

Machinery Health™ Sensor

AMS EZ 1000 Probe Holder



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Patents

The product(s) described in this manual are covered under existing and pending patents.

Contents

Chapter 1	General.....	4
	1.1 Using this installation guide.....	4
	1.2 Symbols.....	4
	1.3 Liability and guarantee.....	4
	1.4 Incoming goods inspection.....	5
	1.5 Technical support.....	5
	1.6 Storage and transport.....	6
	1.7 Disposal of the device.....	6
Chapter 2	Safety instructions.....	7
	2.1 Using the device.....	7
	2.2 Owner's responsibility.....	7
Chapter 3	Application and design.....	8
Chapter 4	Select a probe holder.....	12
Chapter 5	Assemble the AMS EZ 1000 Probe Holder.....	15
Chapter 6	Install the probe holder.....	17
Chapter 7	Assemble and mount the optional EZ1600-HEAD and connect metal protection tubes..	19
	7.1 Assemble and mount the optional EZ1600-HEAD.....	19
	7.2 Connect a metal protection tube to the AMS EZ 1000 Probe Holder.....	23
	7.3 Connect a metal protection tube to the optional EZ1600-HEAD.....	25
Chapter 8	Assemble and mount the optional EZ1600-BOX and connect a metal protection tube...28	
	8.1 Assemble and mount the optional EZ1600-BOX.....	28
	8.2 Connect a metal protection tube to the optional EZ1600-BOX.....	39
Chapter 9	Technical data.....	41
Chapter 10	Drawings.....	42
Chapter 11	Order information.....	49

1 General

1.1 Using this installation guide

This installation guide contains information concerning the proper and correct use of the device.

Read the installation guide completely prior to starting installation and operating the device. Comply with all safety instructions.

Include the installation guide when transferring the device to third parties.

Note

When requesting technical support, please indicate type from the type plate.

Table 1-1 shows a list of documents that are referred to in this installation guide.

Table 1-1: Referenced documents

MHM-97884	Operating Manual EZ 1000, Converter for Eddy Current Sensors
MHM-97883	Installation Guide EZ 10xx, Eddy Current Sensors
---	Specification Sheet MPT 064 Metal Protection Tube

1.2 Symbols

Note

This symbol marks passages that contain important information.

CAUTION

This symbol marks operations that can lead to malfunctions or faulty measurements, but will not damage the device.

DANGER

A danger indicates actions that can lead to property damage or personal injury.

1.3 Liability and guarantee

Emerson is not liable for damages that occur due to improper use. Proper use also includes the knowledge of, and compliance with, this document.

Customer changes to the device that have not been expressly approved by Emerson will result in the loss of guarantee.

Due to continuous research and further development, Emerson reserves the right to change technical specifications without notice.

1.4 Incoming goods inspection

Check the content of the shipment to ensure that it is complete; visibly inspect the goods to determine if the device has been damaged during transport. The following parts are included in the scope of delivery and must be contained in the shipment.

- AMS EZ 1000 Probe Holder

Optional EZ1600-HEAD

Contained in the shipment of the EZ1600-HEAD:

- Head
- Adapter for mounting the EZ1600-HEAD
- Lock nut M16x1 for fixing the adapter
- Cable gland M16x1.5 with sealing
- Cable gland M20x1.5 with sealing

Optional EZ1600-BOX

Contained in the shipment of the EZ1600-BOX:

- Box
- Angle mounting bracket
- Holding plate
- Metal sheet insert
- Disk M24x1.5
- O-ring
- Hex-nut M24x1.5
- Cable gland M20x1.5 with sealing
- 2x Screw plug M20x1.5
- 4x hex-nut M6
- 4x cable tie
- EZ1900-ADAP-90 adapter

If the contents are incomplete, or if you observe any defects, file a complaint with the carrier immediately. Inform the responsible Emerson sales organization so your device can be replaced. In this case, attach a tag with customer name and the observed defect.

1.5 Technical support

You may need to ship this product for return, replacement, or repair to an Emerson Product Service Center. Before shipping this product, contact Emerson Product Support to obtain a Return Materials Authorization (RMA) number and receive additional instructions.

Product Support

Emerson provides a variety of ways to reach your Product Support team to get the answers you need when you need them:

Phone	Toll free 800.833.8314 (U.S. and Canada) +1.512.832.3774 (Latin America) +63.2702.1111 (Asia Pacific, Europe, and Middle East)
Email	Guardian.GSC@Emerson.com
Web	http://www.emerson.com/en-us/contact-us

To search for documentation, visit <http://www.emerson.com>.

To view toll free numbers for specific countries, visit <http://www.emersonprocess.com/technicalsupport>.

Note

If the equipment has been exposed to a hazardous substance, a Material Safety Data Sheet (MSDS) must be included with the returned materials. An MSDS is required by law to be available to people exposed to specific hazardous substances.

1.6 Storage and transport

Store and transport the device only in its original packaging. Technical data specifies the environmental conditions for storage and transport.

1.7 Disposal of the device

Provided that no repurchase or disposal agreement exists, recycle the following components at appropriate facilities:

- Recyclable metal
- Plastic elements

Sort the remaining components for disposal, based on their condition. National laws or provisions on waste disposal and protection of the environment apply.

Note

Environmental hazards! Electrical waste and electronic components are subject to treatment as special waste and may only be disposed by approved specialized companies.

2 Safety instructions

To ensure safe operation, carefully observe all instructions in this manual.

The correct and safe use of this device requires that operating and service personnel both understand and comply with general safety guidelines and observe the special safety comments listed in this manual. Where necessary, safety-sensitive points on the device are marked.

⚠ DANGER

Commissioning and service must be performed only by trained and authorized personnel. Maintenance must be carried out only by trained, specialized, and experienced personnel.

2.1 Using the device

Install and use the device as specified in this manual.

If the device is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.

2.2 Owner's responsibility

Take this device out of service and safeguard it from unintentional operation under the following circumstances:

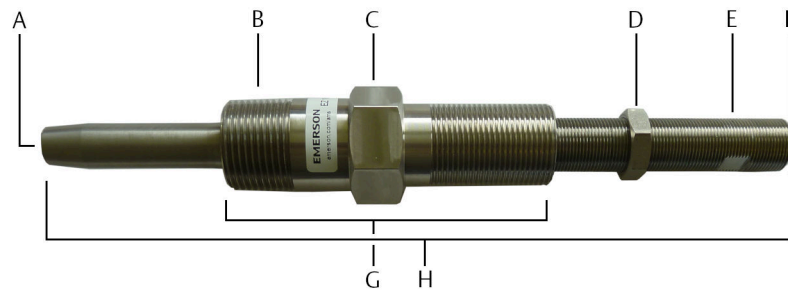
- the device shows visible damage.
- the device no longer operates.
- the device suffers any type of overload (such as storage or transport) that exceeds permissible limits.

3 Application and design

The AMS EZ 1000 Probe Holder permits mounting of AMS EZ 1000 Sensors and other eddy current sensors that fits into the probe holder at machines so that they can be adjusted from outside. The probe holder enables an oil-tight mounting of the sensors.

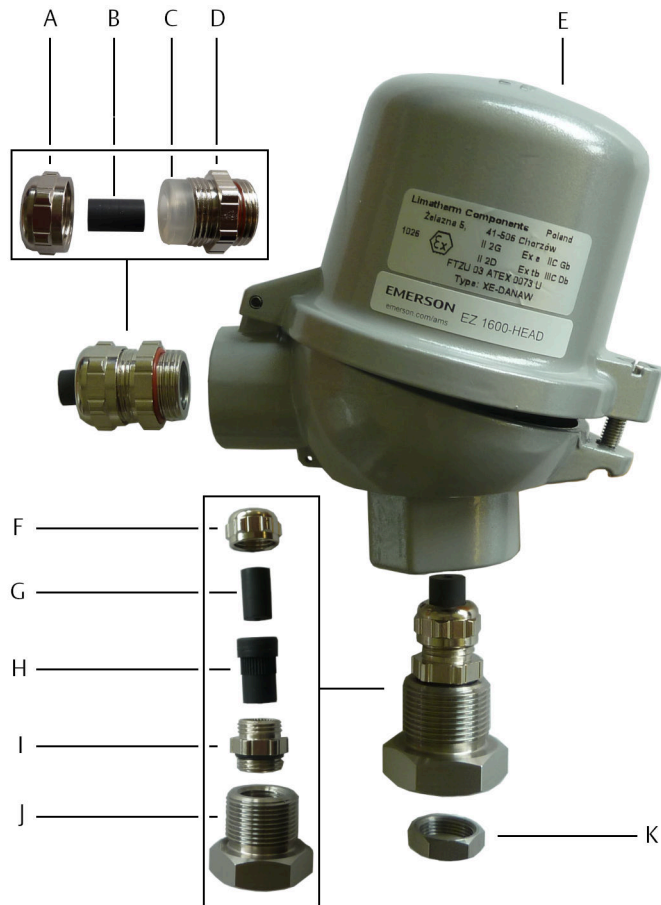
The AMS EZ 1000 Probe Holder is available in different variants. With or without the optional connection head or the optional converter box, with different adjustable ranges, and for different sensor thread types and sizes. See [Order information](#) for details. [Figure 3-1](#) describes the parts of an AMS EZ 1000 Probe Holder. [Figure 3-2](#) describes the parts of the optional EZ1600-HEAD. [Figure 3-3](#) and [Figure 3-4](#) describe the parts of the optional EZ1600-BOX

Figure 3-1: Parts AMS EZ 1000 Probe Holder



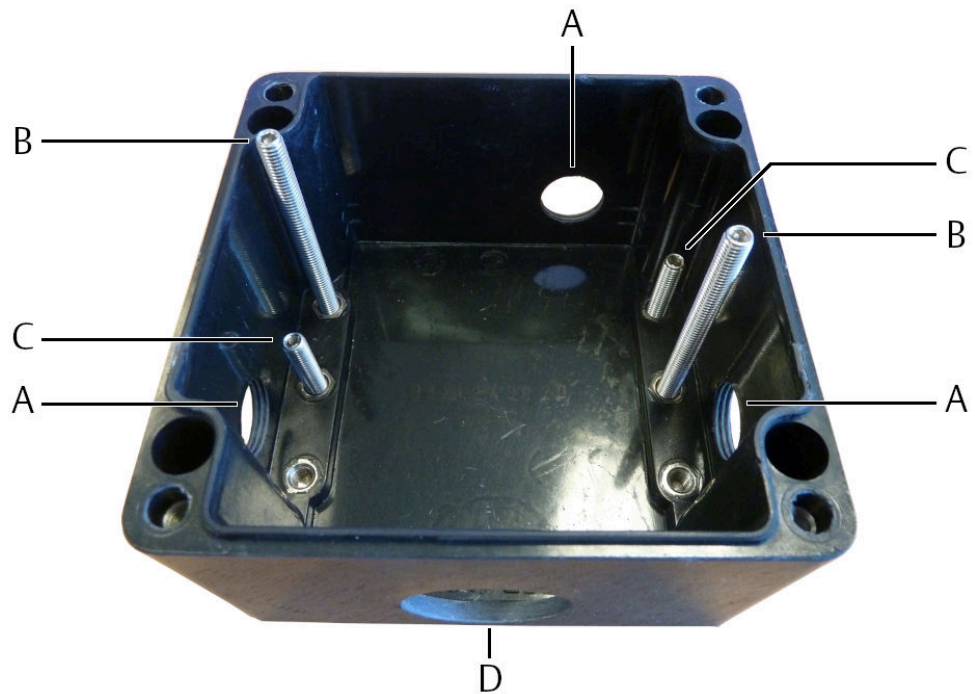
- A. Tip with internal thread for mounting the sensor
- B. Mounting thread (M24x1.5 or ¾"-14 NPT (as shown from this figure))
- C. Hexagon flat, wrench size 30 mm
- D. Lock nut M16x1, wrench size 19 mm
- E. Wrench flat 13 mm
- F. Cable protection (screwed into the movable part of the probe holder)
- G. Fixed part of the probe holder
- H. Movable part of the probe holder

