



Peristaltic condensate and metering pumps CPsingle, CPdouble

Condensate accumulates when conditioning gas in gas conditioning. It always accumulates when cooling moist sample gas. On one hand this may occur inadvertently if thermal bridges occur in the sample gas lines. On the other hand the deposit of moisture is necessary to protect the measuring cells in the analyser from damage and/ or stabilise measurements.

Since the sample gas is often conveyed through the analysis system with suction, the condensate must be pumped off to remove it.

So-called peristaltic pumps are particularly suited for this purpose. They systematically protect the sample gas system from external air and based on the hose material used offer high resistance against the often times highly corrosive condensate.

The CPsingle and CPdouble pump series were developed specifically for these severe operating conditions.

Built-in and housing version

FM approval optional

Separate installation possible

Various flow rates

Metering pumps with low flow rates

Easy to replace hoses

Various hose materials available for demanding applications

115/230 V AC or 24 V DC

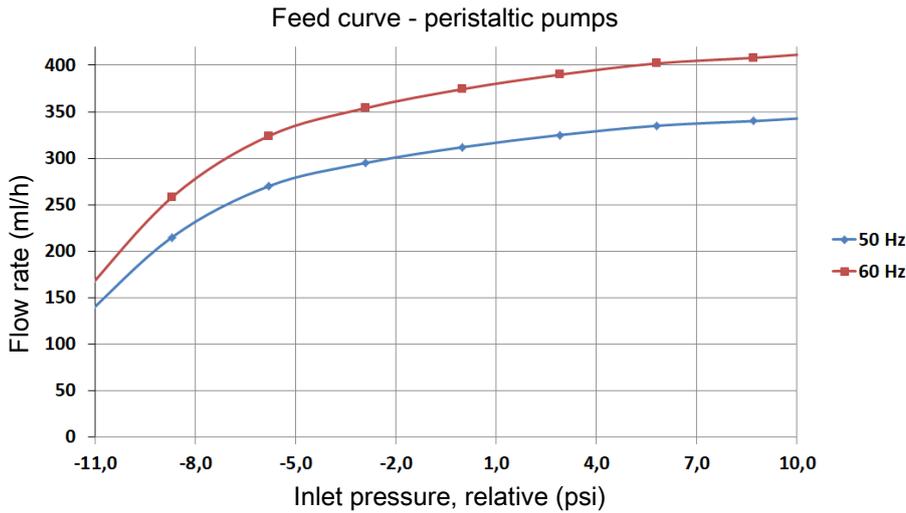
Used in **DNV-GL and LR type-tested** conditioning unit

Can be used in a system to maintain **the IMO MARPOL MEPC.259(68)**.

Special design for use in high vibration environments



Flow rate



When operating the pumps with 60 Hz, the values increase by 20 %.

Calculating condensate accumulation

Dew point	86	104	122	140	158	176	°F
Moisture content Vol %	4	7	12	20	31	47	Vol %
Moisture accumulation (w) per 100 NI/h/cooling air	2.2	4	6.5	12	22	44	$\frac{ml}{h}$ per 100 NI

Total condensate accumulation formula:

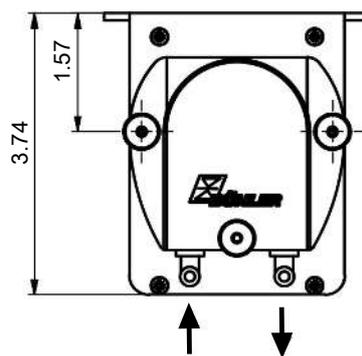
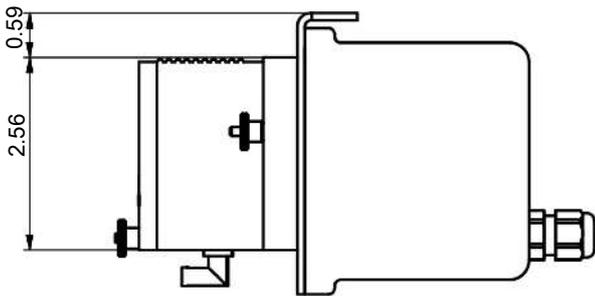
$$w_{tl} = \frac{\text{Cooled air flow}}{100 \text{ NI/h}} \cdot w \text{ (inlet dew point)}$$

Example: 180 NI/h behind the cooler; Inlet dew point 122 °F (50 °C).

