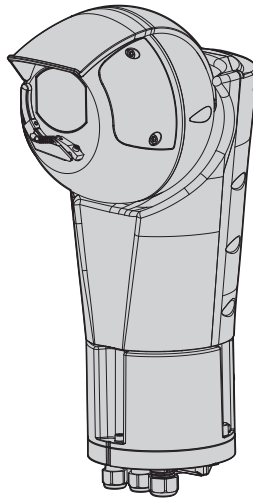


Quick Start Guide

H5A Rugged PTZ Camera

PTZ camera with high performance and extreme reliability




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1 About this manual


 **The complete installation manual can be downloaded from the Avigilon website: avigilon.com/products.**


 **Refer to the figures at the end of this manual when reading the Quick Start Guide.**


Read all the documentation supplied carefully before installing and using this product. Keep the manual in a convenient place for future reference.

1.1 Typographical conventions

 **DANGER!**
High level hazard.
Risk of electric shock. Disconnect the power supply before proceeding with any operation, unless indicated otherwise.

 **DANGER!**
Mechanical hazard.
Risk of crushing or shearing.

 **CAUTION!**
Medium level hazard.
This operation is very important for the system to function properly. Please read the procedure described very carefully and carry it out as instructed.

 **INFO**
Description of system specifications.
We recommend reading this part carefully in order to understand the subsequent stages.

2 Notes on copyright and information on trademarks

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INTEL® Core™ 2 Duo, INTEL® Core™ 2 Quad, INTEL® Xeon® are the property of Intel Corporation.


ONVIF® is a trademark of Onvif, Inc.

3 Safety rules

 **CAUTION! Hazardous moving parts. Keep fingers and other body parts away.**

 **CAUTION! Device installation and maintaining must be performed by specialist technical staff only.**

 **CAUTION! TNV-1 installation type. The installation is type TNV-1, do not connect it to SELV circuits.**

 **CAUTION! In order to reduce the risk of fire, only use UL Listed or CSA certified cables with sections greater than or equal to 0.14mm² (26AWG).**



CAUTION! The infrared LED illuminator emits high-intensity invisible light. For further details on configuration and use, refer to the illuminator accessory manual.



CAUTION! The white LED illuminator emits high intensity light. For further details on configuration and use, refer to the illuminator accessory manual.



During normal operation the surface of the illuminator can reach high temperatures. Do not allow direct contact and position the appliance where it is inaccessible to unauthorised persons. Before touching, switch off the illuminator and allow to cool for a minimum period of 10 minutes.

- Before starting any operation, make sure the power supply is disconnected.
- The equipment is intended for installation in a Restricted Access Area by specialist technical staff.
- The manufacturer declines all responsibility for any damage caused by an improper use of the appliances mentioned in this manual. Furthermore, the manufacturer reserves the right to modify its contents without any prior notice. The documentation contained in this manual has been collected and verified with great care. The manufacturer, however, cannot take any liability for its use. The same thing can be said for any person or company involved in the creation and production of this manual.
- Be careful not to use cables that seem worn or old.
- Never, under any circumstances, make any changes or connections that are not shown in this handbook. Improper use of the appliance can cause serious hazards, risking the safety of personnel and of the installation.
- Use only original spare parts. Non-original spare parts could cause fire, electrical discharge or other hazards.
- Before proceeding with installation, check the supplied material to make sure it corresponds to the order specification by examining the identification labels (4.2 Product marking label, page 4).
- This device was designed to be permanently secured and connected on a building or on a suitable structure. The device must be permanently secured and connected before any operation.
- In the case of a 24Vac power supply, you must provide for adequate separation from the AC power supply line using double or reinforced insulation between the main power supply line and the secondary circuit.
- A power disconnect device must be included in the electrical installation, and it must be very quickly recognizable and operated if needed.
- This is a Class A product. In a domestic environment this product may cause radio interference. In this case the user may be required to take adequate measures.
- Connect the device to a power source corresponding to the indications given on the marking label. Before proceeding with installation make sure that the power line is properly isolated. The power supply voltage must not exceed the limits: 24Vac $\pm 10\%$, 24Vdc $\pm 10\%$.
- The separate protective earthing terminal provided on this product shall be permanently connected to earth.
- Use a Class 2 listed UL transformer, compliant with the Standards in force, only for products marked UL, powered at 24Vac.
- If it is necessary to transport the device, this should be done with great care. Abrupt stops, bumps and violent impact could damage the unit or injure the user.