Figure 3-2: Parts EZ1600-HEAD



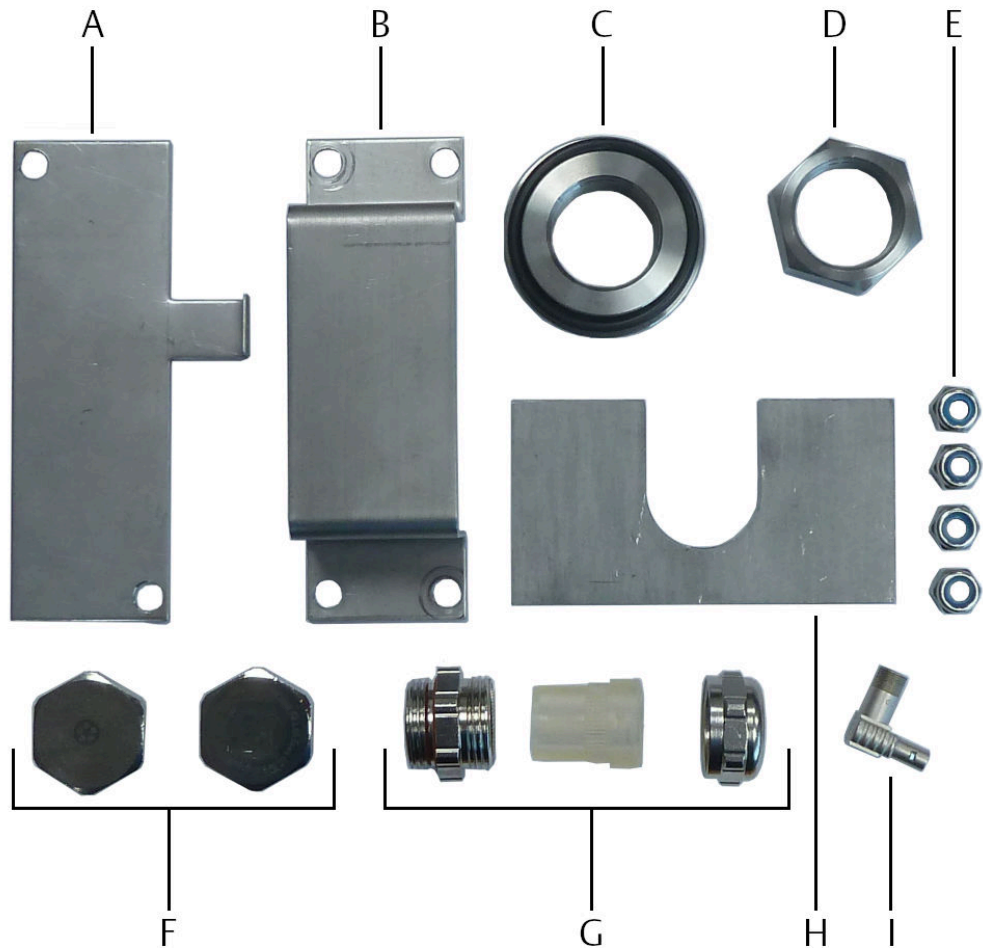
- A. Pressing screw, wrench size 22 mm
- B. Slit sealing
- C. Sealing
- D. Cable gland M20x1.5 with O-ring
- E. Connection head
- F. Pressing screw, wrench size 18 mm
- G. Slit sealing
- H. Sealing
- I. Cable gland M16x1.5 with O-ring
- J. Adapter, wrench size 30 mm
- K. Lock nut M16x1, wrench size 19 (for locking the head against the moveable part of the probe holder)

Figure 3-3: EZ1600-BOX – overview



- A. Threaded hole M20x1.5 for connection cable inlet
- B. Long M6 stud bolts
- C. Short M6 stud bolts
- D. Hole for mounting the box on an AMS EZ 1000 Probe Holder

Figure 3-4: EZ1600-BOX – parts

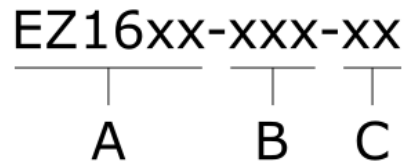


- A. Holding plate
- B. Angle mounting bracket
- C. Disk with M24x1.5 thread and O-ring (material: NBR 70 Shore)
- D. M24x1.5 hex-nut
- E. Four M6 self-locking hex-nuts
- F. Two M20x1.5 screw plugs
- G. M20x1.5 cable gland (material sealing: silicone)
- H. Metal sheet insert
- I. EZ1900-ADAP-90 adapter (for details see AMS EZ 1000 Converter operating manual, MHM-97884)

4 Select a probe holder

Information about sensor thread, adjustable probe holder range, and thread of the mounting hole must be known to select a suitable probe holder. The order number for the probe holder contains this information and is structured as shown in [Figure 4-1](#).

Figure 4-1: Structure order number



- A. Model number (defines the sensor thread)
- B. Adjustable range
- C. Screw fitting (defines the required thread of the mounting hole)

Sensor thread

Select the model number of the AMS EZ 1000 Probe Holder in accordance to the thread of the sensor to be mounted in the probe holder. See [Table 4-1](#).

Table 4-1: Order information – Model No.

Sensor type	Sensor thread	Model No.
EZ1050	M8x1	EZ1650
EZ1080	M10x1	EZ1680
EZ1052	1/4"-28UNF	EZ1652
EZ1082	3/8"-24UNF	EZ1682

Example: EZ1680-xxx-xx, AMS EZ 1000 Probe Holder for EZ1080

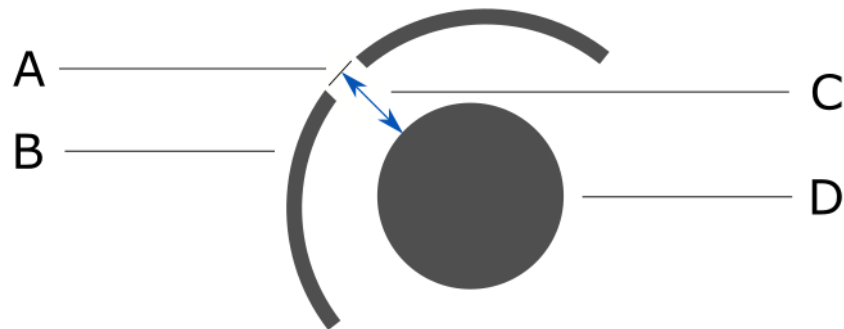
A sensor head length of approximately 10 mm is already included in the adjustable range. See [Figure 4-3](#).

Adjustable probe holder range

Determine the adjustable range.

1. Measure the distance between the surface of the housing and the measuring object. A measuring object could be a shaft or a trigger wheel. With a trigger wheel measure the distance between the surface of the housing and the highest point of the trigger wheel (tooth).

Figure 4-2: Distance between housing and measuring object



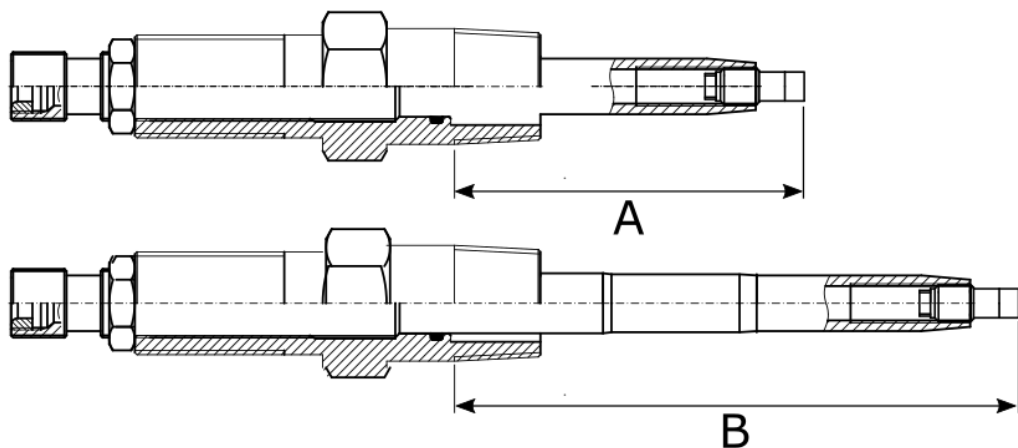
- A. Mounting hole
- B. Machine housing
- C. Distance between housing surface and measuring object
- D. Measuring object such as a shaft

2. Select a holder where the measured distance is approximately in the middle of the adjustable range.

Example for a measured distance of 104 mm: EZ1680-120-xx, AMS EZ 1000 Probe Holder for EZ1080 with an adjustable range of 80 to 120 mm.

Figure 4-3 explains the adjustable range. The whole mounting thread and a sensor head length of approximately 10 mm are contained in the adjustable range. Consider the sensor mounting requirements specified in the related sensor installation guide. Based on the requirements and case length of the used sensor the adjustable range might be shorter than expected.

Figure 4-3: AMS EZ 1000 Probe Holder adjustable range with sensor



- A. Adjustable range – minimum
- B. Adjustable range – maximum

Mounting hole thread

The machine housing must be equipped with a mounting hole with either a M24x1.5 thread or a ¾"-14 NPT thread.

- The ¾"-14 NPT thread is a conical self-sealing thread which is screwed in until the sealing against lubricants used within the machine is reached. The sealing can be reached before the NPT thread is completely screwed in.
- The M24x1.5 thread is equipped with an O-ring for sealing. The M24x1.5 thread must be completely screwed in to ensure proper sealing against the lubricants used within the machine.

Observe this behaviors when defining the necessary probe holder length.

Example: EZ1680-120-02, AMS EZ 1000 Probe Holder for EZ1080 with an adjustable range of 80 to 120 mm and ¾"-14 NPT thread.

5 Assemble the AMS EZ 1000 Probe Holder

This chapter describes the installation of the sensor into the AMS EZ 1000 Probe Holder and the assembly of the AMS EZ 1000 Probe Holder.

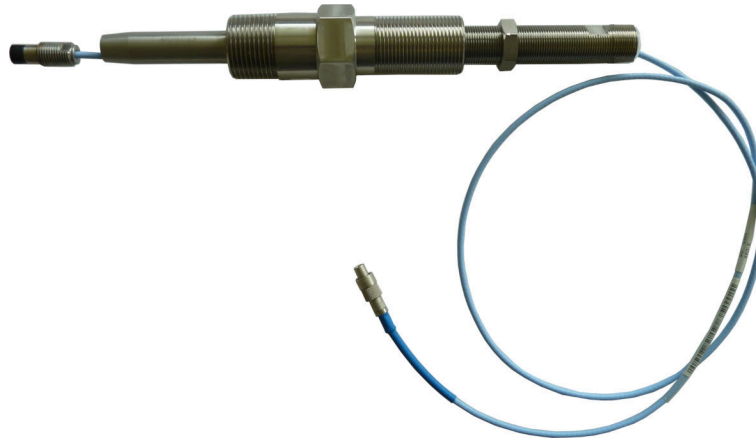
Prerequisites

- A set of wrenches with the following sizes:
 - suitable size for the lock nut provided with the used sensor
 - Size 13 mm
 - Size 19 mm
 - Size 30 mm
- Adhesive Loctite® 620 or equal (only if the sensor must be glued in)

Procedure

1. Run the sensor cable from the tip of the holder through the holder.

Figure 5-1: Insert the sensor cable



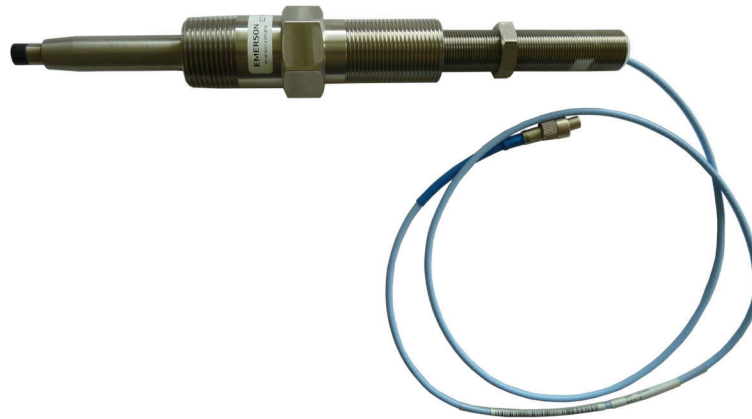
2. Screw in the sensor and fix it in the probe holder tip. There are three options to fix the sensor in the probe holder:
 - Use an adhesive to glue in the sensor (recommended option for oil-tight mounting)
 - Fix the sensor by using a lock nut (generally included in the sensor delivery)
 - Use a sensor for reverse mounting such as EZ1080-RM-00-XXX (sensor case with an integrated lock nut)

For further mounting instructions see the related sensor installation guide. Observe the instructions of the adhesive manufacturer when gluing in the sensor.

