



Wilo Protect Modul-C Typ 22 DM Instruction Manual

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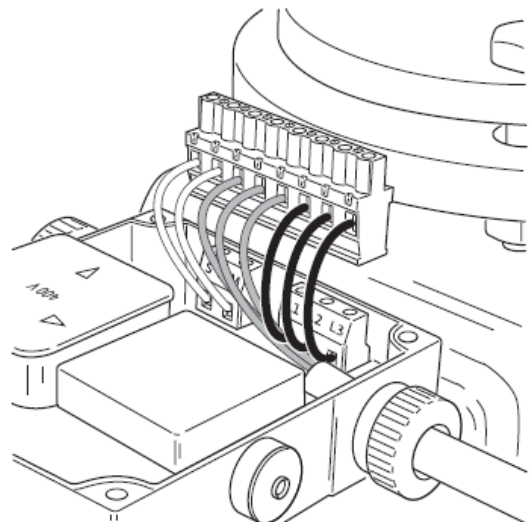
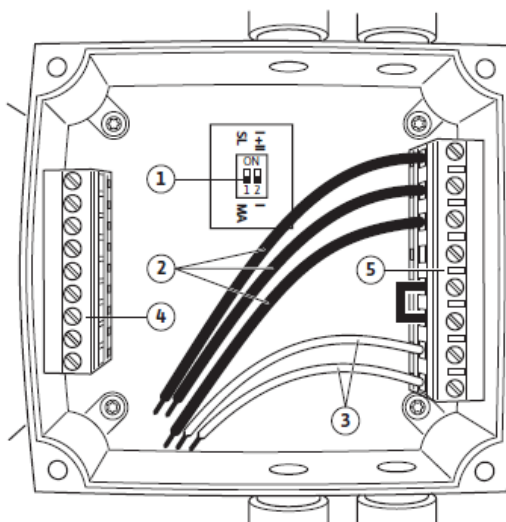
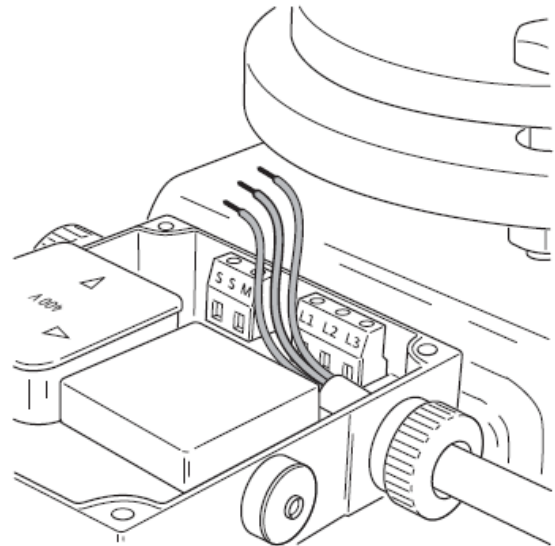
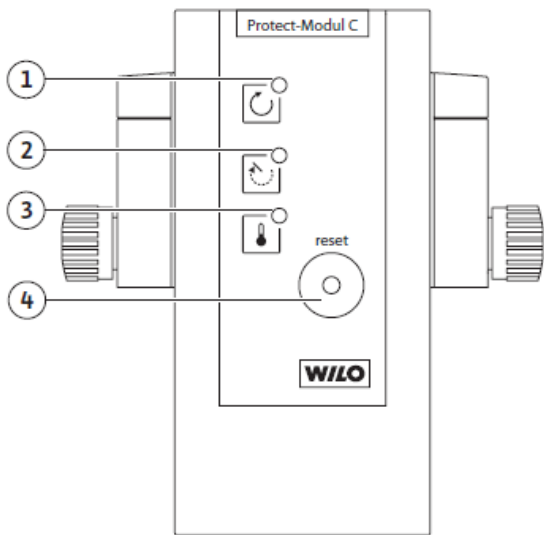
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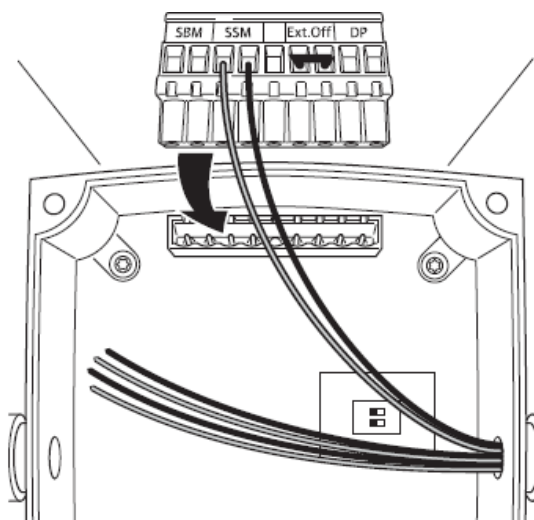
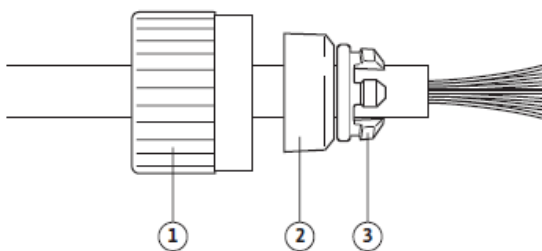
Wilo Protect Modul-C Typ 22 DM

