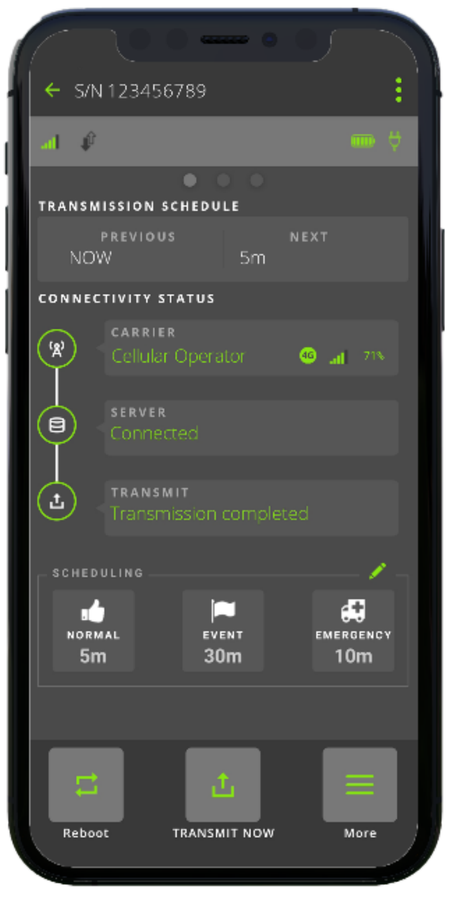
1. Select ”Get Key Via Web”. This will direct you to enter your log-in credentials for the StreamView user interface.
2. Select ”Enter Key Manually”. The Mobile Pair Key is found in the StreamView user interface in the Devices tab.

Once connected to your Wavelet device, there are multiple display screens for different functionality.

The first screen provides essential information, including, but not limited to:

- signal strength
- cellular carrier
- confirmation of successful transmission and connection to the server

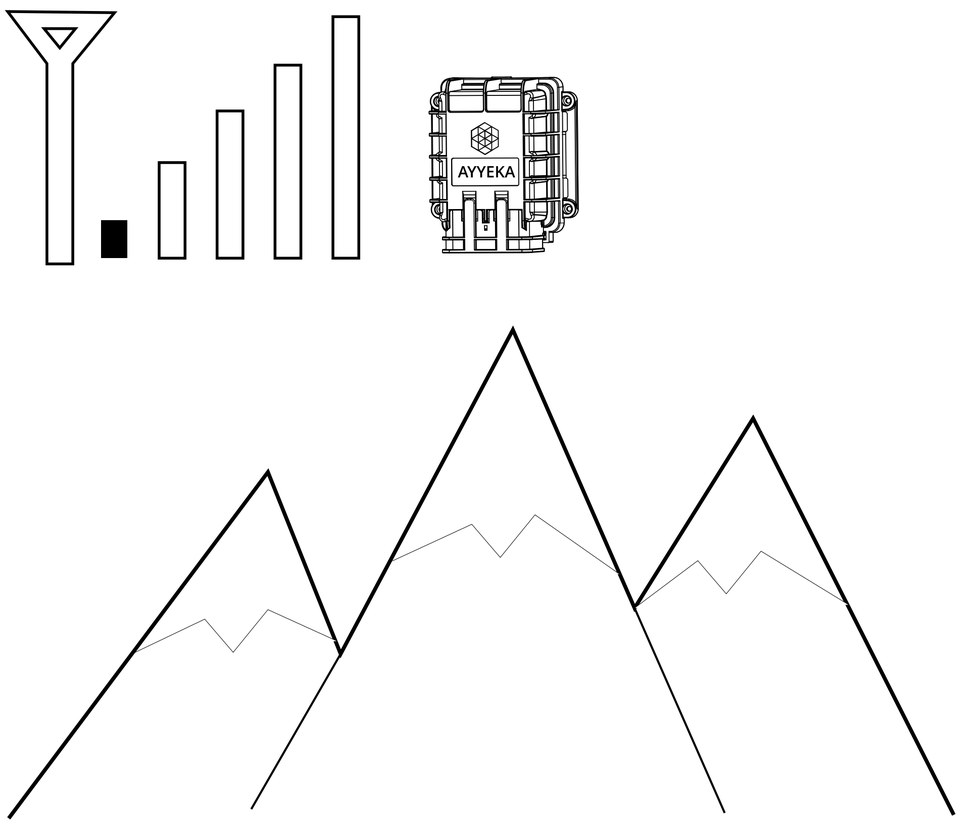
Download on the App Store



GET IT ON Google Play

SPECIAL INSTALLATION LOCATIONS

WEAK SIGNAL LOCATIONS

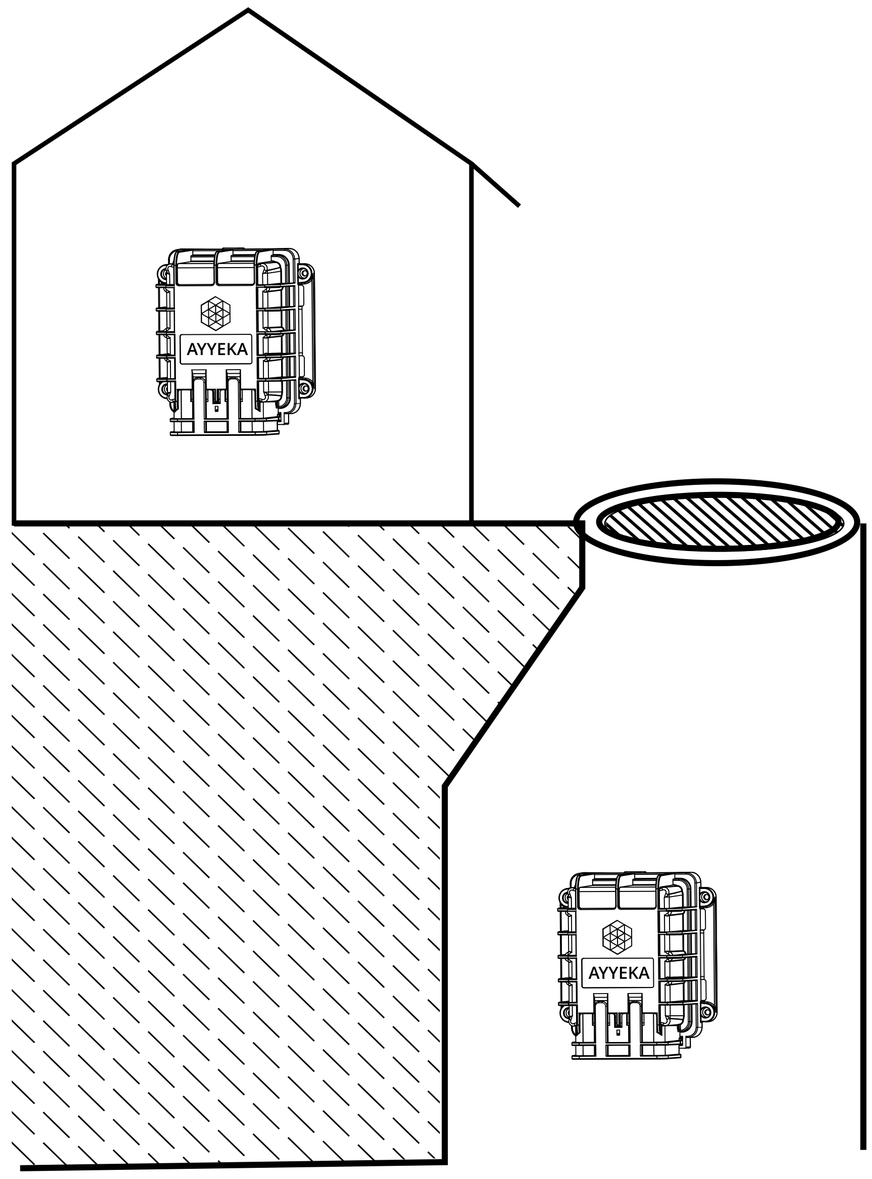


If the device is installed in an area with weak cellular signal, activate the Waveletusing the magnetic activator key.

