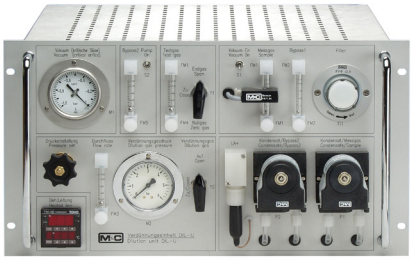

DIL-U/A(N)

Gas Sample Dilution System Version DIL-U

consisting of dilution probe SP2000H/DIL-U/P and dilution pump unit DIL-U/A (N)

Special Features

- **Lowest dilution ratio 1:1**
- **Ambient air as dilution gas possible**
- **Low dilution gas consumption**
- **No influence of barometric pressure[1]**
- **Compact design**
- **Gas sample probe SP2000H**
- **Integrated pre-heater for dilution gas**
- **Test gas connection at the probe inlet**
- **Completely electrically heated up to 180 °C [356 °F]**

[1] varying process pressure must be taken into consideration

Application

The electrically heated M&C gas sampling dilution system DIL-U is used in processes when the measurement method or handling of the process gas requires the dilution of the component(s) to be measured in a dilution range from 100:1 to 1:1.

Typical applications are:

- toxic gases above TLV value
- explosive gas mixture above LEL
- adapting the concentration of sample gas components to the measuring range of the analyzer
- measuring possibility in the case of low sample flow rates from 1 l/h
- moisture measurement in flue gas with IR analyzer.

Since the M&C dilution probe is based on the modular M&C standard probe SP2000, a variety of applications requiring special filter techniques, materials etc. can be performed without any problems with this dilution system.

Description

The M&C dilution system DIL-U consists of the well-proven dilution probe SP2000H/DIL-U/P and the dilution pump unit DIL-U (A/N). In order to prevent the temperature of the sample gas from falling below the dew point at the dilution point, the critical orifices are integrated in a temperature-stable manner in the heated section of the dilution probe in the "clean gas outlet". The dilution gas is heated to probe temperature by means of a gas pre-heater. For system calibration, test gas can be injected into the analyzer via the mounted test gas valve.

The vacuum pump integrated into the DIL-U gas dilution unit generates the vacuum required for the critical orifices to function. The vacuum gauge is used to monitor the function of the vacuum pump.

Two flow meters are used to set and display the analyzer gas and bypass gas flow rates. There is also a flow alarm for the sample gas quantity. For the calibration with zero and end gas, a 3/2-way switch-over valve and a flow meter for adjusting the gas volume are provided.

Version DIL-U/A is suitable for ambient air as dilution gas, and version DIL-U/N for bottle gas or process gas. The components required for pressure and flow adjustment are optional components of the gas dilution unit. If the dew point of the diluted gas is above the ambient temperature, an optional M&C gas cooler ECP1000G/SR25 to dry the sample gas can be integrated into the gas dilution unit.

In the case of high dilution factors, due to the very small amount of gas extracted through the probe, it may be necessary to extract an additional bypass quantity 2 in advance to shorten the response time. With the DIL-U/B option, you order the pump, which is also integrated in the system, and the flow meter. A gas cooler is available as an option.

If heated M&C sample lines 3/4-N/M/H are used between the dilution probe and the dilution unit, the necessary temperature controller 703 can also be integrated into the gas sampling unit.

The design of the dilution system guarantees straightforward maintenance.