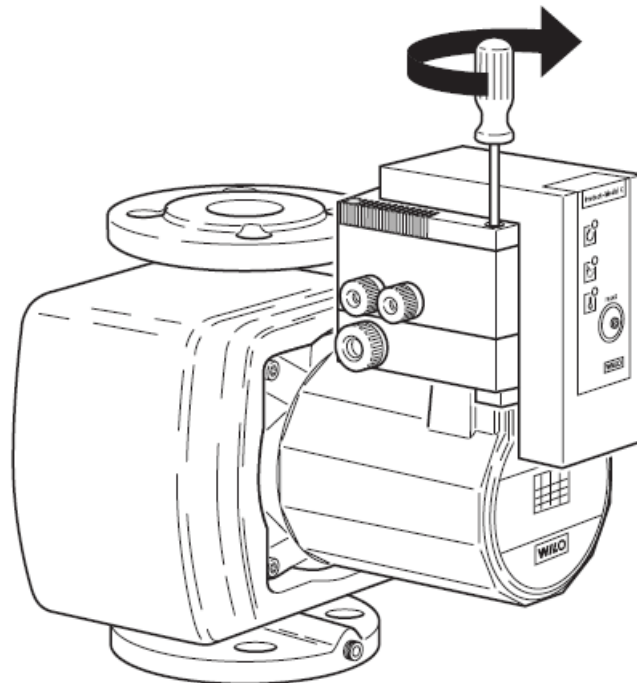
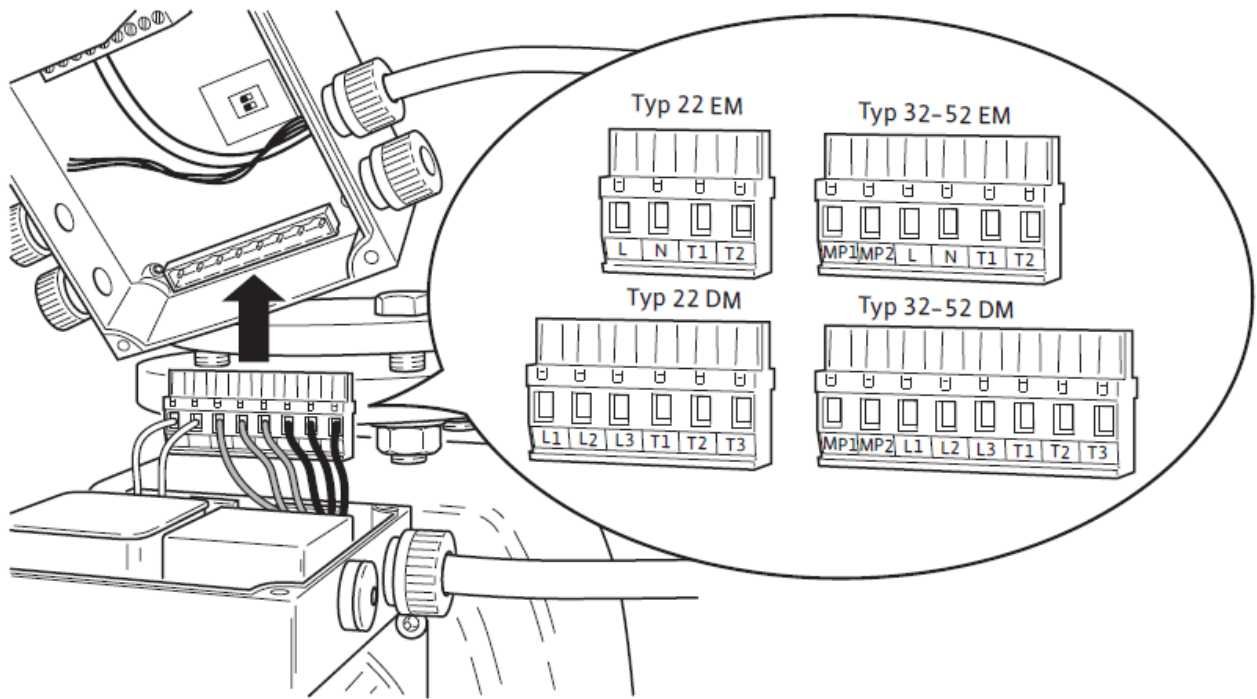


