Compact mixing group

Art. M059

Description

ICMA mixing group M059 is designed for underfloor heating systems, in combination with distribution manifolds.
It maintains the fluid delivery temperature stable to the set value. The delivery temperature adjustment is done simply by means of a thermostatic head.

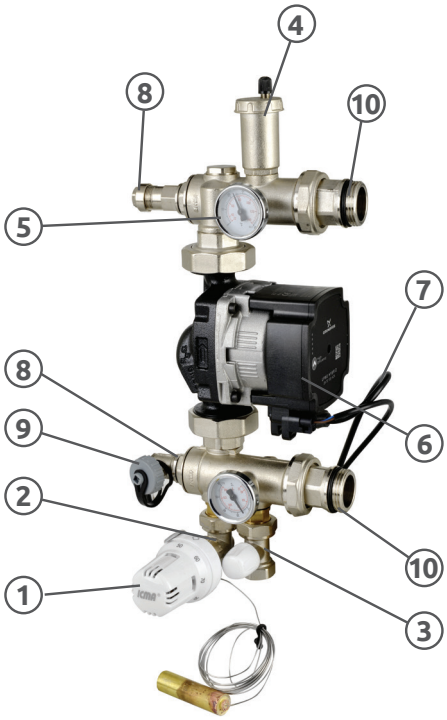
Group advantages

- Right / left reversibility (with respect to the manifold).
- Mixing accuracy.

Component list

Fixed point mixing group components:

1. Thermostat control device (20-50°C) with remote sensor
2. Fixed point thermostatic valve
3. Holder for boiler return
4. Automatic air vent valve
5. Thermometer 0/60°C
6. Circulator
7. Power cable
8. Sensor pocket
9. Valve for system loading/discharge G1" pipe unions with O-ring seal for collector



The pre-assembled units are supplied with four different pump models:

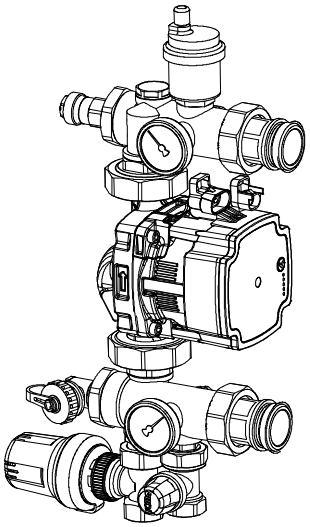
- GRUNDFOS - UPSO 25-65 130 - Synchronous circulation pump with 3 speeds
- GRUNDFOS - UPS2 25-40/60 130 - Circulation pump with 3 speeds
- GRUNDFOS - UPM3 HYBRID 25-70 130 - Electronic circulation pump
- TACO - ES2 25-70/130 - Electronic circulation pump

Technical features

TECHNICAL DATA	
Fluid used:	Water and glycol based solutions
Maximum percentage of glicole:	See specifications on pag. 4
Temperature range of boiler inlet:	5÷110°C
Mixing temperature range:	20÷50°C
Thermometers scale:	0÷60°C
Maximum operating pressure:	10 bar
Maximum differential pressure:	1 bar
Circulator power supply:	230 V – 50 Hz
Circulators:	See specifications on pag. 4

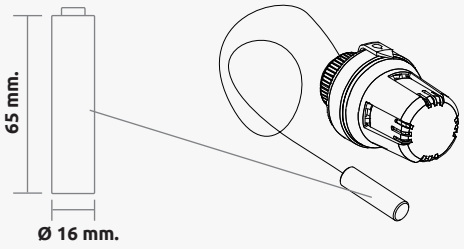
MATERIALS	
Valve bodies and fittings:	Brass CW617N - UNI EN 12165
Unions and nuts:	Brass CW617N - UNI EN 12165
Thermometer:	Steel/Aluminium
O-rings and gaskets:	EPDM Perox

CONNECTIONS	
Boiler connection threads:	G1/2" F
Collectors connection threads:	G1" M