Use the mobile app to pair with the device and confirm transmission. You can also log into the user interface using your credentials to validate that the device is transmitting and sensor sampling.

Wait for at least15 minutes,then log into the user interface at https://home.ayyeka.com to confirm successful transmission.

INDOOR/UNDERGROUND



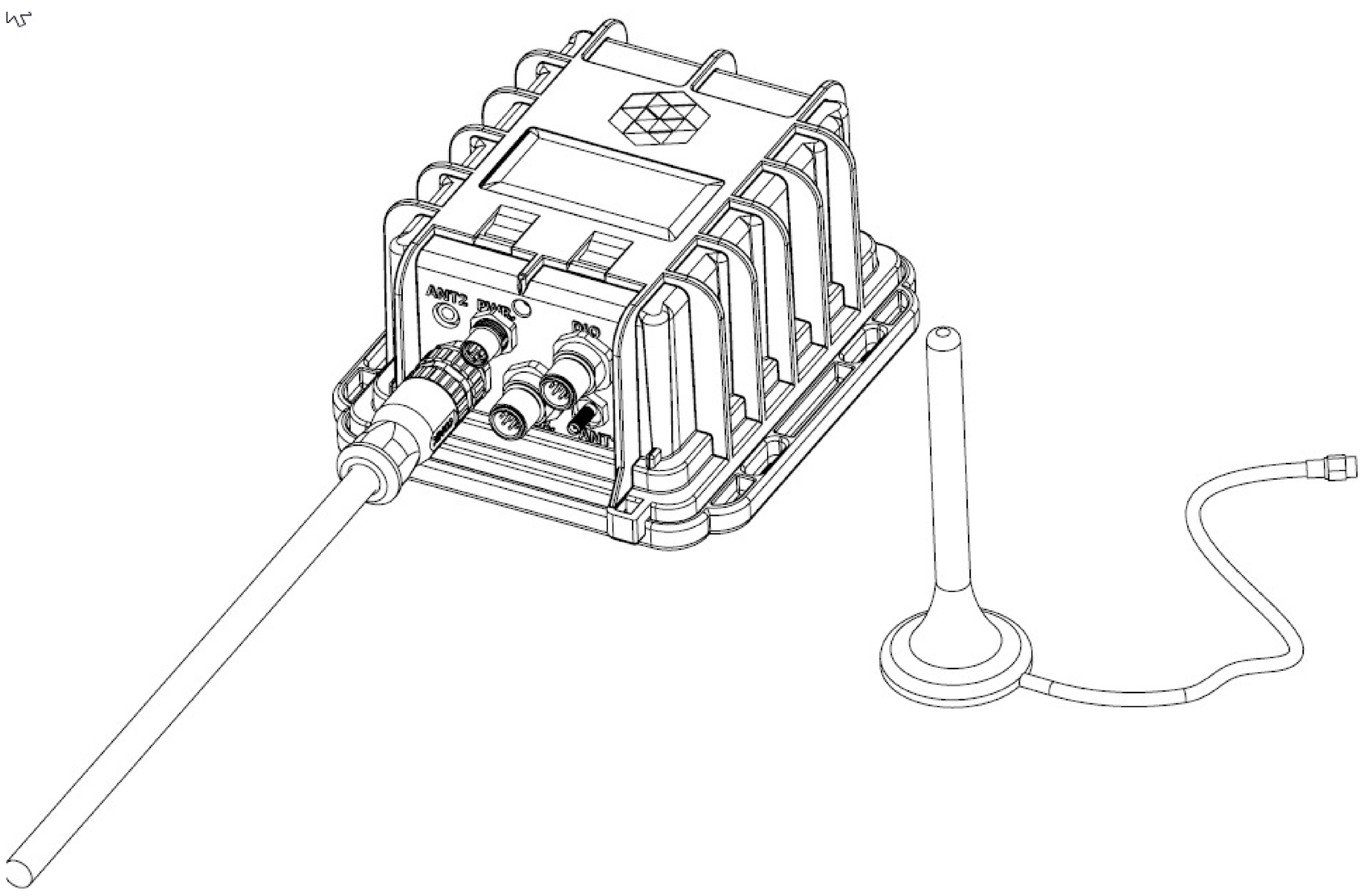
If the device is installed in an area with weak cellular signal, activate the Wavelet and place in the intended installation location with closed doors/access hatch.

Wait for at least 15 minutes, then log into the user interface at https://home.ayyeka.com to confirm successful transmission.

Before installation, initiate the GPS by activating the device.

DISCONNECT EXTERNAL ANTENNA

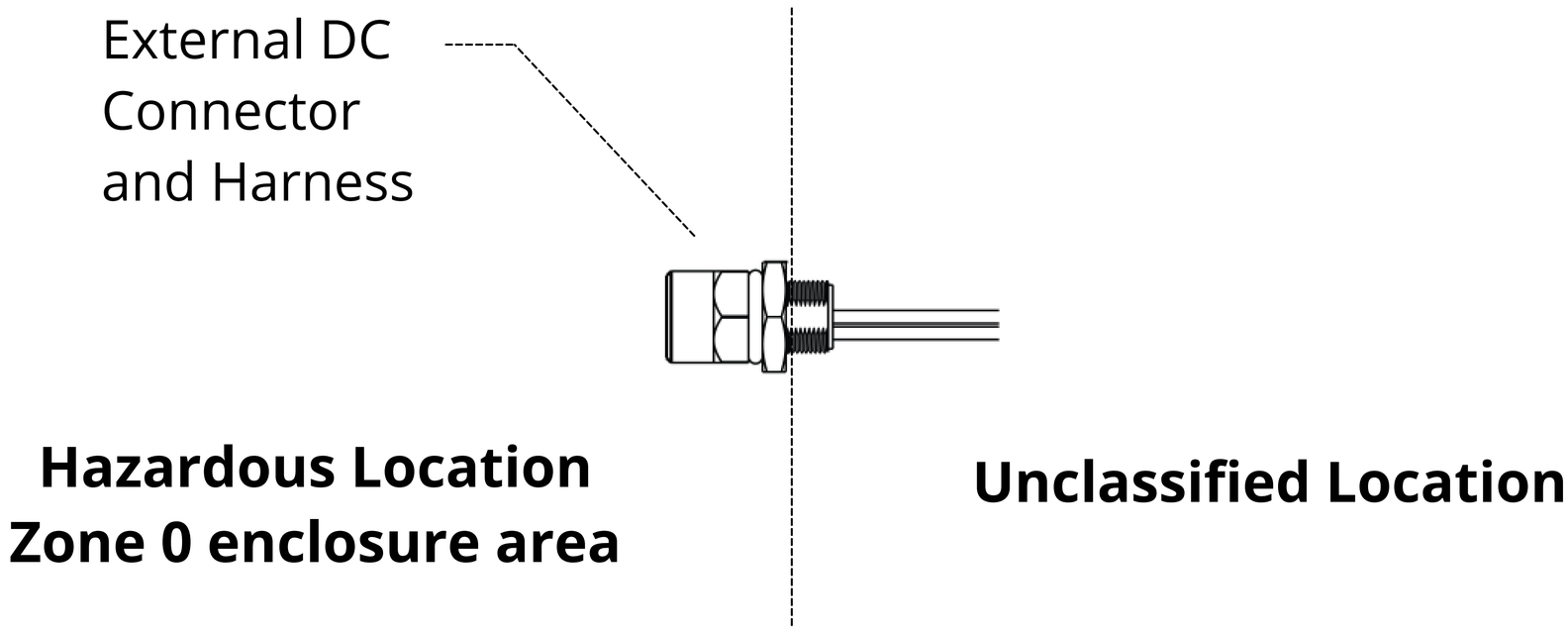
6 If you have tested the device in the unclassified location using the external antenna, disconnect the antenna from the Wavelet panel connector. Mount the antenna in its permanent permanent installation location within the unclassified location.