overview

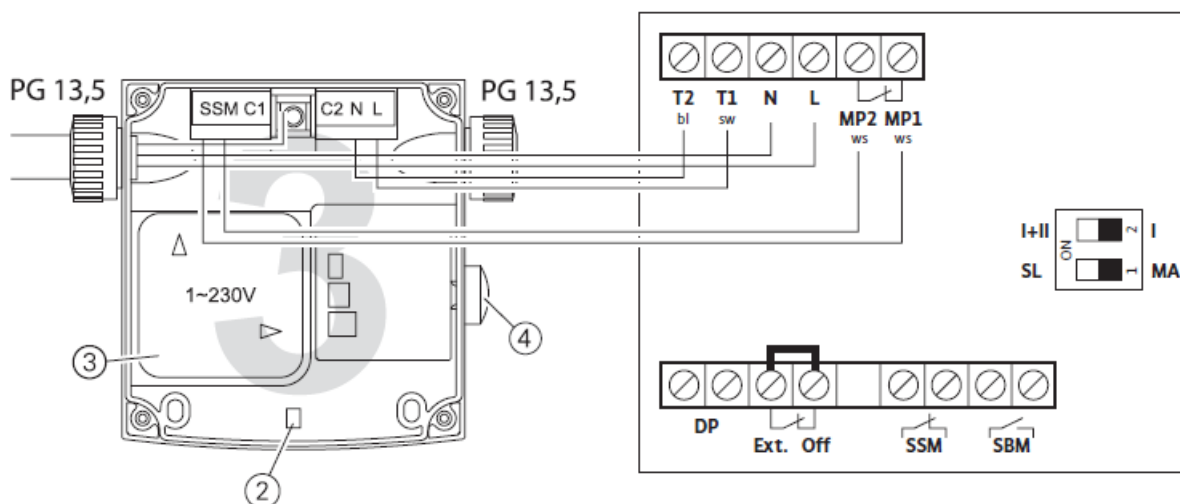
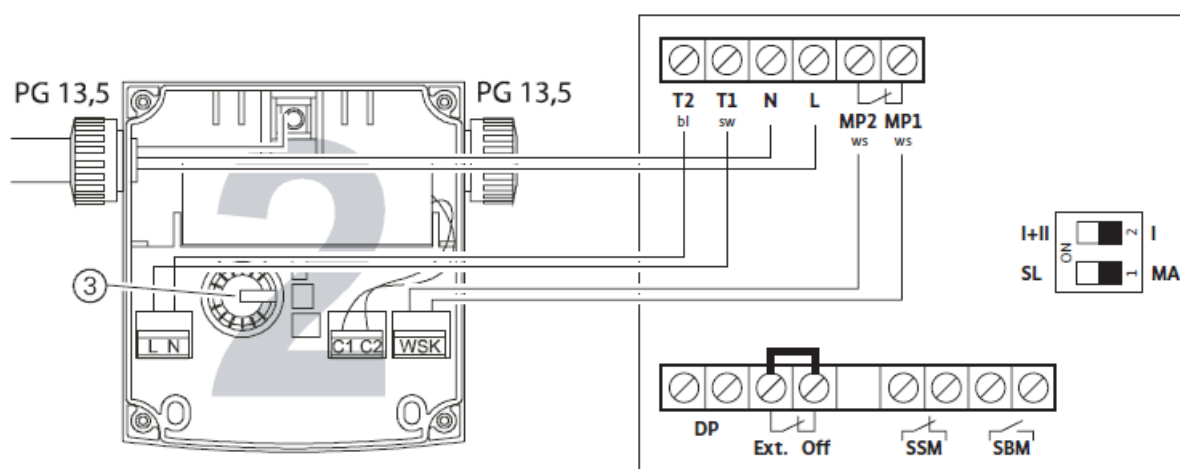
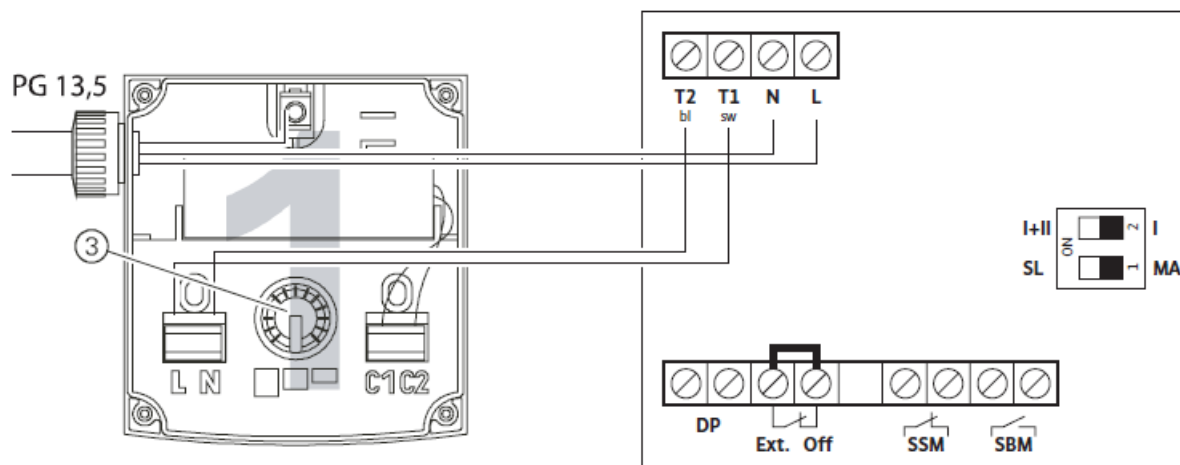


