

Operating Instructions ISEmax compressed air cleaning unit (230 V AC)

Order no.: 71072583

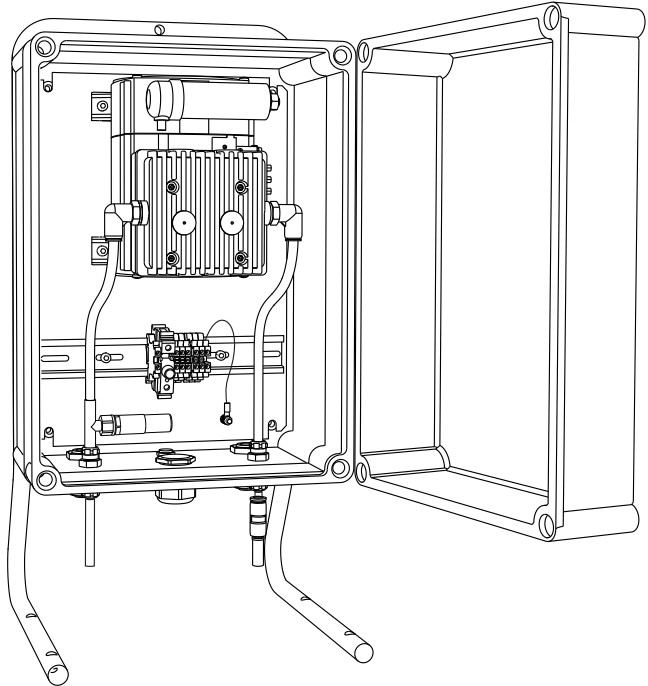






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
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1 Document information

1.1 Warnings

Structure of information	Meaning
 <p>Causes (/consequences) If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action</p>	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation will result in a fatal or serious injury.</p>
 <p>Causes (/consequences) If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action</p>	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury.</p>
 <p>Causes (/consequences) If necessary, Consequences of non-compliance (if applicable) ▶ Corrective action</p>	<p>This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.</p>
 <p>Cause/situation If necessary, Consequences of non-compliance (if applicable) ▶ Action/note</p>	<p>This symbol alerts you to situations which may result in damage to property.</p>

1.2 Symbols used

Symbol	Meaning
	Additional information, tips
	Permitted or recommended
	Not permitted or not recommended
	Reference to device documentation
	Reference to page
	Reference to graphic
	Result of a step

2 Basic safety instructions

2.1 Requirements for personnel

- Installation, commissioning, operation and maintenance of the measuring system may be carried out only by specially trained technical personnel.
- The technical personnel must be authorized by the plant operator to carry out the specified activities.
- The electrical connection may be performed only by an electrical technician.
- The technical personnel must have read and understood these Operating Instructions and must follow the instructions contained therein.
- Faults at the measuring point may only be rectified by authorized and specially trained personnel.



Repairs not described in the Operating Instructions provided must be carried out only directly at the manufacturer's site or by the service organization.

2.2 Designated use

The product is designed for the cyclic cleaning of ion-selective sensors with compressed air in municipal wastewater treatment plants. The cleaning intervals are controlled by the connected transmitter.

Use of the device for any purpose other than that described, poses a threat to the safety of people and of the entire measuring system and is therefore not permitted.

The manufacturer is not liable for damage caused by improper or non-designated use.

2.3 Occupational safety

As the user, you are responsible for complying with the following safety conditions:

- Installation guidelines
- Local standards and regulations

2.4 Operational safety

Before commissioning the entire measuring point:

1. Verify that all connections are correct.
2. Ensure that electrical cables and hose connections are undamaged.
3. Do not operate damaged products, and protect them against unintentional operation.
4. Label damaged products as defective.

During operation:

- ▶ If faults cannot be rectified:
products must be taken out of service and protected against unintentional operation.

2.5 Product safety

2.5.1 State of the art

The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and European standards have been observed.