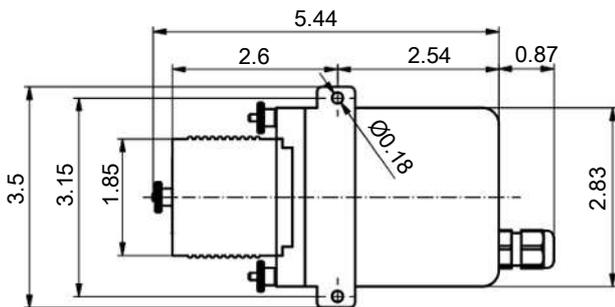
$$w_{tl} = \frac{180 \text{ NI/h}}{100 \text{ NI/h}} \cdot 6.5 \frac{\text{ml}}{\text{h}} = 12 \frac{\text{ml}}{\text{h}}$$

Dimensions of peristaltic pumps 115 / 230 V

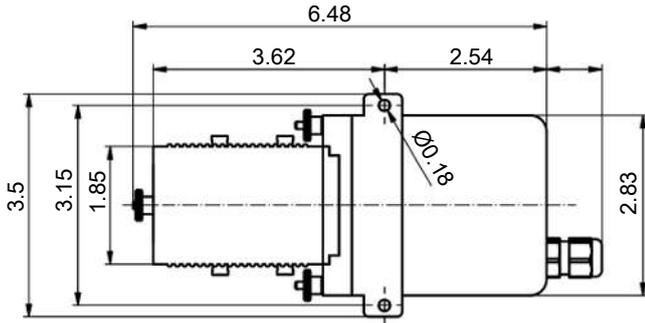
Housing versions



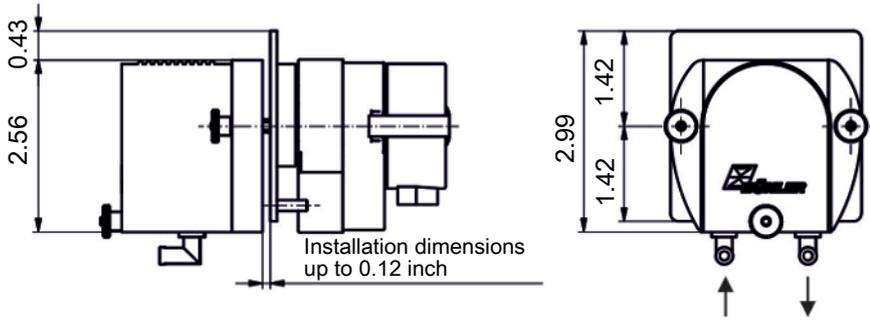
Housing version with 1 gas path



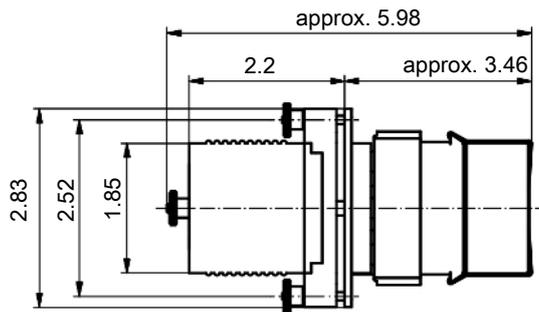
Housing version with 2 gas paths



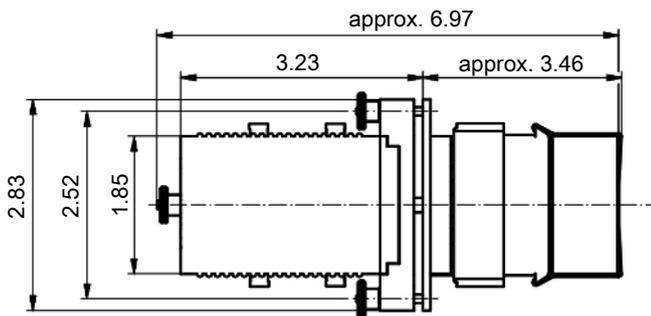