- To comply with the main supply voltage dips and short interruption requirements, use a suitable Uninterruptible Power Supply (UPS) to power the unit.
- The Cat5e/Cat6 shielded (STP) Ethernet cable is required to fully comply with EMC regulatory standards.
- To meet the requirements of the EN 50121-4 Railway Applications Standard, use an external power supply or PoE injector that is also compliant with EN 50121-4.
- The appliance includes moving parts. Make sure that the unit is positioned where it is inaccessible under normal operating conditions.
- Attach the Dangerous Moving Parts label near the device. (Fig. 1, page 5).
- Do not use the appliance in the presence of flammable substances.
- Do not allow children or unauthorised people to use the appliance.
- The device can only be considered to be switched off when the power supply has been disconnected and the connection cables to other devices have been removed.
- Only skilled personnel should carry out maintenance on the device. When carrying out maintenance, the operator is exposed to the risk of electrocution and other hazards.
- Use only the accessories indicated by the manufacturer. Any change that is not expressly approved by the manufacturer will invalidate the warranty.
- Take all necessary precautions to prevent the apparatus from being damaged by electrostatic discharge.
- The unit has been made for connection using a three-core cable. To make a correct connection to the earth circuit, follow the instructions in this handbook.
- Handle the unit with great care, high mechanical stress could damage it.

4 Product description and type designation

4.1 Product overview

The product consists of 3 parts (Fig. 2, page 11):

1. Sunshield.
2. Body.
3. Base.

4.2 Product marking label



Before proceeding further with installation, make sure the material supplied corresponds to the order specification by examining the marking labels.




The product has a label applied in compliance with CE marking (Fig. 3, page 11).

The label shows:

- Model identification code.
- Supply voltage (Volt).
- Frequency (Hertz).
- Current consumption (Ampere) or power consumption (Watt).
- Protection degree (IP).
- Serial number.

5 Preparing the product for use

 **Any change that is not expressly approved by the manufacturer will invalidate the warranty.**

5.1 Safety precautions before use



 **The appliance includes moving parts. Make sure that the unit is positioned where it is inaccessible under normal operating conditions. Attach the warning label supplied with the appliance, placing it near the unit so that it can be seen easily.**



Fig. 1

5.2 Unpacking

 **A thin oil film due to the gasket may be present on the unit. This oil film does not alter the mechanical performance of the unit. Refer to the cleaning instructions in the relevant chapter (9 Cleaning, page 10).**

When the product is delivered, make sure that the package is intact and that there are no signs that it has been dropped or scratched.

If there are obvious signs of damage, contact the supplier immediately.

When returning a faulty product we recommend using the original packaging for shipping.

Keep the packaging in case you need to send the product for repairs.

5.3 Contents

Check the contents to make sure they correspond with the list of materials as below:

- H5A Rugged PTZ camera
- Sunshield
- Accessories package:
 - Allen wrench
 - Power connector
 - I/O connector
 - Label (CAUTION: Hazardous moving parts)
 - Reduction gasket, for alarm cable, for cable glands M16
 - Reduction gasket, for Ethernet cable with pre-assembled connector, for cable gland M20
- Instruction manual
- Plate for safety chain coupling
- Screw for sunshield fastening

5.4 Safely disposing of packaging material

The packaging material can all be recycled. The installer technician will be responsible for separating the material for disposal, and in any case for compliance with the legislation in force where the device is to be used.

