9 Appendices

9.1 General specifications for all pumps

General Specifications	
Nominal voltage:	see ordering information
Protection class:	electric IP55 mechanical IP20
Dead volume:	8.5 ml
Materials of parts in contact with mediums by pump type:	PTFE / PVDF (standard pump with 100 °C valves) + PEEK (standard pump with 160 °C valves) + Viton (standard pump with 100 °C valves and bypass valve) + PCTFE, Viton (standard pump with 160 °C valves and bypass valve) + 1.4571 (VA pump body) + 1.4401, Viton (VA pipe fitting) + Viton (VA pump body with bypass valve)

9.2 Technical data for P2.3C and P2.4C

P2.3C/P2.4C Technical Data	
Weight P2.3 C: P2.4 C:	 approx. 6.5 kg approx. 7 kg
Marking:	Ex II 3G/- Ex h IIB T4 Gc
Ambient temperature Motor: Pump head:	 max. 50 °C see table
Medium temperature:	see table

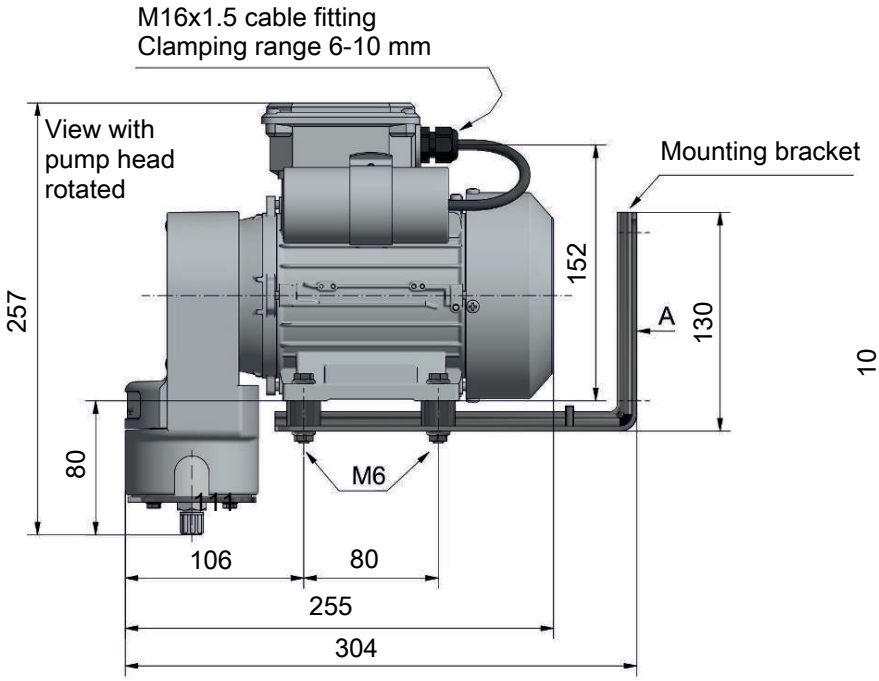
NOTICE! The devices are not suitable for use in explosive areas!

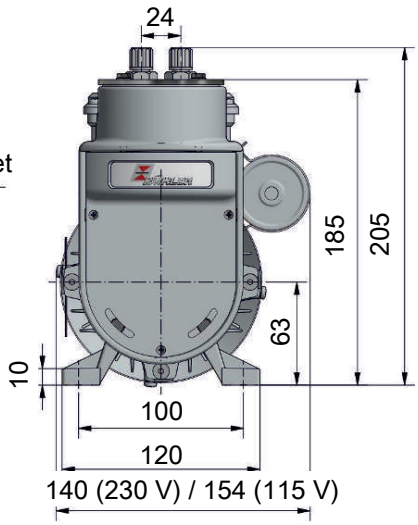
9.3 Temperature classes for P2.3C and P2.4C

P 2.3C		Medium temperature
no flammable gasses in the gas circuit		see P2.3/P.283
Flammable gasses in the gas circuit above the LEL	T3	120 °C
	T4	50 °C