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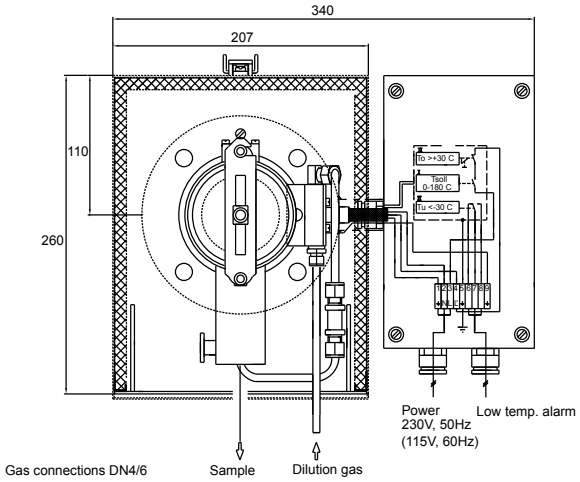
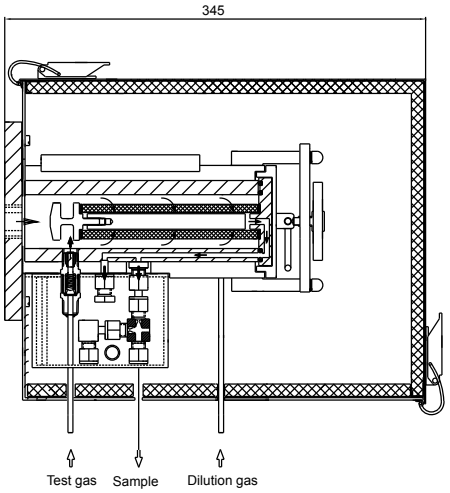
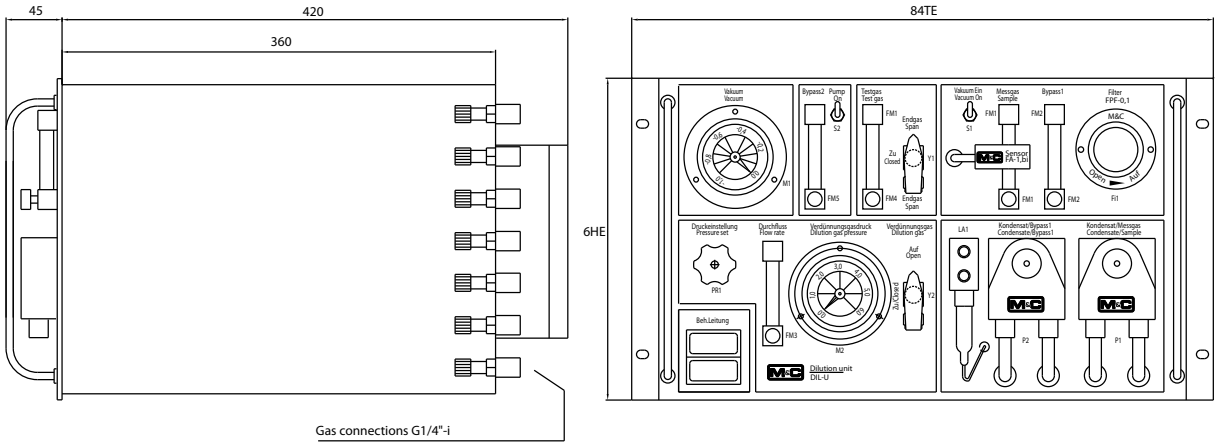
Dimensions







Dimensions in mm

Technical Data

Gas sample dilution system version DIL-U	Part No.	Type
Dilution gas sample probe SP2000H/DIL-U/P Part No.	SP2000H/DIL-U/P	20S4950(a) *see dilution ratio
Dilution pump unit, standard DIL-U/A Part No.	DIL-U/A	20S4955(a)
Sample tubes or pre-filters	Optionally available, see data sheets for sample probe tubes with G 3/4"-connection, electrically heated sample probe tubes and pre-filters	
Dilution ratio	1:1 up to 100:1; adjustable via corresponding orifices * please specify the required dilution ratio when ordering	
Sample flow rate	From approx. 1 l/h up to 50 l/h	
Dilution gas flow rate	From approx. 30 l/h up to 100 l/h	
Dilution gas pressure at DIL-U/N	> 3 bar g	
Material of sample-contacting parts	Stainless steel, 316Ti, 316L, glass, FPM, PTFE	
Dimensions from dilution pump unit DIL-U	19" rack, 6 U, 84 HP, depth = 460 mm [≈ 18.1"]	
Gas connections	Thread G 1/4" i	
Power supply	230 V/50 Hz, optional 115 V/60 Hz (a)	
Weight	Dilution gas sample probe SP2000H/DIL-U/P: 15 kg [≈ 33.1 lbs], dilution pump unit DIL-U: 15 kg [≈ 33.1 lbs]	

Further technical data, see data sheet SP2000.

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