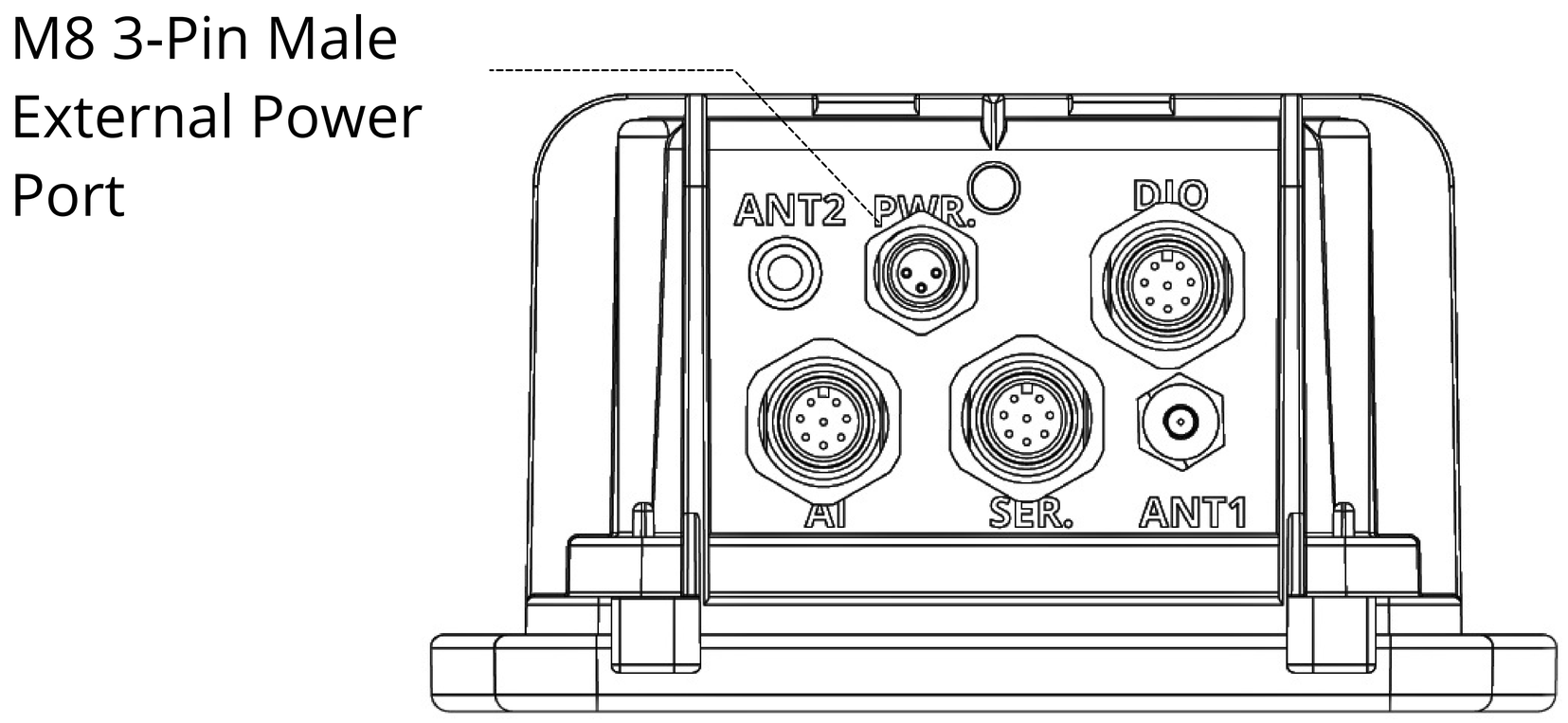
EXTERNAL POWER CONNECTION

DANGER
Use extreme caution. Installation of through-the-wall connectors must be performed with proper tools for a hazardous location. Failure to conform with this warning may result in death or serious injury.

7 Prepare the site for the optional external power connections to be made through the wall from the hazardous location Zone 0 enclosure area to the unclassified location using the external DC connector and harness.



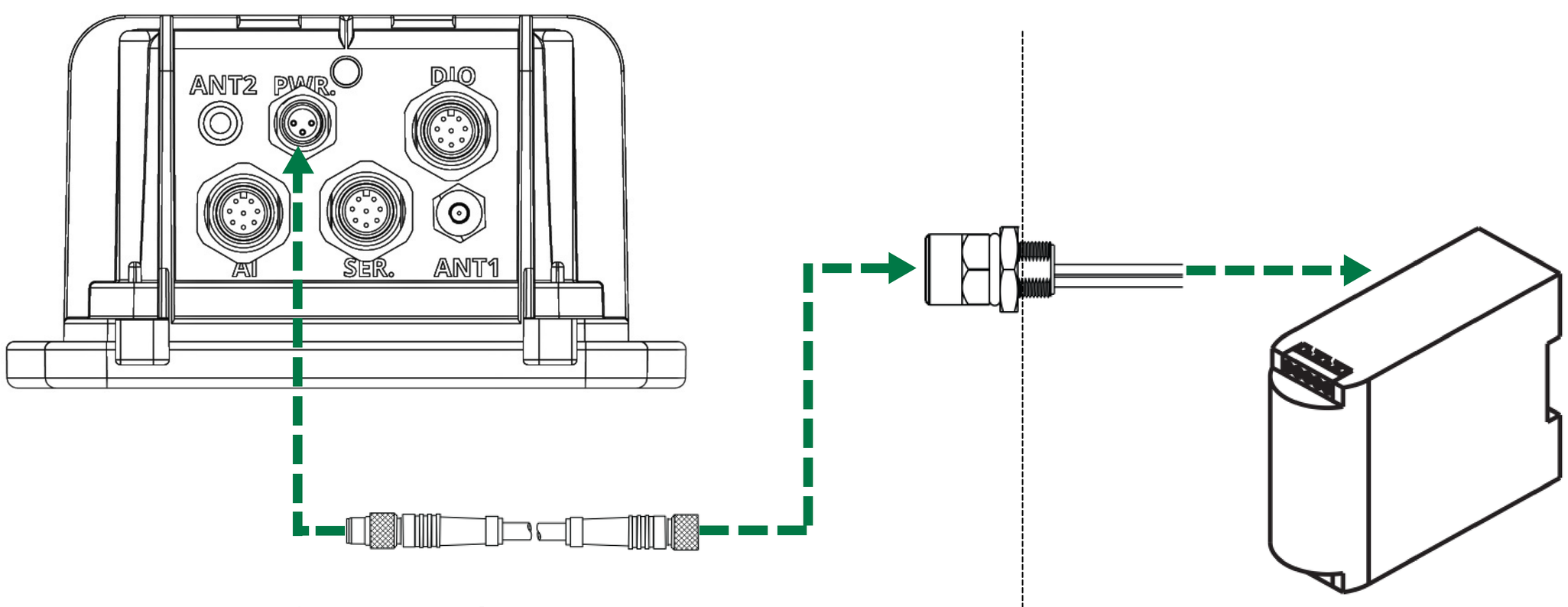
Locate the M8 3-pin male power panel connector on the device.



