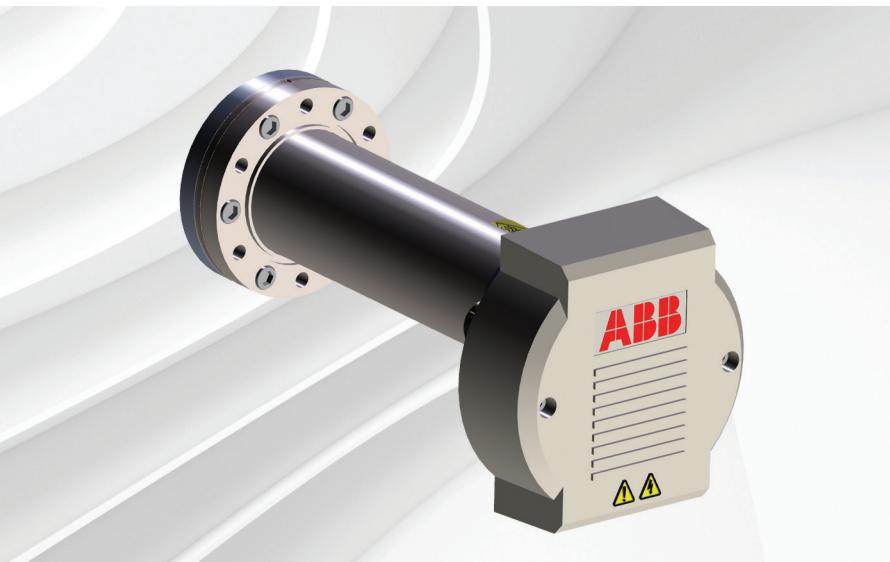


# Endura AZ10

## Oxygen probe



Endura AZ10  
oxygen probe

## 1 Introduction

This publication details how to replace the terminal PCB assembly on an AZ10 probe.



### WARNING – Bodily injury

This symbol in conjunction with the signal word ‘WARNING’ indicates a potentially dangerous situation. Failure to observe this safety information may result in death or severe injury.

–This procedure can be performed with the AZ10 probe removed from the process, **only if** all safety conditions listed in Section 3, page 2) are met.

### Tools required

- 3 mm allen key
- Terminal screwdriver
- 24 mm spanner
- Small flat-bladed screwdriver
- Suitable PPE, including gloves, goggles, high visibility jacket

Terminal PCB assembly spares kit

**Measurement made easy**

## 2 For more information

Further information is available from:

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

or by scanning these codes:



Service

## 3 Health & Safety

### 3.1 Operational conditions – site conditions / site preparation

#### **DANGER – Serious damage to health / risk to life** **Site safety– safe site working conditions**

Before maintaining, installing and / or removing the AZ10 probe at the process:

- ensure the process is switched off / shutdown
- notify the plant / process supervisor that the AZ10 probe will be offline during maintenance / removal / installation
- ensure suitably-qualified personnel wearing adequate PPE are available and used for all maintenance / removal / installation tasks
- after the AZ10 probe is removed from the process, blank off the opening in a safe manner

### 3.2 Operational conditions – high temperatures on exposed sensor surfaces

#### **WARNING – Bodily injury**

#### **High temperature on exposed surfaces**

- exposed sensor surfaces can reach 400 °C (752 °F) through conduction from the process during operation
- ensure both the process and probe are in a safe, cool condition before removing the probe from the process and / or performing maintenance tasks
- do not touch exposed surfaces until the sensor / probe is cool enough to handle with PPE
- suitable PPE must be worn before handling the sensor

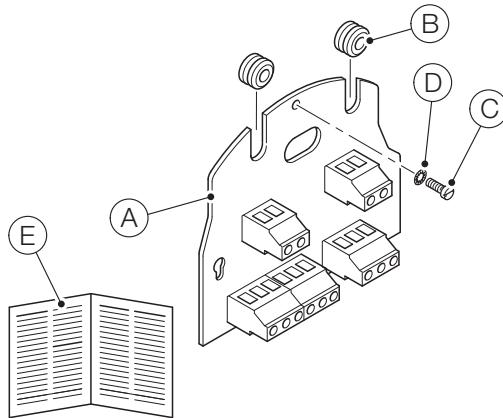
### 3.3 Operational conditions – high voltage mains electrical power

#### **DANGER – Serious damage to health / risk to life** This symbol in conjunction with the signal word 'DANGER' indicates an imminent electrical hazard.

Failure to observe this safety information will result in death or severe injury.

- isolate the AZ10 probe from mains electrical power before performing maintenance tasks

## 4 Kit contents



Item	Description	Qty.
(A)	Terminal PCB assembly	1
(B)	Grommet 6.4 x 4	2
(C)	Screw M4 x 16 SS	1
(D)	M3 shakproof washer	1
(E)	Information sheet   Terminal PCB assembly spares kit	1

Table 4.1 Terminal PCB assembly spares kit – part number AZ10 0256

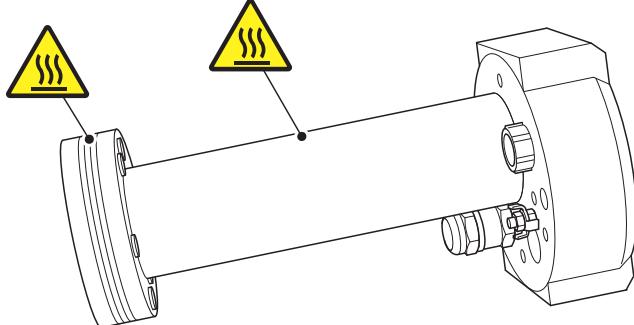


Fig. 3.1 High temperature points on exposed sensor surfaces

## 5 Replacing the terminal PCB assembly



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

Before replacing the terminal PCB assembly:

- isolate mains electrical power supplies to the AZ10 probe
- isolate the test gas supply to the AZ10 probe
- allow the probe to cool before touching any exposed parts

Referring to Fig. 5.1:

1. At the process, disconnect test gas pipe (A) from probe test gas inlet (B).

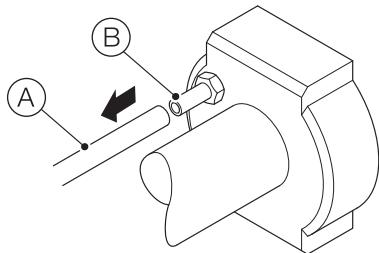


Fig. 5.1 Disconnecting the test gas supply to the probe

2. Ensure the probe cable has sufficient slack, remove the probe from the process and transfer it to a clean dry working area.
3. Blank off the opening at the process-mounted flange.

Referring to Fig. 5.2:

4. Loosen 2 socket-head screws (A) using 3 mm allen key and remove lid (B).
5. Disconnect all wires at terminal blocks (C), (D), (E) and (F) using terminal screwdriver.  
Ensure the M4 nut on earth stud (G) is not disturbed – leave the green (internal) earth wire (with attached clamp washer) and drain wires (twisted pair from cable) in place at the earth stud.
6. Disconnect silicon (test gas) tube (H) from the external test gas connector at position (I) and unscrew and remove M4 terminal PCB retaining screw and shakeproof washer (J).
7. Lift the terminal PCB assembly away from the probe mounting plate location dowels and discard.
8. Fit grommets (K) to (new) terminal PCB assembly (L).
9. Offer terminal PCB assembly (L) to the probe mounting plate, feed (internal) thermocouple / cell wires (M) through the grommet above terminal (C) and (internal) heater wires (N) through the grommet above terminal (D).
10. Route silicon tube (H) through the terminal PCB assembly centre slot, locate terminal PCB assembly (L) on the probe mounting plate location dowels (O) and secure using M4 screw / shakeproof washer (P).
11. Reconnect wires at terminals (C) and (D) in reverse order of disconnection – refer also to Section 5.1, overleaf.
12. Carefully re-connect silicon tube (H) to the external test gas connection at position (I).

13. Reconnect cable wires at terminals (E) and (F) in reverse order of disconnection – refer also to Section 5.1, overleaf.



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

Ensure earth wires connected to earth stud (G) are secure and the M4 earth stud nut is fully tightened before switching on the mains power supply.

14. Connect (internal) earth wire (Q) to the earth (⏚) connection on terminal (F) using terminal screwdriver.

15. Refit lid (B) in reverse order of removal.

16. Re-mount the AZ10 probe at the process and reconnect the test gas supply.

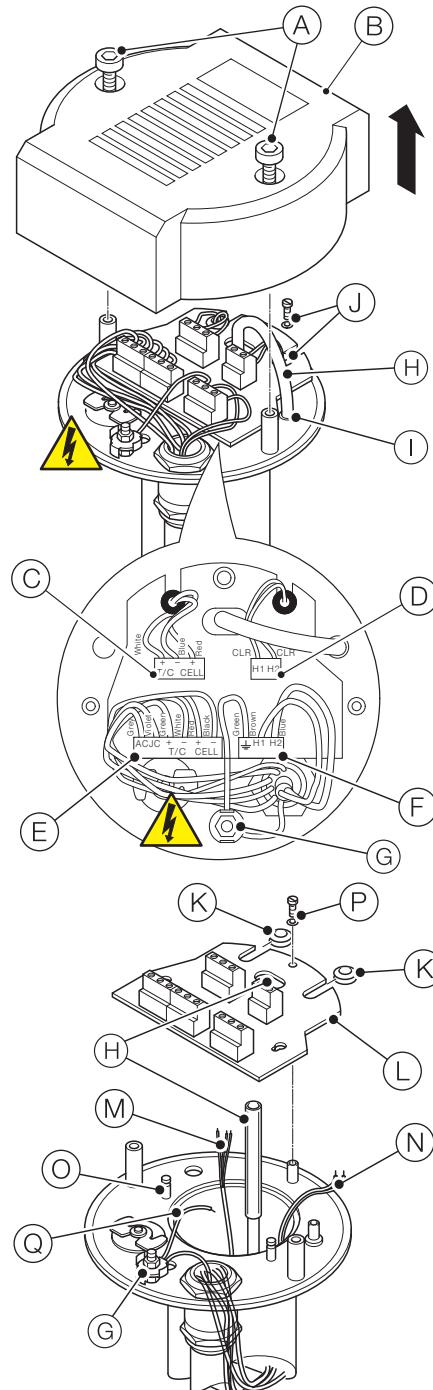


Fig. 5.2 Replacing the terminal PCB assembly

## 5.1 AZ10 probe cable connections



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

The earth wires (drain wires and clamp washer) must be connected at the earth stud (item (G) Fig. 5.2, page 3) and the M4 earth stud nut must be secured and tight before switching mains power on.

Probe connections*	Note
Grey	ACJC
Violet	ACJC
Green	T/C +
White	T/C -
Red	Cell + (oxygen input)
Black	Cell - (oxygen input)
Green (internal earth to earth stud) Drain wires (twisted pair from cable) connected at sensor earth stud	The internal earth wire (including clamp washer must be secured at the earth stud and connected at the (green) earth connection of terminal (F) – see Fig. 5.2, page 3
Brown	Heater 1
Blue	Heater 2
White / Yellow	
White / Black	
White / Orange	Not used
White / Green	(cut back to installation)
White / Red	
White / Blue	

\*Connections to terminals (E) and (F) – Fig. 5.2, page 3

Table 5.1 Cable connections – AZ10 probe

# Notes

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