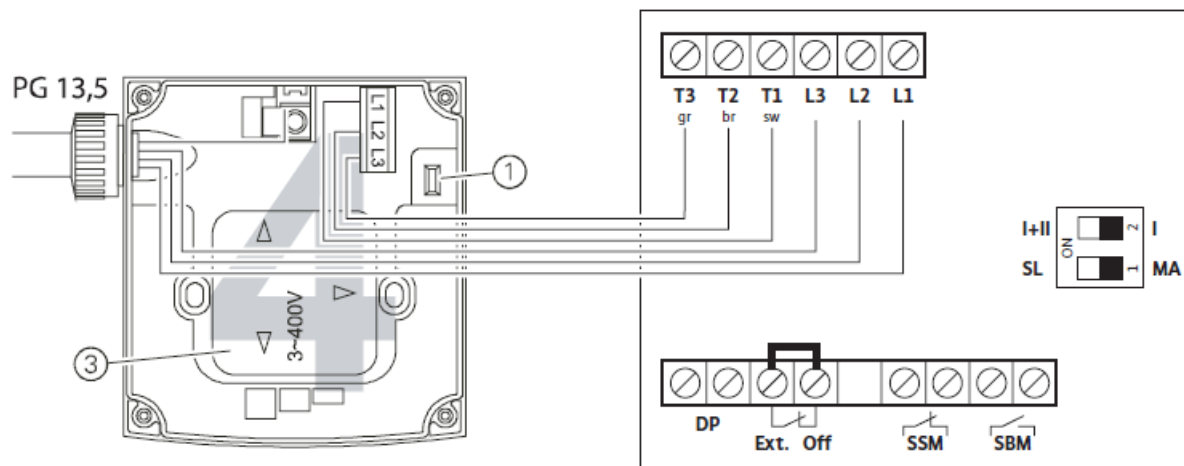
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