EXTERNAL POWER CONNECTION

DANGER
Use extreme caution. Do not disconnect/reconnect the unit after installation while power is on internally and/or externally. Failure to conform with this warning may result in death or serious injury.

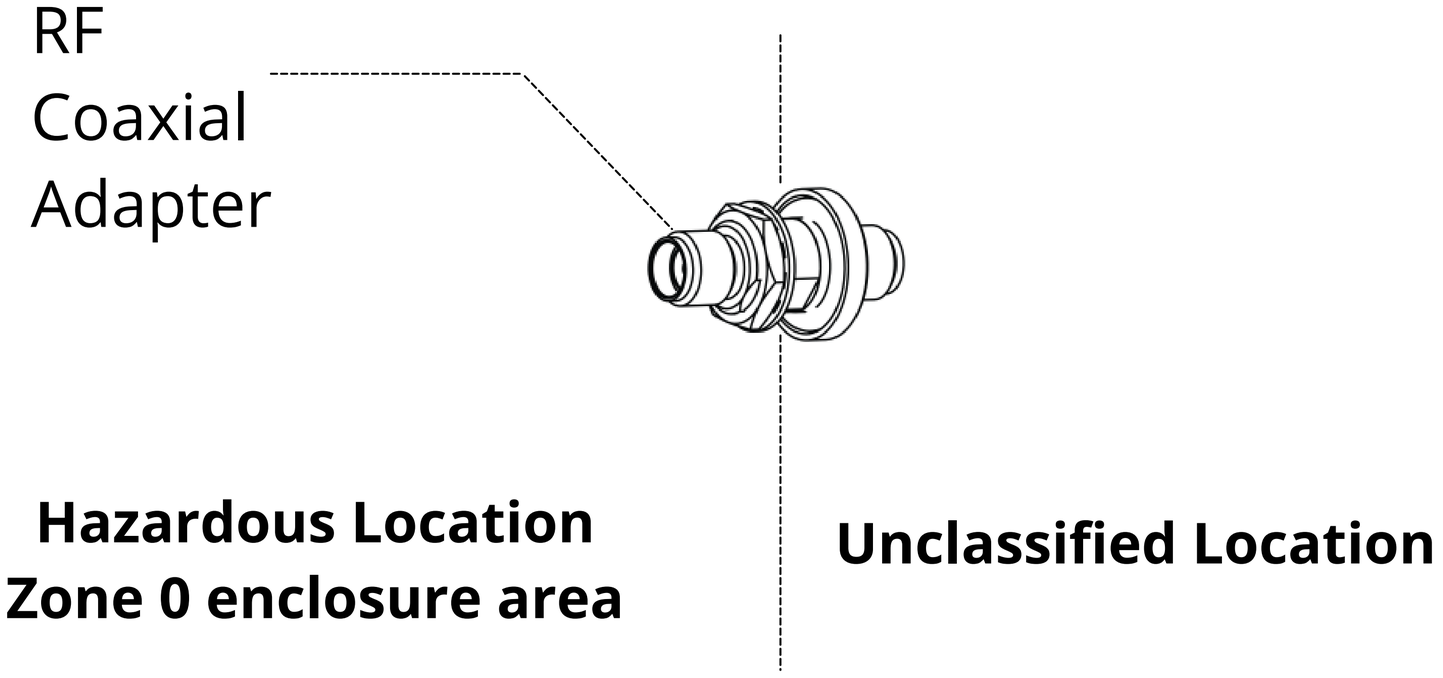
8 Connect the M8 3-pin female to M8 3-pin male cable assembly. The M8 3-pin female connector is connected to the device panel connector (PWR port). The M8 3-pin male connector is connected to the external DC connector and harness.