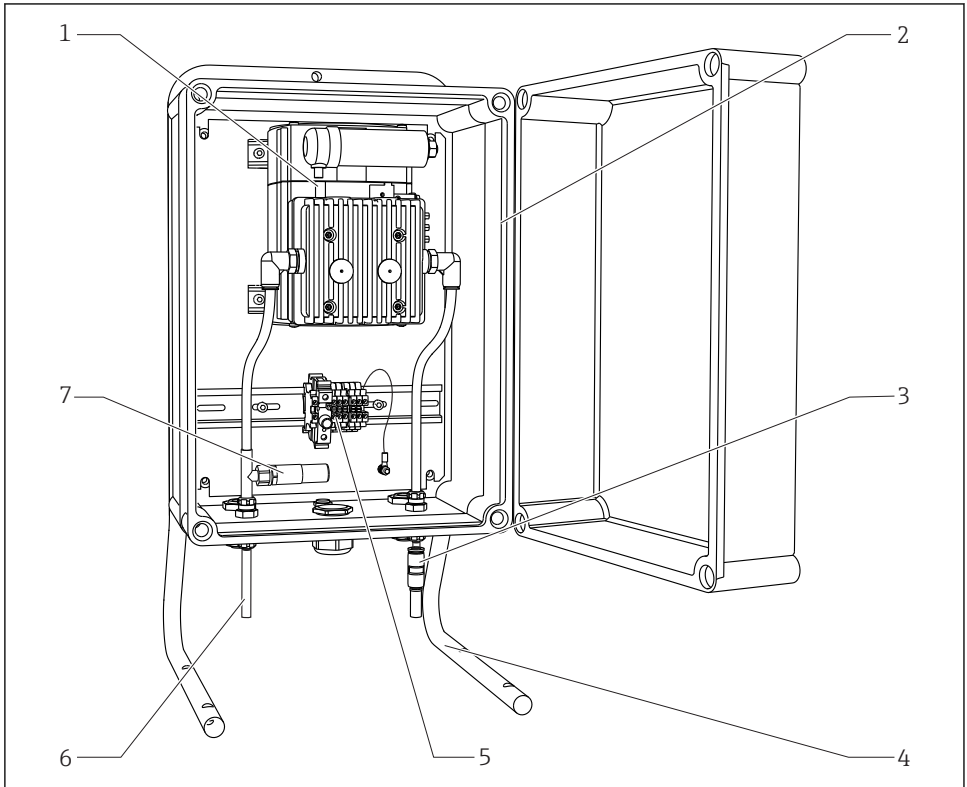
2.6 IT security

We only provide a warranty if the device is installed and used as described in the Operating Instructions. The device is equipped with security mechanisms to protect it against any inadvertent changes to the device settings.

IT security measures in line with operators' security standards and designed to provide additional protection for the device and device data transfer must be implemented by the operators themselves.

3 Product description

3.1 Product design



A0016120

1 Cleaning unit

- 1 Pump
- 2 Housing
- 3 Suction side with air filter
- 4 Tube frame (in scope of delivery)
- 5 Terminal strip with fuse
- 6 Compressed air supply (to sensor)
- 7 Safety valve to limit pressure

4 Incoming acceptance and product identification

4.1 Incoming acceptance

1. Verify that the packaging is undamaged.
 - ↳ Notify the supplier of any damage to the packaging.
Keep the damaged packaging until the issue has been resolved.
2. Verify that the contents are undamaged.
 - ↳ Notify the supplier of any damage to the delivery contents.
Keep the damaged goods until the issue has been resolved.
3. Check that the delivery is complete and nothing is missing.
 - ↳ Compare the shipping documents with your order.
4. Pack the product for storage and transportation in such a way that it is protected against impact and moisture.
 - ↳ The original packaging offers the best protection.
Make sure to comply with the permitted ambient conditions.

If you have any questions, please contact your supplier or your local Sales Center.

4.2 Product identification

4.2.1 Nameplate

The nameplate provides you with the following information on your device:

- Manufacturer identification
- Order code
- Extended order code
- Serial number
- Ambient and process conditions
- Input and output values
- Safety information and warnings

- ▶ Compare the information on the nameplate with the order.

4.2.2 Product identification

Cleaning unit in the housing

Order no.: 71072583

Manufacturer's address

Endress+Hauser Conducta GmbH+Co. KG

Dieselstraße 24

D-70839 Gerlingen

4.3 Scope of delivery

The delivery comprises:

- Cleaning unit, complete
- 1 set of Operating Instructions in German
- 1 set of Operating Instructions in English
- ▶ If you have any queries:
Please contact your supplier or local sales center.

