

# Endura AZ40

## Sensor assembly



Sensor covers kit  
Kit reference: AZ400 755

**Measurement made easy**

Endura AZ40  
sensor assembly

## 1 Introduction

This publication details replacement procedures for the AZ40 flange and terminal block sensor covers (AZ400 755) fitted to Endura AZ40 sensor assemblies. Before carrying out any procedures, read Section 3.

These procedures must be carried out by a suitably-trained technician.

Kit contains:

- Sensor covers x 2
- This publication

### Tools required

- Transmitter door key (supplied with transmitter)
- Operating instruction [OI/AZ40-EN\\*](#)
- Flat-bladed screwdriver
- Anti-seize compound (suitable for temperatures up to 200 °C [392 °F])

\*Operating instruction [OI/AZ40-EN](#) contains mandatory safety information and can be downloaded from the link (above) or by scanning this code:



## 2 For more information

Further information is available from:

[www.abb.com/analytical](http://www.abb.com/analytical)

or by scanning these codes:



Sales



Service

## 3 Health & Safety

### 3.1 Safety precautions

Be sure to read, understand and follow the instructions contained within this document before and during use of the equipment. Failure to do so could result in bodily harm or damage to the equipment.



**WARNING – Bodily injury** Installation, operation, maintenance and servicing must be performed:

- by suitably trained personnel only
- in accordance with the information provided in this document
- in accordance with relevant local regulations

### 3.2 Potential safety hazards

#### 3.2.1 Process conditions and requirements



**WARNING – Bodily injury**

**Environmental conditions**



– High air / equipment / structure temperatures, poor air quality and adverse environmental conditions may be present when the process is running.



– It is recommended that the process is shut down before performing these procedures.



– The process must be cool enough to enable shutdown, disconnection and removal of the sensor in a safe manner and in accordance with relevant local regulations.

– Appropriate PPE, including mask and goggles must be worn when preparing the process for these procedures.

#### 3.2.2 Endura AZ40 sensor – fibrous material in probe assembly



**WARNING – Serious damage to health**

**Fibrous material**



– The sensor and probe assemblies (standard and high temperature versions) contain fibrous material that can be a health hazard if airborne.



– The material, predominantly – aluminosilicate refractory fibres, CAS 142844-00-6. Refractory ceramic fibres (RCF) are classified as:



– Category 1B carcinogen under regulation (EC) No 1272/2008 – the classification, labelling and packaging regulations.

– Category 2B carcinogen by inhalation by The International Agency for Research on Cancer (IARC).

– When removing the sensor cover and subsequent maintenance activities, exposure to the airborne fibres could occur. ABB have conducted air sampling assessments within the breathing zone of the operator and have identified that an exposure limit of 1 fibre / cubic centimeter is unlikely to occur.

– Exposure to any carcinogen must be kept as low as reasonably practicable.

– Appropriate PPE defined below, must be worn when working with probe assemblies (all installation, replacement, maintenance procedures):

– A face fit tested, half mask conforming to EN140 (or equivalent) with a level 3 particulate filter conforming to EN 143 (or equivalent).

– Disposable protective coveralls in accordance with Type 5 ISO 13982-1:2004 (or equivalent).

– Goggles and gloves.

#### 3.2.3 Endura AZ40 sensor / probe – installation to pressurized process



**DANGER – Serious damage to health / risk to life**  
**Pressurized equipment – do not install / remove / the sensor / probe if the process is at positive pressure**

Installation, operation, maintenance and servicing of pressurized equipment must be performed:

– by suitably trained personnel only

– in accordance with the information provided in this document

– in accordance with relevant local regulations

– when process conditions are suitable to allow enough to enable installation / maintenance

### 3.2.4 Endura AZ40 sensor – high operational temperature on exposed parts



#### **WARNING – Bodily injury** High temperature on exposed surfaces – see Fig. 3.1

- During operation, exposed sensor surfaces can reach 200 °C (392 °F).
- Ensure suitable PPE is available and is worn before handling the sensor.
- Do not touch exposed surfaces until the sensor / probe is cool enough to handle with PPE.

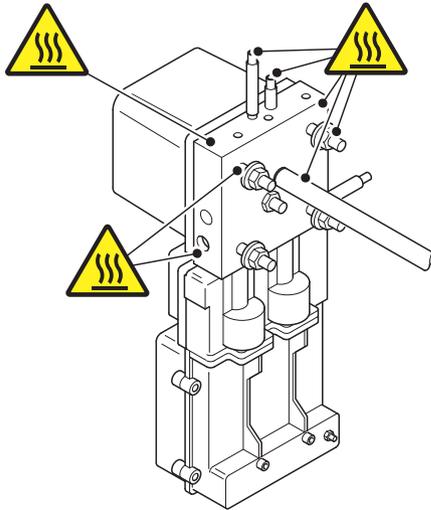


Fig. 3.1 High temperature points on exposed sensor surfaces during operation

### 3.2.5 Endura AZ40 sensor – weight



#### **WARNING – Bodily injury**

- The sensor weighs 9.0 kg (20 lb). When fitted with a probe / filter assembly, the combined sensor / probe weight is dependent on probe length / type plus filter option – refer to Operating instruction OI/AZ40-EN for weight details.
- The sensor / probe assembly must be mounted in accordance with the information supplied in Operating instruction OI/AZ40-EN.
- Suitable lifting equipment must be available when installing / removing the sensor / probe from the process.