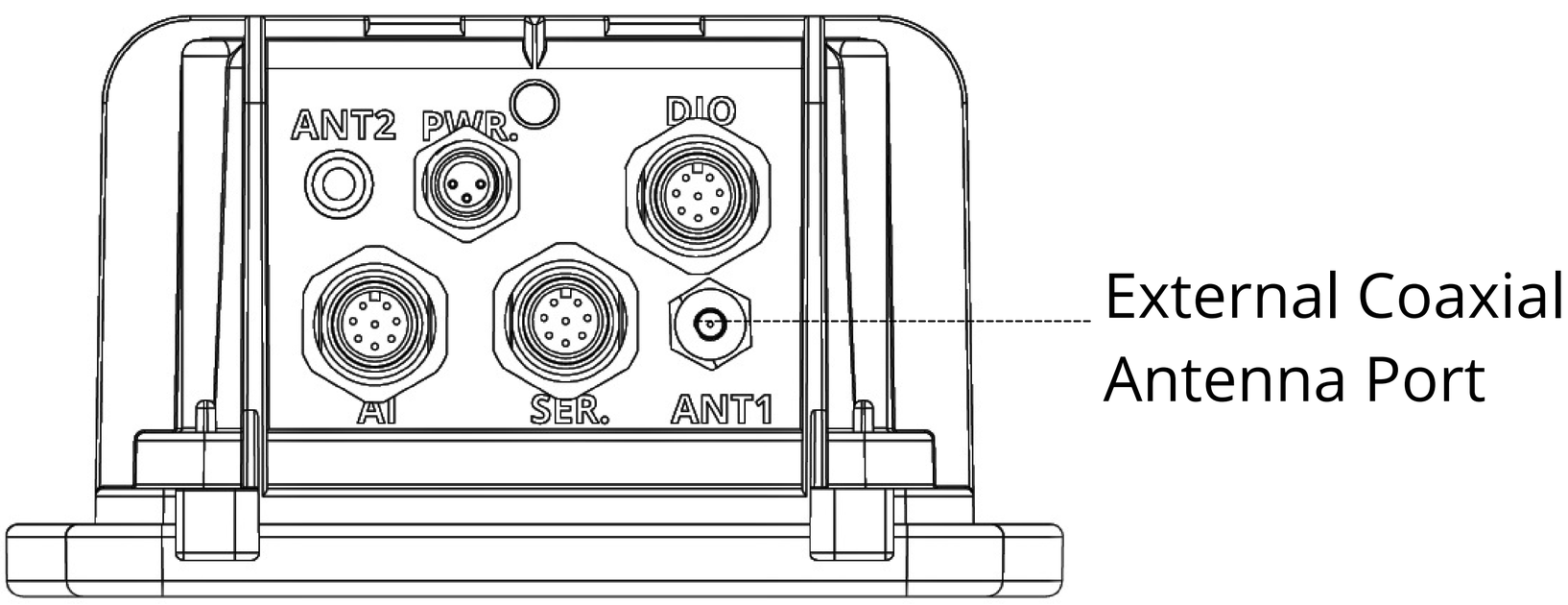
ANTENNA CONNECTOR

DANGER
Use extreme caution. Installation of through-the-wall connectors must be performed with proper tools for a hazardous location. Failure to conform with this warning may result in death or serious injury.

9 Prepare the site for the optional antenna connections to be made through the wall from the hazardous location Zone 0 enclosure area to the unclassified location.



Locate the SMA female external coaxial antenna port on the device (ANT 1).



ANTENNA CONNECTOR

DANGER
Use extreme caution. Do not disconnect/reconnect the unit after installation while power is on internally and/or externally.

Failure to conform with this warning may result in death or serious injury.

10 Connect the SMA male to SMA male coaxial cable assembly. The M8 3-pin female connector is connected to the device panel connector (PWR port). The M8 3-pin male connector is connected to the external DC connector and harness.

SMA Male to SMA Male
Coaxial Cable Assembly

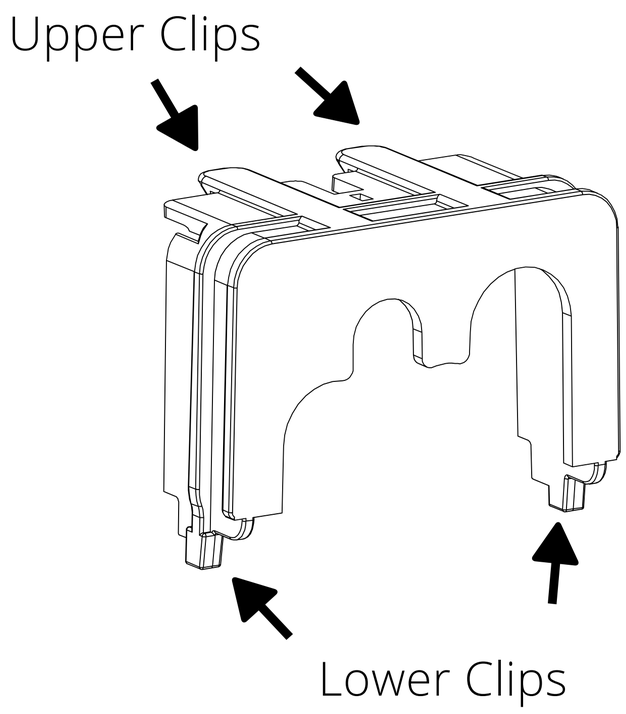
Hazardous Location
Zone 0 enclosure area

Unclassified
Location

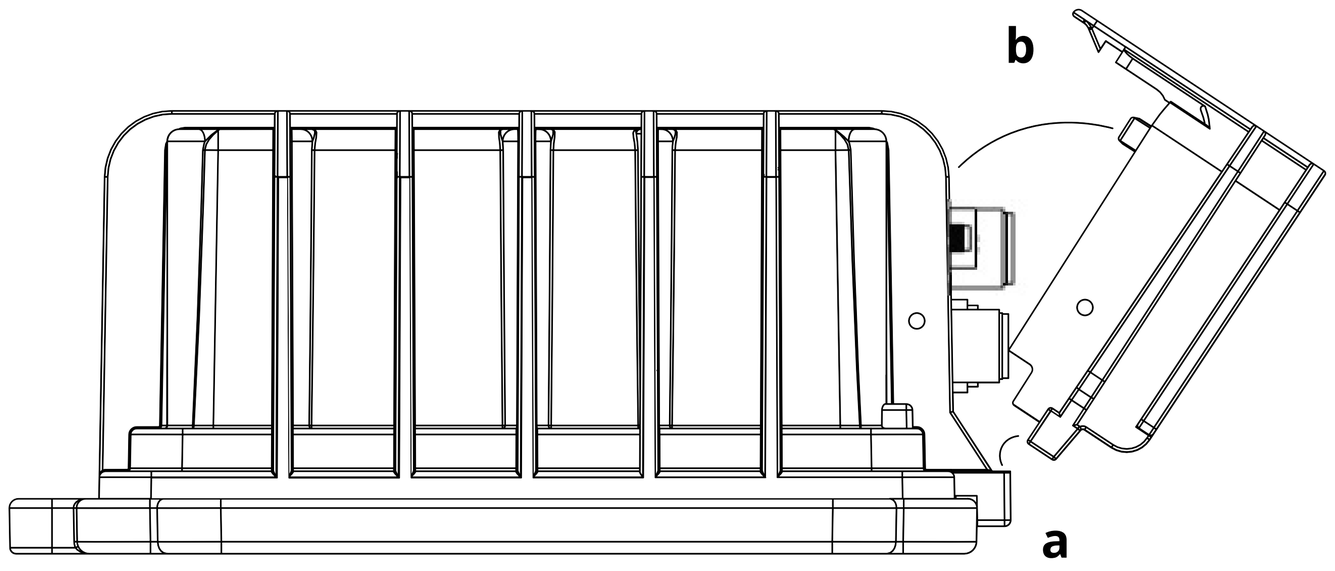
PANEL CONNECTOR PROTECTOR

CAUTION
The panel connector protector is provided to shield the connections from tampering or overexposure that could result in disconnected wiring. Failure to properly attach and secure the protector to comply with Ex restrictions may result in death or serious injury.

11 Once all sensor, power, and antenna connections to the device panel connector have been complete, secure the panel connector protector. Place the device protector above the connector ports and secure the device protector into the device enclosure.



a. Insert the two lower clips into the two lower holes of the device enclosure.
b. Snap the upper clips into place in the two grooves above the panel connector.