6 Installation

6.1 Opening the base of the product

To avoid scratching the product with the hexagonal wrench, align the groove on the body of the product with the screw before screwing it in (Fig. 4, page 11).

Unscrew the three screws at the bottom of the product (Fig. 5, page 11).

6.2 Mounting the bracket



Take special care when attaching and fastening down the apparatus. If the equipment must be fastened to a concrete surface, plugs must be used with a minimum traction force of 300dN each. For a metal surface use screws with a diameter of at least 8mm and of an appropriate length. The fastening system must be capable of supporting at least 4 times the weight of the entire equipment (PTZ, supports and adapters).



The device should be assembled vertically. Any other position could impair the performance of the device.

Various types of optional mounts and accessories are available.

Choose the mounting accessories for the installation you want to implement.

Install the optional mounts and accessories by following the instruction manuals provided with the bracket or accessory.

6.3 Cable management



The cables must be adequately fastened to the structure to avoid causing the cables to be accidentally unplugged.



You must use cables suited to the type of installation you are using.



Multipolar cable sheath diameter:

Cable glands M16: from 4.5mm (0.2in) up to 10mm (0.4in).

Cable glands M20: from 8mm (0.3in) up to 13mm (0.5in).

Insert the cables into the cable glands (Fig. 7, page 12).

If the cable has a pre-assembled connector, replace the gasket inside the cable gland with the one supplied. Insert the Ethernet cable in the gasket as illustrated in the figure (Fig. 6, page 12). Pass the cable with connector RJ45 through the M20 cable gland.

Tighten the cable glands.



Pay attention to the fixing. Tightening torque : 1.5Nm (± 0.2 Nm) for M16 cable glands, 2Nm (± 0.2 Nm) for M20 cable glands.


If a cable gland does not have a cable inserted, a specific cap must be inserted for closure. Always close the cable glands with the stated tightening torque.

6.4 Fixing the base to the support




For further details on installing the camera with brackets and accessories, refer to the manual provided with the bracket or accessory.


6.5 Fastening of the safety coupling

 Take special care when attaching and fastening down the apparatus. If the equipment must be fastened to a concrete surface, plugs must be used with a minimum traction force of 300dN each. For a metal surface use screws with a diameter of at least 8mm and of an appropriate length. The fastening system must be capable of supporting at least 4 times the weight of the entire equipment (PTZ, supports and adaptors).

The product is equipped with a safety coupling to secure the product to a second fixing point through a safety chain or cable.


Position the safety coupling and fix it with the screw and the washer supplied as shown in the figure (Fig. 8, page 12).

 Use an external anchor point to fix the chain or the safety cable to the unit support surface. Choose a chain or safety cable capable of supporting 4 times the weight of the unit, including its brackets and adaptors.

 Pay attention to the fixing. Tightening torque: 4.5Nm (± 0.2 Nm).

 Apply thread-locker into the holes for screws (Loctite 243®).

6.6 Connector board description

 The earth ground cable must always be connected to the relevant terminal (GND_INT or GND_EXT, Fig. 9, page 12).

 Please refer to the figures: Fig. 9, page 12 and Fig. 10, page 13.

BOARD DESCRIPTION	
Connector	Function
J3	Ethernet
J4	Power supply
J6	Digital I/O
S1, S2	Reset to Factory Default Settings
GND_INT (internal earth ground terminal)	The GND_INT and GND_EXT are both suitable to ground the unit. Use the GND_EXT terminal if the GND earth cable cannot be passed through the cable glands (check the diameters of the cable glands allowed in the technical data section).
GND_EXT (external earth ground terminal)	

Tab. 1

6.7 Connecting the power supply

6.7.1 24Vac/24Vdc power supply



Electrical connections must be performed with the power supply disconnected and the circuit-breaker open.