Built-in versions



Built-in version with 1 gas path



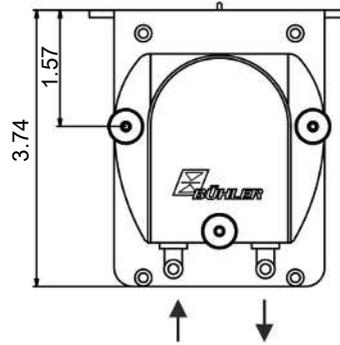
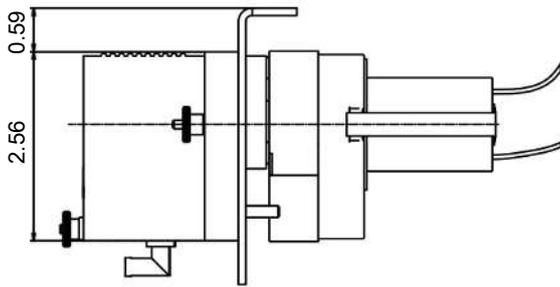
Built-in version with 2 gas paths



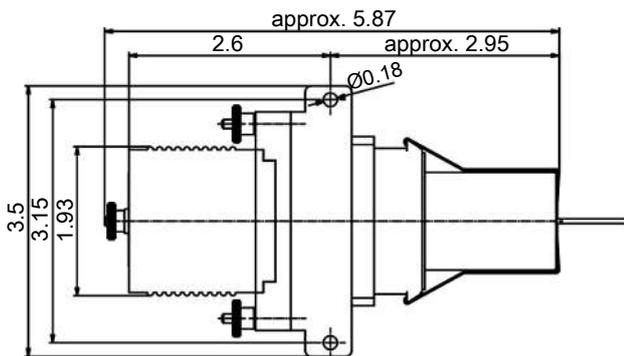
(All dimensions in inch)

Dimensions of peristaltic pumps 24 V

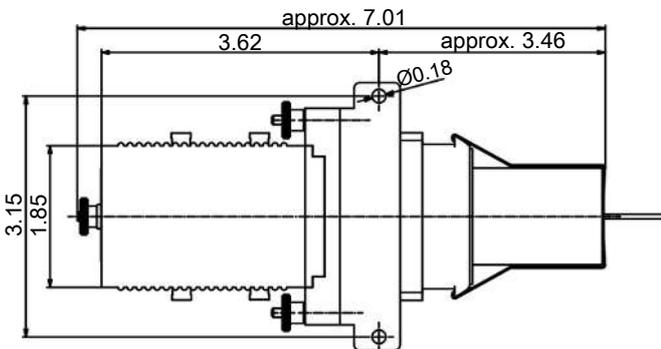
Housing versions



Housing version with 1 gas path

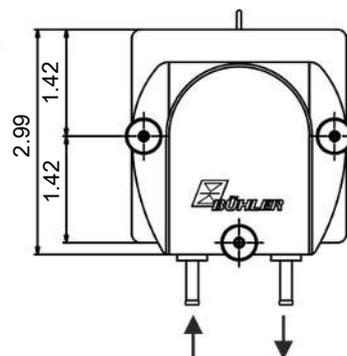
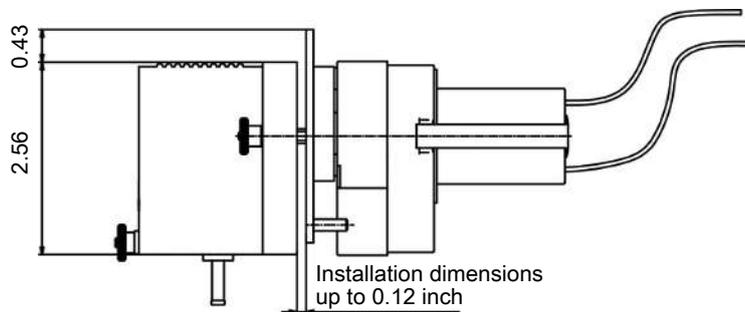