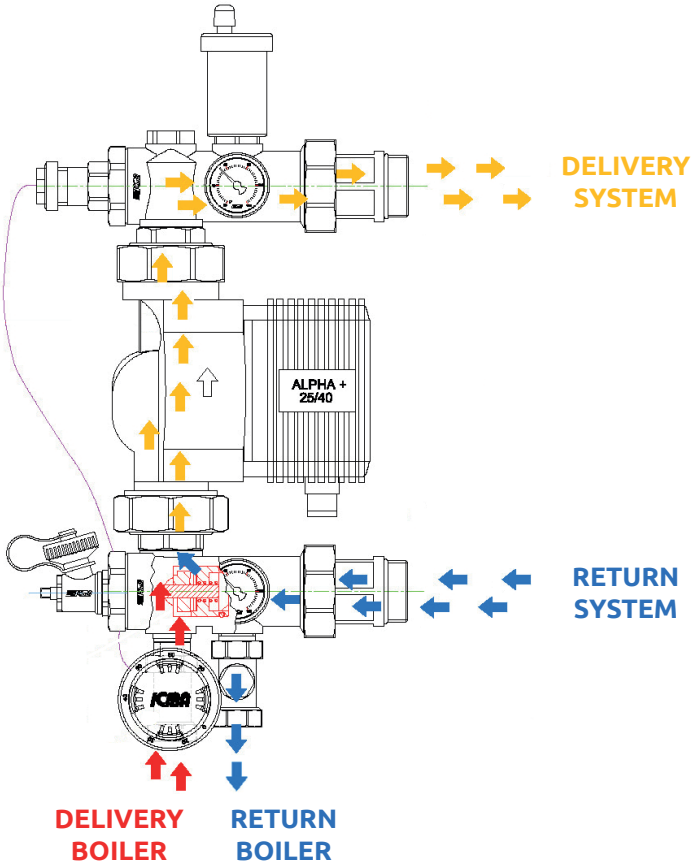


THERMOSTATIC HEAD (Code 82994AC20):

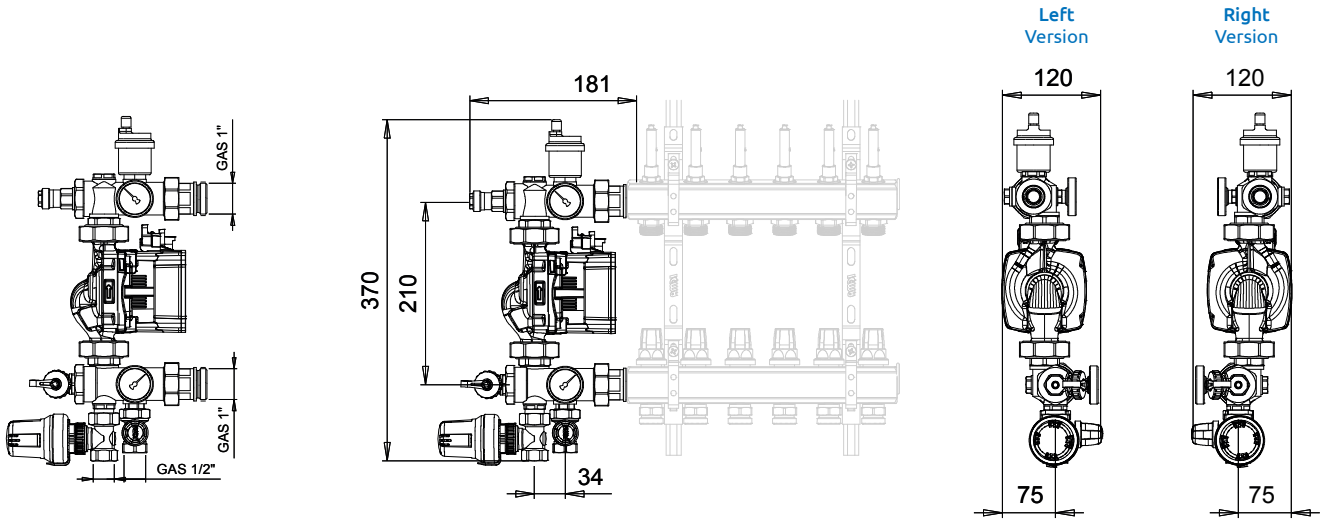
Max working temperature:	110°C
Max working pressure:	10 bar
Temperature setting range:	20°C-50°C
Body:	PA66 F.V. 30%
Spring:	Stainless steel
Ferrule:	Brass CW 614 N UNI EN 12164
Element	Composite



