



Note: Read the corresponding technical documentation for handling and safety reasons.

Science with Passion



Motor temperature sensor add-on kit for BlueShadow 40P pumps

1. General

This supplement will introduce the correct installation of the motor temperature sensor add-on kit for KNAUER BlueShadow 40P pumps.

When the pump is operated in continuous mode for long time periods, the motor temperature can increase under certain operation conditions. To ensure safe operation, we recommend to equip the motor with a temperature sensor. Motor temperature monitoring is available for both BlueShadow 40P generations.



Note: In case of overheating, the motor switches off and a warning message will be displayed. If overheating occurs regularly, replace the motor.

2. Scope of delivery

The motor temperature sensor add-on kit (A9664) includes:

- Temperature sensor PCB
- Sensor cable
- Sensor mounting ring

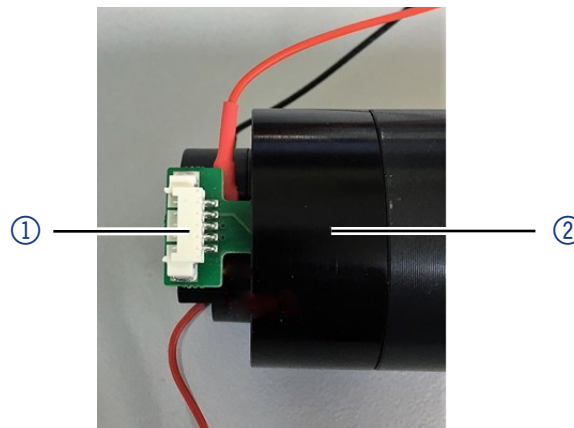


Fig. 1: Motor with temperature sensor board ① and sensor mounting ring ②.

3. Installation

NOTICE

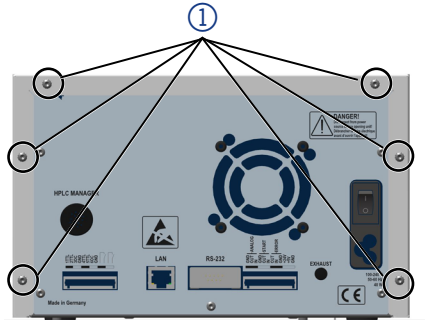
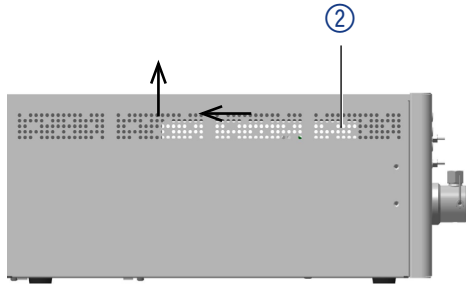
Electronic defect

Damage to the electronics if the device is turned on while installing the temperatur sensor.

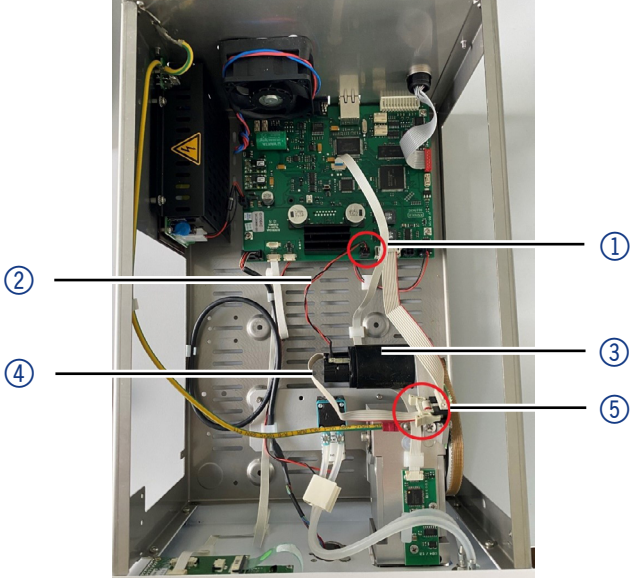
➔ Switch off the device beforehand.

- Prerequisite**
- The pump is switched off.
 - The power plug has been pulled.
 - The device hood has been removed.
- Tools**
- Motor temperature sensor add-on kit (A9664)
 - Torx screwdriver, size 10

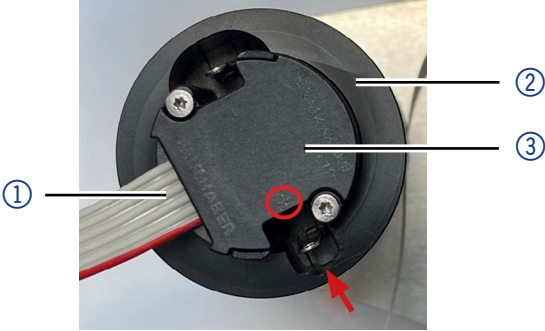
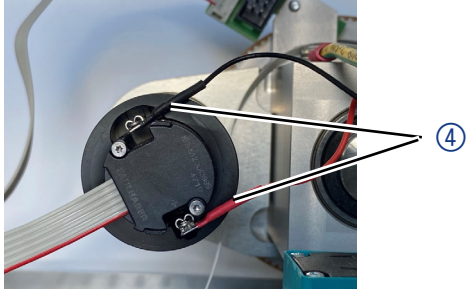
Step 1: Removing the device hood