Note

Emerson recommends to glue in the sensor sealed with Loctite® 620 or equal for an oil-tight mounting. Ensure that also an additional adapter¹ used for the sensor mounting is glued in sealed.

Figure 5-2: Example with glued in sensor



Continue with [Install the probe holder](#).

¹ Example: EZ1080-xxx-xx with adapter sleeve M10x1 to M6x0.5 for mounting of a PR6422 sensor

6 Install the probe holder

Note

If using the EZ1600-HEAD, the EZ1600-BOX, or a MPT 064 Metal Protection Tube, completely install and adjust the AMS EZ 1000 Probe Holder before mounting the EZ1600-HEAD, the EZ1600-BOX, or connecting a metal protection tube.

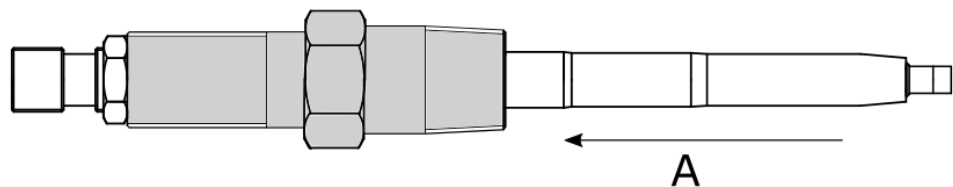
Prerequisites

- A set of wrenches with the following sizes:
 - Size 13 mm
 - Size 19 mm
 - Size 30 mm
- A prepared mounting hole in the machine housing.
 - With a M24x1.5 thread if using an EZ16xx-xxx-01
 - With a ¾"-14 NPT thread if using an EZ16xx-xxx-02

Procedure

1. Screw the movable part of the probe holder out as far as it goes.

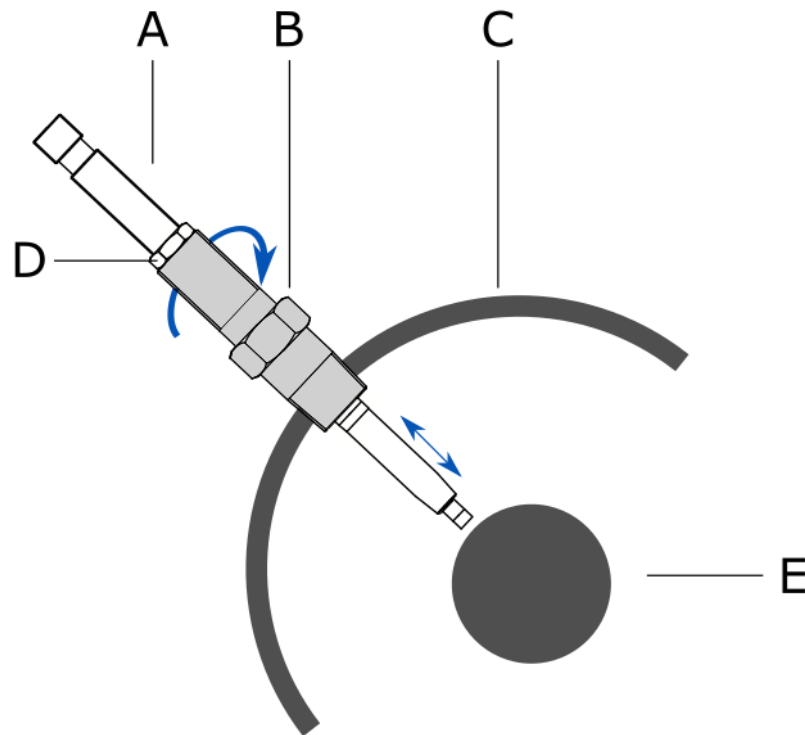
Figure 6-1: Movable part of the probe holder



A. Screw moveable part out

2. Screw the probe holder into the prepared mounting hole in the machine housing.
 - M24x1.5 thread: The upper part of the thread is equipped with an O-ring for sealing. Screw the probe holder completely in to ensure proper sealing against the lubricants used within the machine.
 - ¾"-14 NPT thread: The NPT thread is a conical self-sealing thread. Screw the probe holder in until the sealing against the lubricants used within the machine is reached.

Figure 6-2: Probe holder installation



- A. Moveable part of the probe holder
- B. Fixed part of the probe holder (light gray) which is screwed into the machine housing
- C. Machine housing
- D. Lock nut
- E. Measuring object such as a shaft

3. Screw in the movable part of the probe holder to adjust the distance between sensor and measuring object.
See documentation of the used sensor for details about the sensor adjustment.
4. Fix the position of the movable probe holder part with the lock nut (see [Figure 6-2](#)).
5. Optionally, mount the EZ1600-HEAD or the EZ1600-BOX if required. See [Assemble and mount the optional EZ1600-HEAD](#) or [Assemble and mount the optional EZ1600-BOX and connect a metal protection tube](#).
6. Optionally, connect a MPT 064 Metal Protection Tube if required. See [Connect a metal protection tube to the AMS EZ 1000 Probe Holder](#) or [Connect a metal protection tube to the optional EZ1600-HEAD](#).

7 Assemble and mount the optional EZ1600-HEAD and connect metal protection tubes

7.1 Assemble and mount the optional EZ1600-HEAD

This chapter describes the assembly and the mounting of the optional head. Execute the following steps after the AMS EZ 1000 Probe Holder is completely installed and adjusted,

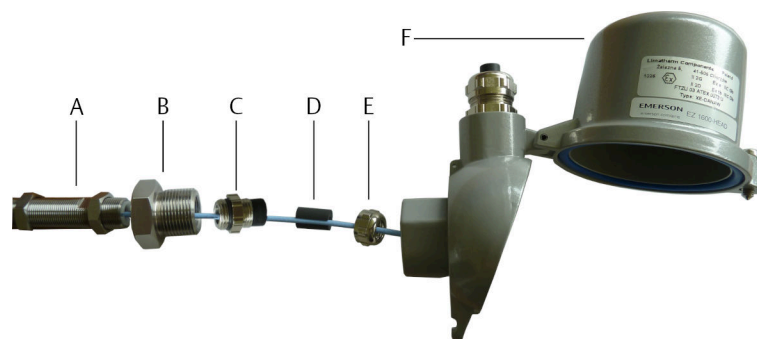
Prerequisites

- A set of wrenches with the following sizes:
 - Size 18 mm
 - Size 19 mm
 - Size 22 mm
 - Size 30 mm
- Adhesive Loctite® 620 or equal (only if parts must be glued in)

Procedure

1. Run the sensor cable through the adapter and the parts of the M16x1.5 cable gland as shown in [Figure 7-1](#).

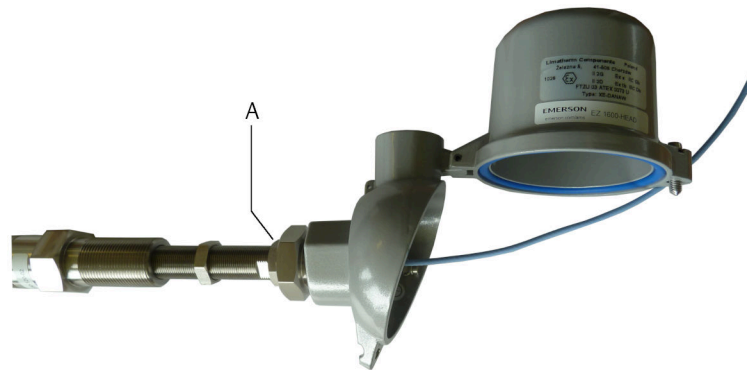
Figure 7-1: Assemble M16x1.5 cable gland and adapter



- A. AMS EZ 1000 Probe Holder
- B. Adapter for mounting the EZ1600-HEAD
- C. Double gland (lower part of the cable gland with sealing)
- D. Slit sealing
- E. Pressing screw
- F. EZ1600-HEAD

2. Screw the adapter on the already installed AMS EZ 1000 Probe Holder as far as possible. Do not fix the adapter yet, otherwise the head cannot be adjusted.
3. Screw the cable gland into the adapter (double gland, M16x1.5 thread with the O-ring, [Figure 7-1](#), part C).
4. Push the sealings into the cable gland. Ensure that the slit sealing is completely inserted into the cable gland.
Ensure that the sensor cable is still moveable. This facilitates the adjustment of the head ([Step 7](#)).
5. Lead the sensor cable through the middle inlet into the head (see [Figure 7-1](#)).
6. Screw the head on the adapter as far as possible. [Figure 7-2](#) shows the head screwed on the probe holder.

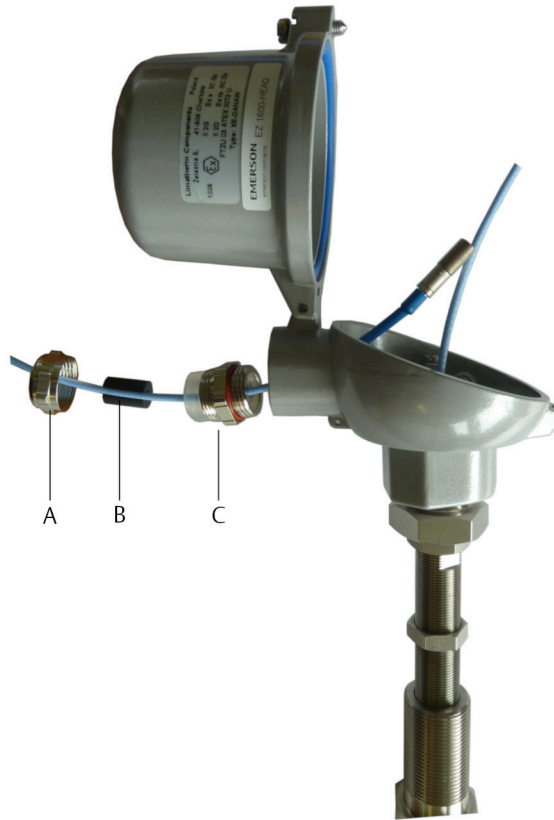
Figure 7-2: Head screwed on the probe holder



A. Lock nut

7. Adjust the head. Turn the adapter until the cable outlet with the M20x1.5 cable gland points into the desired direction.
8. Fix the adapter with the lock nut (see [Figure 7-2](#), A).
To achieve protection class IP65, glue the probe holder into the adapter with an adhesive like Loctite® 620 to form a seal.
9. Screw the pressing screw on ([Figure 7-1](#), part E).
10. Run the sensor extension cable through the M20x1.5 cable gland into the head as shown in [Figure 7-3](#).