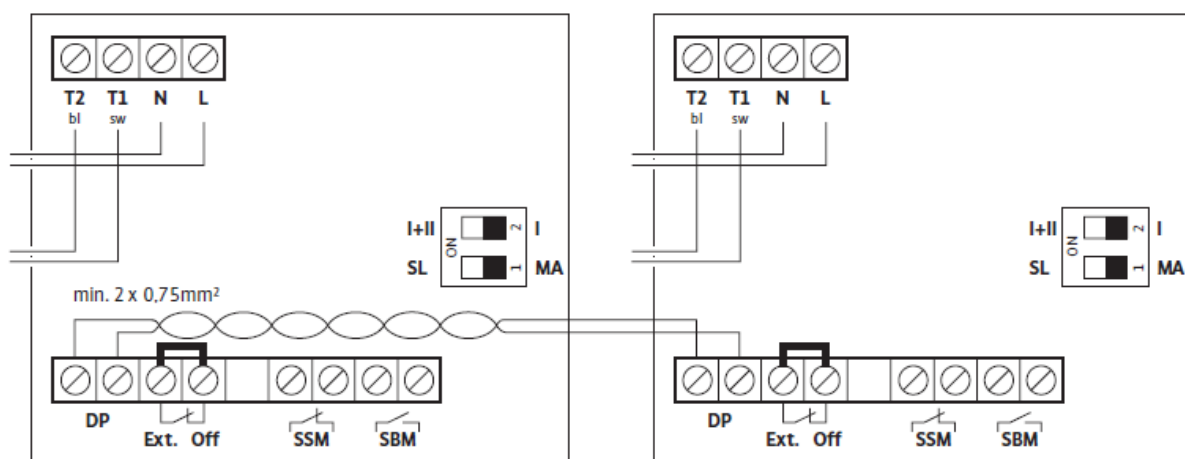
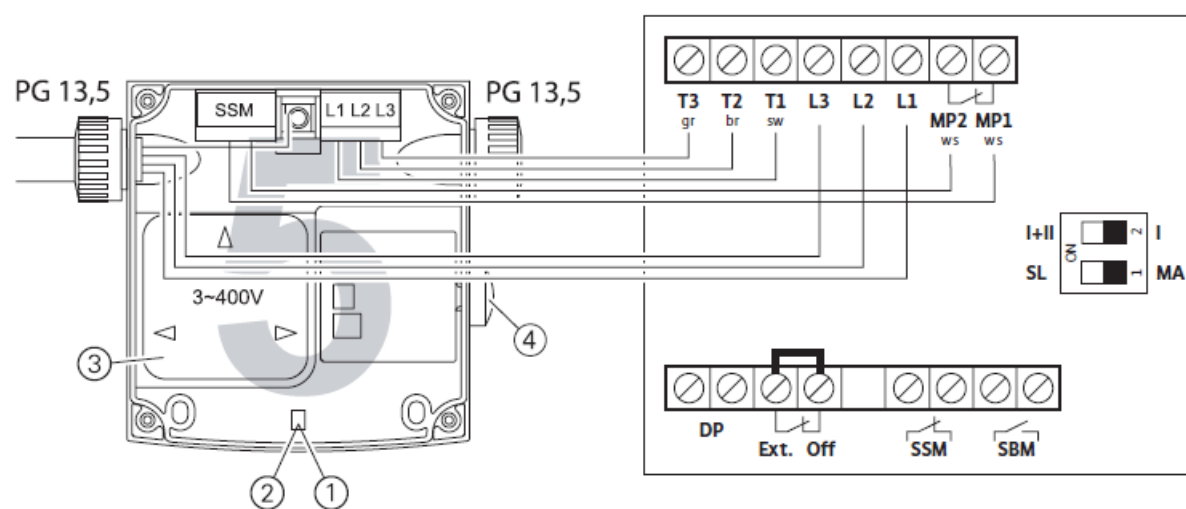