Flow diagram



Dimensions



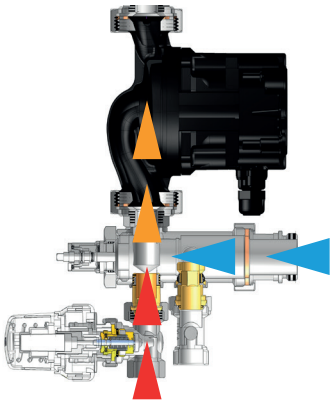
Thread dimensions	Code	Circulator
G1"M	87M059PGP06	NOCIRCOLATORE
G1"M	87M059PG0665	GRUNDFOS UPS 25/65
G1"M	87M059PGP328	GRUNDFOS UPM3 HYBRID 25/70
G1"M	87M059PGP326	GRUNDFOS UPM3 25/60
G1"M	87M059PG06P329	Taco ES2 25/60

Functioning

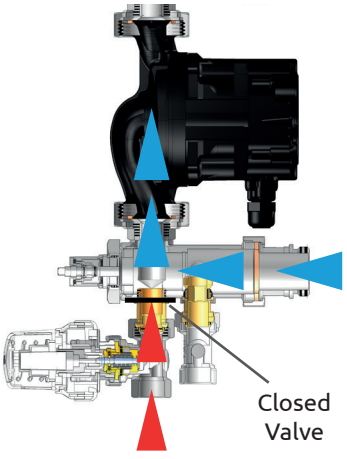
The picture below shows a group with left side delivery set at 40 °C. The “RT” room thermostat controls the recirculation pump, activating the system when the room temperature goes below the set value. The connections to the unit pass through an hydraulic separator “HS”, which sends the heat transfer fluid to the heating zones. The thermostatic valve works continuously to maintain the temperature previously set by manual adjustment.

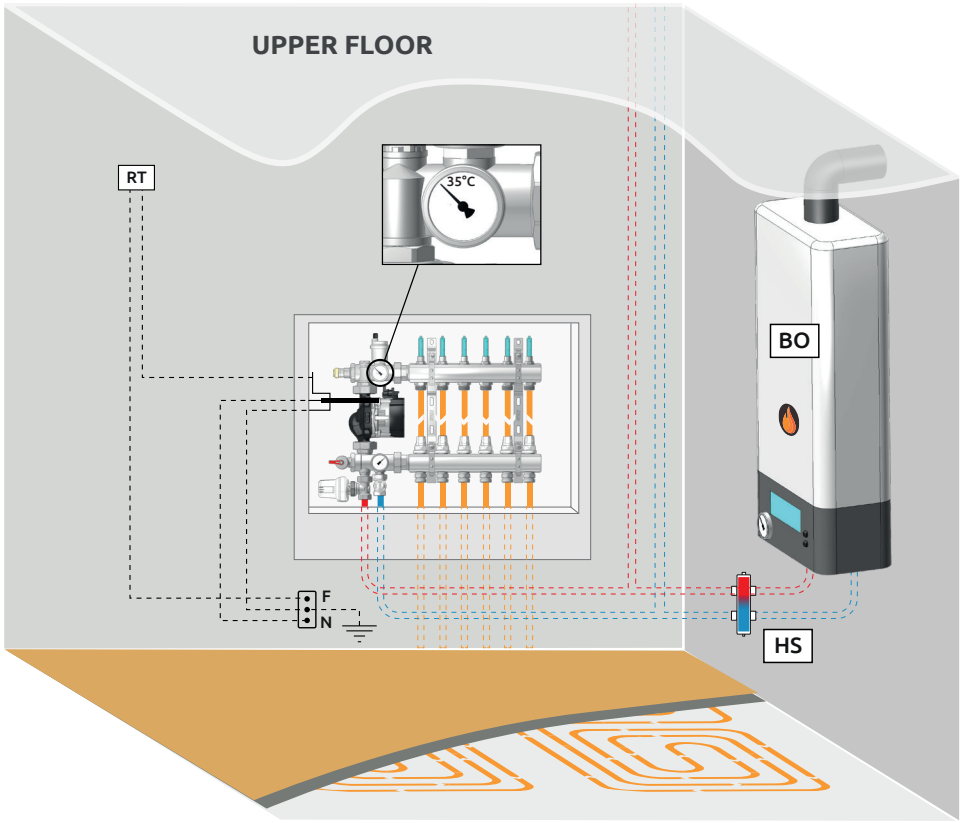
The thermostatic mixer works in two different positions during its operation:

1. ADJUSTMENT POSITION:
In case of thermostatic head set on 40*, and Tmix<40°, the thermostatic valve let the heat carrying fluid coming from the boiler in and mixes it with the underfloor heating system return fluid.