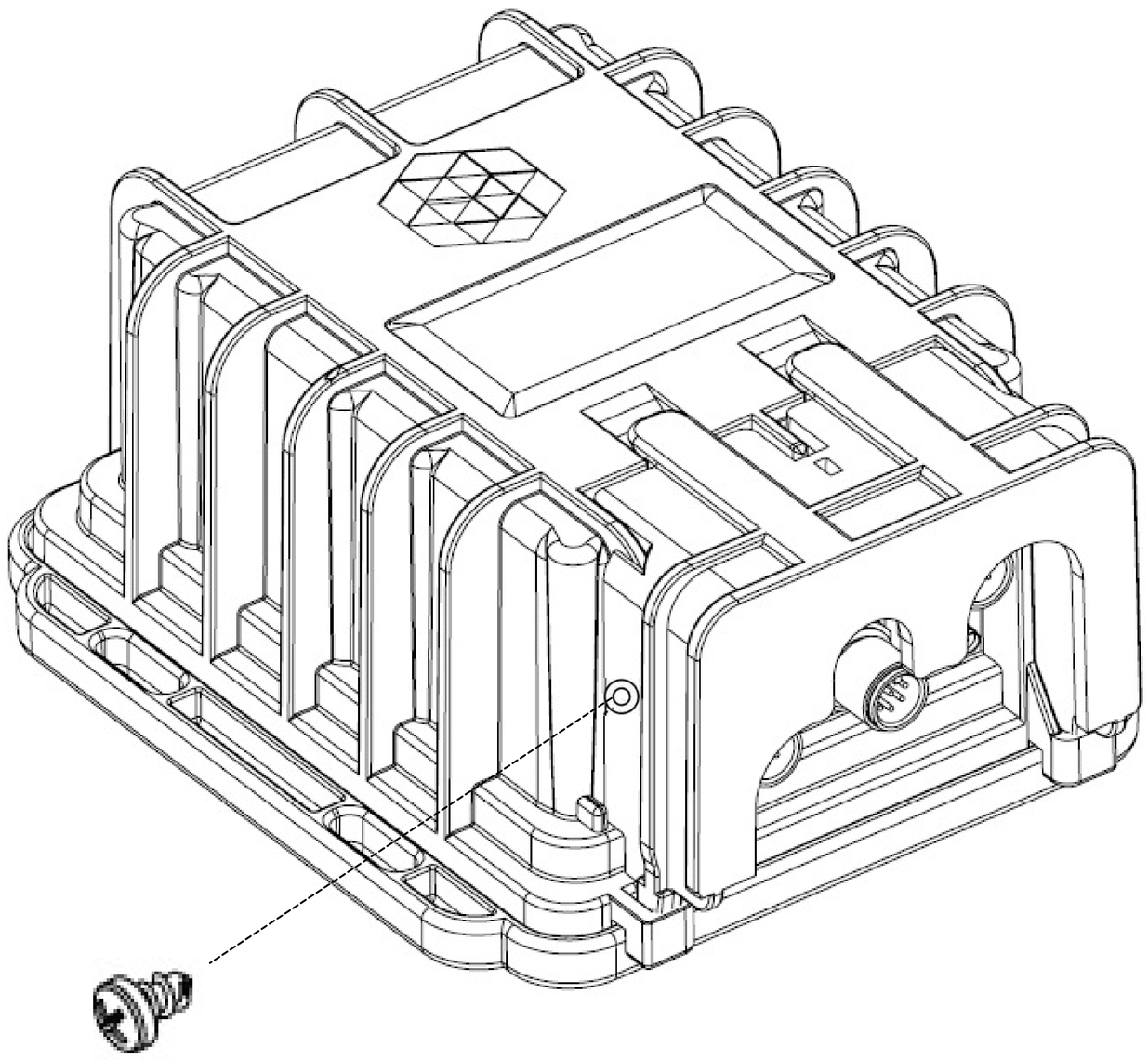


PANEL CONNECTOR PROTECTOR

CAUTION
The panel connector protector is provided to shield the connections from tampering or overexposure that could result in disconnected wiring. Failure to properly attach and secure the protector to comply with Ex restrictions may result in death or serious injury.

DANGER
Use extreme caution. Secure the screw with proper tools for a hazardous location. Failure to conform with this warning may result in death or serious injury.

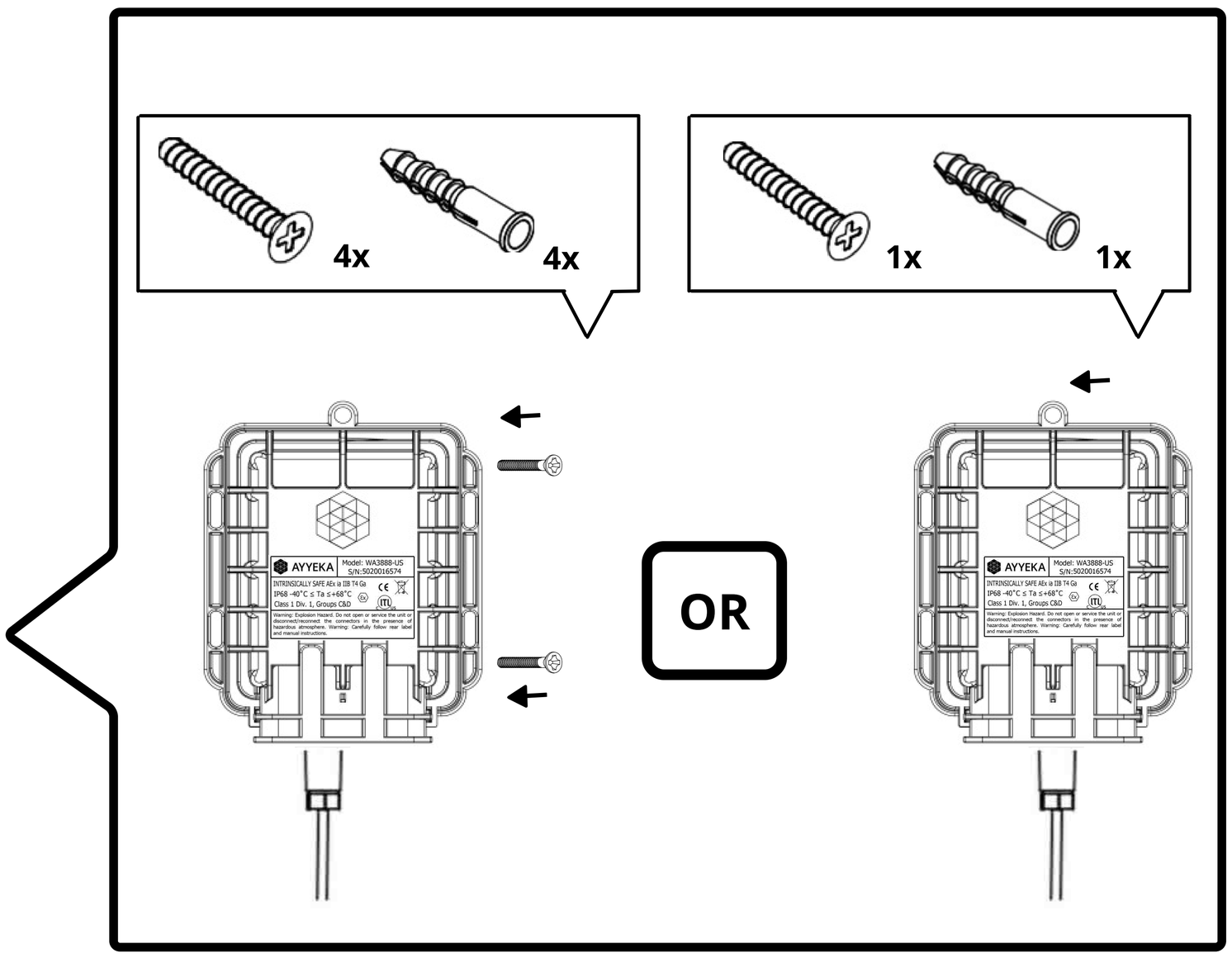
After the protector has securely snapped into place, insert and tighten the security screw to lock the panel connector protector. Do not over-tighten the screw.



