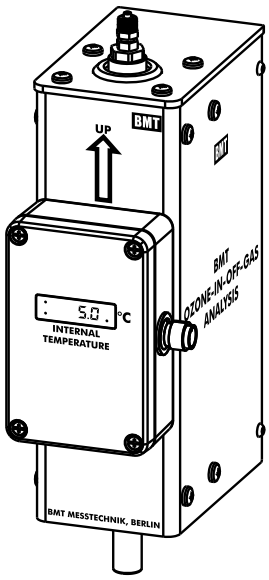
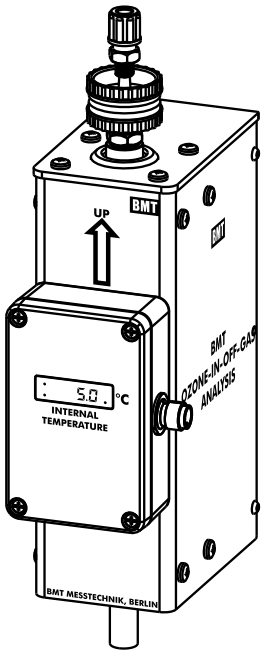
Quick Installation Guide: BMT DH6/DH6-LC



DH6



DH6-LC

Table of Contents

1 General Description 2
2 DH6 vs. DH6-LC 2
3 Scope of Delivery 3
3.1 DH6 3
3.2 DH6-LC 3
3.3 Mounting options (compatible with DH6 and DH6-LC) - not included, sold separately! 3
4 Mechanical Installation 4
5 Electronic Installation 4
6 Customization 5
7 Mounting Options 5
7.1 SOBV (shut-off ball valve) - sample point can be shut off for maintenance 6
7.2 DH6-BRACKET - no direct mounting, without condensate removal 6
7.3 DH6-CR (condensate removal) - no direct mounting, with condensate removal 7
7.4 DT 100 - laboratory application 7
8 Specifications 8

QDH6&DH6-LC_001_EN_2026-04-23

1 General Description

The SAMPLE GAS DEHUMIDIFIER DH6/DH6-LC is a flow-through cooling device for removing water vapor from a sample gas e.g. before photometric measurement of its ozone content.

Dehumidification is necessary if the following applies:

$T_A < T_{DP} = T_W \rightarrow$ Dehumidification is required

T_A = ambient temperature
T_{DP} = dew point temperature
T_W = water temperature

The DH6 is only suitable for use in the high ozone concentration range in conjunction with an analyser of the BMT 965 series. For low ozone concentration measurement use a monitor of the BMT 932 series with a DH6-LC. Both models come with different mechanical mounting options designed for multiple applications.

The User Manual should be consulted for additional information where needed.

2 DH6 vs. DH6-LC

DH6

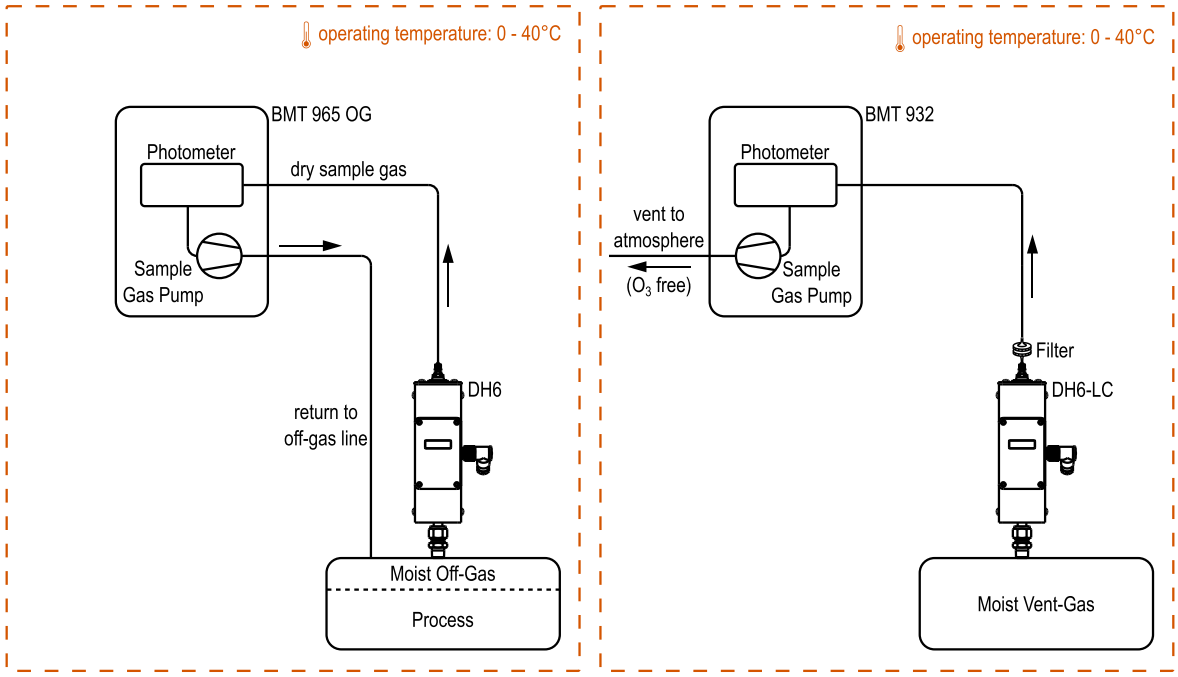
(> 250 ppm_v / 0.5 g/Nm^3)