When commencing installation make sure that the specifications for the power supply for the installation correspond with those required by the device.



Do not power the product using auto-transformers.



Check that the power supply socket and cable are adequately dimensioned.



Power supply cables section: from 0.75mm² (18AWG) up to 2.5mm² (13AWG).



In case of continuous current power supply, either polarity can be used.

To power the unit, use the power supply units indicated in the technical data sheet of the product on the website: avigilon.com, or use a toroidal transformer with nominal power of at least 200VA.

Connect the power supply cable to the relative connector (J4, Fig. 11, page 13).

Connect the ground cable to the relevant terminal (GND_INT, Fig. 11, page 13).

The power cables must be sized according to the ratio between the supply current and the distance to be covered.

If the product is powered by two sources of power simultaneously (24V and PoE 90W), only the 24V line will be used, disabling the PoE 90W power supply.

The removable connector is supplied in the kit.

6.7.2 PoE 90W power supply

The product can be powered by 90W PoE according to standard IEEE 802.3bt (CLASS 8).

The PoE injector must have at least 90W power.

By default, the product is configured to work according to standard IEEE 802.3bt.

The use of the POE-INJ-BT-90W-NA Injector is highly recommended.

If the product is powered by two sources of power simultaneously (24V and PoE 90W), only the 24V line will be used, disabling the PoE 90W power supply.


There are two DIP switches inside the base, which are set by default as below:

- S1-DIP2 = OFF
- S2-DIP1 = OFF

For correct product operation, always leave S1-DIP2 and S2-DIP1 in the default position (S1 Fig. 9, page 12 and S2 Fig. 10, page 13).

6.8 Alarms and relays connections

 **Cables signal section: from 0.14mm² (26AWG) up to 1mm² (17AWG).**

 **Maximum relay voltage and current: 30Vac /30Vdc max, 1A.**

 **Alarm inputs: 2 (auto-powered from 12Vdc up to 18Vdc).**

Connect the digital I/O cable to the relative connector (J6, Fig. 11, page 13 and Fig. 11, page 13).

The maximum cable length for each alarm is 200m.

The removable connector is supplied in the kit.

CONNECTION OF THE ALARM INPUTS AND RELAYS	
Terminals	Description
RL1A, RL1B, RL2A, RL2B	Dry contacts of the two relays which can be activated via alarm or by user command
AL1, AL2, COM	Self-powered alarm inputs referred to the shared terminal

Tab. 2

The device can be equipped with a washing system as an accessory. Connect the pump activation signal cable to the indicated relay: RL2A, RL2B.

6.9 Ethernet cable connection

Use of Ethernet cables with the following characteristics is highly recommended:


- Minimum cabling type: Class D (ISO/IEC11801:1995) or Category 5 (ANSI/EIA/TIA-568-A:1995).

- Shielded twisted cable (STP).
- 4 pair.
- Maximum DC Loop Resistance: 250ohm.

Connect the ethernet cable to the relative connector (J3, Fig. 11, page 13).

If the product is powered by 90W PoE, the ground cable must be connected to the relevant terminal (GND_EXT, Fig. 11, page 13).

6.10 Installation of the upper body

 **Installation of the upper body must take place with the base not powered.**


Check the LED indicated in the figure is off (Fig. 12, page 13).

Check the gasket on the base is in good condition and positioned correctly (Fig. 13, page 13).

Place the unit body on the base aligning the reference marks. Be especially careful not to damage internal components during installation (Fig. 14, page 14).

To avoid scratching the product with the hexagonal wrench, align the groove on the body of the product with the screw before screwing it in (Fig. 15, page 14).

Fasten the upper unit to the base using the 3 fixing screws (Fig. 16, page 14).

 **Pay attention to the fixing. Tightening torque: 4.5Nm (±0.2Nm).**

 **Apply thread-locker into the holes for screws (Loctite 222®).**

7 Switching on



Ensure the unit and the other components of the system are appropriately closed to prevent contact with live parts.