Figure 7-3: Assembly M20x1.5 cable gland



- A. Pressing screw
- B. Slit sealing
- C. Double gland (lower part of the cable gland with sealing)

11. Screw the double cable gland (the M20x1.5 thread with the O-ring, see [Figure 7-3](#), C) into the head.
12. Push the sealings into the cable gland. Ensure that the slit sealing is completely inserted into the cable gland.
Ensure that the sensor extension cable is still moveable. This facilitates the winding of the sensor extension cable and the connection to the sensor cable.
13. Wind the sensor cable up and close the connection between sensor cable and extension cable. Ensure that the cable is not bend too much to avoid damages. Use a cable tie to fix the coiled cable. See [Figure 7-4](#).

Figure 7-5: Head with almost closed cover



A. Cover screw

7.2 Connect a metal protection tube to the AMS EZ 1000 Probe Holder

This chapter describes the connection of a metal protection tube to the AMS EZ 1000 Probe Holder.

Prerequisites

- MPT064/xxx² Metal Protection Tube

² Placeholder for different tube lengths, see MPT064 ordering information.

- MPT064/PG Gland Set PG
- Wrench: size 19 and size 20
- Suitable flat-head screw driver to remove the cable protection

Procedure

1. Remove the cable protection form the AMS EZ 1000 Probe Holder.

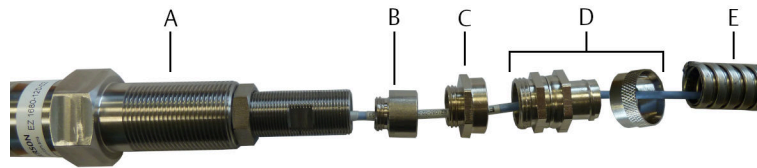
Figure 7-6: Remove cable protection



A. Cable protection

2. Run the sensor cable through the listed parts as shown in [Figure 7-7](#) and the protection tube.

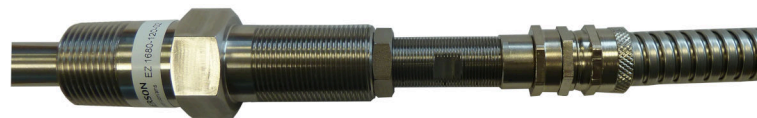
Figure 7-7: Sequence of the required parts



- A. AMS EZ 1000 Probe Holder
- B. Extension PG7/PG9
- C. Extension PG9/PG11
- D. Rakkord-Gland PG11, outside thread
- E. Metal protection tube

3. Screw all parts together.

Figure 7-8: Assembled parts



Note

Fix the metal protection tube to reduce leverage on the probe holder.

7.3 Connect a metal protection tube to the optional EZ1600-HEAD

This chapter describes the connection of a metal protection tube to the optional EZ1600-HEAD. Use the MPT064/ME-O gland set if an oil-tight installation is required, otherwise use the MPT064/ME gland set.

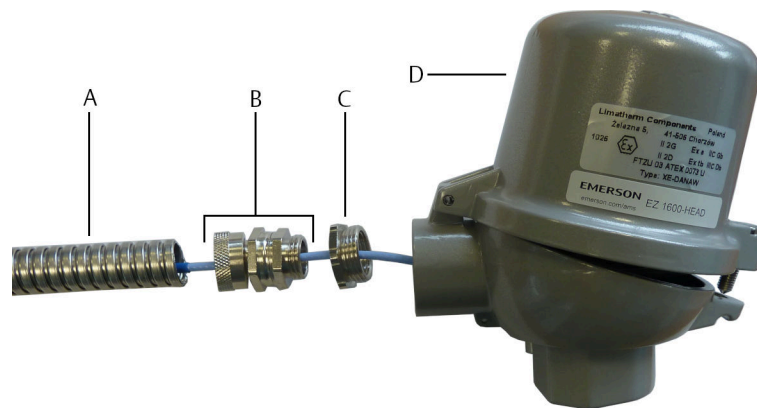
Prerequisites

- MPT064/xxx³ Metal Protection Tube
- MPT064/ME Gland Set metric or MPT064/ME-O Gland Set metric, oil proof
- Wrench: size 19, size 20, and size 22

Procedure

1. Run the sensor cable through the listed parts as shown in [Figure 7-9](#) if using the MPT064/ME Gland Set metric or as shown in [Figure 7-10](#) if using the MPT064/ME-O Gland Set metric, oil proof.

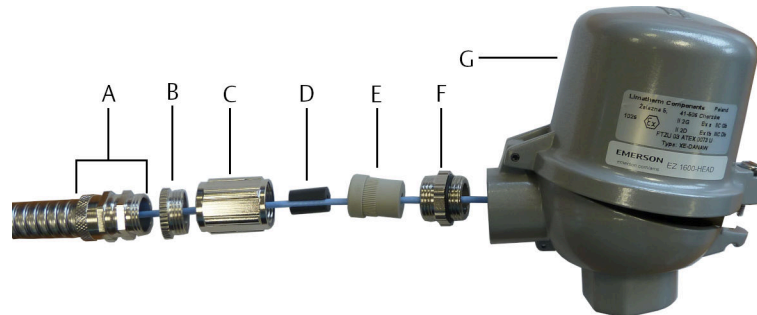
Figure 7-9: Sequence of the required parts – MPT064/ME Gland Set metric



- A. Metal protection tube
- B. Rakkord-Gland M16x1.5, outside thread
- C. Reducer M20x1.5/M16x1.5
- D. EZ1600-HEAD

³ Placeholder for different tube lengths, see MPT064 ordering information.

Figure 7-10: Sequence of the required parts – MPT064/ME-O Gland Set metric, oil proof



- A. Rakkord-Gland PG11, outside thread (part rotatable), already screwed on the metal protection tube
- B. Reducer PG13.5/PG11
- C. Pressing screw PG13.5
- D. Sealing FKM (Viton)
- E. Sealing TPE-V
- F. Double gland M20x1.5
- G. EZ1600-HEAD

2. Screw all parts together.

Figure 7-11: Assembled parts – MPT064/ME Gland Set metric

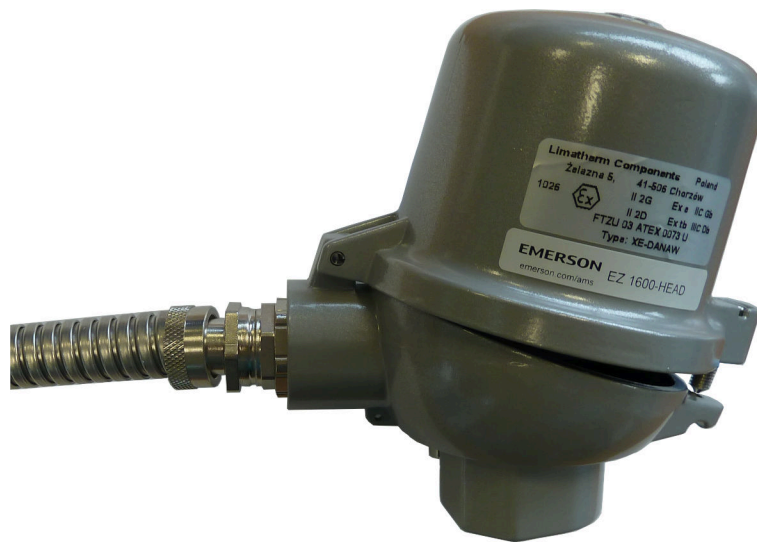
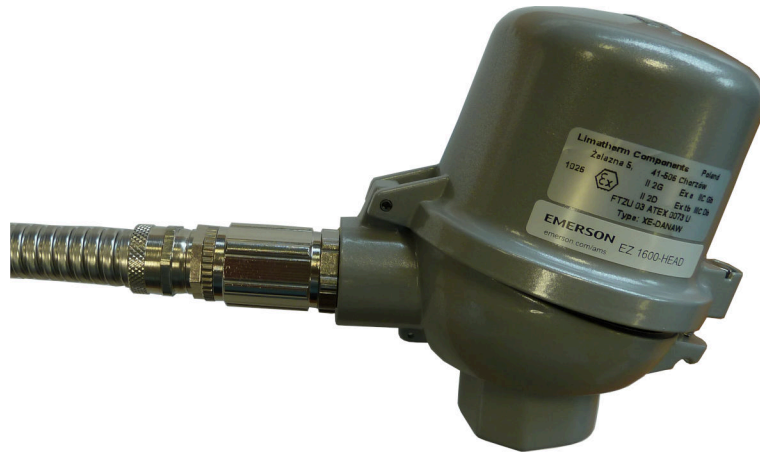


Figure 7-12: Assembled parts – MPT064/ME-O Gland Set metric, oil proof



Note

Fix the metal protection tube to reduce leverage on head and probe holder.

8 Assemble and mount the optional EZ1600-BOX and connect a metal protection tube

8.1 Assemble and mount the optional EZ1600-BOX

This chapter describes the assembly and the mounting of the optional box for installing an AMS EZ 1000 Converter directly on top of the AMS EZ 1000 Probe Holder. Execute the following steps after the AMS EZ 1000 Converter is configured and the AMS EZ 1000 Probe Holder is completely installed and adjusted.

Prerequisites

- A set of wrenches with the following sizes:
 - Size 10 mm
 - Size 22 mm
 - Size 24 mm
 - Size 30 mm
- Suitable cross-tip screwdriver to open the box
- Adhesive Loctite® 620 or equal (only if parts must be glued in)
- AMS EZ 1000 Probe Holder is completely installed and adjusted, see [Install the probe holder](#)

Procedure

1. Open the box, if not already done.
The box is already equipped with four M6 stud bolts for fixing the AMS EZ 1000 Converter.
2. Run the sensor cable through the M24x1.5 disk with O-ring as shown in [Figure 8-1](#).

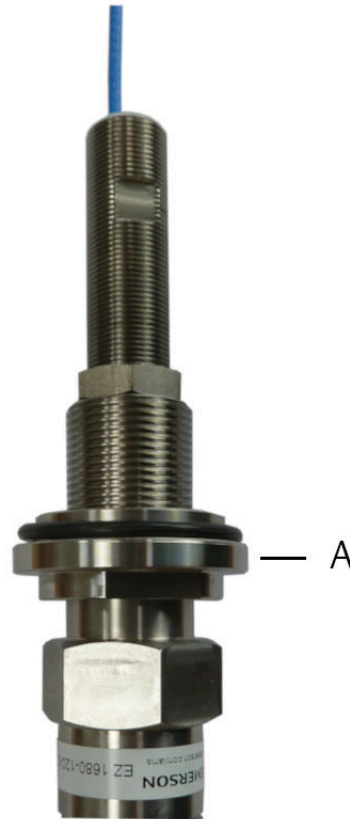
Figure 8-1: Disk



- A. Sensor cable
 - B. O-ring
 - C. M24x1.5 disk
 - D. Already installed AMS EZ 1000 Probe Holder
-

3. Screw the M24x1.5 disk on the already installed AMS EZ 1000 Probe Holder as far as possible. If required, fix the M24x1.5 disk with an adhesive.