Use a DH6 for high ozone concentration ranges in conjunction with an analyser of the BMT 965 series, typically used for off-gas measurement.

DH6-LC

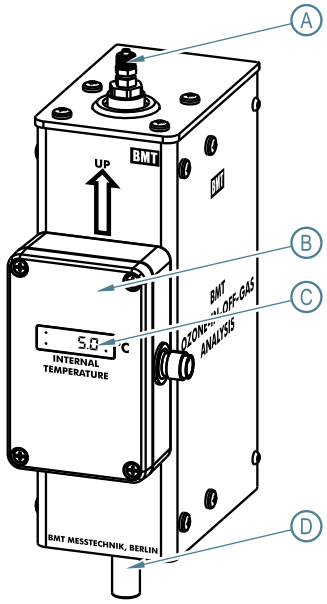
(0 … 250 ppm_v)

For measurement of very low ozone concentration, e.g. in humid vent gas behind an ozone destruct, the model DH6-LC is available. It has an inner PTFE lining, and a particle filter installed at its outlet, assuring that the full length of tubing leading the sample gas to the ozone monitor is protected against contamination by any particles contained in the sample gas.



3 Scope of Delivery

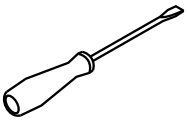
3.1 DH6

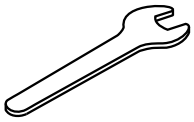


A outlet fitting (4x6 mm, 3x5 mm, SL 1/4", SL 6 mm available)
B electronic enclosure
C actual temperature of the inner wall of the cooler
D inlet tube (SS, OD 12 mm) with different mounting options

Manual

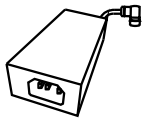
Mounting Adapter


Screwdriver

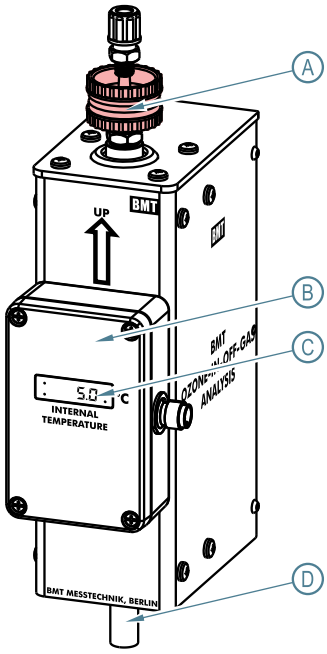

Open-ended Wrench

Power Cable

OR


Power Supply

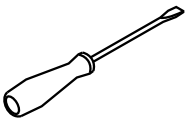
3.2 DH6-LC

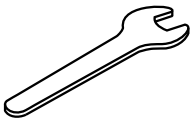


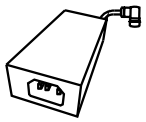
A particle filter with outlet fitting (4x6 mm or 1/4" x 5/32" for FEP tubing)
B electronic enclosure
C actual temperature of the inner wall of the cooler
D inlet tube (SS, OD 12 mm) with different mounting options

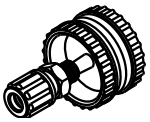
Manual

Mounting Adapter


Screwdriver


Open-ended Wrench


Power Supply


Particle Filter + Box with 20 Filter Inserts

3.3 Mounting options (compatible with DH6 and DH6-LC) - not included, sold separately!

- SOBV (shut-off ball valve)
- DH6-BRACKET
- DH6-CR (condensate removal)
- DT 100 (dirt trap)

For more information, please consult Chapter 7 Mounting Options, or do not hesitate to contact us.

