

Startup

Electrical system

Observe the relevant local and national regulations when laying out and selecting the electric lines as well as when connecting the motor. The motor must be protected by a motor protection switch. Have the motor connected in accordance with the "Electrical connection" data sheet. Pay attention to the direction of rotation. If the direction of rotation is incorrect, the machine will not perform as specified, and under certain circumstances, can become damaged. In accordance with the machine data sheet, check the operating voltage and make certain that the current consumption remains uniform during all phases.

Make sure that all temperature sensors and monitoring devices, such as the sealing chamber monitor, are connected and that their function is tested. For details on this, see the "Electrical connection plan" data sheet.



Beware of electrical current!

**Electrical current can cause fatal injuries if not handled correctly!
All machines with free cable ends (i.e. without plugs) must be connected by a qualified electrician.**

Direction of rotation

The machine must be connected in accordance with the data sheet "Electrical connection plan". Rotation direction is controlled by a rotating field tester. This tester is switched on when the pump is connected and displays the rotation direction of the rotating field. There must be a clockwise rotating field for the machine to run correctly.

If a counter-clockwise rotating field is displayed, two phases must be swapped.

The pump and performance data specified can only be achieved when there is a clockwise rotating field. The machine is not designed for operation with a counter-clockwise rotating field.

Motor protection and activation types

Motor protection

The minimum requirement is a thermal relay / motor protection switch with temperature compensation, differential triggering and an anti-reactivation device in accordance with VDE 0660 or the appropriate national regulations. If the machines are connected to electrical systems in which faults frequently occur, we recommend installing additional protective devices (overvoltage, undervoltage or phase failure relays, lightning protection). Local and national regulations must be adhered to when connecting the machine.

If the machine is used in a fire extinguishing or sprinkler system, this may not be turned off by a safety device under any circumstances. The motor protection may only signal faults.

Activation types for cables with free ends (without plugs)

Direct activation

Motor protection should be set to the rated current when fully loaded. At partial load, we recommend that motor protection is set 5% above the measured current at the operating point.

Star-delta activation

If the motor protection is installed in the line:

Set the motor protection to 0.58 x the rated current. The maximum start-up time in star-delta mode is 3 seconds.

If the motor protection is not installed in the line:

Set the motor protection to the rated current when fully loaded.

Starting transformer/soft start

Motor protection should be set to the rated current when fully loaded. At partial load, we recommend that motor protection is set 5% above the measured current at the operating point. The maximum start-up time at reduced voltage (approx. 70%) is 3 seconds.