

LHS 210 P/410 P

Assembly Instructions

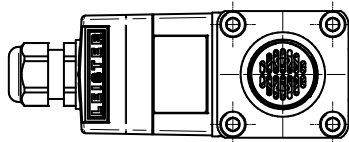
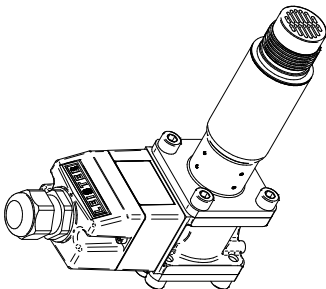
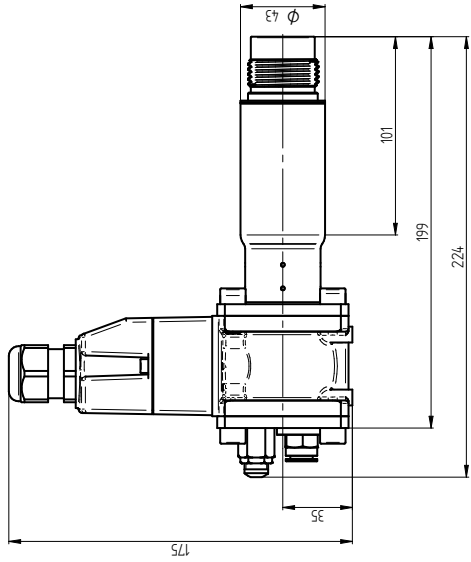
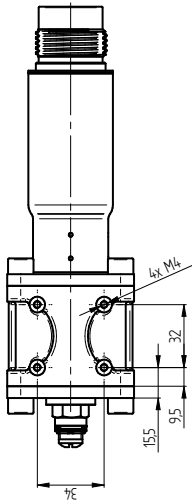
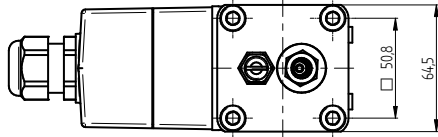
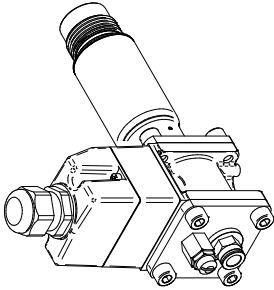


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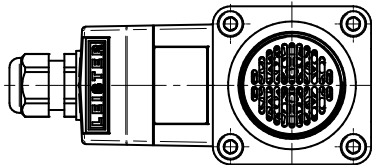
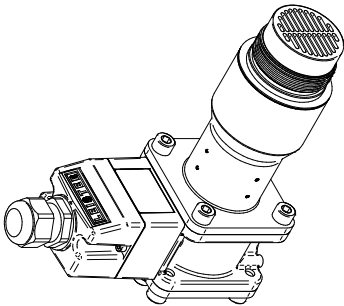
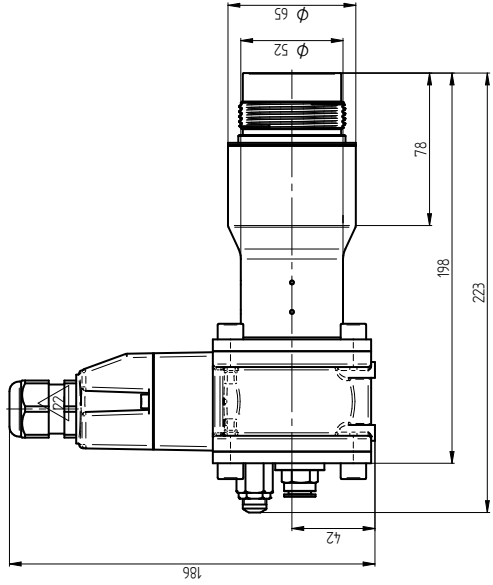
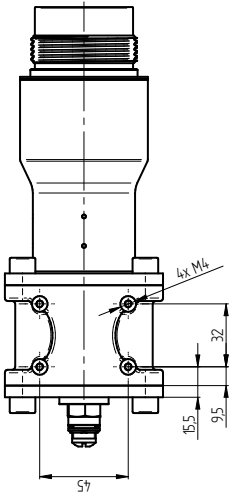
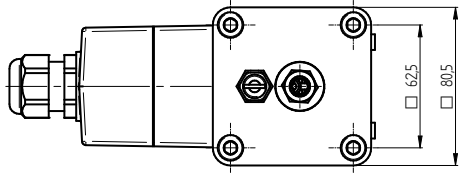
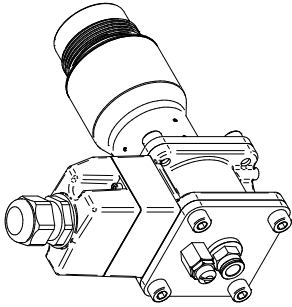
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Dimensions