4 Mechanical Installation

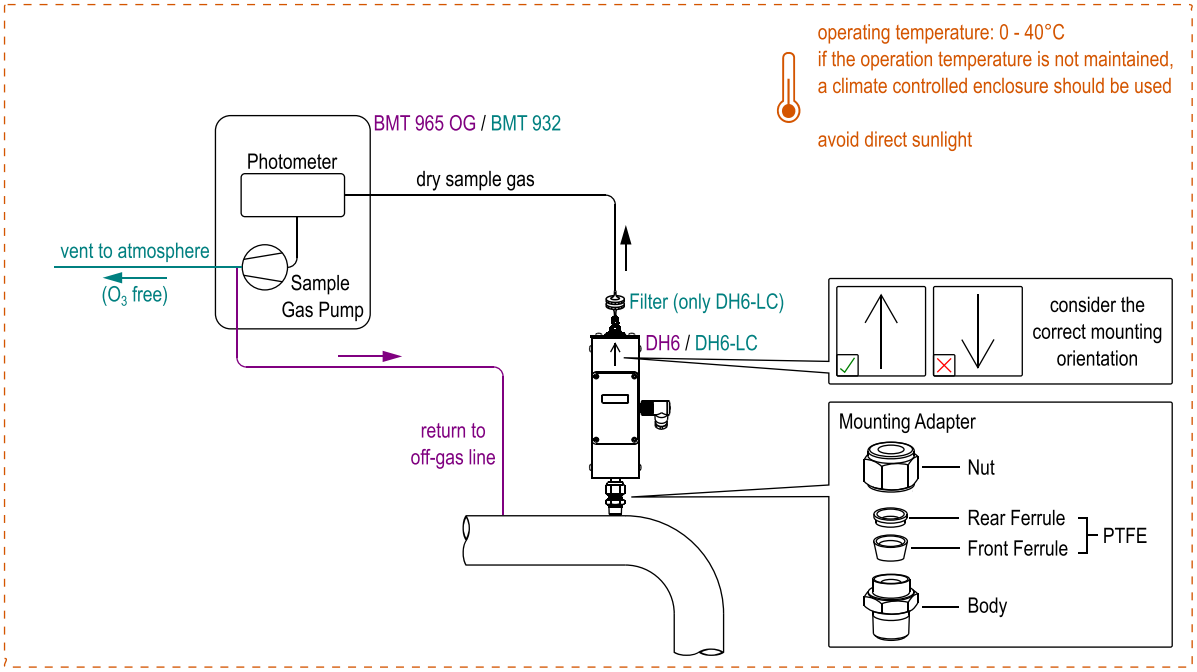
WARNING
Ozone is a highly toxic gas. The ozone concentrations fed through the SAMPLE GAS DEHUMIDIFIER DH6 might be above the lethal limit. Appropriate safety devices (ozone monitors) should be used.

WARNING
Before opening the sample gas connection make sure that the sample line does not contain ozone gas, and is not under pressure.

For removing water vapor from the sample gas with a DH6 or DH6-LC the cooler has to be mounted at the point of sample (e.g. on top of a reaction vessel or on a large diameter off-gas tube) to avoid condensate build-up in the sample gas tubing leading from the sample point to e.g. a photometric analyser.

The inlet tube of the DH6 or DH6-LC is plugged into a big SS fitting with PTFE sealing inserts (= Mounting Adapter, will be delivered with the instrument). The Mounting Adapter can be screwed into a 3/8" NPT threaded bore hole, or it can be welded into a bore hole 17 mm ID.

This patented principle allows for any condensate to drop back into the reaction vessel. If it is not possible to mount the cooler directly on top of the reaction vessel, see the alternative mounting options on page 5.



