

Installation Instructions

Spare parts

FMA90 Mainboard 230VAC / 24VDC

1 Overview of spare part sets

The Installation Instructions apply to the following spare part sets:

Order number	Original spare parts set	Contents
71706842	Mainboard FMA90 230VAC, 5x Relais, Feld	1x Mainboard
71706843	Mainboard FMA90 24VDC, 5x Relais, Feld	1x Installation instruction

2 Intended use

- A defective unit can only be replaced with a functioning unit of the same type.
- Use only original parts from Endress+Hauser.

3 Personnel authorized to carry out repairs

Authorization to carry out repairs depends on the measuring device's approval type. The table below shows the authorized group of people in each case.



Whoever carries out the repairs has full responsibility to ensure that work is carried out safely and to the required quality standard. He/she must also guarantee the safety of the device following repair.

Measuring device approval	Personnel authorized to carry out repairs ¹⁾
Without approval	1, 2, 3
With approval (e.g. IECEx)	1, 2, 3
For custody transfer	4

1) 1 = Qualified specialist on customer side,

2 = Service technician authorized by Endress+Hauser,

3 = Endress+Hauser (return measuring device to manufacturer)

4 = Check with local approval center if installation/conversion must be performed under upper vision.

4 Safety instructions

- The spare part set and the Installation Instructions are used to replace a defective unit with a functioning unit of the same type.
 - Only use original parts from Endress+Hauser.
- Comply with national regulations regarding mounting, electrical installation, commissioning, maintenance and repair.
- The following requirements must be met with regard to specialized technical staff for the mounting, electrical installation, commissioning, maintenance and repair of the measuring devices:
 - Specialized technical staff must be trained in instrument safety.
 - They must be familiar with the individual operating conditions of the devices.
 - In the case of Ex-certified measuring devices, they must also be trained in explosion protection.
- The measuring device is energized! Risk of fatal injury from electric shock. Open the measuring device only when the device is de-energized.
- For measuring devices intended for use in hazardous locations, please observe the guidelines in the Ex documentation (XA).
- For measuring devices in safety-related applications in accordance with IEC 61508 or IEC 61511: following repair, re-commission the device in accordance with the Operating Instructions. Document the repair.
- Before removing the device: set the process to a safe state and purge the pipe of dangerous process substances.
- Danger of burns due to heated surfaces! Before commencing work: allow the system and measuring device to cool down to a touchable temperature.
- In the case of devices in custody transfer, the custody transfer status no longer applies once the seal has been removed.
- The Operating Instructions for the device must be followed.
- Risk of damaging the electronic components! Ensure you have a working environment protected from electrostatic discharge.
- After removing the electronics compartment cover: risk of electrical shock due to missing touch protection! Turn the measuring device off before removing internal covers.
- Modifications to the measuring device are not permitted.
- Only open the housing for a brief period. Avoid foreign objects, moisture or dirt entering the housing.
- Replace defective seals only with original seals from Endress+Hauser.
- If threads are defective the measuring device must be repaired.
- If, during repair work, spacing is reduced or the dielectric strength of the measuring device cannot be guaranteed, perform a test on completion of the work (e.g. high-voltage test in accordance with the manufacturer's instructions).
- Service plug:
 - Do not connect in potentially explosive atmospheres.
 - Only connect to Endress+Hauser service devices.



Contact Endress+Hauser Service if you have questions: www.addresses.endress.com

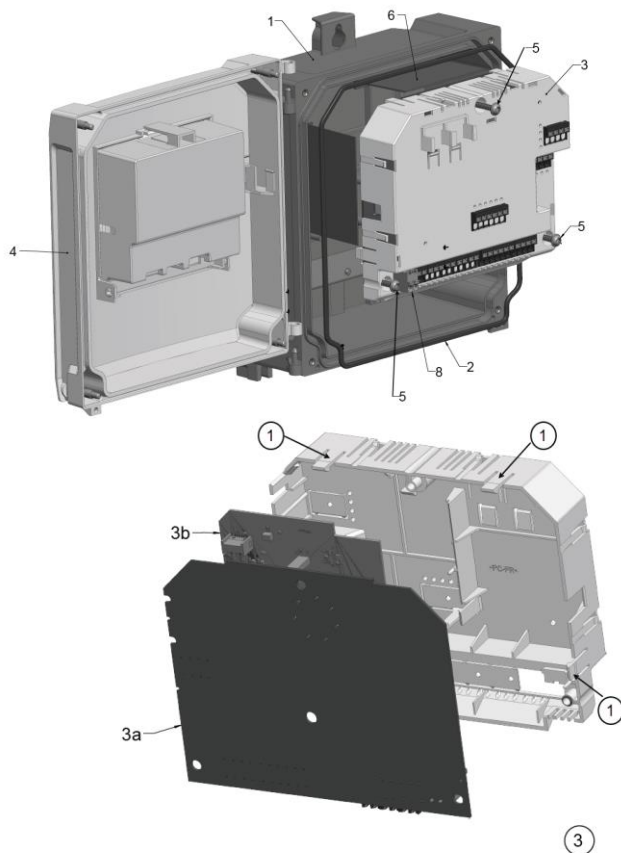
5 Symbols used

Symbol	Meaning
	Permitted Procedures, processes or actions that are permitted.
	Forbidden Procedures, processes or actions that are forbidden.
	Tip Indicates additional information.
1., 2., 3....	Series of steps

6 Tool list

Only one TX20 is required

7 Replacing the mainboard of the FMA90



Procedure:

1. **Remove Front Cover**
Unscrew the four Torx screws (item 4) located on the front side of the device.
2. **Disconnect Power Supply**
Disconnect the device from the power source and ensure it is completely voltage-free.
3. **Disconnect All Cables**
Carefully unplug all cable connections from the mainboard.
4. **Remove the Cover**
Unscrew the three Torx screws securing the cover and set them aside.
5. **Remove Mainboard Assembly**
Remove the cover along with the mainboard and, if applicable, the I/O board (item 3).
⚠ Caution: Pay attention to the ribbon cable connected to the CPU board.
6. **Detach Mainboard from Cover**
Gently press the four retaining clips to release the mainboard (item 3a) from the cover. Carefully slide the mainboard out of the guide rails.
7. **Disconnect Ribbon Cable and Replace Mainboard**
Disconnect the ribbon cable between the mainboard and the CPU board. Replace the mainboard.
8. **Reassemble Device**
Reassemble the device by following the steps in reverse order.
9. **Commissioning**
Power on the device and perform a functional test if necessary.

8 Disposal



If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.

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