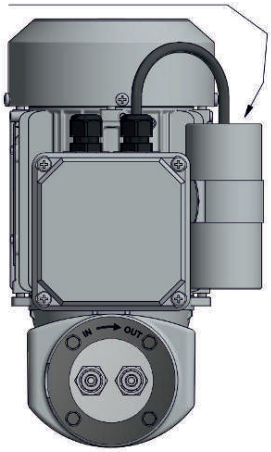
P 2.4C		Medium temperature	Pump head temperature
no flammable gasses in the gas circuit		see P2.4/P2.84	
Flammable gasses in the gas circuit above the LEL	T3	100 °C	80 °C
	T4	50 °C	50 °C

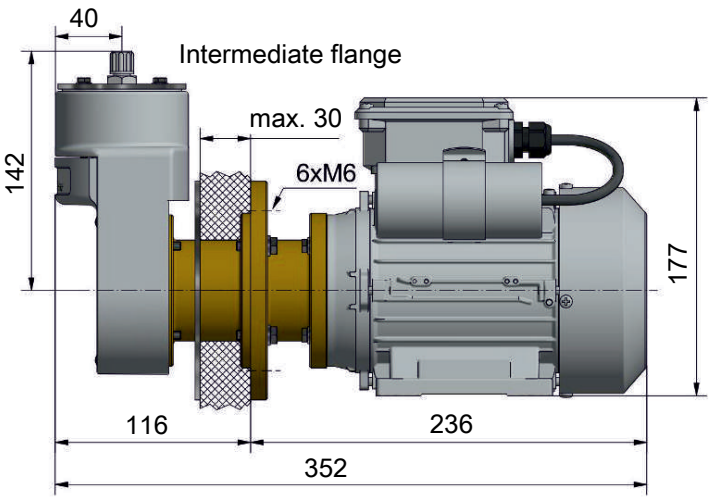
9.4 Dimensions



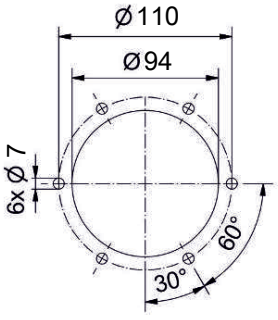


Three-phase motors without capacitor

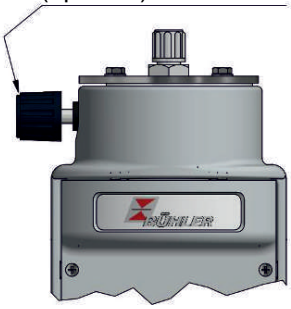




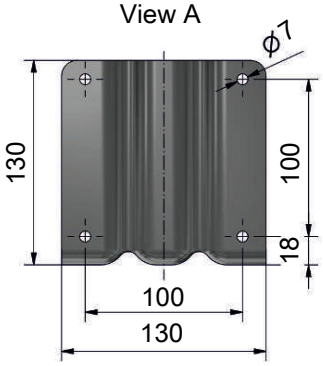
Cabinet cut-out for pumps with intermediate flange



Adjustable bypass valve (optional)



View A



Installation notices:
1) This pump should be installed horizontally
2) If necessary, rotate the pump head during installation. When conveying gasses with condensate content it must be installed valves down.

9.5 List of chemical resistance

The wetted materials of your device are printed on the type plate.