□ consider the correct mounting orientation of the DH6 / DH6-LC

□ Rear Ferrule and Front Ferrule of the Mounting Adapter shall be made of PTFE

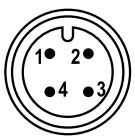
□ DH6-LC: install a particle filter at the outlet of the device (will be delivered with the DH6-LC)

□ operating temperature: 0 - 40 °C, otherwise use a climate-controlled enclosure

□ avoid direct sunlight

5 Electronic Installation

black	1	GND (24 VDC & cable shield)
white	2	+24 VDC
brown	3	contact DRYER ERROR (BMT 965 OG)
green	4	contact DRYER ERROR (BMT 965 OG)

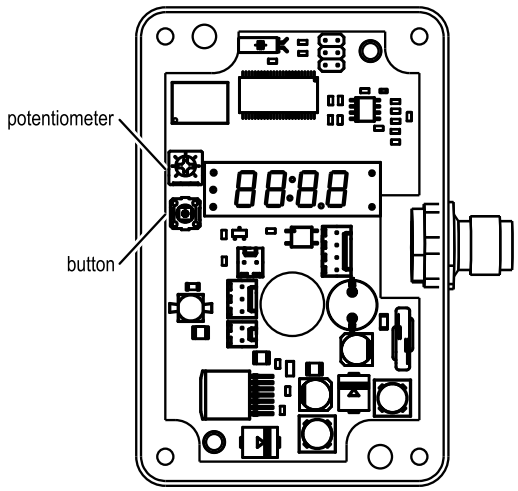


(screw terminal side)

If connected to a BMT 965 OG no external power supply is needed, the DH6 is powered by the BMT 965 OG.

6 Customization

CAUTION
Before opening the lid of the electronics, the user should ground himself by touching grounded points in order to prevent damage of the electronics by electrostatic discharge.

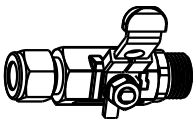


For adjusting the set point temperature (between 1°C and 15°C, default 5°C):

- open the lid of the electronics
- press and hold the button; the display will show the set point temperature
- turn the potentiometer to adjust the set point temperature in one-degree increments
- release the button; the display will show the new set point temperature flashing three times and the parameter is saved
- close the lid

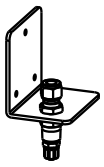
7 Mounting Options

We recommend to install the DH6 / DH6-LC according to chapter 4. If this is not technically feasible, one of the following mounting options could be helpful:



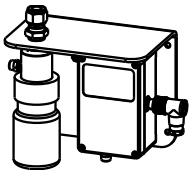
SOBV
(shut-off ball valve)

#12848



DH6-BRACKET

#13563



DH6-CR
(condensate removal)

#13724

DT 100 DH6 / DH6-LC
(dirt trap)

#12903 DH6 3x5
#13019 DH6 4x6
#13025 DH6-LC 4x6

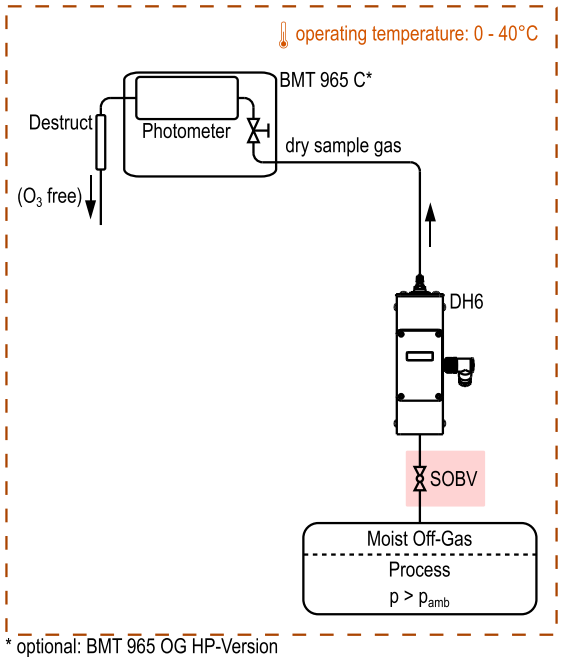
The following overview could be used to select the appropriate mounting option:

Application	Mounting Option			
	SOBV	**DH6-BRACKET**	**DH6-CR**	**DT100**
system pressure above ambient pressure	X			
no direct mounting on top of the reactor		X	X	X
automatic condensate removal			X	
manual condensate removal				X
outdoor sampling point		X	X	