Make sure that all parts are fastened down firmly and safely.



The automatic pre-heating (De-Ice) process could be started whenever the device is switched on and the ambient temperature is below 0°C (+32°F). The procedure is necessary to guarantee correct operation of the devices even at low temperatures. The duration ranges depending on environmental conditions (from 60 minutes up to 120 minutes).

The unit is switched on by connecting the power supply.

To switch off the unit disconnect the power.

8 Maintenance



Before carrying out any type of maintenance, read the "Safety rules" chapter carefully in the product manual.



CAUTION! Device installation and maintaining must be performed by specialist technical staff only.

When contacting AVIGILON for assistance please provide the serial number and the identification code of the model.

Use only AVIGILON original spare parts.

9 Cleaning

9.1 Cleaning the window and external surfaces of the product



Avoid ethyl alcohol, solvents, hydrogenated hydrocarbide, strong acid and alkali. Such products may irreparably damage the surface.

We recommend using a soft cloth with neutral soap diluted with water or specific products to clean the lenses.

10 Information on disposal and recycling

The European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) mandates that these devices should not be disposed of in the normal flow of municipal solid waste, but they should be collected separately in order to optimize the recovery stream and recycling of the materials that they contain and to reduce the impact on human health and the environment due to the presence of potentially hazardous substances.



The symbol of the crossed out bin is marked on all products to remember this.

The waste may be delivered to appropriate collection centers, or may be delivered free of charge to the distributor where you purchased the equipment at the time of purchase of a new equivalent or without obligation to a new purchase for equipment with size smaller than 25cm (9.8in).

For more information on proper disposal of these devices, you can contact the responsible public service.

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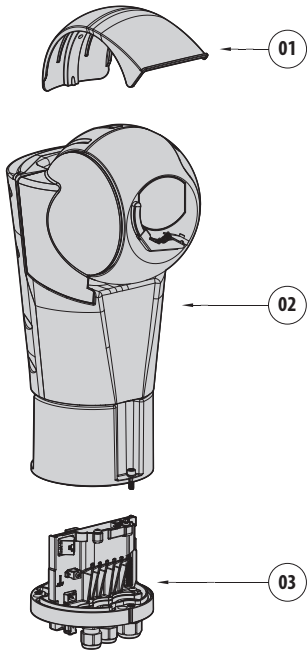