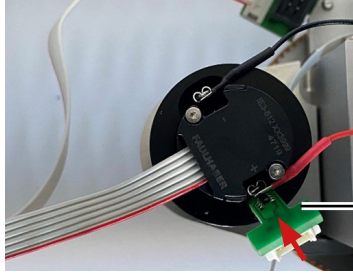
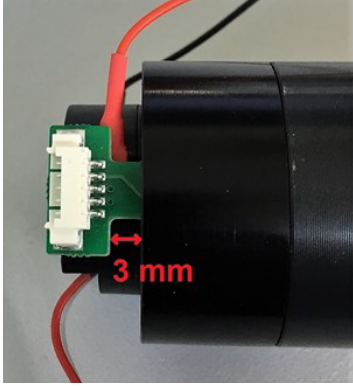
Process	Pictures
<ol style="list-style-type: none"> 1. To remove the device hood unscrew the 6 Torx screws ① with the screwdriver and store them safely (Fig. 2). 2. Push the device hood ② back and lift it up with both hands (Fig. 3). 	 <p>Fig. 2: Removing screws of device hood</p>  <p>Fig. 3: Removing device hood</p>

Step 2: Removing the connections

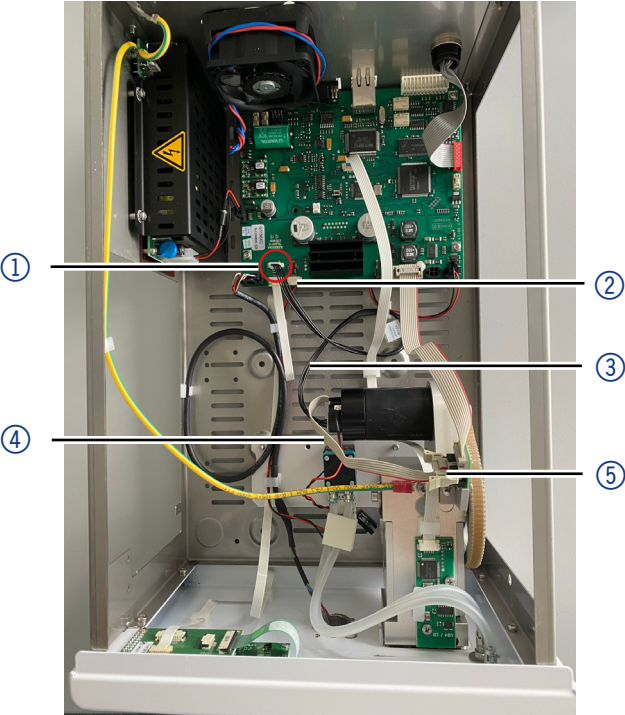
Process	Pictures
<ol style="list-style-type: none"> 1. Remove the motor encoder cable ④ from the hall sensor board ⑤. 2. Remove the motor power cable ② from the main board ①. 3. Carefully remove the motor power cable from the motor ③. 	 <p data-bbox="699 965 1406 1021">Fig. 4: Removing connections from hall sensor board and main board</p>

Step 3: Installing the temperatur sensor add-on

Process	Pictures
<ol style="list-style-type: none"> 1. Thread the encoder cable ① through the sensor mounting ring ②. 2. Slide the sensor mounting ring onto the motor ③. Make sure that the small groove (red arrow) is located at the positive pole (Fig. 5, red circle). 3. Plug in the motor power cable connectors ④ as tight as possible, aligning the cables as shown in Fig. 6. 	 <p data-bbox="699 1556 1278 1590">Fig. 5: Sliding sensor mounting ring onto the motor</p>  <p data-bbox="699 1921 1222 1955">Fig. 6: Plugging the motor cable connectors in</p>

Process	Pictures
<p>4. Place the temperature sensor board ⑤ at a slight angle to the groove (arrow).</p> <p>5. Insert the temperature sensor board parallel to the motor power cable connectors.</p> <p>Note: Do not push the temperature sensor board in all the way. Maintain a distance of approx. 3 mm between the sensor mounting ring and the edge of the board (Fig. 8).</p>	 <p>⑤</p> <p>Fig. 7: Insertion of temperature sensor board</p>  <p>Fig. 8: Space between temperature sensor board and sensor mounting ring</p>

Step 4: Reconnecting the cables

Process	Pictures
<ol style="list-style-type: none"> 1. Plug the sensor cable ③ onto the temperature sensor board and onto the main board ① . 2. Plug the encoder cable ④ onto the hall sensor board ⑤ . 3. Plug the motor power cable ② onto the main board. 4. Reattach the device hood. 	 <p data-bbox="699 1122 1327 1153">Fig. 9: Reconnecting cables</p>

Result The motor temperature sensor add-on has been installed.

Next step Update the firmware of the device.

4. Firmware update

- Software**
- KNAUER Firmware Wizard
 - 40P Firmware V 2.30 or higher (for pumps with article no. APC40xx, APC60xx)
 - 40P Firmware V 1.14 or higher (for pumps with article no. APC3xxx)

Device type	Article number	Firmware version
BlueShadow 40P with Touch Display	APC30xx	1.14 or higher
BlueShadow 40P with LCD Display and Buttons	APC40xx APC60xx	2.30 or higher