7.1 SOBV (shut-off ball valve) - sample point can be shut off for maintenance

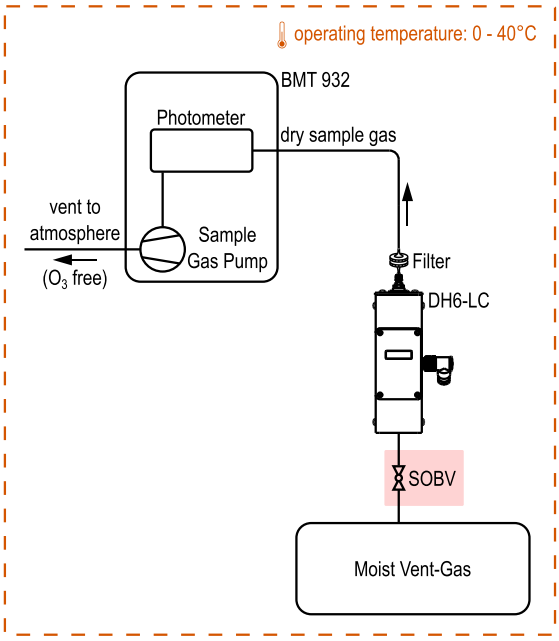
DH6

(> 250 ppmᵥ / 0.5 g/Nm³)



DH6-LC

(0 … 250 ppmᵥ)

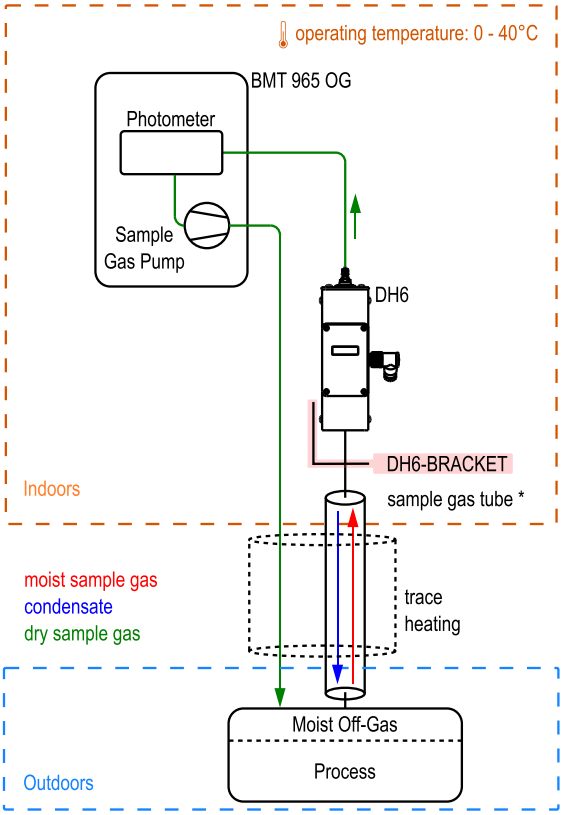


* optional: BMT 965 OG HP-Version

7.2 DH6-BRACKET - no direct mounting, without condensate removal

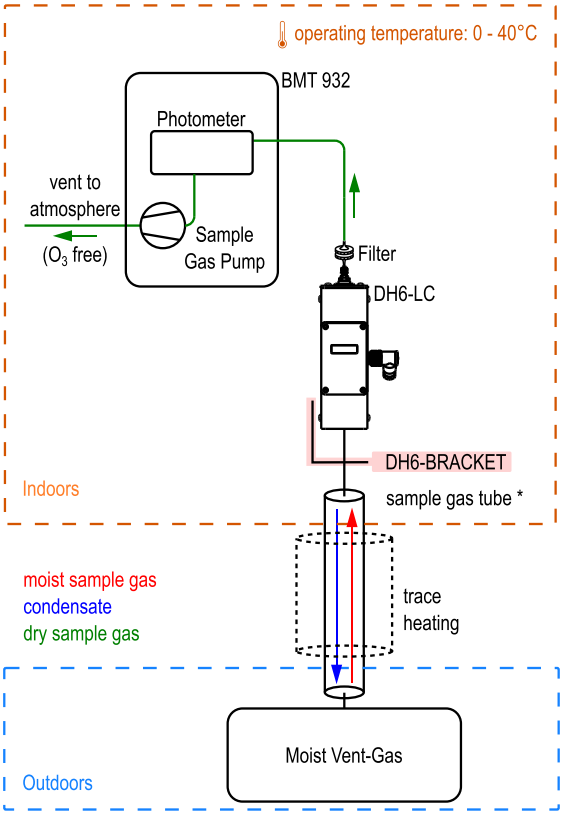
DH6

(> 250 ppmᵥ / 0.5 g/Nm³)