Fig. 2

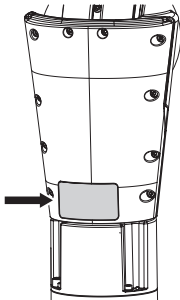


Fig. 3

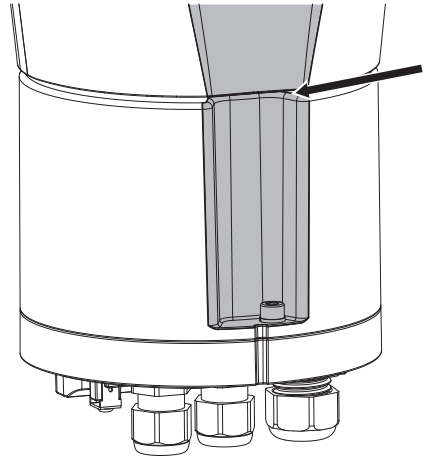


Fig. 4

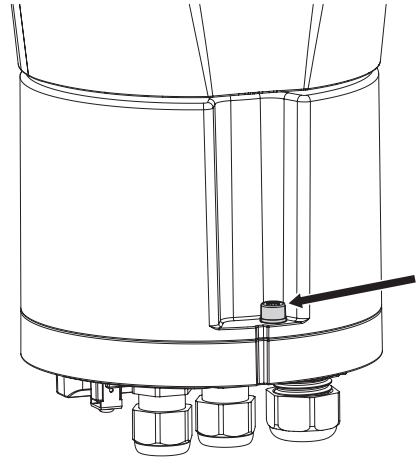


Fig. 5

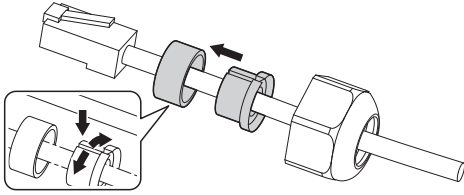


Fig. 6

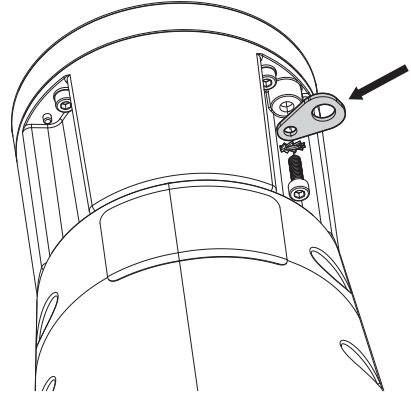


Fig. 8

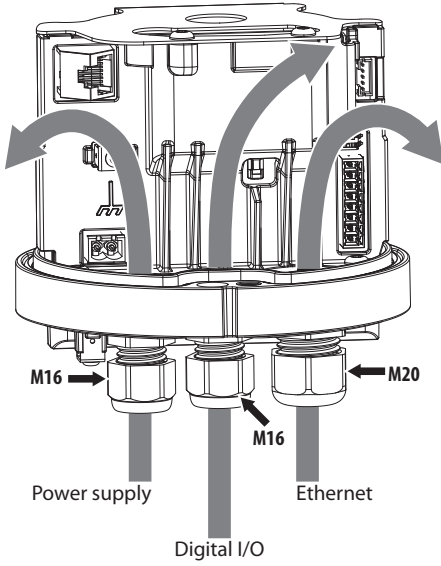


Fig. 7

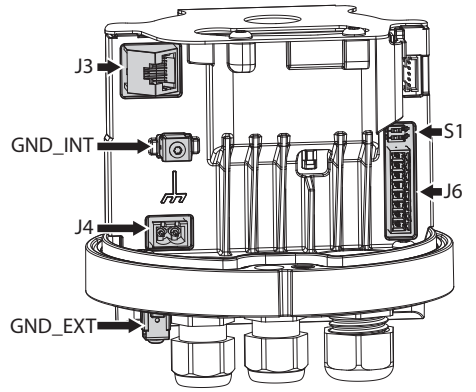


Fig. 9

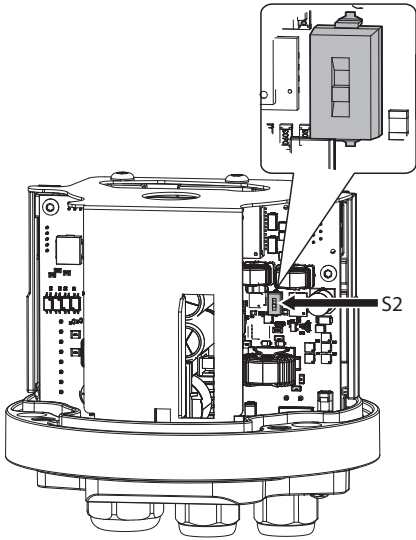