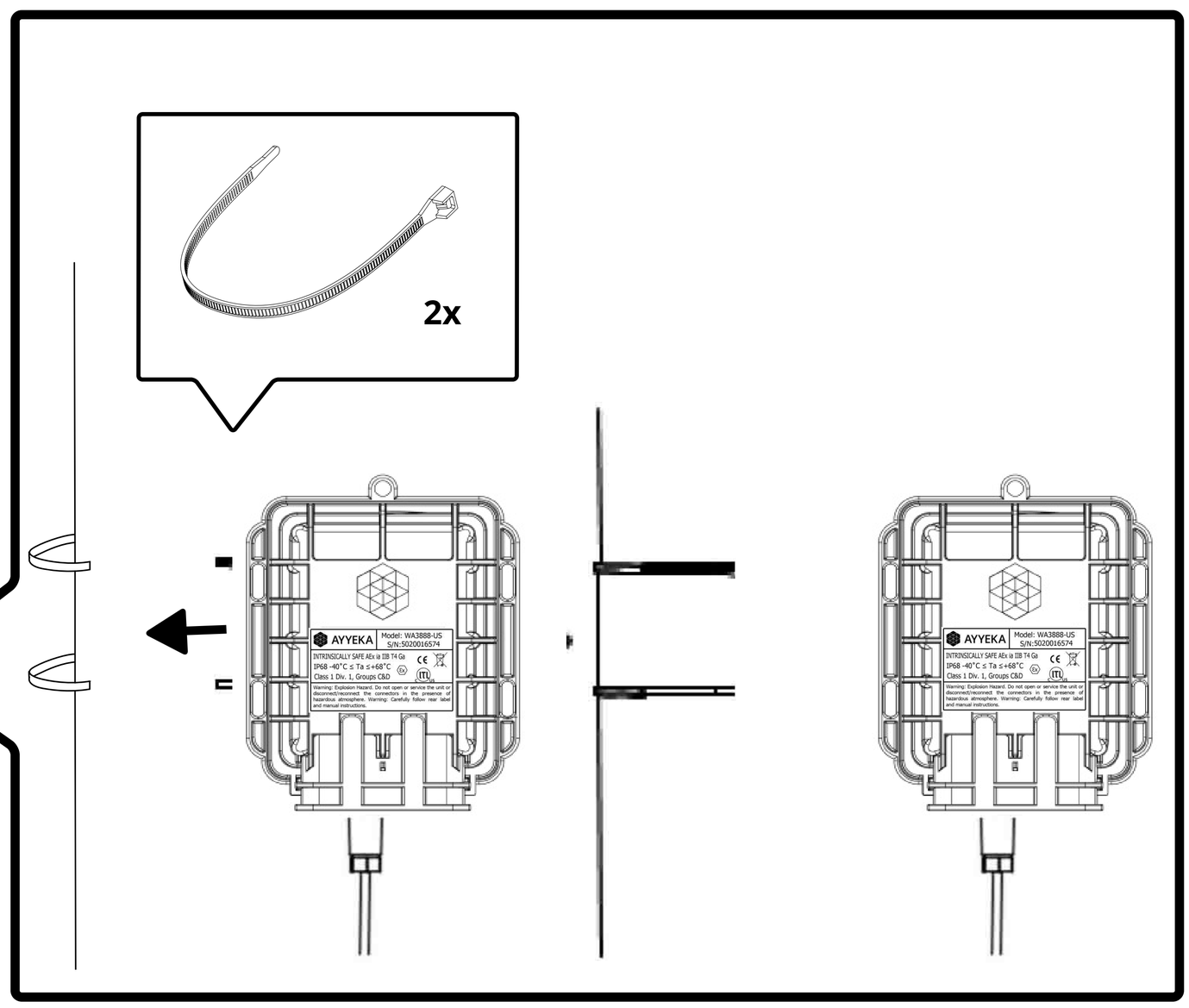
DEVICE MOUNTING

12 Secure the device on a wall, pipe, or other secure mount location by using zip ties or screws.

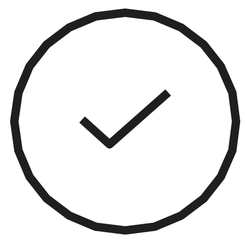
Wall Mounted



Pipe Mounted

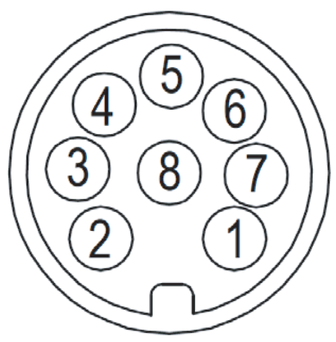
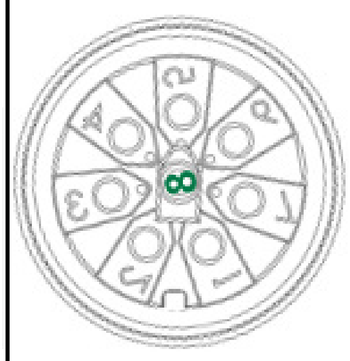


YOUR DEVICE
IS SUCCESSFULLY INSTALLED!



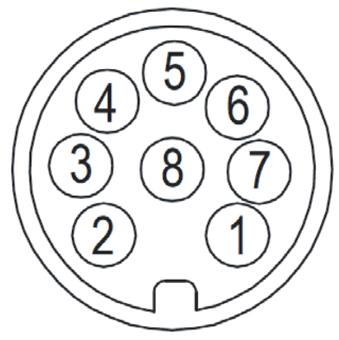
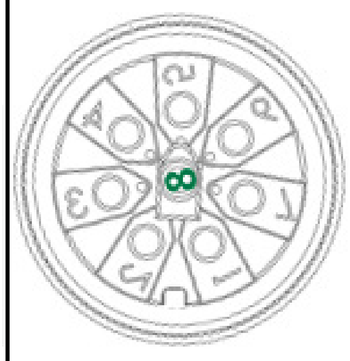
DEVICE PINOUT – PORT #1

M12 8-pin male panel connector

Connector Pin #	Signal	Cable Connector Pin Assignment	
		Front	Back
1	4-20mA or 0-24V Input #1		
2	PCNT_1 – pulse counting, edge, periodic, output dry contact, open drain, 0V or 2.8V (max)		
3	RS485 A		
4	Wavelet 12V Power Supply #2 (+)		
5	RS485 B		
6	RS232 RX		
7	RS232 TX		
8	GND		

