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Endress+Hauser
People for Process Automation

BRIEF OPERATING INSTRUCTIONSen

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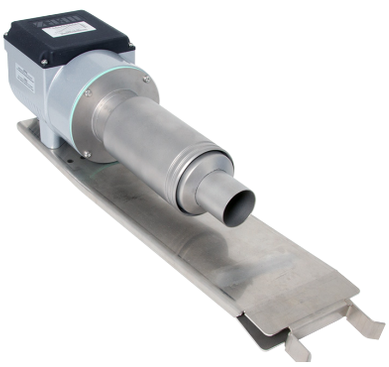
Air Heater



1. Intended use

The air heater is used in in-situ and dust measuring devices. It serves to warm up the purge air in applications with gas temperatures close to the water dew point or ambient temperatures down to –25 °C. The air heater heats the purge air to an adjustable temperature. Underflow of the dewpoint is prevented in the area of the purge air inlet and thus prevents condensation in the gas path as well.

2. About this document

These Operating Instructions describe installation, connection and settings for operation of the air heater on a measuring device.

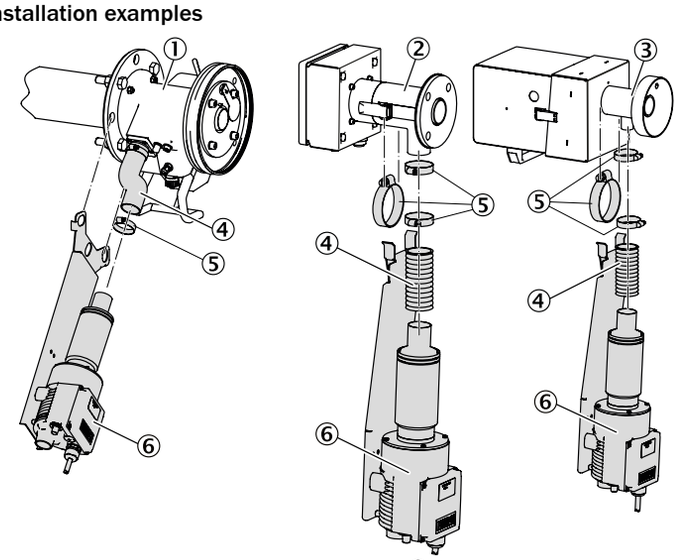
3. Additional documents

Documents of devices with air heater, e.g. GM series or DUSTHUNTER series, can be downloaded directly from www.endress.com.

4. Assembly

Use an assembly bracket with a screw connection or hose clamp to fit the air heater directly on the measuring device. A version with housing is available for use outdoors.

Installation examples



①. Purge air attachment GM32/35/700
②. Purge air attachment GM901
③. Purge air attachment DUSTHUNTER Txxx
④. Purge air hose
⑤. Hose clamp
⑥. Air heater

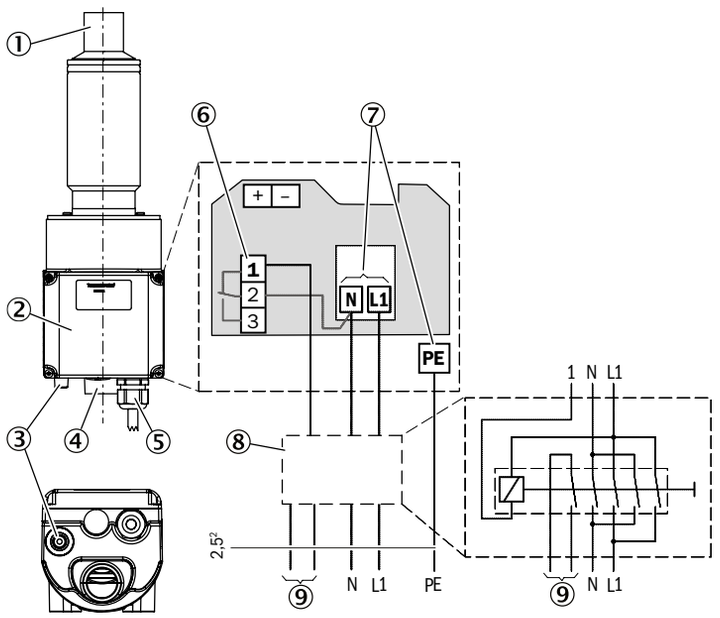
Fig. 1: Assembly for GM32, GM35, GM700, GM901 or DUSTHUNTER Txxx

5. Installation

Ensure voltage supply for the air heater is 230 V AC / 120 V AC (50 … 60 Hz) and perform installation in accordance with applicable standards.