Installation





Intend to use



General

About this document

These Installation and Operating Instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product. This Installation and Operating Instructions correspond to the relevant version of the product and the underlying safety standards valid at the time of going to print. These Installation and operating instructions are an addition to the Installation and operating instructions for glandless circulation pump type TOP-S/TOP-SD/TOP-Z.

Safety

These operating instructions contain basic information which must be adhered to during installation and operation. For this reason, these operating instructions must, without fail, be read by the service technician and the responsible operator before installation and commissioning. It is not only the general safety instructions listed under the main point "safety" that must be adhered to but also the special safety instructions with danger symbols included under the following main points.

CAUTION!

There is a risk of damaging the pump/unit. 'Caution' implies that damage to the product is likely if the information is disregarded.

NOTE:

Useful information on using the product. It draws attention to possible problems.

Danger in event of non-observance of the safety instructions

Non-observance of the safety instructions can result in risk of injury to persons and damage to pump/unit. Non-observance of the safety instructions can result in the loss of any claims to damages.

In detail, non-observance can, for example, result in the following risks:

- Failure of important pump/unit functions,
- Failure of required maintenance and repair procedures
- Danger to persons from electrical, mechanical and bacteriological influences,
- Property damage

Transport and interim storage

On receipt of the product, check it for any damage incurred in transit. In the event of damage in transit, the necessary steps must be taken with the carrier before the relevant deadlines.

CAUTION!

Danger of damage to the module!

Danger of damage due to improper handling during transport and storage.

- The Protect-Module C must be protected during transport and storage from moisture, frost and mechanical damage.
- It must not be exposed to any temperature outside the range – 10 °C to + 70°C.

Application

The TOP series circulating pumps come equipped with a standard terminal box. A retrofit plug-in module is available for the pump with the Protect-Module C (see title illustration). In addition to the pump functions, the Protect-Module C also enables further signals as well as the performance of control tasks. When the Protect-Module C is deployed, external contactors and supplementary switchgears are no longer required, with a corresponding effect on the complexity of the installation.