LHS 210 P
Size in mm



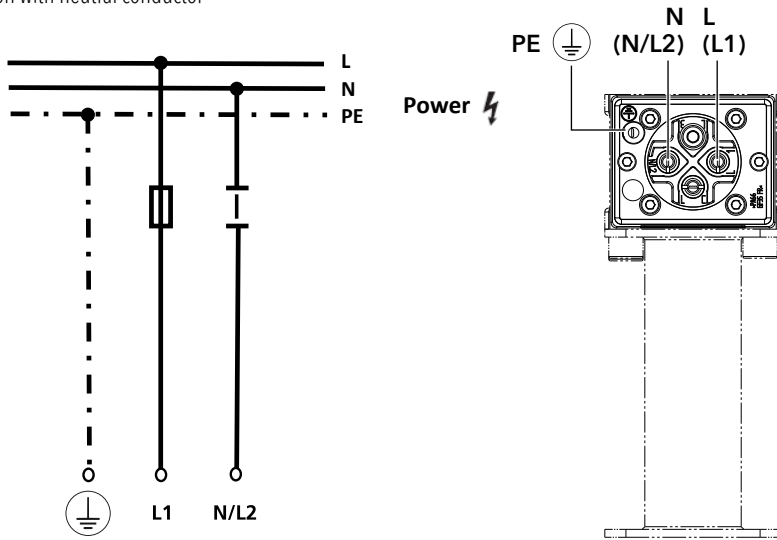
LHS 410 P
Size in mm



Wiring Diagram

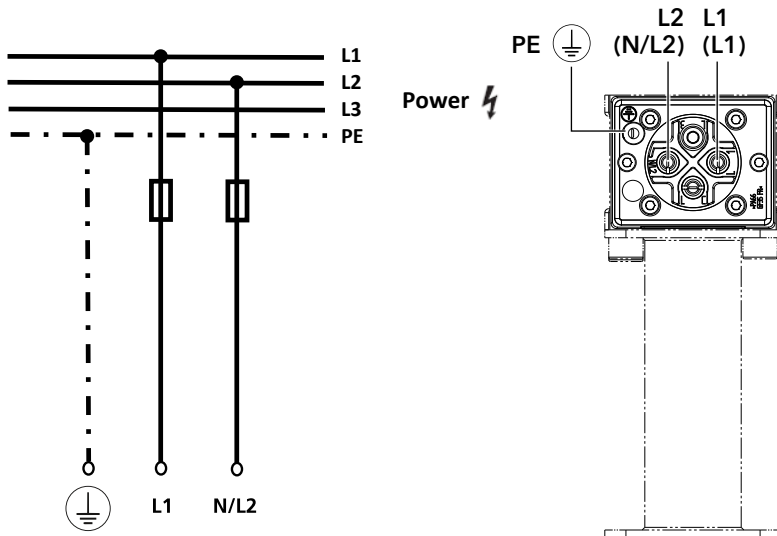
LHS 210 P/410 P

Connection with neutral conductor



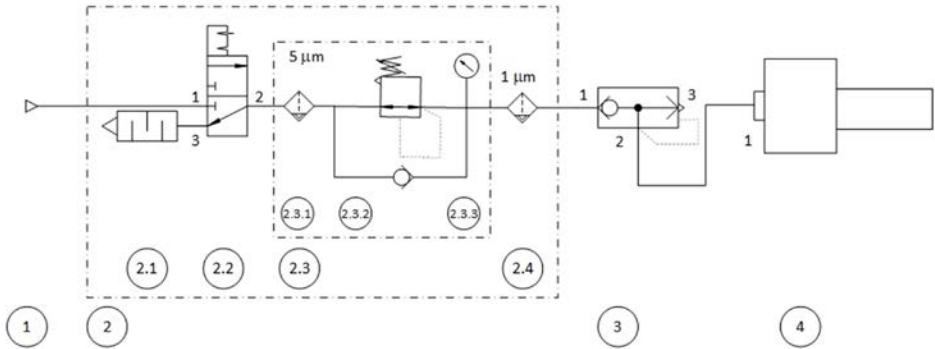
LHS 210 P/410 P

Connection without neutral conductor



Pneumatic Diagram

LHS 210 P/410 P



No. (Modul) [-]	Description Setting [-]	Necessity [-]	Utilization [-]	
1	Pneumatic energy source	needed *	airflow according standardized characteristics of air heater	
2 (Maintenance unit)	2.1	Silencer for on/off valve (No. 2.2)	recommended * Reducing sound pressure level to 65 ... 84 [dB (A)]	
	2.2	On/Off valve	recommended * (Manual) 3/2-way valve for pressurising and exhausting	
	2.3 (Filter regulator)	2.3.1	Filter 5 µm	needed * Particle and condensate separation, condensate drain fully automatic
		2.3.2	Regulator valve max. 6 [bar]	needed * Regulating of compressed air, with secondary venting and return flow function
		2.3.3	Pressure gauge	needed * Observation of compressed air pressure
2.4	Fine filter 1 µm	needed * Removing oil aerosols from compressed air, condensate drain fully automatic		
3	Quick exhaust valve	recommended *	Exhaust air control with balanced noise emission, protection of maintenance unit from compressed hot air in case of error	
4	LHS 210 P/410 P		Air heater, push-in fitting air hose Ø10 (G1/2)	

* = Not included in delivery

Congratulations on your purchase of the LHS 210 P/410 P.

You have chosen a premium air heater.

It was developed and produced in accordance with the latest state-of-the-art technology in the plastics-processing industry. It has also been manufactured using high-quality materials.



Please read the installation instructions carefully before operating the air heater and keep them for further reference.

LHS 210 P; LHS 410 P

Air heater



To learn more about the LHS 210 P/410 P, visit leister.com

1. Application