Warning: Danger of electrical shock
Danger of electrical shock during work on electric parts when the device is switched on.
- ▶ Ensure the device is switched off prior to starting work on the device.
- ▶ Ensure a disconnector switch (e.g. power plug or switch) is installed nearby to disconnect all live cables from the voltage supply.

Note
Endress+Hauser recommends a control for monitoring and switch-off in case of failure. The air heater is limited by a temperature switch to maximum 130 °C (±10 °C). Project planning on request.



①. Air outlet (device side)
②. Cover (electrical connections)
③. Temperature controller
④. Air inlet (blower side)
⑤. Voltage supply line
⑥. Change-over contact connection 230V/1 A
2—1: N/O contact
2—3: N/C contact
⑦. Voltage supply connections
⑧. Control (plant side)
⑨. Status of purge air monitoring

Fig. 2: Electrical connections and temperature controller

Steps

1. Remove cover ② and connect voltage supply:
   Wire line ⑤ according to terminal assignment ⑦.
2. Connect purge air monitoring: Wire line according to terminal assignment ⑥ and fit cover ② again.
3. Set temperature controller ③ to minimum and measure purge air temperature at air outlet ①.
4. Set temperature controller ③ so that the desired purge air temperature is reached. See temperature curve on cover ②.
5. Fit the purge air hose to the measuring device to air outlet ① on the device side and tighten with a hose clamp (40 … 60 m).
6. Fit the air heater on the measuring device using an assembly bracket, see FigFig. 1:
   - ▶ GM32, GM35, GM700, version for screw fitting: Fit 3 screw fittings on the flange of the purge air attachment.
   - ▶ GM901, DUSTHUNTER Txxx, version for hose clamp fitting: Open/loosen hose clamp (80 … 100 mm), push through mounting of the assembly bracket. Position the assembly bracket on the purge air attachment and tighten the hose clamp so that the air heater is sufficiently secured.
   - ▶ Version with housing: Screw tight to 4 fastening clips.
7. Fit the purge air hose on the purge air attachment (nozzle) of the measuring device using the second hose clamp (40 … 60 mm).
8. Fit the purge air hose to the air inlet of air heater ④.
9. Switch voltage supply on: Purge air unit, air heater.

Note

- The desired purge air temperature varies depending on the application, but always has to be above the dew point of the sample gases of the measuring device.
- Temperature control is limited to 120 °C. This applies to a medium air feed amount of 45 m^3/h.
- Control deviations occur for deviating feed amounts, e.g. 75 m^3/h at 100 °C or 25 m^3/h at 130 °C.

6. Maintenance and repairs

The air heater is almost maintenance-free.

- Perform the following steps regularly, e.g. quarterly:
  - Check electric lines for mechanical damage. Reconnect in case of damage, see Chapter "„5. Installation"".
  - For versions with hose clamp fitting: Check whether the assembly bracket with air heater is still fixed tightly to the purge air attachment of the measuring device. Tighten, if required.

7. Troubleshooting

The air heater is equipped with equipment protection for automatic switch-off to avoid possible overheating and damage. The relay contact (N/O contact) signals a malfunction.

- Perform reset in case of malfunction: Switch the air heater free from voltage for at least 3 seconds. Switch the voltage supply on again.

