Conlift1 LS

Installation and operating instructions





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GB: EC declaration of conformity

We, Grundfos, declare under our sole responsibility that the products Conlift LS, to which this declaration relates, are in conformity with these Council directives on the approximation of the laws of the EC member states:

- Low Voltage Directive (2006/95/EC).
- Standards used: EN 60335-1:2010, EN 60335-2-41:2010 and EN 62233:2008.

This EC declaration of conformity is only valid when published as part of the Grundfos installation and operating instructions (publication number 98491876 0813).

NL: EC overeenkomstigheidsverklaring

Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat de producten Conlift1 LS waarop deze verklaring betrekking heeft, in overeenstemming zijn met de Richtlijnen van de Raad in zake de onderlinge aanpassing van de wetgeving van de EG Lidstaten betreffende:

- Laagspannings Richtlijn (2006/95/EC).
- Gebruikte normen: EN 60335-1:2010, EN 60335-2-41:2010 en EN 62233:2008.

Deze EC overeenkomstigheidsverklaring is alleen geldig wanneer deze gepubliceerd is als onderdeel van de Grundfos installatie- en bedieningsinstructies (publicatienummer 98491876 0813).

FR: Déclaration de conformité CE

Nous, Grundfos, déclarons sous notre seule responsabilité, que les produits Conlift1 LS, auxquels se réfère cette déclaration, sont conformes aux Directives du Conseil concernant le rapprochement des législations des Etats membres CE relatives aux normes énoncées ci-dessous :

- Directive Basse Tension (2006/95/CE)
- Normes utilisées: EN 60335-1:2010, EN 60335-2-41:2010 et EN 62233:2008.

Cette déclaration de conformité CE est uniquement valide lors de sa publication dans la notice d'installation et de fonctionnement Grundfos (numéro de publication 98491876 0813).

Bjerringbro, 29th May 2013

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Person authorised to compile technical file and empowered to sign the EC declaration of conformity.

English (GB) Installation and operating instructions

Original installation and operating instructions.

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Warning



Prior to installation, read these installation and operating instructions. Installation and operation must comply with local regulations and accepted codes of good practice.

Warning

The use of this product requires experience with and knowledge of the product.



Persons with reduced physical, sensory or mental capabilities must not use this product, unless they are under supervision or have been instructed in the use of the product by a person responsible for their safety. Children must not use or play with this product.

1. Symbols used in this document

Dago

Warning If these safety instructions are not observed, it may result in personal injury.

Warning



If these instructions are not observed, it may lead to electric shock with consequent risk of serious personal injury or death.



Note

If these safety instructions are not observed, it may result in malfunction or damage to the equipment.

Notes or instructions that make the job easier and ensure safe operation.

2. General description

Grundfos Conlift1 LS is a small, compact lifting station with built-in-non-return valve.

3. Handling

Caution Do not drop the Conlift on the floor.

4. Applications

The Conlift is designed for the pumping of condensate from the following:

- boilers
- air-conditioning systems
- · cooling and refrigeration systems
- air dehumidifiers
- evaporators.

The Conlift is suitable for the pumping of condensate which is collected below sewer level or which cannot flow to the sewage system or drain of the building by means of a natural downward slope.



Warning

Condensates from boilers are aggressive as they contain acid.



Treat (possibly neutralise) condensate from boilers according to local regulations before it is led out into the sewage system.



Warning

The Conlift must not be used for flammable liquids.



Warning

The Conlift must not be installed in potentially explosive environments.

The Conlift can pump condensates not requiring neutralisation, i.e. with pH values of 2.5 or higher.

Condensates with pH values up to 2.5 should be neutralised before they leave the Conlift.

Boilers fired with the following fuels normally supply condensate with pH values up to 2.5:

- gas
- liquid gas
- low-sulphur fuel oil according to DIN 51603-1.

Irrespective of the capability of the Conlift, local regulations may require the installation of a neutralisation unit, even for pH values of 2.5 or higher.

5. Function

The condensate runs by natural fall through a hose into the tank. See section 7. *Installation*.

The liquid level in the tank is controlled automatically by a float switch. A micro switch in the float switch will start the pump when the liquid level reaches the start level, and it will stop the pump again when the liquid level has fallen to stop level. The condensate is pumped through the discharge hose to the drain.

The Conlift also has a safety overflow switch with a 1.7-metre electric cable. This overflow switch can be connected to the condensate boiler and set to stop the boiler in case of an alarm.

The Conlift has a thermal switch which stops the motor in case of overload. When the motor has cooled to normal temperature, it will restart automatically.

6. Operating conditions

6.1 Maximum head

5.5 metres.

6.2 Maximum flow rate

600 l/h.

6.3 Temperatures

6.3.1 Ambient temperature

During operation: +5 °C to +35 °C.

6.3.2 Liquid temperature

Average temperature: +50 °C.