### 3.2.6 Endura AZ40 analyzer – electrical



#### **WARNING – Bodily injury**

To ensure safe use when operating this equipment, the following points must be observed:

- up to 240 V AC may be present. Ensure the supply is isolated before removing the terminal cover
- normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and / or temperature

Safety advice concerning the use of the equipment described in this document or any relevant Material Safety Data Sheets (where applicable) can be obtained from the Company, together with servicing and spares information.

### Endura AZ40 transmitter – weight



#### **WARNING – Bodily injury**

- The transmitter weighs 7.6 kg (17 lb) and must be mounted in accordance with the information supplied in Operating instruction OI/AZ40-EN.
- Suitable lifting equipment must be available when installing / removing the transmitter from the mounting.

## 4 Isolating the transmitter

### 4.1 Isolating the transmitter

Referring to Fig. 4.1.

1. Isolate transmitter (A) from incoming mains powers supplies (B).



**DANGER – Serious damage to health / risk to life**

The transmitter must be isolated from mains powers supplies before carrying out this procedure.

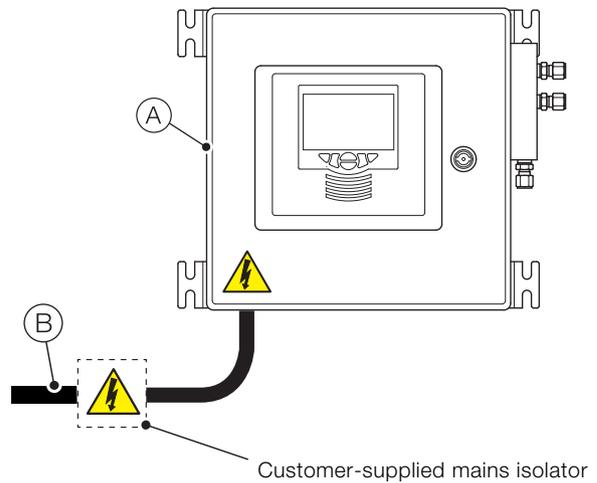


Fig. 4.1 Isolating the transmitter from incoming mains power supplies

## 5 Replacement procedure

Referring to Fig. 5.1:

1. Use a medium flat-bladed screwdriver to unscrew 4 (captive) sensor cover retaining screws (A) and remove and discard sensor cover (B).
2. Use a medium flat-bladed screwdriver to unscrew 2 (captive) sensor terminal cover retaining screws (C) and remove and discard sensor terminal cover (D).
3. Remove seals (E) and (F). If seals have bonded to the mating surfaces on the sensor, remove any material and clean surfaces thoroughly.
4. Fit new seals ((G) and (F)) into the recess of each new cover.
5. Apply a light coating of an anti-seize compound (suitable for temperatures up to 200 °C [392 °F]) to the thread of each captive cover screw.
6. Position new sensor terminal cover (D) over the sensor terminal block and secure 2 (captive) cover retaining screws (C) using a medium flat-bladed screwdriver.
7. Position new sensor cover (B) over the sensor manifold block and secure 4 (captive) sensor cover retaining screws (A) using a medium flat-bladed screwdriver.
8. Prepare the sensor assembly for operation by reversing the isolation procedure – refer to Section 4, page 4.
9. Refer to Operating instruction OI/AZ40-EN to restore the analyzer to full operational condition.

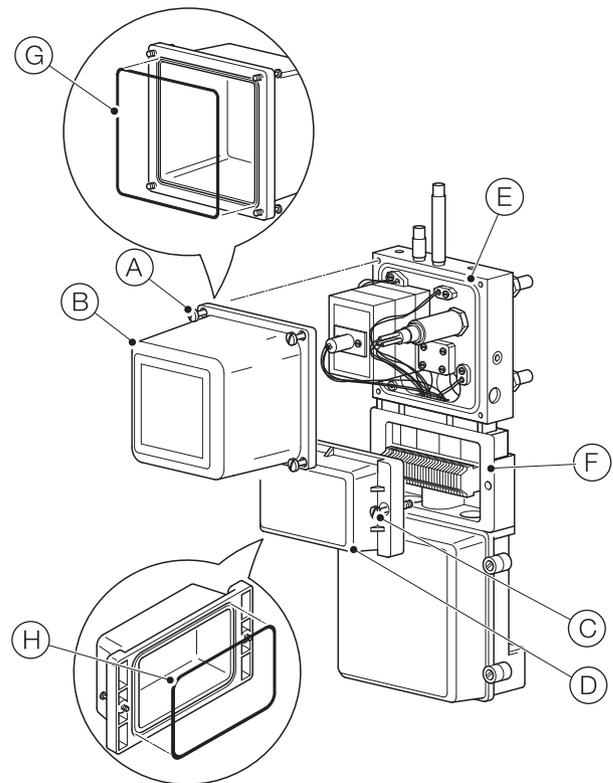


Fig. 5.1 Sensor covers replacement procedure