8. Specifications

Technical data		
Version	**230 V version**	**120 V version**
Assembly	Under a roof: Version for screw fitting: GM32, GM35, GM700 Version for hose clamp fitting: GM901, DUSTHUNTER Txxx	
	Outdoors: Version with housing GM32,GM35, GM700, GM901, DUSTHUNTER Txxx/SBxxx	
Voltage supply	230 V AC; 13.0 A, 50/60 Hz; Power input: 3 kW	120 V AC; 18.3 A, 50/60 Hz; Power input: 2.2 kW
Temperature setting	+40 ... +120 °C	
Cutout temperature	+130 °C	
Minimum air amount	1,000 l/min at 230 V AC	800 l/min at 120 V AC
Ambient temperature	Up to +55 °C (maximum temperature of air feed)	
Degree of protection	IP 30	
Weight (without assembly bracket)	Air heater with assembly bracket: 4.3 kg	
	Air heater with housing: 11.5 kg	
Item numbers		
Version with screw fitting	2021516	2021515
Version with clamp fitting	2021521	2021519
Version with housing	2021514	2021513

8.1 Dimension drawings

8.2 Version with assembly bracket for screw fitting

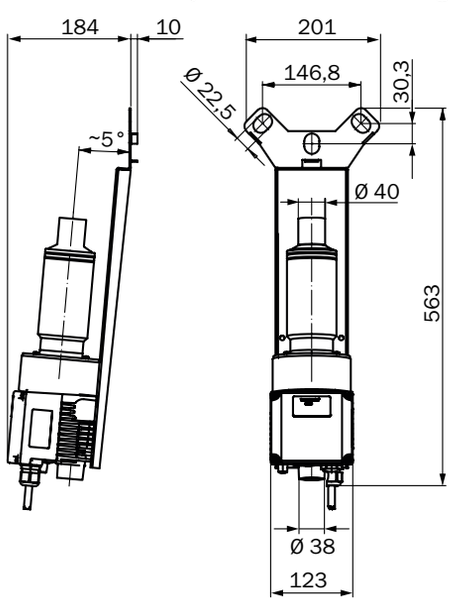


Fig. 3: Assembly for GM32, GM35 or GM700

8.3 Version with assembly bracket for hose clamp fitting

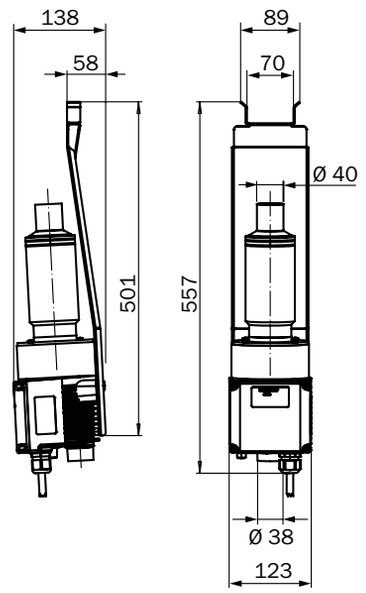
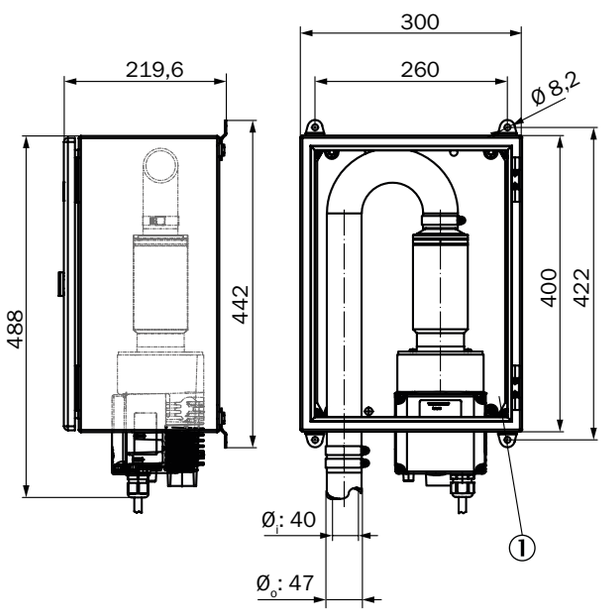


Fig. 4: Assembly for GM901 or DUSTHUNTER Txxx-series

8.4 Version with housing for outdoor installation



①. Right view: Housing without cover

Fig. 5: Assembly for GM32,GM35, GM700, GM901, DUSTHUNTER Txxx or DUSTHUNTER Sxxx