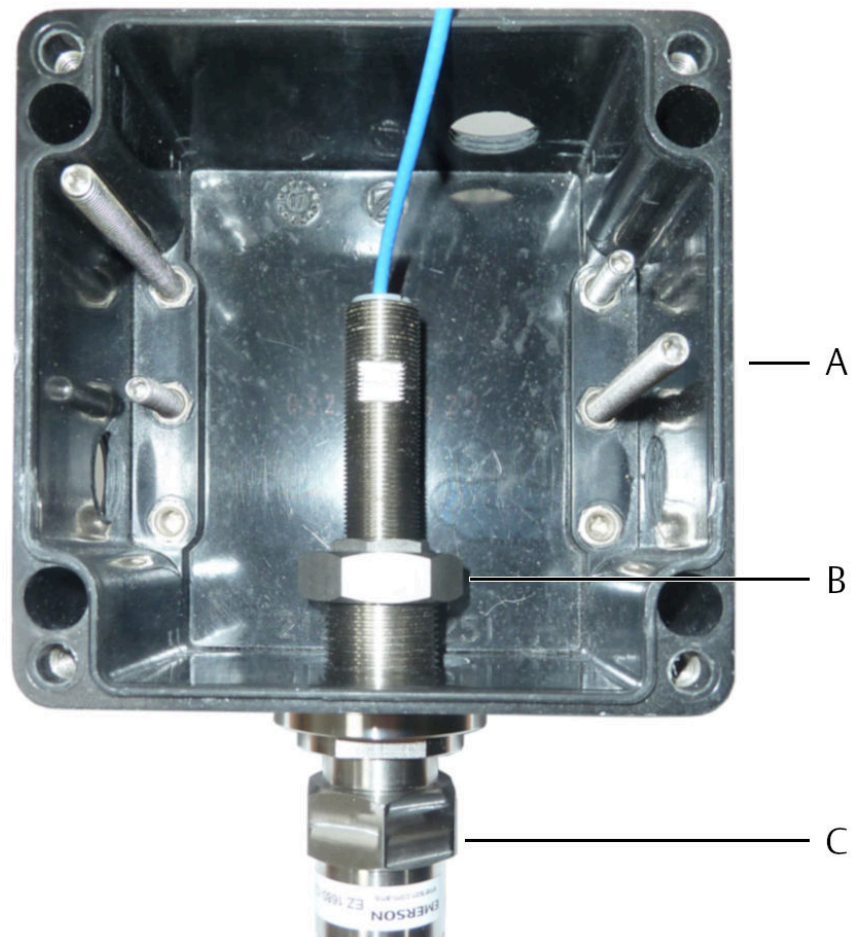
Figure 8-2: AMS EZ 1000 Probe Holder with M24x1.5 disk and O-ring



A. M24x1.5 disk and O-ring

4. Screw the M24x1.5 hex-nut on the probe holder and then put the EZ1600-BOX on the probe holder as shown in [Figure 8-3](#). Do not tighten the hex-nut yet. Leave enough space to insert the metal sheet insert.

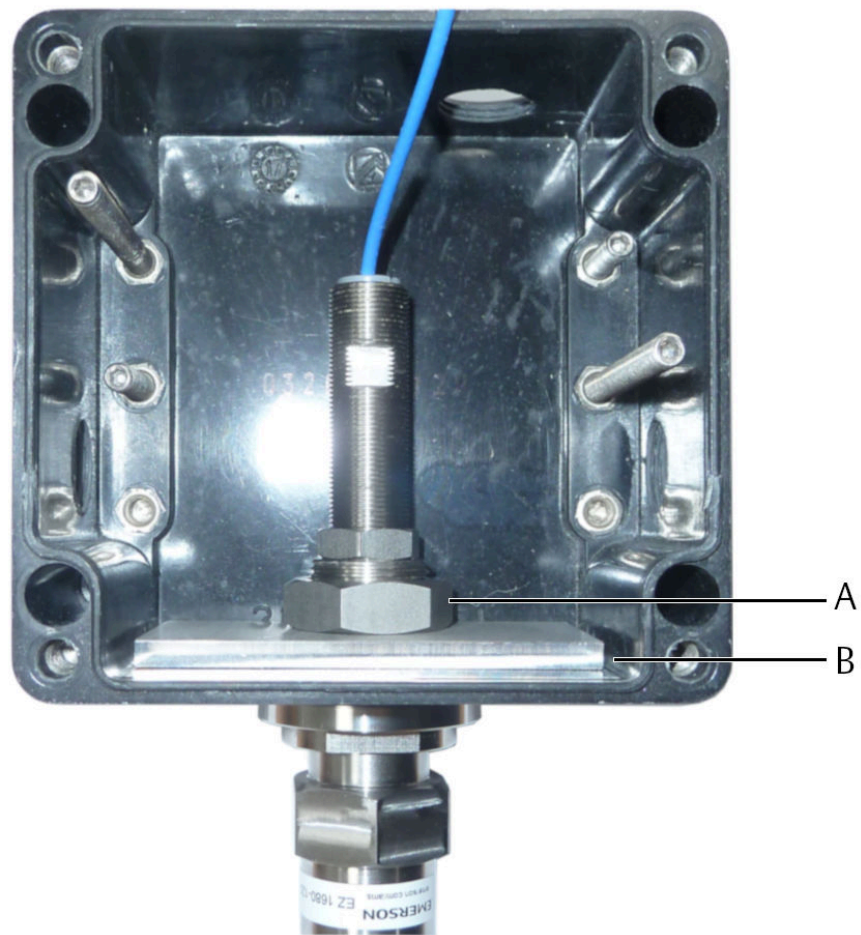
Figure 8-3: EZ1600-BOX and hex-nut



- A. EZ1600-BOX with four M6 stud bolts
- B. M24x1.5 hex-nut
- C. AMS EZ 1000 Probe Holder

5. Insert the metal sheet insert. Align the EZ1600-BOX and fix the desired position by tightening the M24x1.5 hex-nut.

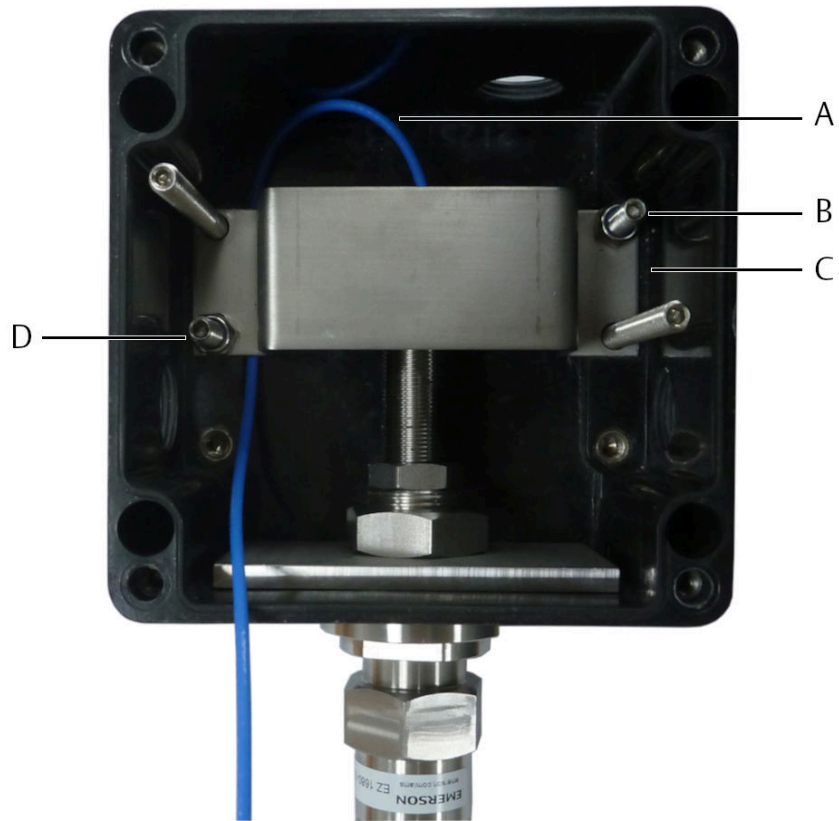
Figure 8-4: EZ1600-BOX fixed with metal sheet insert



- A. M24x1.5 hex-nut
- B. Metal sheet insert

6. Lead the sensor cable as shown in [Figure 8-5](#) and insert the angle mounting bracket. Fix the angle mounting bracket by screwing a self-locking M6 hex-nut on the short M6 stud bolts.

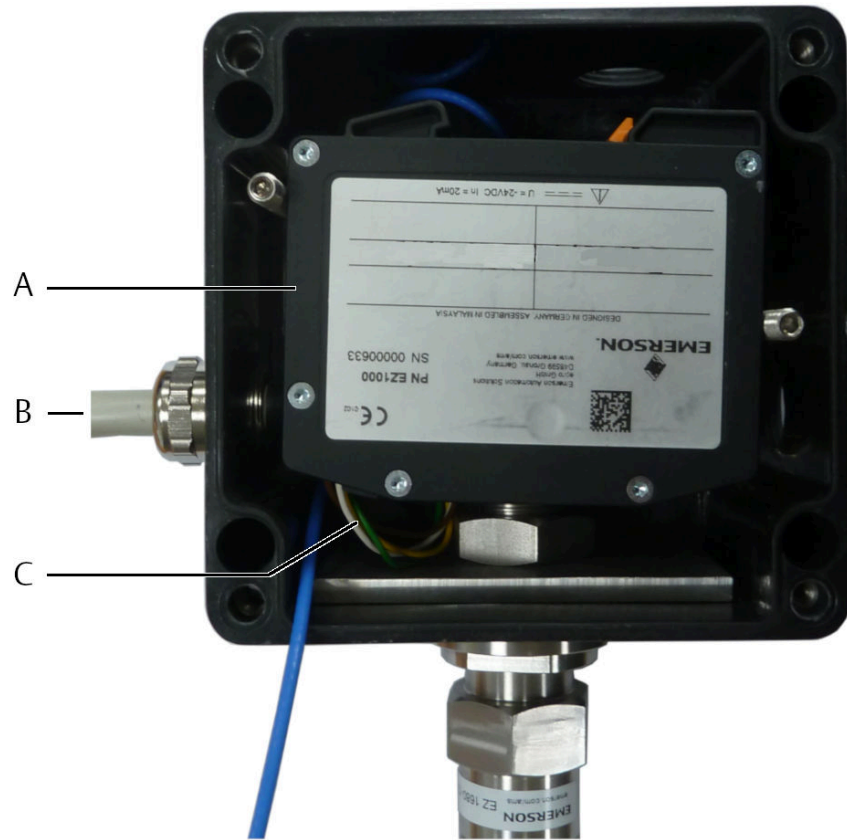
Figure 8-5: Sensor cable routing and inserted angle mounting bracket



- A. Sensor cable routing
- B. Short M6 stud bolt with screwed on self-locking M6 hex-nut
- C. Angle mounting bracket
- D. Short M6 stud bolt with screwed on self-locking M6 hex-nut

7. Select one of the three threaded M20x1.5 holes and lead the AMS EZ 1000 Converter connection cable through the selected hole into the box by using the M20x1.5 cable gland. Connect the converter and then place the converter in the box as shown in [Figure 8-6](#).