6.4 Operating mode



The Conlift is designed for max. 60 starts per hour.

S3 (intermittent operation): 30 % according to DIN EN 0530 T1. This means that the system is running for 18 seconds and is stopped for 42 seconds.

6.5 Handling of condensates

Condensates from condensate boilers are very aggressive and will attack the material of the building's sewage system.

In order to protect the sewage system, we recommend the use of a neutralisation unit. The neutralisation unit is included in Conlift2 pH+ and is available as an accessory for Conlift1 and Conlift2. See section *11. Accessories*.

The local discharge regulations regarding condensates from boilers must be met.

English (GB)

7. Installation

Note

The Conlift must be installed according to local regulations.

If not already integrated, a water trap (emission trap) must be fitted in all inlets.

The Conlift is not designed for outdoor use.

7.1 Mechanical installation

See also the quick guide supplied with the Conlift. When installing the Conlift, observe the following:

- The condensate must run freely into the lifting station.
- The cooling slots in the motor cover must not be covered.
- The lifting station should be easily accessible in order to facilitate maintenance.
- The lifting station must be installed in a well-illuminated and -ventilated room.

7.2 Electrical installation

Carry out the electrical connection according to local regulations.

Check that the supply voltage and frequency correspond to the values stated on the nameplate.

Check that the installation has a 10 A slow-blowing fuse on the mains side and an earth leakage circuit breaker according to IEC 345.

The power supply cable has a Schuko plug or a free cable end. The cable has a length of 2 metres.



Warning

The power supply cable with a free cable end must be connected by an authorised electrician.



Warning

If the power supply cable is damaged, it must be replaced by the manufacturer, the manufacturer's service partner or similarly qualified person.



Warning

Before starting work on or moving the Conlift, make sure that the power supply has been switched off and that it cannot be accidentally switched on.

Warning



As a precaution, the Conlift must be connected to a Schuko socket or socket with earth connection. We recommend to provide the permanent installation with an earth leakage circuit breaker (ELCB) with a tripping current < 30 mA.

The Conlift must be connected to an external mains switch with a minimum contact gap of 3 mm in all poles.

7.2.1 Cable to condensate source or external alarm

Warning



Before starting work on the Conlift, switch off the power supply and make sure that it cannot be accidentally switched on.

Work on electric systems and components must only be carried out by an authorised electrician.

The Conlift has a safety overflow switch which can be connected to the condensate source or to an external alarm system. The switch is connected to an alarm cable with free cable end.

Alarm systems with a control voltage of 250 VAC, 2.5 A, can be used.

On delivery, the alarm cable is connected to terminals COM1 (brown) and NO4 (blue) of the safety overflow switch. See fig. 1.



Fig. 1 Wiring diagram

The alarm cable can be connected in two ways, depending on application:

- Shutdown of condensate source
 The safety overflow switch can be connected to a
 Class-II low-voltage circuit.
 To enable shutdown of the condensate source,
 the COM1 and NO4 terminals of the safety
 overflow switch must be connected in series with
 the low-voltage thermostat circuit of the
 condensate source.
- External alarm system The COM1 and NC2 terminals can be used to close a low-voltage alarm circuit. To activate an alarm, the COM1 and NC2 terminals of the safety overflow switch must be connected in series with the low-voltage alarm circuit.

8. Startup

Start up the Conlift in accordance with Note local regulations and accepted codes of good practice.

- 1. Check that all hoses and connections are tight.
- 2. Connect the power supply.

8.1 Checking the function

Alarm

- 1. To ensure that the alarm level is reached. squeeze the discharge hose (or close the isolating valve, if fitted), and fill water into the tank. The pump will be started via the float switch.
- 2. Continue filling water into the tank until the safety overflow switch is activated. If no external alarm is connected to the Conlift, this function can be checked by means of a multimeter.

Note

The safety overflow switch must be activated before the water starts running out of the Conlift.

3. Stop filling water into the tank and stop squeezing the discharge hose. The alarm stops (the switch opens). The pump continues operating. When the stop level is reached, the pump will stop.

After checking the function, push the inlet hose back into the lifting station and let the condensate from the boiler or air-conditioning system run into the tank again.

9. Maintenance and service

Warning



The Conlift must only be serviced by trained service personnel.

Alwavs use original accessories from Grundfos to ensure safe and reliable operation.

Warning

If the power supply cable is damaged, it must be replaced by the manufacturer, the manufacturer's service partner or similarly qualified person.

9.1 Maintenance

The Conlift does not require any special maintenance, but we recommend to check operation and pipe connections at least once a year and to check and clean the collecting tank, if necessary.

9.2 Service

Thanks to the Conlift design, service can easily be performed in case of malfunction or blocked pump.

Warning

The Conlift must only be serviced by trained service personnel.