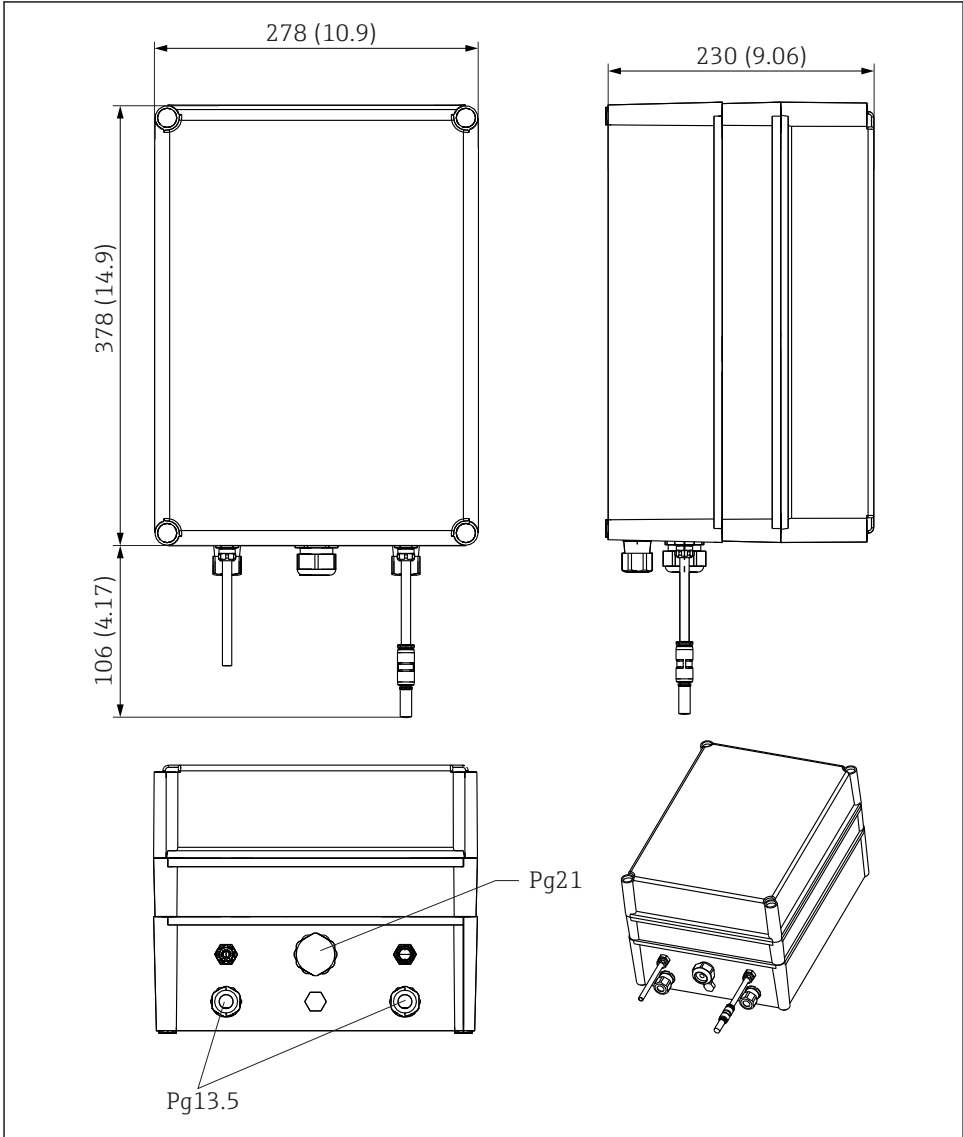
4.4 Certificates and approvals

4.4.1 CE mark

The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EU directives. The manufacturer confirms successful testing of the product by affixing to it the **CE** mark.