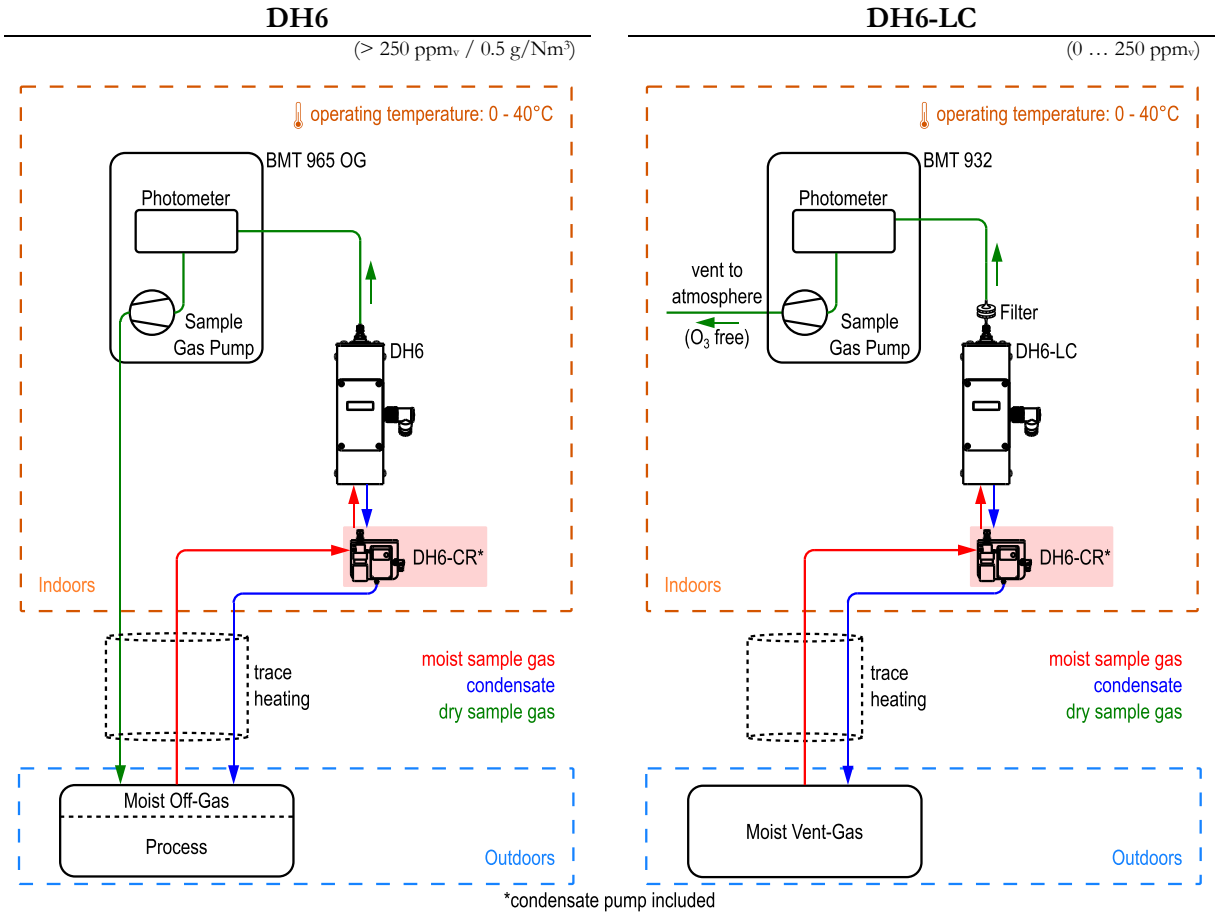
DH6-LC

(0 … 250 ppmᵥ)