Product data

Example: Wilo-Protect-Modul C Type 22 EM	
Protect-Modul	Series designation
C	Comfort
Type 22	Type designation: 22 or 32-52
EM	For mains connection: EM = 1~230 V, 50 Hz (single-phase motor) DM = 3~400 V, 50 Hz (three-phase current motor)

Technical data

Technical data	
Connection current Type 22 EM Type 32-52 EM Type 22 DM Type 32-52 DM	1~230 V, $\pm 10\%$, 50 Hz 1~230 V, $\pm 10\%$, 50 Hz 3~400 V, $\pm 10\%$, 50 Hz 3~400 V, $\pm 10\%$, 50 Hz
Frequency	50 Hz
Terminal cross-section, all terminals	max. 2.5 mm ²
Temperature range of flow medium	-20 °C to +110 °C
Max. ambient temperature	+40 °C
Pump protection class	IP 44
Cable connections	4x PG9
Electromagnetic compatibility: Emitted interference Immunity to interference	EN 61000-6-3 EN 61000-6-2

Scope of supply

- Protect-Module C
- Plug strip control and signal terminals
- Plug strip mains connection terminals and connection terminals WSK/SSM with connection cables

- Fixing screws (4)
- Installation and operating instructions

Description and function

The functions of the pump housed in the terminal box (mains connection, thermal winding contact WSK or potential-free collective fault signal) are transferred to the terminal box when the Protect-Module C is installed. The fault acknowledgement button and the direction of rotation control lamp, if fitted, as well as the manual speed stage switching of the standard terminal box continue to function when the Protect-Module C is installed. The Protect-Module C is fitted to the standard terminal box of the pump in place of the terminal box cover.

- Operation light signal (figure 1, position 1)

WARNING!

Danger of electric shock

- Even when the operation light signal is off, voltage may be present on the Protect-Module.
- Fault signal light “Stoppage” (figure 1, position 2)
- Fault signal light “Winding Overheat” (figure 1, position 3)
- Fault acknowledgement button on the pump (figures 3b, 3d, position 4)
- If fitted, this button is used to reset the response of the integrated full motor protection. This fault reset is done before fault reset on the Protect-Module C.
- Fault acknowledgement button on Protect-Module C (figure 1, position 4)
- A fault displayed on the Protect-Module C is reset by briefly pressing this button (< 1s).
- Pressing and holding down the button (≥ 1 s) triggers pump cycling in dual pump operation with integrated dual pump management.
- Single pump
- The following table shows the links between possible faults and the reactions of light signals and signal contacts:

Operating element	Status	Possible causes
Operation light signal green	off	<ul style="list-style-type: none"> • No supply voltage. • Control input “Ext. Off” opened. • Fault is present and has not yet been acknowledged.
	flashing	<ul style="list-style-type: none"> • DP communication fault (only with double pump).
Fault signal light “Stoppage” red	off	<ul style="list-style-type: none"> • No motor stoppage.
	on	<ul style="list-style-type: none"> • Motor stoppage recognised. • Mechanical blockage of pump • Winding fault

	flashing	<ul style="list-style-type: none"> Motor stoppage acknowledged, pump is in control loop 1).
Fault signal light “Winding Overheat” red	off	<ul style="list-style-type: none"> No overheat.
	on	<ul style="list-style-type: none"> Overheat recognised. Pump overload Winding fault Unacceptable combination of medium temperature – ambient temperature
	flashing	<ul style="list-style-type: none"> Overheat acknowledged, pump is in control loop 1).
Operating signal contact	open	<ul style="list-style-type: none"> No supply voltage. Control input “Ext. Off” opened. Fault is present and has not yet been acknowledged.
	closed	<ul style="list-style-type: none"> Pump functioning, no fault recognised.
Fault signal contact	open	<ul style="list-style-type: none"> Fault is present. Pump is still in control loop 1).
	closed	<ul style="list-style-type: none"> Fault-free operation.
Fault signal light “Stoppage” red	off	<ul style="list-style-type: none"> No motor stoppage.
	on	