The Leister LHS 210 P and LHS 410 P series air heaters are designed for installation in machines, systems or equipment and are designed for continuous industrial operation.

Its most important processes are, for example:

- various drying and heating processes
- Shrinking and welding of packaging films and molded parts
- Heating of pass-through ovens and containers
- Activating and dissolving solvent-free adhesives and hot melt adhesives
- Sterilizing packaging materials such as bottles, corks and containers
- Separation and fusion of synthetic sutures and fabrics
- Soldering processes on thin sheet metal parts
- Accelerate mixing processes and dissolve foams that occur during mixing or filling operations
- Welding of thermoplastics
- Removing plastic flash and polishing plastic surfaces
- Creating gloss on plastic surfaces

1.1 General safety information

Please observe the warnings in the individual chapters of this installation manual and the following safety instructions.

Warning



Danger to life

- When opening the air heater, there is a risk of death because energized components and connections are exposed. Before opening the air heater, it must be disconnected from the power supply in **all poles**.



Danger of fire and explosion

- There is a risk of fire and explosion if the air heater is installed and used improperly. This is especially true if the air heater is near flammable materials or explosive gases or if the maximum air pressure (overpressure) is exceeded.



Risk of burning

- There is a risk of burns when touching the heating tube and nozzle and other heat sources. Therefore, always allow the air heater to cool before touching.
- Never point the hot air jet at people or animals.



Risk of poisoning

- Toxic fumes can be generated when plastics overheat. Therefore, you should always ensure good ventilation when working.
- In addition, you should always comply with the specifications of the material manufacturers when processing plastics.