5 Installation

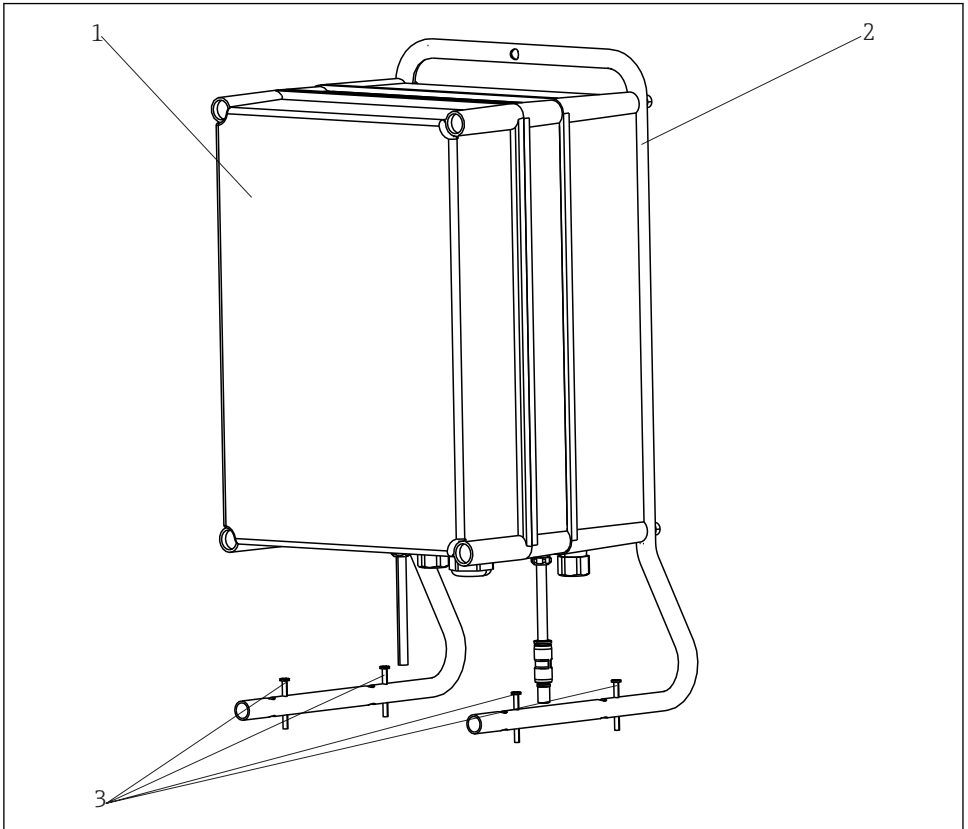
5.1 Installation conditions



A0011377

2 Dimensions in mm (inch)

5.2 Mounting the cleaning unit



A0011385

3 Cleaning unit on tube frame supplied

- 1 Cleaning unit
- 2 Tube frame (mounted on delivery)
- 3 Screws to secure on ground (to be provided by customer)

The following options are available for installation:

1. Secure the unit mounted on the tubular frame to the ground.
 - ↳ Fastening fixtures must be provided by the customer.
2. Position the unit mounted on the tubular frame on the railing or an upright post.
 - ↳ Secure the tubular frame to the railing or post using a hose clip (provided by customer).
3. Preferably mount the cleaning unit close to the measuring point.

5.3 Post-installation check

- ▶ Once mounted, check all the connections to ensure they are secure and leak-tight.
- ▶ Check the cables and hoses for damage.
- ▶ Verify that the cables are routed in such a way that they are free from electromagnetic interference influences.

6 Electrical connection

WARNING

Device is live!

Incorrect connection may result in injury or death!

- ▶ The electrical connection may be performed only by an electrical technician.
- ▶ The electrical technician must have read and understood these Operating Instructions and must follow the instructions contained therein.
- ▶ **Prior** to commencing connection work, ensure that no voltage is present on any cable.

6.1 Connecting the cleaning unit

NOTICE

Use of impermissible cable diameters!

IP65 degree of protection is voided

- ▶ Use cables with a diameter of 6 to 12 mm (0.24 to 0.47") for the Pg 13.5 cable gland.
- ▶ Use cables with a diameter of 13 to 18 mm (0.51 to 0.71") for the Pg 21 cable gland (mains supply line).

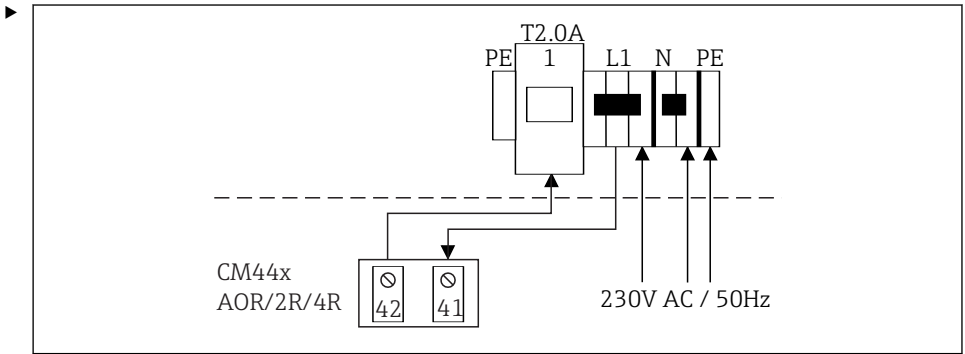
NOTICE

Power consumption too high for the Liquiline alarm relay!

Can cause irreparable damage to the base module

- ▶ Connect the cleaning unit only to terminals of an additional module (AOR, 2R or 4R), **not** to the alarm relay of the base module.