- Double pump:
- The relationships between possible faults and the reactions of light signals and signal contacts depend on the following factors:
- Parametrization of signal contacts in individual operation/individual fault signal or joint operation/collective fault signal (function see Table 2)
- Allocation of “Ext. Off” control inputs to master and slave

Double pump operation

- Main/Reserve operation with automatic switching to the standby reserve pump after 24 hours of real running time, the external control command “Ext. Off” interrupts the running time counter.
- Switching takes place through an overlap, i.e. at the time of switching, both pumps run simultaneously (for approx. 10 sec.). This avoids pressure surges and undersupply in cooling and air-conditioning systems for example.

- The DIP switch 1 (figure 2b, position 1) determines which pump is the master (MA) and which pump is the slave (SL) (function see Table 2).
- The DIP switch 2 (figure 2b, position 1) determines whether the signal contacts “SSM” and “SBM” are individual or collective signals (function see Table 2).
- In the case of a fault in the working pump, the system switches to the standby pump after approx. 3 sec.

Single pump		Double pump	
Master (MA)		Slave (SL)	
DIP Switch1: MA		DIP Switch1: MA	DIP Switch1: SL
DIP Switch2: I		DIP Switch2: –	DIP Switch2: –
Allocate terminals to Ext. Off		Allocate terminals to Ext. Off	Bridge terminals to Ext. Off
DIP Switch1: MA		DIP Switch1: MA	DIP Switch1: SL
DIP Switch2: I		DIP Switch2: I	DIP Switch2: –
SSM: Collective fault signal		SSM: Individual fault signal	SSM: Individual fault signal
for pump		for MA	for SL
		DIP Switch2: I + II	DIP Switch2: –
		SSM: Collective fault signal	SSM: Individual fault signal
		for MA + SL	for SL
DIP Switch1: MA		DIP Switch1: MA	DIP Switch1: SL
DIP Switch2: I		DIP Switch2: I	DIP Switch2: –
SBM: Individual operating		SBM: Individual operating	SBM: Individual operating
signal for pump		signal for MA	signal for SL
		DIP Switch2: I + II	DIP Switch2: –
		SBM: Collective operating	SBM: Individual operating
		signal for MA + SL	signal for SL
– : Setting of DIP switch not relevant			

installation and electrical connection

Installation and electrical connection must be carried out in accordance with local regulations and only by qualified personnel. applicable regulations on the prevention of accidents must be observed.

WARNING!

Danger of electric shock Potential dangers from electrical currents must be eliminated. Local directives or general regulations [e.g. IEC, VDE etc.] and those issued by the local power supply company must be adhered to.

Protect-Module C	Terminal diagram
Type 22 EM	3a
Type 32-52 EM	3b
Type 22 DM	3c
Type 32-52 DM	3d

Commissioning

CAUTION!

Danger of damage to Protect-Module C When commissioning, the Installation and operating instructions of the glandless circulation pump, types TOP-S/TOP-SD/TOP-Z must be observed. NOTE: Rotation control (only for three-phase motors)


Maintenance

Maintenance and repair work must only be carried out by professionally qualified personnel.

WARNING!

The danger of electric shock Potential dangers from electrical currents must be eliminated. During all maintenance and repair work, the pump must be disconnected from the power supply and secured against possible unauthorized reconnection. Spare parts may be ordered through local professional technicians and/or Wilo Customer Service. To avoid queries and order errors, all data on the rating plate must be given along with every order. Subject to technical changes!

Documents / Resources

	<p>Wilo Protect Modul-C Typ 22 DM [pdf] Instruction Manual Protect, Typ 22, DM, Modul-C</p>
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References

- [NA Commercial Distributor & Supply Company | North American](#)
- [100% WIR | Crisol Holding GmbH](#)
- [wilo Wilo Corporate - Pioneering for You | WILO](#)
- [wilo Wilo - Pumpenhersteller in Ihrer Nähe seit 1872 | Wilo](#)