Formula	Substance	Concentration	Teflon® PTFE	PCTFE	PEEK	PVDF	FFKM	Viton® FPM	V4A
CH_3COCH_3	Acetone		1/1	1/3	1/1	3/4	1/1	4/4	1/1
C_6H_6	Benzene		1/1	1/3	1/1	1/3	1/1	3/3	1/1
Cl_2	Chlorine	10 % wet	1/1	0/0	4/4	2/2	1/1	3/0	4/4
Cl_2	Chlorine	97 %	1/0	1/3	4/4	1/1	1/0	1/1	1/1
C_2H_6	Ethane		1/0	0/0	1/0	2/0	1/0	1/0	2/0
C_2H_5OH	Ethanol	50 %	1/1	1/3	1/1	1/1	1/1	2/2	1/0
C_2H_4	Ethene		1/0	0/0	0/0	1/0	1/0	1/0	1/0
C_2H_2	Ethine		1/0	0/0	0/0	1/0	1/0	2/0	1/0
$C_6H_5C_2H_5$	Ethylbenzene		1/0	0/0	0/0	1/1	1/0	2/0	1/0
HF	Hydrofluoric acid		1/0	0/0	0/0	2/2	2/0	4/0	3/4
CO_2	Carbon dioxide		1/1	0/0	1/0	1/1	1/0	1/1	1/1
CO	Carbon monoxide		1/0	0/0	1/1	1/1	1/0	1/0	1/1
CH_4	Methane	technically pure	1/1	0/0	1/1	1/0	1/0	1/1	1/1
CH_3OH	Methanol		1/1	1/1	1/1	1/1	1/1	3/4	1/1
CH_3Cl_2	Methylene chloride		1/0	2/0	1/0	1/0	1/0	3/0	1/1
H_3PO_4	Phosphoric acid	1-5 %	1/1	1/1	1/1	1/1	1/1	1/1	1/1
H_3PO_4	Phosphoric acid	30 %	1/1	1/1	1/1	1/1	1/1	1/1	1/1
C_3H_8	Propane	gaseous	1/1	0/0	1/0	1/1	1/0	1/0	1/0
C_3H_6O	Propenoxide		1/0	0/0	0/0	2/4	2/0	4/0	1/0
HNO_3	Nitric acid	1-10 %	1/1	1/0	1/1	1/1	1/0	1/1	1/1
HNO_3	Nitric acid	50 %	1/1	1/0	3/3	1/1	1/0	1/0	1/2
HCl	Hydrochloric acid	1-5 %	1/1	1/1	1/0	1/1	1/1	1/1	2/4
HCl	Hydrochloric acid	35 %	1/1	1/1	1/0	1/1	1/1	1/2	2/4
O_2	Oxygen		1/1	0/0	1/0	1/1	1/1	1/2	1/1
SF_6	Sulfur hexafluoride		1/0	0/0	1/0	0/0	1/0	2/0	0/0
H_2SO_4	Sulfuric acid	1-6 %	1/1	1/1	2/2	1/1	1/1	1/1	1/2
H_2S	Hydrosulphide		1/1	1/1	0/0	1/1	1/1	4/4	1/1
N_2	Nitrogen		1/1	0/0	1/0	1/1	1/0	1/1	1/0
$C_6H_5C_2H_3$	Styrene		1/1	0/0	1/0	1/0	1/0	3/0	1/0
$C_6H_5CH_3$	Toluene (Methylbenzene)		1/1	0/0	1/0	1/1	1/1	3/3	1/1
H_2O	Water		1/1	0/0	1/1	1/1	1/1	1/1	1/1

Tab. 3: List of chemical resistance

0 - resistant

1 - practically resistant

2 - partially resistant

3 - not resistant

4 - no data available

Two values are given for each medium, left number = value at 20 °C (68 °F), right number = value at 50 °C (122 °F) Temperature.

Important note

The tables headed "Chemical resistance of plastics" and "Properties of plastics materials" have been compiled from information from various producers of raw materials. The figures relate exclusively to laboratory tests on raw materials. Plastics items made from these materials are often subject to influences which cannot be detected in a laboratory test (temperature, pressure, stresses in the material, chemical substances, design features, etc.). For these reasons the figures quoted can serve only as a guideline. In case of doubt we strongly recommend that a test be carried out. No legal claims can be derived from these figures and we disclaim all liability. The chemical and mechanical resistance of a product does not suffice for the assessment of its suitability for use, for example legislation on flammable liquids (explosion protection) is to be taken into particular consideration.

Chemical resistance for other substance on request.

9.6 User book (Please make copies)

Maintained on	Unit no.	Operating hours	Remarks	Signature