Risk of injury from improperly repaired equipment

- Only have repairs carried out by an authorized service center.
- Only original accessories and spare parts may be used.

Caution





- The **rated voltage** specified on the air heater must match the local **line voltage**.



Operate air heater under supervision

- Heat or hot particles may come into contact with flammable materials. Therefore, air heaters may only be used by trained professionals or under their supervision.
- Children are not permitted to operate the device.

2. Technical Data

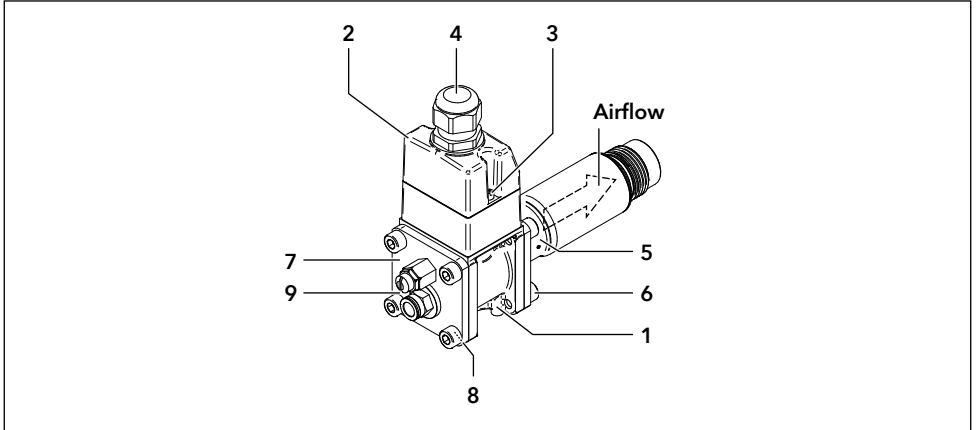
		LHS 210 P	LHS 210 P	LHS 410 P	LHS 410 P	LHS 410 P
Voltage	V	230	230	230	230	400
Frequency	Hz			50/60		
Power	W	2.0	3.3	3.6	4.4	5.5
Min. airflow*	l/min.	160	260	280	350	420
Max. Air pressure (overpressure)	kPa			600		
Max. air outlet temperature	°C			650		
Max. ambient temperature	°C			65		
Max. air inlet temperature	°C			100		
Weight	kg	1.7	1.7	2.34	2.34	2.34
IP protection level (terminal box)				IP 65		
Approvals, protection class						

* Required minimum airflow at 100 % heating capacity and an inlet air temperature of 20 °C

We reserve the right to make technical changes.

3. Description of Air Heater

LHS 210 P/410 P



- | | |
|---|---|
| 1. Threaded holes for device mounting | 6. Heater tube screws |
| 2. Connection housing cover | 7. Inlet opening (on the plate)
Hose Ø 10 |
| 3. Screws for cover connection housing | 8. Threaded holes for blow-in nozzle mounting |
| 4. Cable gland for power connection (factory mounted) | 9. Pressure relief valve (on the plate) |
| 5. Heated pipe with thread for mounting various adapters* | |

* Adapters are not included in the scope of delivery.

4. Preparation

- Remove the LHS air heater from the packaging.
- Remove the cover of the **connection housing (2)** by loosening the **screws (3)**.
- Remove the warning label, read it carefully and keep it for further reference.
- Connect the connection cable.
- Pull the connection cable through the **cable gland (4)**.
- Close the connection cable according to information in the chapter "Wiring Diagram" on the connection pins.
- Check connections for secure fittings.
- Install the **cover of the connection housing (2)** through the **screws (3)**. Retighten the cables through the **cable gland (4)**.
- **Tighten the cable gland (4)**.

5. Installation

- The installation must ensure that:
 - local standards and guidelines are taken into account.
 - the supplied air complies with the specifications in section “Technical data”.
 - there is no (heat) backlog.
 - the air heater is not flowed by the hot air jet of another device.
 - the air heater is protected from mechanical vibration and vibration.
 - the air heater has been attached to the threaded holes for **unit mounting (1)** (see pages 3-4 for installation compound).
 - the connection housing of the air heater is not damaged by backflowing hot air.
 - the nozzle was firmly connected to the **heating tube (5)** (for geometry for nozzle connection, see installation mass pages 3-4 Detail Z).