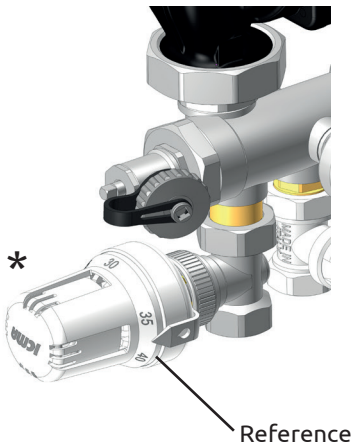


2. CLOSURE POSITION:
In case of thermostatic head set on 40*, and Tmix>40°, the thermostatic valve excludes the heat-carrying fluid coming from the boiler completely, to let the underfloor heating return fluid recirculate.





RT: Room thermostat
BO: Boiler
HS: Hydraulic separator



Position	20°C	25°C	30°C	40°C	45°C	50°C

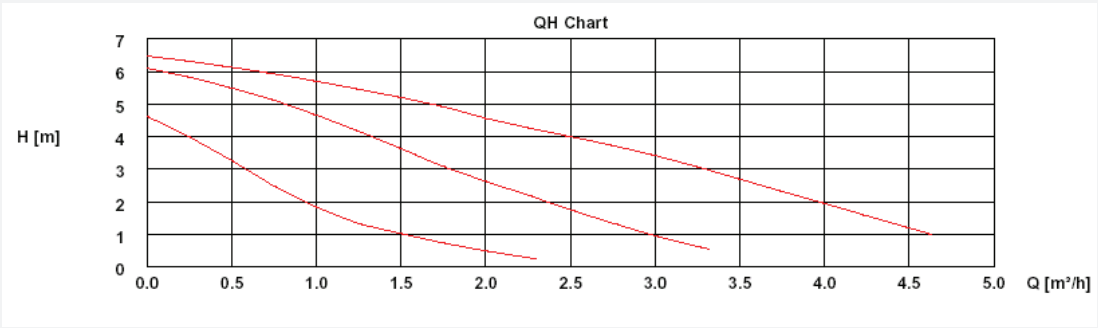
Circulators range

Art. P321 - Synchronous circulation pump with 3 speeds (Saleable in Extra-EU countries only):

CARATTERISTICHE TECNICHE:

Brand:	Grundfos
Model:	UPSO 25 – 65 130 mm
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50Hz
Operating temperature:	+2°C ÷ 110°C.
Max operating pressure:	10 bar
Minimum pressure on the intake side:	85°C = 0,049 bar
	90°C = 0,27 bar
	110°C = 1,08 bar
Max. percentage of glycol:	50%
Protection level:	IP44

HYDRAULIC CHARACTERISTICS

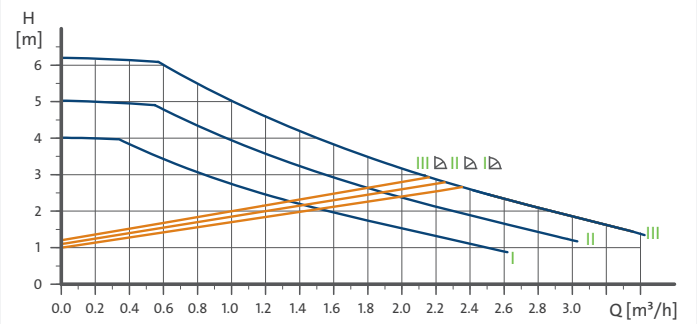


Art. P326 - Art. P326 - Circulation pump with PWM:

TECHNICAL SPECIFICATIONS:

Brand:	Grundfos
Model:	UMP4 PWM 25/70 130
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50Hz
Operating temperature:	+2°÷110°C.
Temp. ambiente max.:	70°C
Max operating pressure:	10 bar
Minimum pressure on the intake side:	75°C = 0,05 bar
	95°C = 0,5 bar
	110°C = 1,08 bar
Max. percentage of glycol:	50%
Protection level:	IP44
Energy class (EEI):	≤0.20