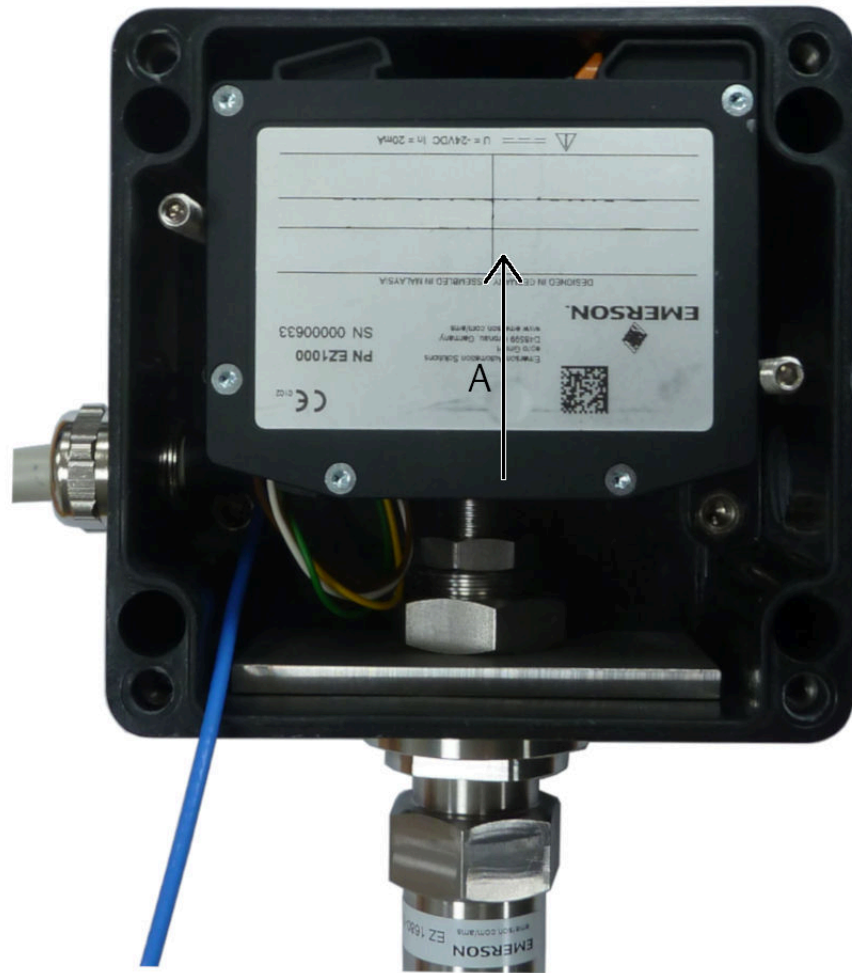
Figure 8-6: AMS EZ 1000 Converter connecting and installation



- A. AMS EZ 1000 Converter
- B. Connection cable
- C. Connection wire

8. Push the converter to the outer edge of the EZ1600-BOX as shown in [Figure 8-7](#).

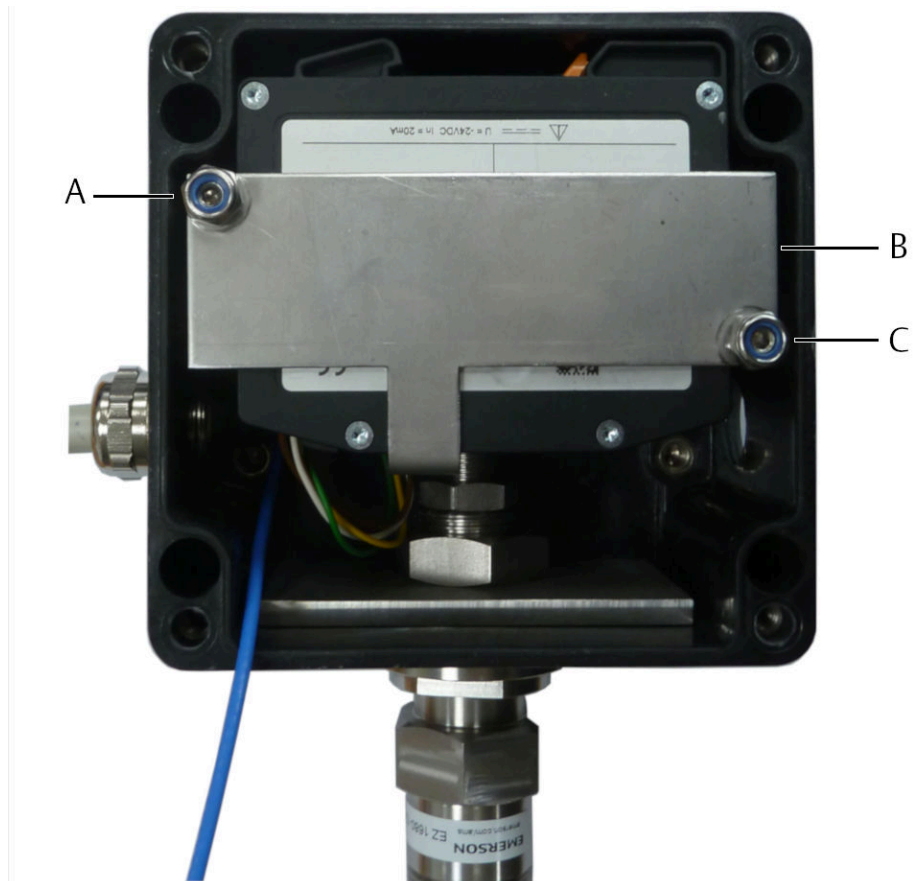
Figure 8-7: Positioning of the converter



A. Push the converter in this direction

9. Secure the converter with the holding plate. Place the holding plate as shown in [Figure 8-8](#). Fix the holding plate by screwing a self-locking M6 hex-nut on the long M6 stud bolts.

Figure 8-8: Holding plate



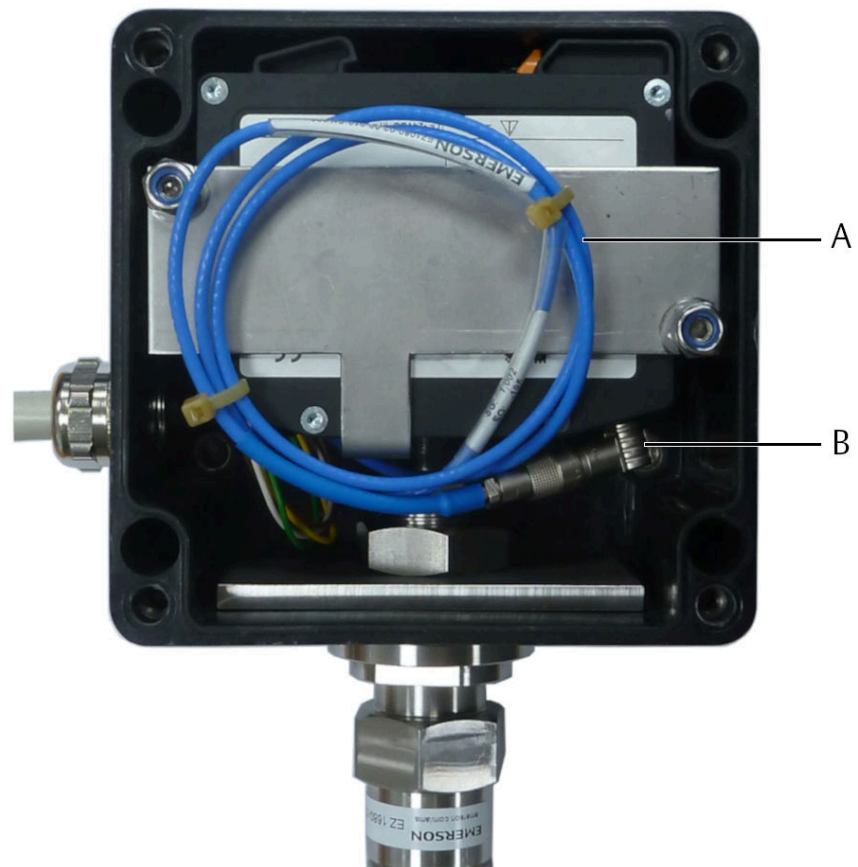
- A. Long M6 stud bolt with screwed on self-locking M6 hex-nut
- B. Holding plate
- C. Long M6 stud bolt with screwed on self-locking M6 hex-nut

10. Wind the sensor cable up and connect it to the converter by using the EZ1900-ADAP-90 adapter. Use cable ties to fix the coiled cable.

⚠ CAUTION

When using a sensor with sensor cable plus extension cable, wind the whole sensor cable (sensor cable plus extension cable) up. Shortening of the whole sensor cable by removing the extension cable affects the accuracy of the calibrated measuring chain.

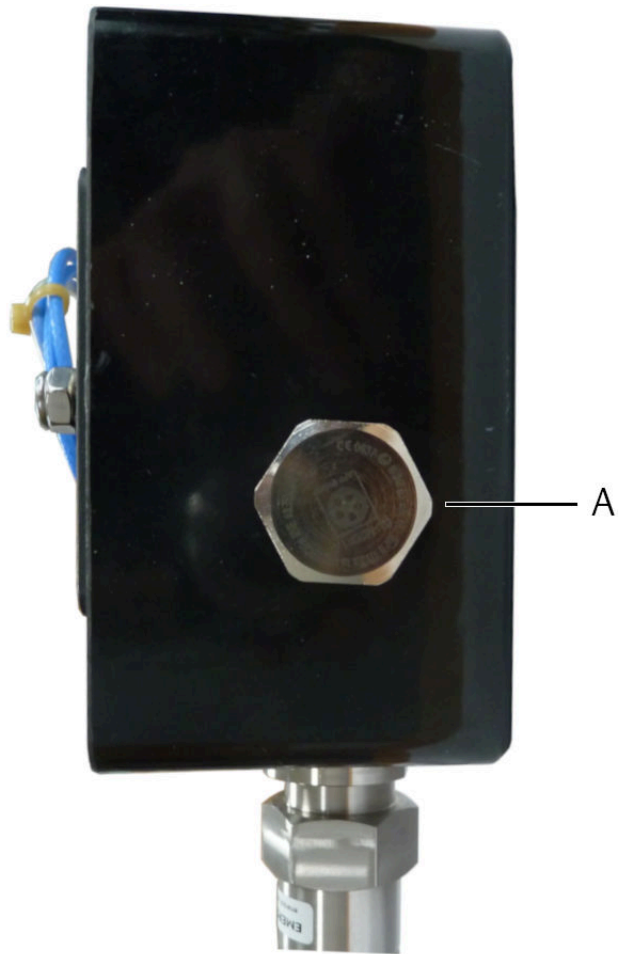
Figure 8-9: Coiled sensor cable



- A. Sensor cable
- B. EZ1900-ADAP-90 adapter.

11. Close the remaining threaded M20x1.5 holes with the screw plugs

Figure 8-10: Closed thread holes



A. M20x1.5 screw plug

12. Close the cover.

Figure 8-11: EZ1600-BOX with closed cover



8.2 Connect a metal protection tube to the optional EZ1600-BOX

This chapter describes the connection of a metal protection tube to the optional EZ1600-BOX. Use the MPT064/ME-O gland set.

Prerequisites

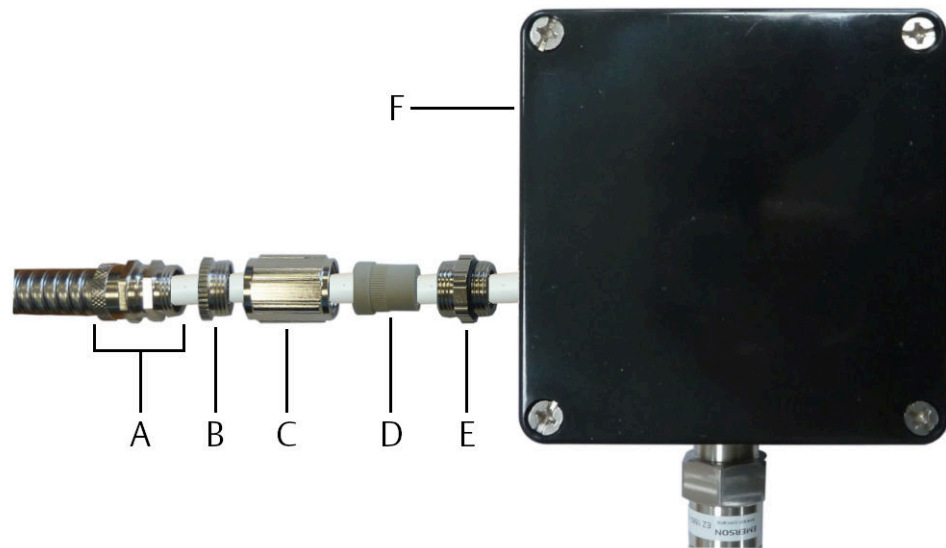
- MPT064/xxx⁴ Metal Protection Tube
- MPT064/ME-O Gland Set metric, oil proof
- Wrench: size 19, size 20, and size 22

⁴ Placeholder for different tube lengths, see MPT064 ordering information.