6. Air Supply



- The heating tubes of the LHS 210 P/410 P air heaters must not be insulated, as the surface temperature of the heating tubes would rise permanently due to the insulation. This could lead to heater tube defects.
- To protect the air heater and heating element, do not exceed the minimum air volume and do not exceed the maximum air outlet temperature (hottest point: 3 mm in front of the heating tube). If the minimum air volume is not reached, the power supply must be interrupted immediately.
- Suitable components for compressed air preparation must be used for air supply (see “Pneumatic Diagram”). For the compressed air connection, it must be ensured that the maximum overpressure is not exceeded at any time, even if the nozzle is clogged or closed (see [Fig. 2](#) Technical Data [2]).
- A fine filter (1 µm) in the compressed air preparation must be used to ensure that the concentration of oil aerosols has been reduced to a minimum.



Caution: Always operate the air heater with the air supply!

7. Connection

- The air heater must be connected by a trained technician.
- Connect the LHS air heater to the electrical grid.
- Make sure that there is a suitable device in the mains connection for all-pin disconnection from the mains.
- The air heater must be connected according to the connection diagram and the clamping arrangement on page 5 (Wiring Diagram) of the assembly instructions.
- Make sure that the connection cables do not touch the heating tube and are not exposed to the hot air jet.
- Make sure that the hot air can flow out freely, otherwise the air heater can be damaged by heat back (risk of fire).
- Before switching on the air heater, the air supply must be switched on.
- **Caution:** The minimum air volume must be observed according to the technical data.
- Turn on the air heater.
- At the end of heating operation, the air supply must be recirculated to cool the heating element.

8. 3D Drawings

For LHS Series 3-D-Zeichnungen, contact your service center or visit leister.com.

9. Accessories

- Only original Leister accessories may be used.
- Leister offers a wide range of accessories, e.g.,
 - Various adapters
 - Temperature Controller
 - Nozzles
 - Blower
 - Temperature probe bracket
 - Connection flanges
 - Seals
 - Hoses and hose clamps

For more information please visit leister.com.

10. Service and Repair

- Repairs may only be carried out by authorized Leister service centers. These ensure a professional and reliable repair service with original spare parts according to circuit diagrams and spare parts lists.
- The heating tube must be replaced in case of visible deformation or at the latest after ten years. Due to the continuous influence of forces under high temperatures, damage to the heating tube can otherwise occur.

For more information please visit leister.com.

11. Training

The Leister Academy and its authorized Leister sales and service partners offer welding courses and product and service application training.

For more information please visit leister.com.

12. Related documents

Process Heat – Safety Instructions (Item number: 100.163)

13. Declaration of Conformity

The declaration of conformity is available on the website at leister.link/doc-lhs-p



14. Disposal



Do not dispose of electrical equipment with household refuse.

Electrical equipment, accessories and packaging should be recycled in an environmentally friendly manner. When disposing of our products, consider national and local Regulations.

Warranty

- The guarantee or warranty rights granted for this device by the direct distribution partner/salesperson apply from the date of purchase. In the event of a guarantee or warranty claim (verification by invoice or delivery note), manufacturing or processing errors will be rectified by the sales partner through replacement delivery or repair. Heating elements are excluded from warranty obligations or guarantees.
- Other guarantee or warranty claims are excluded within the framework of mandatory law.
- Damage resulting from natural wear, overload, or improper handling is excluded from the warranty.
- Devices that have been converted or modified by the purchaser are not covered by any warranty or guarantee.
- Only use original Leister spare parts and accessories, otherwise you will not be able to make any warranty claims.
- In addition to your statutory warranty rights, Leister grants you an extended warranty of up to 5 years from the date of purchase for Leister branded devices and machines purchased through authorized sales channels. To take advantage of this, register your product online at leister.link/warranty within 30 days of the date of purchase.



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