Warning



Before starting any service work. remove the fuse, pull out the plug, or switch off the power supply. Make sure that the power supply cannot be accidentally switched on.

All rotating parts must have stopped movina.

9.2.1 Conlift

See illustrations on page 9.

Make the following checks and clean the collecting tank, if necessary:

- 1. Disconnect the power supply.
- 2. Cut off the flow of condensate from the boiler or other application, or stop the flow of condensate to the Conlift.
- 3. Make sure that the hoses are not mechanically or chemically damaged.
- 4. Remove the discharge hose by turning the bayonet coupling, and check the O-ring. The condensate in the hose will not run out due to the non-return valve.
- 5. If the condensate is running out of the hose. check and clean the non-return valve.
- 6. Press the side-locking catches and lift off the motor support. Place it in upright position.
- 7. Remove deposits, dirt, algae and incrustations under running water.

9.3 Contaminated lifting station or components



If a Conlift has been used for a liquid which is injurious to health or toxic, it will be classified as contaminated.

If Grundfos is requested to service the lifting station, Grundfos must be contacted with details about the pumped liquid, etc. before the lifting station is returned for service. Otherwise Grundfos can refuse to accept the lifting station for service.

Incidentally, any application for service, no matter to whom it may be made, must include detailed information about the pumped liquid.

A lifting station returned for service must always be cleaned in the best possible way.

Possible costs of returning the lifting station are to be paid by the customer.

10. Fault finding

Warning



Before starting fault finding, switch off the power supply and make sure that it cannot be accidentally switched on.

Work on electric systems and components must only be carried out by an authorised electrician.

Fault		Cause		Remedy	
1.	The pump does	a)	No power supply.	Connect the power supply.	
	not run.	b)	Fuse is blown.	Replace the fuse (10 A slow-blow fuse).	
		c)	Power supply cable damaged.	Repair or replace the cable. This must only be carried out by an authorised service workshop or by Grundfos.	
		d)	Thermal overload switch has tripped:		
			 The motor is not sufficiently cooled. 	Clean the cooling slots in the motor cover.	
			- Deposits in the pump.	Clean the impeller, pump housing and the entire lifting station.	
2.	Reduced or no performance.	a)	Discharge hose squeezed or broken.	Straighten the discharge hose or replace it. The bending radius of the hose should be at least 60 mm.	
		b)	The non-return valve does not open.	Remove the discharge connection, and clean the non-return valve.	
		c)	The motor fan cannot be turned freely.	Clean the pump housing and the impeller.	
3.	Frequent starts/stops.	a)	The non-return valve does not close.	Remove the discharge connection, and clean the non-return valve.	
		b)	The inlet quantity is too high.	Make sure the inlet quantity is correct.	
4.	Alarm.	a)	The condensate is not pumped out of the tank.	See points 1 and 2.	

11. Accessories

The following accessories for the Conlift are available from your local Grundfos supplier.

Accessory/ service part	Description	Product number
pH+ Box	Complete neutralisation unit including fitting accessories, neutralisation granulate and pH indicator.	97936176
Extension hose	6 metres of PVC hose with 10 mm internal diameter including one hose coupling.	97936177
Granulate refill package	Granulate, 4 x 1.4 kg.	97936178
Alarm PCB Conlift	Printed-circuit board (PCB) enabling additional pump start at alarm level or stop of boiler with acoustic alarm.	97936209

12. Technical data

Supply voltage

1 x 230 VAC - 6 %/+ 6 %, 50 Hz, PE. See nameplate.

Input power

P1 = 70 W.

Input current

I = 0.65 A.

Alarm connection

An external alarm can be connected via the safety overflow switch.

The cable can stand a control voltage of 250 VAC, 2.5 A.

Cable lengths

Alarm and power supply cables: 1.7 metres.

Storage temperature

When stored in dry rooms:

- Empty tank: -10 °C to +50 °C.
- Tank with condensate: above 0 °C (risk of frost not allowed).

Maximum head

5.5 metres.

Maximum flow rate 600 l/h.

pH value of condensate

2.5 or higher.

Density of condensate

Maximum 1000 kg/m³.

Motor protection

- Thermal overload switch: +120 °C.
- · Insulation class: F.

Enclosure class

IP20.

Weight

2.0 kg.

Volume

- Tank volume: 2.65 litres.
- Useful volume: 0.9 litre.
- · Alarm condition: 2.1 litres.
- · Operating condition: 1.7 litres.

Dimensions

See dimensional sketches on page 10.

13. Marking and approvals

13.1 Marking



13.2 Approvals



14. Disposal

This product or parts of it must be disposed of in an environmentally sound way:

- 1. Use the public or private waste collection service.
- 2. If this is not possible, contact the nearest Grundfos company or service workshop.

Subject to alterations.

Appendix

Conlift1 LS



TM05 8628 2413

Dimensions, Conlift1 LS







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