HYDRAULIC CHARACTERISTICS

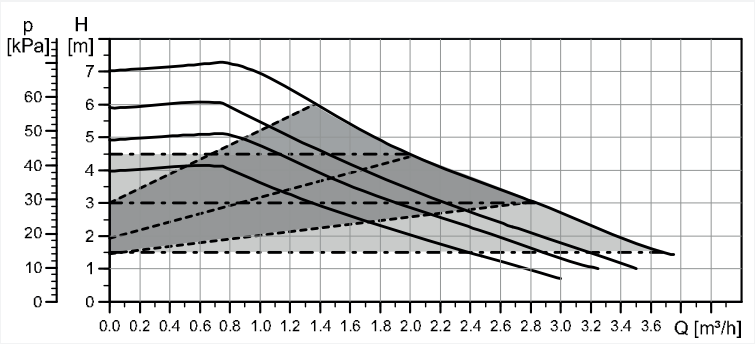


Art. P328 - Circulator with PP (proportional pressure), CP (constant pressure) CC (constant curves), PWM (profile A o C), AA (auto adapt):

TECHNICAL SPECIFICATIONS:

Brand:	Grundfos
Model:	UPM3 hybrid 25/70 130
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply	230V – 50/60Hz
Operating temperature:	+2°C ÷ 110°C
Max. ambient temperature:	70°C
Max operating pressure:	10 bar
Minimum pressure on the intake side:	75°C = 0,05 bar 95°C = 0,5 bar 110°C = 1,08 bar
Max. percentage of glycol:	50%
Protection level:	IP44
Energy Class (EEI):	≤0.20

HYDRAULIC CHARACTERISTICS

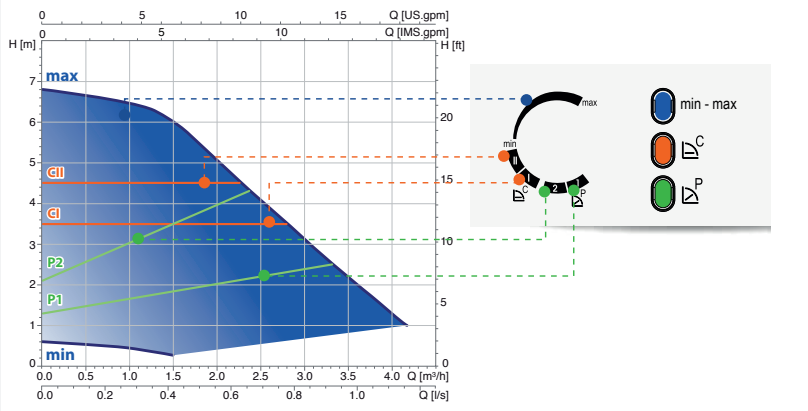


Art. P329 - Circulator with nr. 2 proportional-pressure curves, nr. 2 constant-pressure curves, min-max mode – Fixed speed

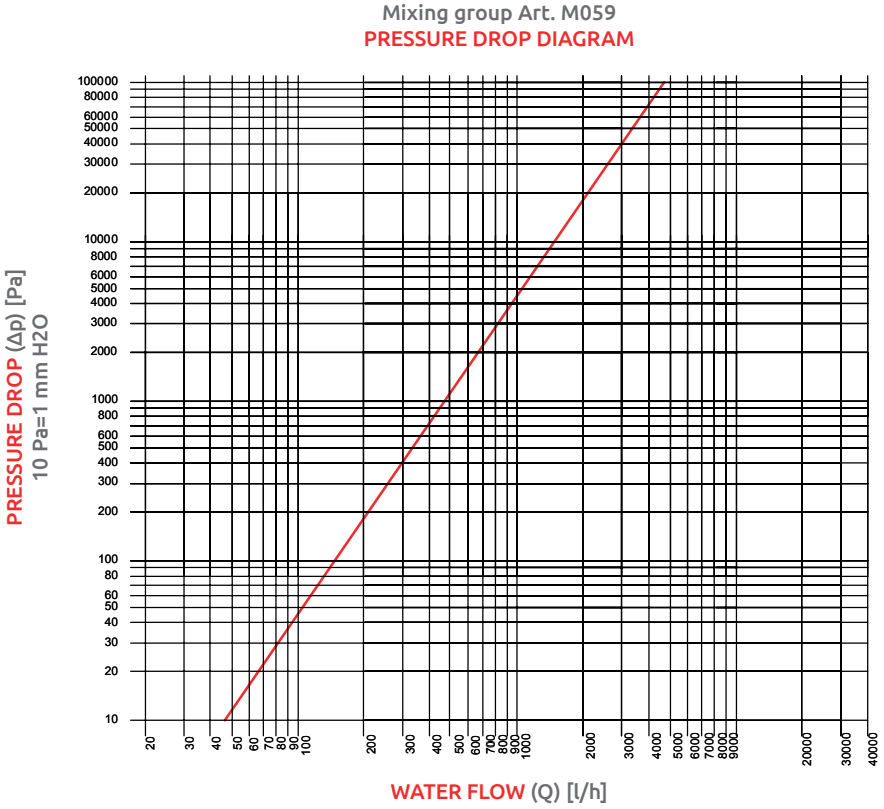
TECHNICAL SPECIFICATIONS:

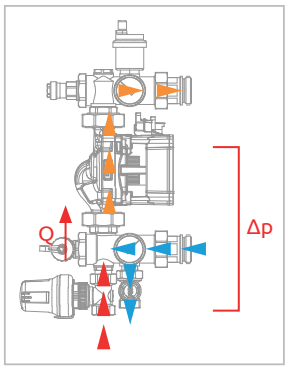
Brand:	Taco
Model:	ES2 25-70/130
Centre to centre distance:	130 mm
Connections:	G 1"1/2 M
Electrical power supply:	230V – 50/60Hz
Operating temperature:	Ambient. temp. 30°C = 30 ÷ 95°C Ambient. temp. 35°C = 35 ÷ 90°C Ambient. temp.
Max operating pressure:	6 bar
Minimum pressure on the intake side:	50°C = 0,3 bar 95°C = 1,0 bar
Max. percentage of glycol:	30%
Protection level:	IP44
Energy Class (EEI):	≤0.21

HYDRAULIC CHARACTERISTICS



Hydraulic specifications

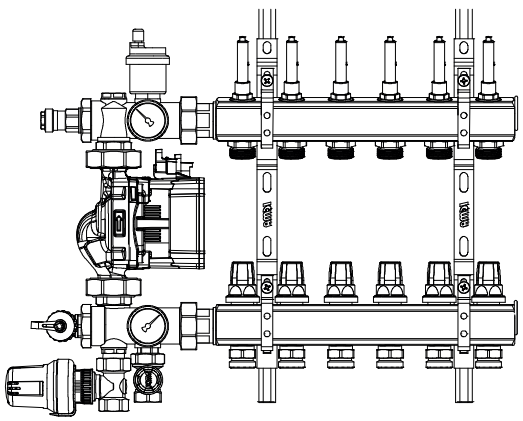


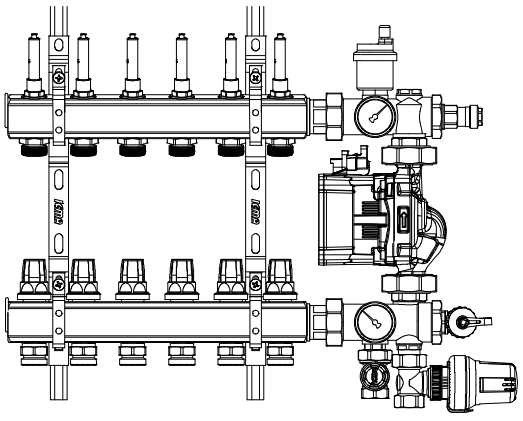


Kv m3/h	4.84

Positioning

Group orientation





Safety

Read assembly and operating instructions carefully before starting up the system in order to prevent accidents and damage to the system caused by improper use. Remember that your rights under the warranty will be forfeited if you make any changes to the system or tamper with it during assembly and construction without authorisation.

Operating conditions

The limits on operating values specified must not be exceeded under any circumstances. Safe operation is guaranteed if you comply with the general conditions and limits on operating valves described in this information sheet.

Safety standards for assembly and inspection

Assembly and inspection operations must always be performed by qualified, authorised personnel familiar with the instructions contained herein. Make sure the system is shut down before performing any work on it.

Electrical connections

Electrical connections must be made by qualified personnel. .
Check that the power supply voltage is as specified on the plate before turning on the pump. All connections must be made as required by law.

Maintenance

Maintenance work must always be performed by qualified, authorised personnel familiar with the instructions contained herein. Make sure the system is shut down before performing any work on it. Should the pump be replaced, rotate the on/off valve to closed position.

WARNING! Depending on operating conditions in the pump and the system, the surface temperature could be very high. Touching the pump directly comports a risk of burning!