Connect the cleaning unit to the transmitter:



Connect voltage L1 to terminals 41 and 42 of an additional module (AOR, 2R or 4R).

6.2 Post-connection check

Device status and specifications	Notes
Are the sensor and cable free from damage on the outside?	Visual inspection

Electrical connection	Notes
Does the supply voltage of the connected transmitter match the data on the nameplate?	Visual inspection
Are the installed cables strain-relieved and not twisted?	
Is the cable type route completely isolated on site?	Power cables / signal lines
Are all cable entries installed, tightened and sealed?	In the case of lateral cable entries: Cable loops facing downwards to allow water to drip off.
Are all cable entries facing downwards or mounted laterally?	

7 Commissioning

7.1 Function check

⚠ CAUTION

Avoid risk of injury due to incorrect power supply and incorrect or non-secure hose connections!

- ▶ Check that all connections have been established correctly.
- ▶ In particular, check all hose connections to ensure they are secure and liquid cannot escape.
- ▶ Ensure that the supply voltage matches the voltage indicated on the nameplate.

7.2 Switching on the cleaning unit

⚠ CAUTION

Hot surfaces in open housing!

Risk of burns if touched!

- ▶ Always wear heat-protection gloves to touch components in the open housing after prolonged operation of the device.

NOTICE

Damage to property from non-designated use!

- ▶ The device is designed for interval operation, i.e. maximum 3 minutes cleaning, break of at least six times the cleaning time.
- ▶ Do not start up the device against a pressure load and do not subject it to pressure when at a standstill.
- ▶ Use the device only to convey air. Never use the cleaning unit to convey liquids and aggressive and/or toxic media.
- ▶ Protect the device against spray or splash water and excessive dust.



For more information on "Creating cleaning programs with the transmitter firmware", see BA00444C.

8 Maintenance

⚠ WARNING

Device is live!

Risk of serious or fatal injury from electric shock!

- ▶ Disconnect the device from the mains voltage.
- ▶ Secure the device to prevent it from being switched on again unintentionally.

Take all the necessary precautions in time to ensure the operational safety and reliability of the entire measuring system.

NOTICE

Effects on process and process control!

- ▶ When carrying out any work on the system, bear in mind any potential impact this could have on the process control system and the process itself.
- ▶ For your own safety, only use genuine accessories. With genuine parts, the function, accuracy and reliability are also ensured after maintenance work.

8.1 Maintenance schedule

1. Check the compressed air supply to the sensor at regular intervals.
2. As the only wear part, the seal lip of the ribbed cover must be replaced after a long time in service.
 - ↳ You know that the seal lip needs to be replaced if the conveying capacity drops noticeably.

8.2 Maintenance tasks

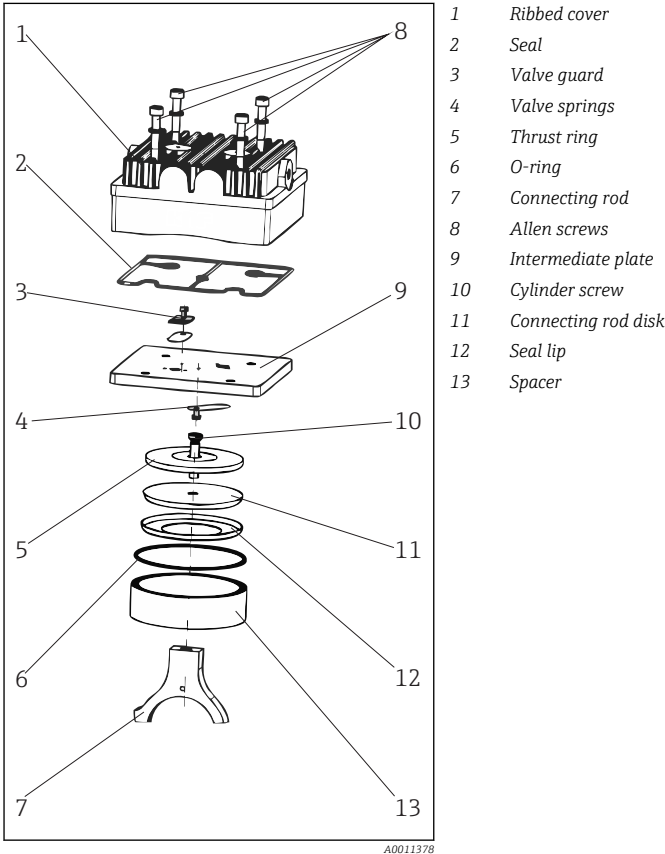
8.2.1 Checking compressed air supply to sensor

If cleaning unit is switched on:

1. Check if air is escaping from the cleaning nozzle on the sensor.
2. If not, and if air is instead escaping only via the safety valve on the cleaning unit:
Check the complete supply line to the cleaning nozzle and check the nozzle itself for contamination and blockage.
3. Remove the contamination.
 - ↳ If this is not possible: Replace blocked hoses, connectors or nozzles.