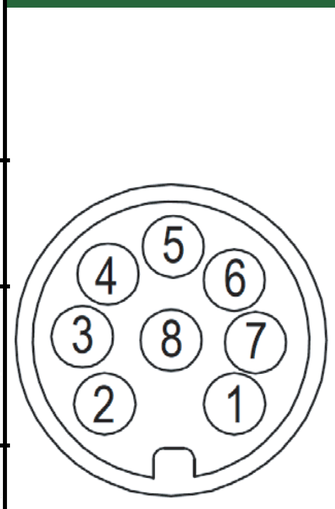
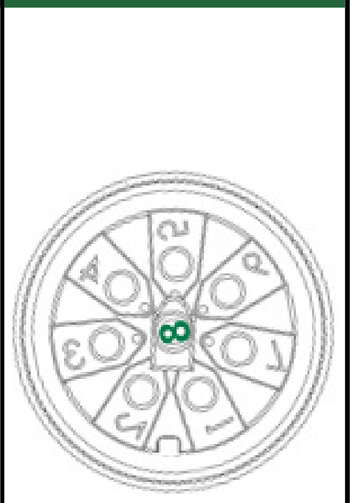
DEVICE PINOUT – PORT #2

M12 8-pin male panel connector

Connector Pin #	Signal	Cable Connector Pin Assignment	
		Front	Back
1	4-20mA or 0-24V Input #2		
2	PCNT_1 – pulse counting, edge, periodic, output dry contact, open drain, 0V or 2.8V (max)		
3	RS485 A		
4	Wavelet 12V Power Supply #2 (+)		
5	RS485 B		
6	RS232 RX		
7	RS232 TX		
8	GND		

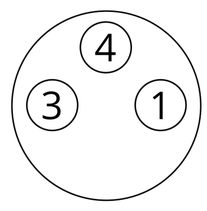
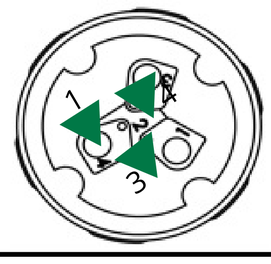
DEVICE PINOUT – PORT #3

M12 8-pin male panel connector

Connector Pin #	Signal	Cable Connector Pin Assignment	
		Front	Back
1	4-20mA or 0-24V Input #3		
2	IO_2 – edge, periodic, output dry contact, open drain, 0V or 2.8V (max)		
3	RS485 A		
4	Wavelet 12V Power Supply #2 (+)		
5	RS485 B		
6	RS232 RX		
7	RS232 TX		
8	GND		

DEVICE PINOUT – PORT #4

M8 3-pin male panel connector

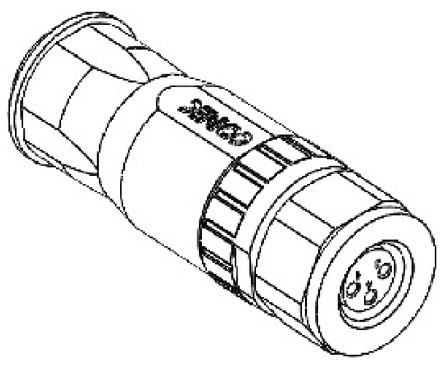
Connector Pin #	Signal	Cable Connector Pin Assignment	
		Front	Back
1	6-12VDC		
3	No Connection		
4	Negative (-)		

WIRING INSTRUCTIONS

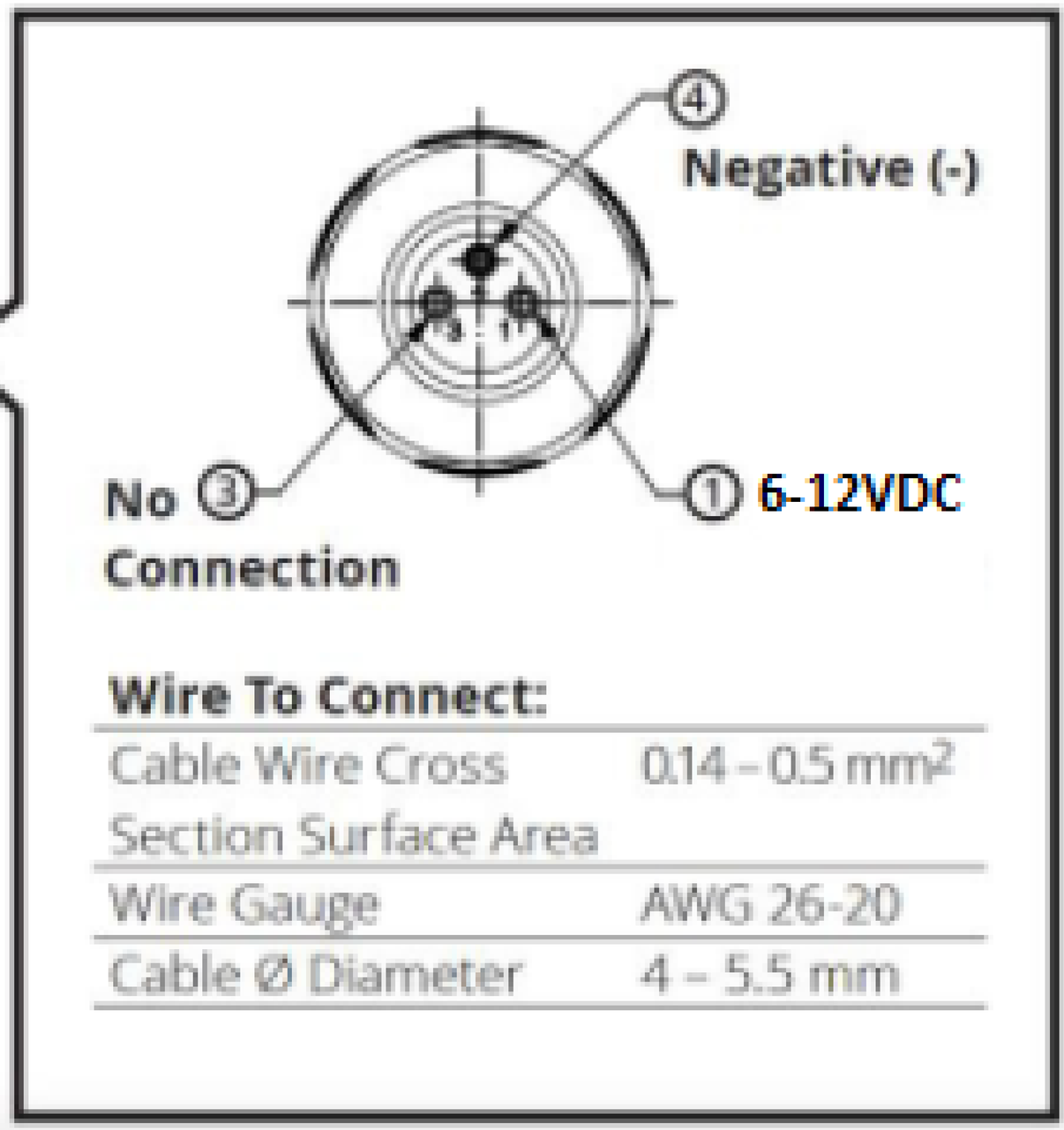
DANGER

Use extreme caution. Do not disconnect/reconnect the unit after installation while power is on internally and/or externally. Failure to conform with this warning may result in death or serious injury.

If you want an external power connection, refer to the instructions below.



Installation tool for wire termination (included)



Wire To Connect:	
Cable Wire Cross Section Surface Area	0.14 – 0.5 mm²
Wire Gauge	AWG 26-20
Cable Ø Diameter	4 – 5.5 mm

QUESTIONS?

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