Procedure

1. Run the sensor cable through the listed parts as shown in [Figure 8-12](#).

Figure 8-12: Sequence of the required parts – MPT064/ME-O Gland Set metric, oil proof



- A. Rakkord-Gland PG11, outside thread (part rotatable), already screwed on the metal protection tube
- B. Reducer PG13.5/PG11
- C. Pressing screw PG13.5
- D. Sealing
- E. Double gland M20x1.5
- F. EZ1600-BOX

2. Screw all parts together.

Note

Fix the metal protection tube to reduce leverage on box and probe holder

9 Technical data

Only specifications with tolerances are guaranteed. Data without tolerance or without error limits are informative data and not guaranteed. Technology is under constant development, and specifications are subject to change without notice.



Performance

Adjustable Range	40 mm (1575 mils)
Immersion Depth	Up to 450 mm (17.7in), depending on type, see Order information .

Environmental conditions

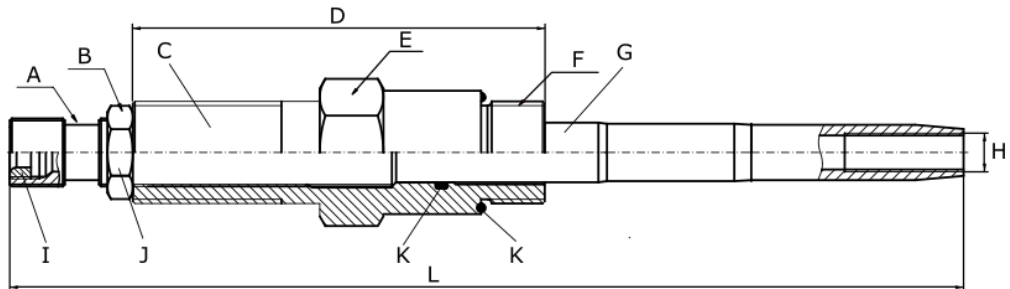
Protection class	
Probe holder – machine housing	IP68 – if the sensor is glued in sealed with adhesive Loctite® 620 or equal and the probe holder is properly screwed into the machine housing
Upper part of the probe holder	IP65 – if adapter (position “1” in Figure 10-5) is glued in sealed with adhesive Loctite® 620 or equal. With optional Connection Head only.
Operating temperature range	
Probe holder without Connection Head	See individual sensor specification sheet for details.
Probe holder with Connection Head	-20°C to +60°C
Probe holder with EZ1600-BOX and installed AMS EZ 1000 Converter	-35°C to +65°C
Others	
Differential pressure and sealing	2000 hpa (29 psi), if sensor is glued in.
Material	Holder: stainless steel, 1.4404 Connection Head: aluminum die-cast with polyester coating EZ1600-BOX: Fibre glass reinforced, duroplastic polyester graphite added

Hazardous area approvals

Connection Head	 II 2GD EEx e II FTZU 03 ATEX 0073 U Zone 1, Zone 2, Zone 21, Zone 22
Ex-Gland M16x1.5 and M20x1.5	 II 2G Ex eb IIC Gb II 2D Ex tb IIIC Db IP66/68 PTB 14 ATEX 1011X xx CE 0102 xx = M16, M20

10 Drawings

Figure 10-1: EZ 16xx-xxx-01 with M24x1.5 thread



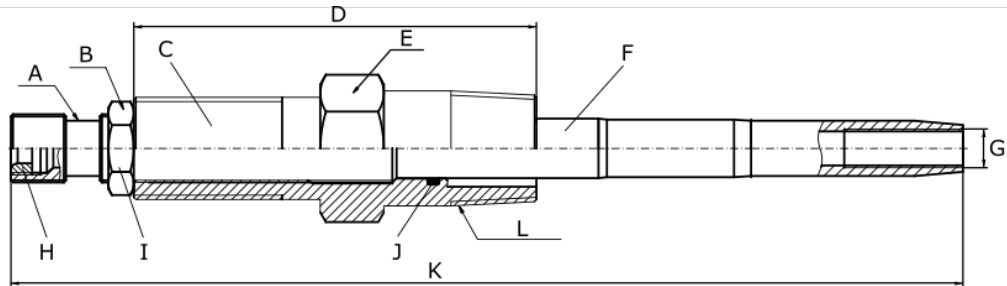
- A. Wrench size 13 mm
- B. Wrench size 19 mm
- C. Screw Fitting
- D. 97 mm (3.819 in)
- E. Wrench size 30 mm
- F. M24x1.5 thread
- G. Sensor sleeve
- H. See [Table 10-1](#)
- I. Gland PG7
- J. Nut M16x1
- K. O-Ring
- L. Sleeve length x

Table 10-1: Thread size (H) for sensor mounting

Designation ¹	H
EZ 1650-xxx-01	M8x1
EZ 1680-xxx-01	M10x1
EZ 1652-xxx-01	1/4"-28UNF-2A
EZ 1682-xxx-01	3/8"-24UNF-2A

¹ xxx: Adjustable range, see [Table 11-2](#)

Figure 10-2: EZ 16xx-xxx-02 with 3/4"-14NPT thread



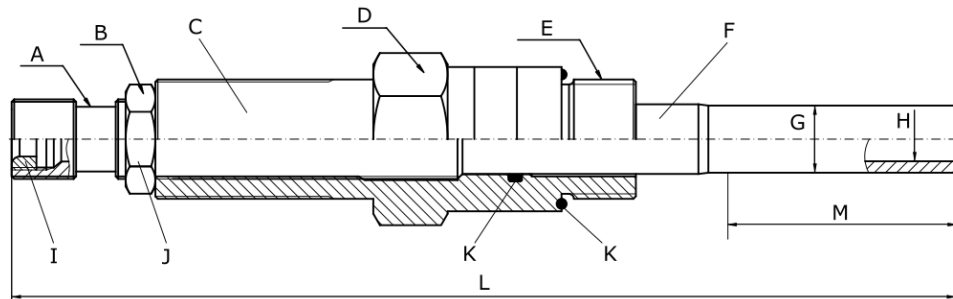
- A. Wrench size 13 mm
- B. Wrench size 19 mm
- C. Screw Fitting
- D. 95 mm (3.740 in)
- E. Wrench size 30 mm
- F. Sensor sleeve
- G. See [Table 10-2](#)
- H. Gland PG7
- I. Nut M16x1
- J. O-Ring
- K. Sleeve length x
- L. 3/4"-14NPT

Table 10-2: Thread size (G) for sensor mounting

Designation ¹	G
EZ 1650-xxx-02	M8x1
EZ 1680-xxx-02	M10x1
EZ 1652-xxx-02	1/4"-28UNF-2A
EZ 1682-xxx-02	3/8"-24UNF-2A

¹ xxx: Adjustable range, see [Table 11-2](#)

Figure 10-3: EZ1600-450-01 with M24x1.5 thread

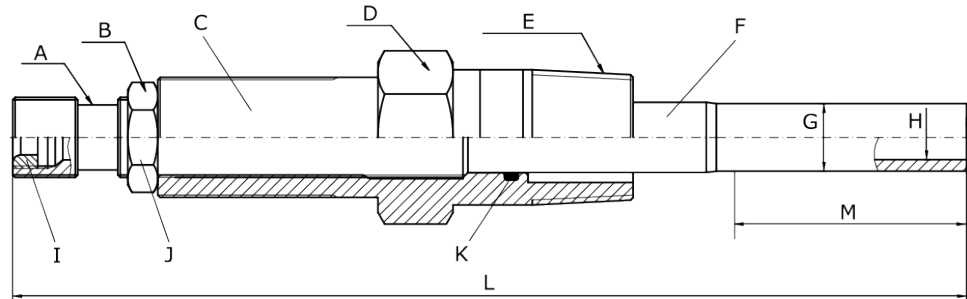


- A. Wrench size 13 mm
- B. Wrench size 19 mm
- C. Screw Fitting
- D. Wrench size 30 mm
- E. M24x1.5 thread
- F. Sensor sleeve
- G. Diameter 13.5 mm
- H. Diameter 8.9 mm
- I. Gland PG7
- J. Nut M16x1
- K. O-Ring
- L. 550 mm
- M. 350 mm (Part of the holder that can be cut to an individual length)

Note

Self-cut probe holder
Cut the probe holder to length and tap a suitable thread.

Figure 10-4: EZ1600-450-02 with 3/4"-14NPT thread

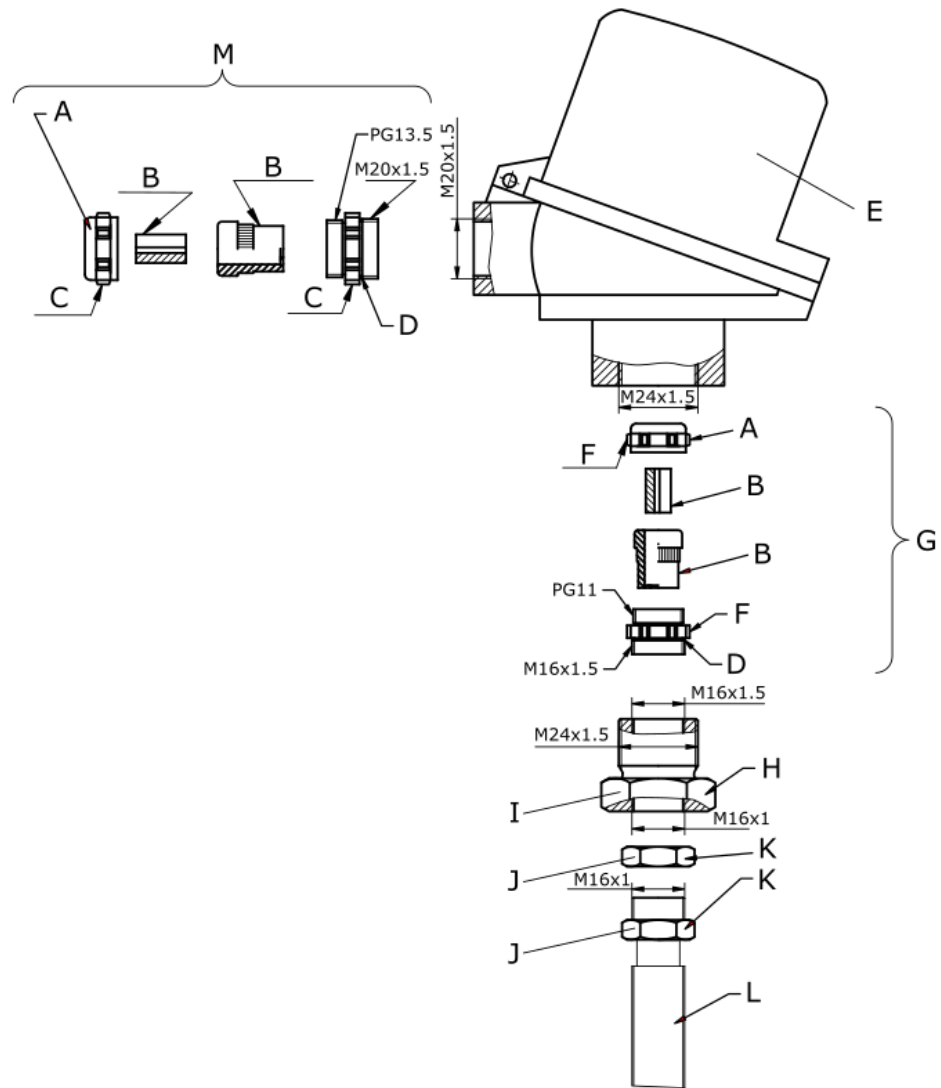


- A. Wrench size 13 mm
- B. Wrench size 19 mm
- C. Screw Fitting
- D. Wrench size 30 mm
- E. 3/4"-14NTP
- F. Sensor sleeve
- G. Diameter 13.5 mm
- H. Diameter 8.9 mm
- I. Gland PG7
- J. Nut M16x1
- K. O-Ring
- L. 550 mm
- M. 350 mm (Part of the holder that can be cut to an individually length)