Fig. 10

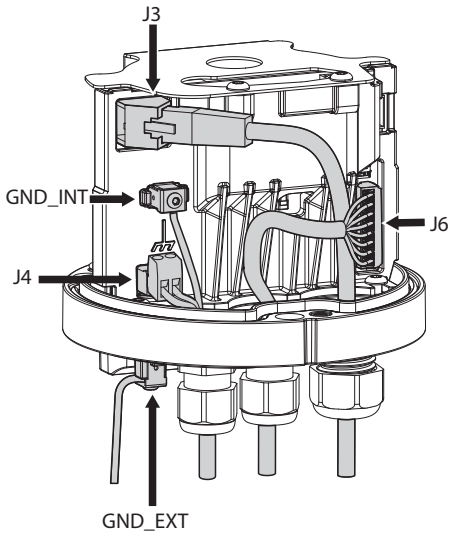


Fig. 11

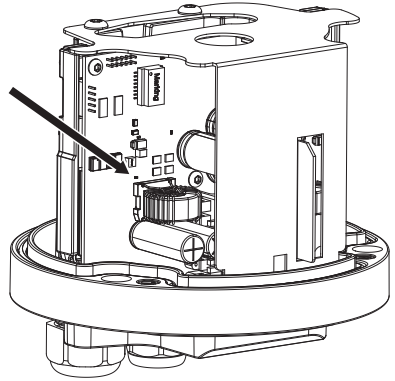


Fig. 12

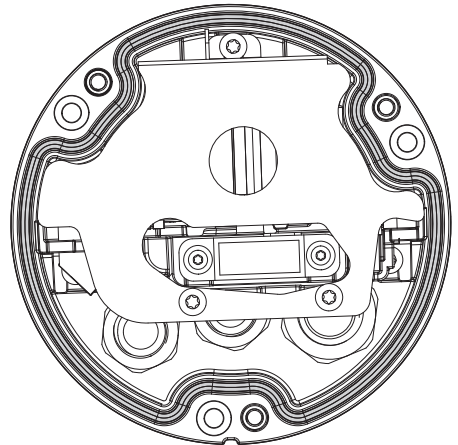


Fig. 13

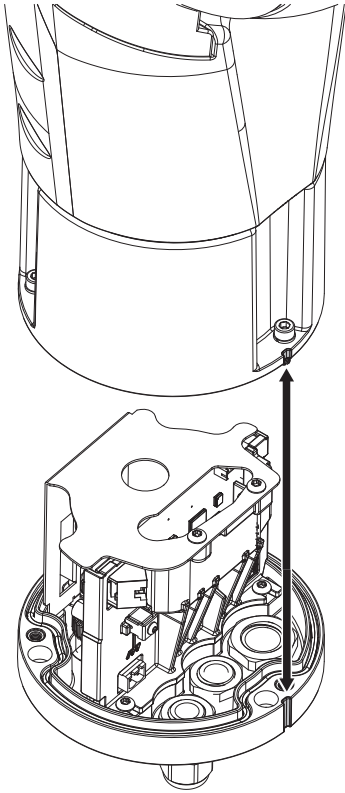


Fig. 14

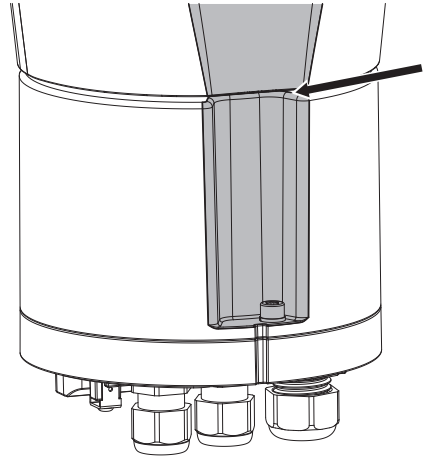


Fig. 15

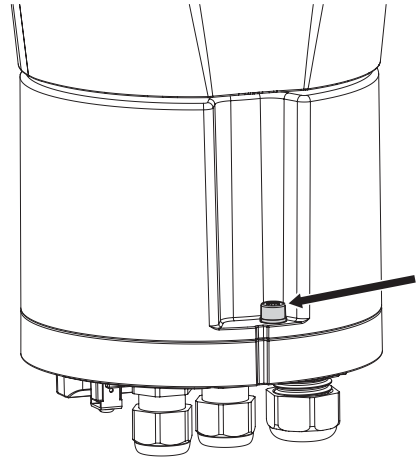


Fig. 16



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