Housing version with 2 gas paths

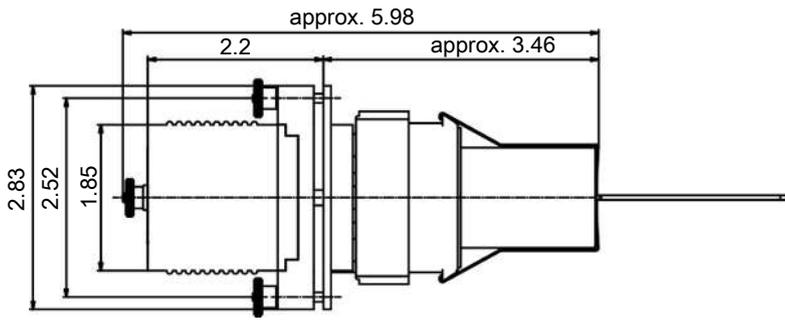


(All dimensions in inch)

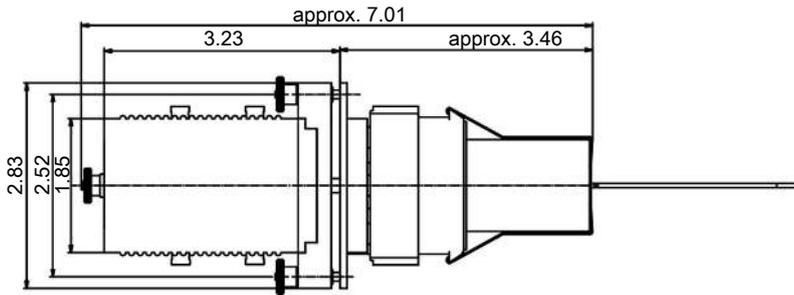
Built-in versions



Built-in version with 1 gas path



Built-in version with 2 gas paths



(All dimensions in inch)

Selection matrix for peristaltic pumps and subsequent add-on cooler

Cooler model	Built-in (OEM)/ Housing version (SA)	Flow rate l/h for 230 V/50 Hz	Single (S)/ Double (D) version
TC-MINI	SA (separate installation only)	0,3	S
TC-Standard (+)	SA	0,3	S or D
TC-Double (+)	SA	0,3	D
TC-MIDI (+)	OEM	0,3	S or D
EGK 1/2	OEM	0,3	S or 2x S
EGK 2-19 (+)	OEM	0,3	S or 2x S
EGK 1SD	SA (separate installation only)	0,3	S or D
EGK 10	SA	1,0	S
TS 10	OEM	1,0	S
RC 1.1	OEM	0,3	S or D
RC 1.2+	OEM	0,3	S or D

Peristaltic pump ordering information

The item number is a code for the configuration of your unit. Please use the following model code:

4492	X	X	X	X	X	X	X	Product Characteristic
								Gas path
	1							Single gas path
	2							Double gas path
								Version
	1							Housing version
	2							Built-in version
								Supply voltage
	2							115/230 V AC
	4							24 V DC
								Area of application
	0							Standard applications – CE
	1							for common locations with FM approval
								Hose material ¹⁾²⁾
	1							Tygon (Norprene)
	2							Fluran
	3							Marprene
								Flow rate/hour
	0							0.3 L/h
	2							13 ml/h (only 115/230 V AC, single gas path)
	3							61 ml/h (only 115/230 V AC, single gas path)
	4							25 ml/min or 1.5 L/h (only 24 V DC, single gas path, for standard applications – CE)
								Hose connection ³⁾
	1							straight hose nipple
	2							angled hose nipple
	3							straight and angled hose nipple
	4							Screw connection (metric) DN 4/6
	5							Screw connection (US) 1/6"-1/4"
	6							angled hose nipple and screw connection (metric)
	7							angled hose nipple and screw connection (US)
	8							straight hose nipple and screw connection (metric)
	9							straight hose nipple and screw connection (US)

¹⁾ Please note hose material information during selection.

²⁾ For 1.5 L/h pumps as well as 13 ml/h and 61 ml/h metering pumps the only hose material option is Tygon (Norprene).

³⁾ For 1.5 L/h pumps as well as 13 ml/h and 61 ml/h metering pumps the only hose connections choices are "Option 4 and 5".

Information on hose materials

The standard hose in Norprene has excellent mechanical properties with high chemical resistance to many substances.

Marprene offers a long life for many applications with high chemical resistance, particularly when oxidation agents are present. This is therefore the first alternative to the standard Norprene hose.

Fluran is particularly beneficial if the condensate contains oils, petrols and other solvents. The mechanical properties should rather be assessed weaker, so we only recommend this hose material for the specified chemicals.

The flow capacity of Fluran and Marprene hoses is slightly lower.

Other materials are available on request.