Note

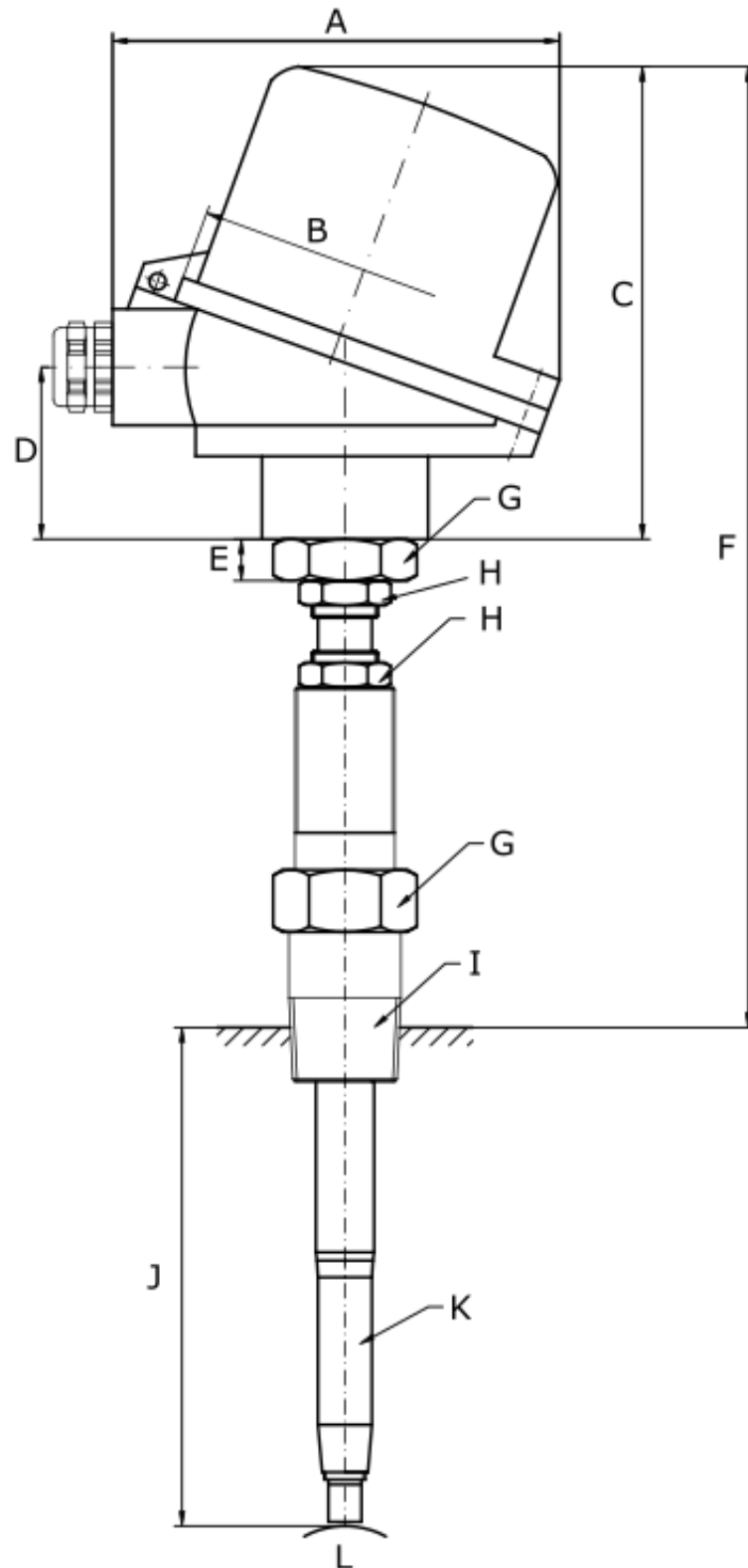
Self-cut probe holder
Cut the probe holder to length and tap a suitable thread.

Figure 10-5: Parts of an AMS EZ 1000 Probe Holder with connection head



- A. Pressing screw
- B. Sealing
- C. Wrench size 22 mm
- D. O-ring
- E. Connection head
- F. Wrench size 18 mm
- G. Cable gland M16x1.5
- H. Wrench size 30 mm
- I. Adapter
- J. Nut M16x1
- K. Wrench size 19
- L. EZ 16-xx-xxx-0x Probe Holder

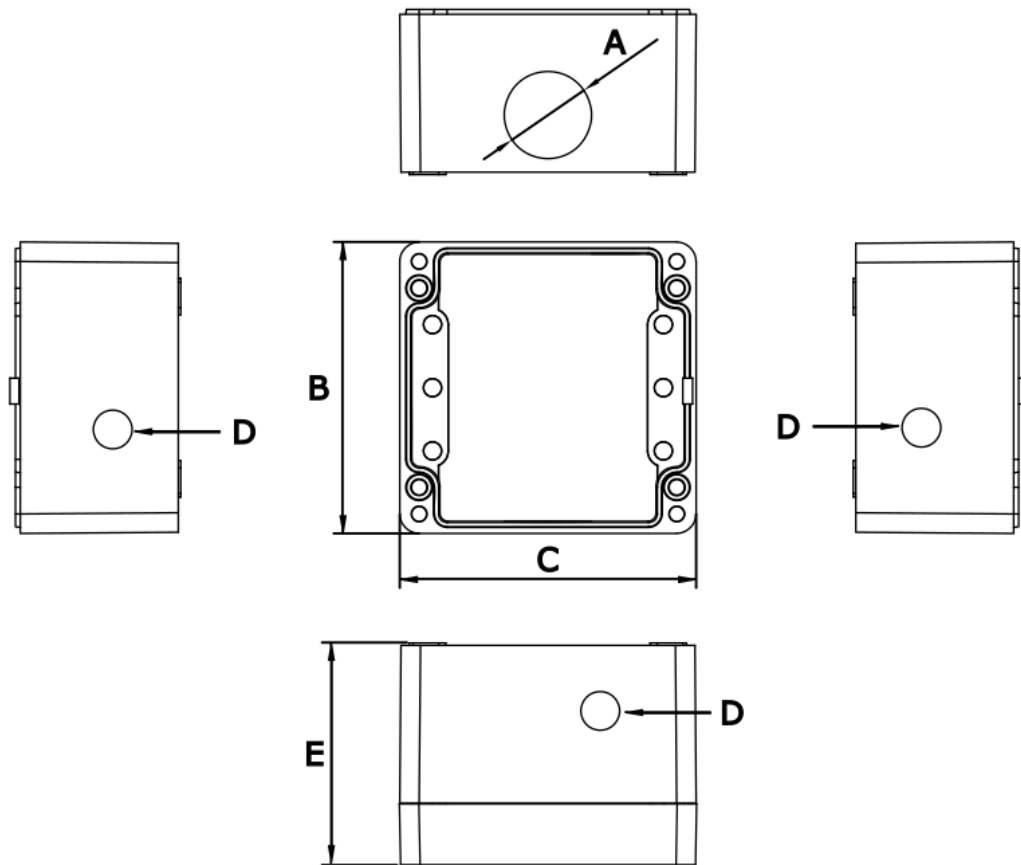
Figure 10-6: AMS EZ 1000 Probe Holder with EZ1600-HEAD



A. 109 mm (4.291 in)

- B. Diameter 83 mm (3.268 in)
- C. 114 mm (4.488 in)
- D. 41.5 mm (1.634 in)
- E. 10 mm (0.394 in)
- F. 226 mm to 266 mm (8.898 in to 10.427 in)
- G. Wrench size 30 mm
- H. Wrench size 19 mm
- I. $\frac{3}{4}$ "-14NPT
- J. For available lengths see [Table 11-2](#)
- K. EZ 16xx-120-02 Probe Holder
- L. Measuring target

Figure 10-7: EZ1600-BOX



- A. Diameter 36 mm
- B. 120 mm
- C. 122 mm
- D. M20x1.5
- E. 91 mm

11 Order information

The AMS EZ 1000 Probe Holder Probe Holder can be ordered in different variations. Select a Probe Holder based on the thread in the machine housing, required adjustable length and the required sensor type. Not all sensor types are compatible with all Probe Holder variations.

Table 11-1: Order information – Model No.

Sensor type	Sensor thread	Model No.
EZ1050	M8x1	EZ1650
EZ1080 ¹	M10x1	EZ1680
EZ1052	1/4"-28UNF	EZ1652
EZ1082	3/8"-24UNF	EZ1682

¹ Including adapter sleeve M10x1 to M6x0.5 for mounting of a PR6422 sensor.

Table 11-2: Order information

Model No.	-	Adjustable Range (mm) xxx	-	Screw fitting xx
EZ1650		070 30 to 70 (x = 169 mm ¹)		01 M24x1.5
EZ1652		090 50 to 90 (x=189 mm ¹)		02 3/4"-14NPT
EZ1680		120 80 to 120 (x=218 mm ¹)		
EZ1682		150 110 to 150 (x=248 mm ¹)		
		180 140 to 180 (x=278 mm ¹)		
		210 170 to 210 (x=308 mm ¹)		
		240 200 to 240 (x=338 mm ¹)		
		270 230 to 270 (x=368 mm ¹)		
		300 260 to 300 (x=398 mm ¹) ²		
		330 290 to 330 (x=428 mm ¹) ²		
		360 320 to 360 (x=458 mm ¹) ²		
		390 350 to 390 (x=488 mm ¹) ²		
		420 380 to 420 (x=518 mm ¹) ²		
		450 410 to 450 (x=548 mm ¹) ²		

¹ Maximum overall length without connection head, see [Figure 10-1](#) or [Figure 10-2](#).

² Holders of this length must be secured at the lower part of the sensor sleeve so that the holder tip cannot move.

Example:

EZ1650-070-01

Probe holder for EZ1050 sensor with a screw fitting of M24x1.5 and an adjustable range of 30 to 70 mm.

Table 11-3: Special versions

Model No.	Product description
EZ1600-450-01	Probe holder for EZ108X, M24X1.5, range up to 450 mm, self-cut
EZ1600-450-02	Probe holder for EZ108X, 3/4 14NPT, range up to 450 mm, self-cut

Table 11-4: Product accessories

Model No.	Product description
EZ1600-HEAD	ECS Probe Holder connection head, ATEX
EZ1600-BOX	Housing for mounting an AMS EZ 1000 Converter on the AMS EZ 1000 Probe Holder

The EZ 105x and EZ 108x sensors listed in [Table 11-5](#) and [Table 11-6](#) are compatible with the AMS EZ 1000 Probe Holder Probe Holder.

Table 11-5: Order information – Sensor Model No.

Tip diameter	Case thread	Armored cable	Model No.
5 mm	M8x1	No	EZ1050
8 mm	M10x1		EZ1080
5 mm	1/4"-28UNF		EZ1052
8 mm	3/8"-24UNF		EZ1082

Table 11-6: Order information – Sensor

Model No.	-	Case length xx	-	Unthreaded length xx	-	Cable length xx
EZ1050		02 20 mm (Minimum) to 05 50 mm (Maximum) Order in increments of 10 mm RM Reverse Mount ¹		00 0 mm No unthreaded length.		005 0.5 m ² 010 1.0 m 015 1.5 m 020 2.0 m 050 5.0 m 100 10.0 m
EZ1080						

Table 11-6: Order information – Sensor (continued)

Model No.	-	Case length xx	-	Unthreaded length xx	-	Cable length xx
EZ1052		08 0.8 in 10 1.0 in (Minimum) to 20 2.0 in (Maximum) Order in increments of 0.5 in RM Reverse Mount ¹		00 0.0 in No unthreaded length.		
EZ1082						

¹ **Note**

Reverse Mount is only available with 8 mm sensors.

² *This version is not feasible to holders with adjustable range longer than 300mm.*

Example:

EZ1080-02-00-050

Sensor with 8 mm tip diameter, with M10x1 case thread, 20 mm case length, no unthreaded length, and 5 meter sensor cable.

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