8.2.2 Replacing the seal lip

Removing



- 1 Ribbed cover
- 2 Seal
- 3 Valve guard
- 4 Valve springs
- 5 Thrust ring
- 6 O-ring
- 7 Connecting rod
- 8 Allen screws
- 9 Intermediate plate
- 10 Cylinder screw
- 11 Connecting rod disk
- 12 Seal lip
- 13 Spacer

4 Pump head

1. Release the 4 Allen screws (AF4, item 8) and remove the ribbed cover (item 1) along with the seal (item 2) and the intermediate plate (item 9).
2. Remove the spacer (item 13) from the connecting rod disk (item 11).
3. Inspect the O-ring (item 6) in the spacer for visible wear.
 - ↳ Where necessary, replace it with the new one in the spare parts kit.
4. Unscrew the fillister-head screw (item 10) using a flat-head screwdriver.
5. Remove thrust washer (item 5).
6. Replace the seal lip (item 12) with the new one in the spare parts kit.
 - ↳ Make sure the seal lip is positioned correctly.

Assembly

1. Place the thrust washer back on the connecting rod disk and seal lip.
2. Screw on the fillister-head screw securely.
 - ↳ The seal lip should not become warped and the pretension should cause it to fit properly in the cylinder.
3. Place the spacer on the connecting rod disk.
 - ↳ Make sure it is positioned correctly in the corresponding recesses.
4. Check the seal (item 2) of the ribbed cover.
 - ↳ and replace if necessary.
5. Insert the intermediate plate into the ribbed cover.
 - ↳ Make sure it is seated correctly (outline of thrust ring and outline of ribbed cover for bottom and top position respectively; position in the ribbed cover is clear).
6. Place the ribbed cover together with the intermediate plate and seal on the pump head so that the logo on the ribbed cover is over the fan grill.
7. Screw the 4 Allen screws tight.



The spare parts kit also contains 2 additional valve springs (item 4), including the associated screws and a valve guard (item 3). Replace these parts only if necessary.

9 Repairs

9.1 Spare parts

Compressor spare parts kit:

- 1 seal lip
- 1 seal for ribbed cover
- 1 O-ring Ø 70 x 2.0
- 1 valve guard
- 2 valve springs
- 2 fillister-head screws DIN84, M3x4
- Order No. 71092783

9.2 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product was ordered or delivered. As an ISO-certified company and also due to legal regulations, Endress+Hauser is obliged to follow certain procedures when handling any returned products that have been in contact with medium.

To ensure the swift, safe and professional return of the device:

- ▶ Refer to the website www.endress.com/support/return-material for information on the procedure and conditions for returning devices.

9.3 Disposal

The device contains electronic components, and must therefore be disposed of in accordance with regulations on the disposal of electronic waste.

- ▶ Observe the local regulations.

10 Technical data

10.1 Electrical connection

10.1.1 Supply voltage

230 V AC, 50 Hz

NOTICE

The device does not have a power switch!

- ▶ A fuse with a maximum rating of 10 A must be provided by the customer.
- ▶ Please observe the local installation guidelines.

10.1.2 Power consumption

300 VA; $\cos(\phi) = 0.8$

10.1.3 Cable specification

Permitted cable diameter:

- 6 to 12 mm (0.24 to 0.47") if using Pg 13.5
- 13 to 18 mm (0.51 to 0.71") if using Pg 21 (provided for mains supply line)

10.1.4 Electrical fuse of pump

Slow-blow 2.0 A

10.2 Performance characteristics

10.2.1 Conveying capacity

50 l/min (13.2 gal/min), at atmospheric pressure

10.2.2 Operating interval

Max. 3 minutes cleaning, break for at least six times the cleaning time

10.3 Environment

10.3.1 Ambient temperature

-10 to +55 °C (+10 to +130 °F)

10.3.2 Degree of protection

IP65

10.3.3 Overheating protection

Automatic switch off at $T > 130\text{ °C}$ (266 °F) in the motor (winding sensor)

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