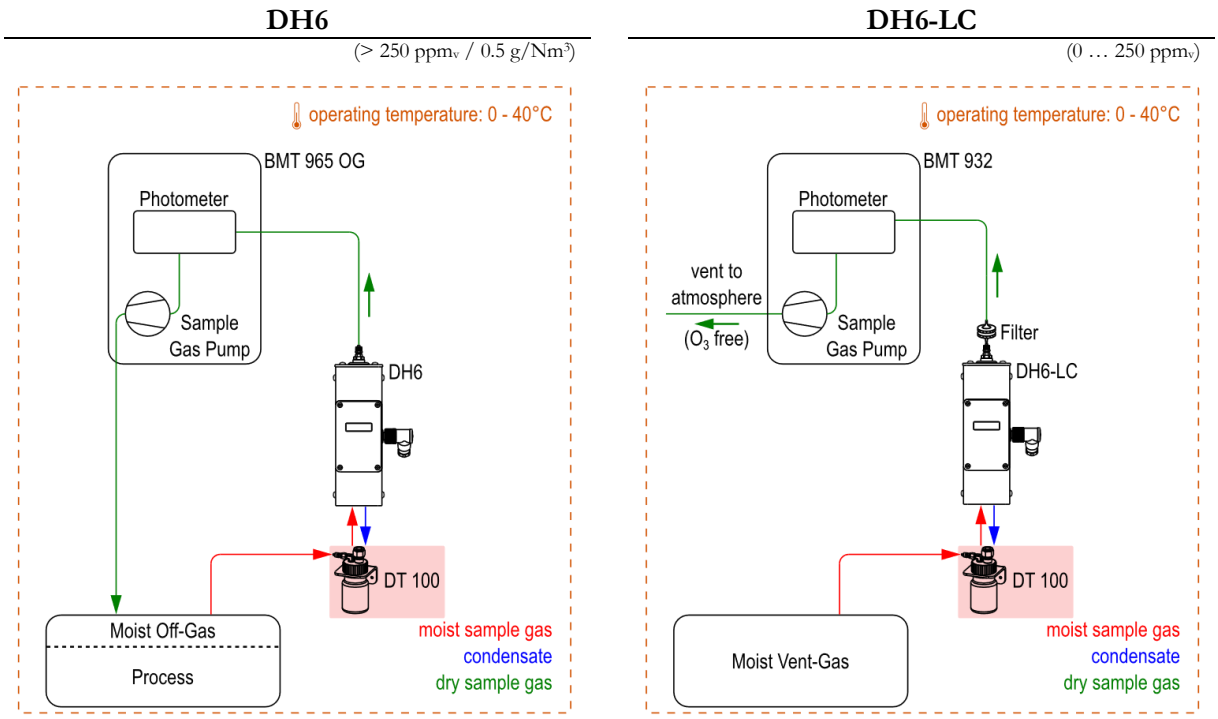
* The condensate must be able to flow back by gravity.
- install with a continuous slope
- large inner diameter > 8 mm
- as short as possible < 3 m
- use trace heating when installed outdoors

7.3 DH6-CR (condensate removal) - no direct mounting, with condensate removal



*condensate pump included

7.4 DT 100 - laboratory application



8 Specifications DH6 / DH6-LC

Principle	Peltier-electric cooling system, no moving parts
MTBF	40.000 h (fan)
Materials in Contact	SS, PTFE, PVDF
Display	4-digit LED
Cooling Power	4.5 W @ ΔT ($T_{Ambient}$ - T_{Set}) = 20 K
Inlet Gas Port	Tube with OD 12 mm, 3/8" NPT thread, with PTFE seals
Outlet Gas Port	DH6: Fittings for 4x6 mm FEP tubing (1/4" x 5/32") or fittings for 3x5 mm FEP tubing (1/8" x 3/16") or Swagelok 6 mm or Swagelok 1/4" DH6-LC: Fitting for 4x6 mm or 1/4" x 5/32" FEP tubing
Ambient Temperature	0 - 40°C (non-condensing)
Power-On to Operational	Max. 10 minutes @ ΔT ($T_{Ambient}$ - T_{Set}) = 20 K and recommended flow rate
Flow Rate	DH6: 0.3 to 0.5 l/min DH6-LC: typical 1.0 l/min
Pressure Drop	DH6: approx. 0.1 mbar @ 0.5 l/min DH6-LC with filter: 6 mbar @ 1.0 l/min
Proof Pressure	Min. 1 barg
Power	24 VDC, 40 W (via separate power supply), reverse polarity protected
Relay Outputs	30 V, 1 A
Dimensions (WxHxD)	64x279x140 mm
Weight	1.5 kg
Protection	IP 65 (including fan)

9 Manuals and Datasheets

DH6

DH6-LC

DH6-CR