

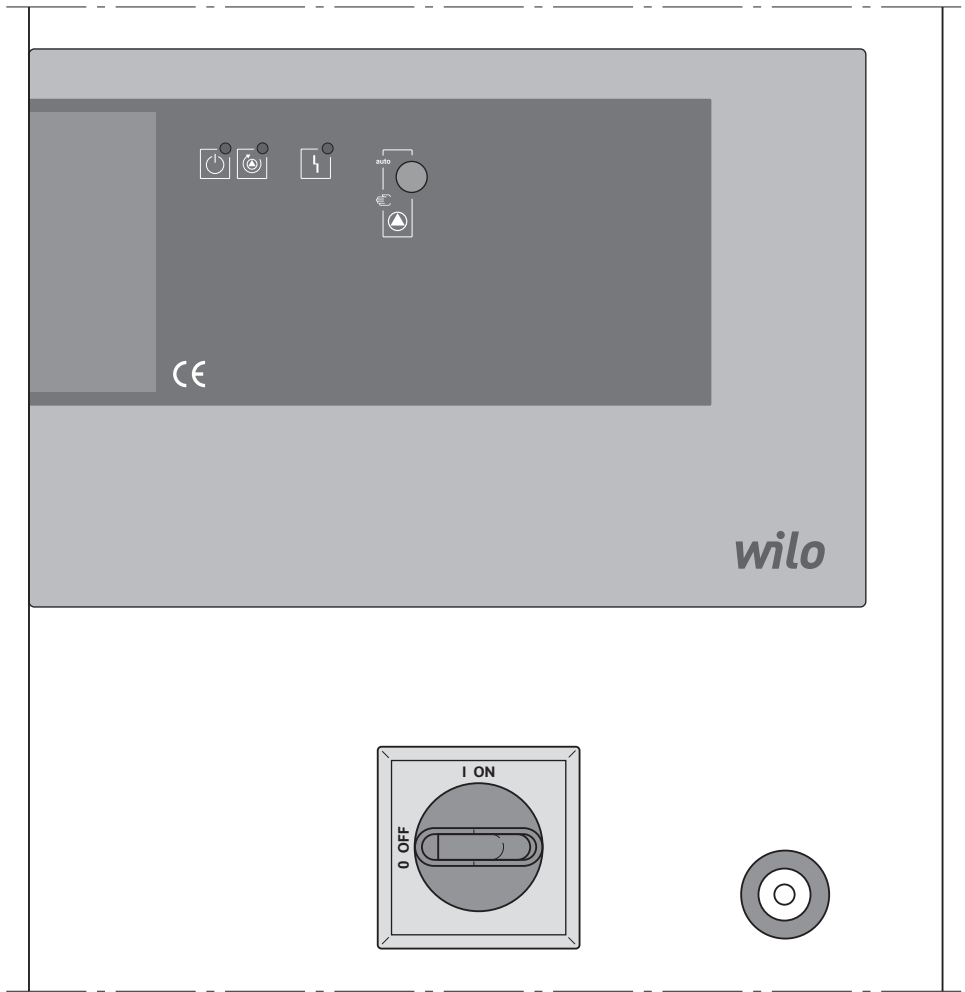
Wilo-Control SC-Fire Jockey



de Einbau- und Betriebsanleitung
en Installation and operating instructions
fr Notice de montage et de mise en service

nl Inbouw- en bedieningsvoorschriften

Fig. 1:



1 General

1.1 About this document

The language of the original operating instructions is German. All other languages of these instructions are translations of the original operating instructions.

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.

These installation and operating instructions correspond to the relevant version of the product and the underlying safety regulations and standards valid at the time of going to print.

EC declaration of conformity:

A copy of the EC declaration of conformity is a component of these operating instructions.

If a technical modification is made on the designs named there without our agreement or the declarations made in the installation and operating instructions on product/personnel safety are not observed, this declaration loses its validity.

2 Safety

These operating instructions contain basic information which must be adhered to during installation, operation and maintenance. For this reason, these operating instructions must, without fail, be read by the service technician and the responsible specialist/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.

2.1 Indication of instructions in the operating instructions

Symbols:
General danger symbol



Danger due to electrical voltage



NOTE



Signal words:

DANGER!

Acutely dangerous situation. Non-observance results in death or the most serious of injuries.

WARNING!

The user can suffer (serious) injuries. "Warning" implies that (serious) injury to persons is probable if this information is disregarded.

CAUTION!

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

NOTE:

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

Information that appears directly on the product, such as:

- Direction of rotation arrow,
 - Identification for connections,
 - Rating plate,
 - Warning sticker,
- must be strictly complied with and kept in legible condition.

2.2 Personnel qualifications

The installation, operating and maintenance personnel must have the appropriate qualifications for this work. Area of responsibility, terms of reference and monitoring of the personnel are to be ensured by the operator. If the personnel are not in possession of the necessary knowledge, they are to be trained and instructed. This can be accomplished if necessary by the manufacturer of the product at the request of the operator.

2.3 Danger in the 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 the environment and the product/unit. Non-observance of the safety instructions results in the loss of any claims to damages.

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

- Danger to persons from electrical, mechanical and bacteriological influences
- Damage to the environment due to leakage of hazardous materials
- Property damage
- Failure of important product/unit functions
- Failure of required maintenance and repair procedures

2.4 Safety consciousness on the job

The safety instructions included in these installation and operating instructions, the existing national regulations for accident prevention together with any internal working, operating and safety regulations of the operator are to be complied with.

2.5 Safety instructions for the operator

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

- If hot or cold components on the product/the unit lead to hazards, local measures must be taken to guard them against touching.
- Guards protecting against touching moving components (such as the coupling) must not be removed whilst the product is in operation.
- Leakages (e.g. from the shaft seals) of hazardous fluids (which are explosive, toxic or hot) must be led away so that no danger to persons or to the environment arises. National statutory provisions are to be complied with.
- Highly flammable materials are always to be kept at a safe distance from the product.
- Danger from electrical current must be eliminated. Local directives or general directives [e.g. IEC, VDE etc.] and instructions from local energy supply companies must be adhered to.

2.6 Safety instructions for installation and maintenance work

The operator must ensure that all installation and maintenance work is carried out by authorised and qualified personnel, who are sufficiently informed from their own detailed study of the operating instructions.

Work on the product/unit must only be carried out when at a standstill. It is mandatory that the procedure described in the installation and operating instructions for shutting down the product/unit be complied with.

Immediately on conclusion of the work, all safety and protective devices must be put back in position and/or recommissioned.

2.7 Unauthorised modification and manufacture of spare parts

Unauthorised modification and manufacture of spare parts will impair the safety of the product/personnel and will make void the manufacturer's declarations regarding safety.

Modifications to the product are only permissible after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure safety. The use of other parts will absolve us of liability for consequential events.

2.8 Improper use

The operating safety of the supplied product is only guaranteed for conventional use in accordance with Section 4 of the operating instructions. The limit values must on no account fall under or exceed those specified in the catalogue/data sheet.

3 Transport and interim storage

Immediately after receiving the product:

- Check product for transport damage.
- In the event of damage in transit, take the necessary steps with the forwarding agent within the respective time limits.



CAUTION! Risk of property damage!
Incorrect transport and interim storage can cause property damage.

- **The switchgear is to be protected against moisture and mechanical damage.**
- **It must not be exposed to temperatures outside the range of -10°C to $+50^{\circ}\text{C}$.**

4 Application (intended use)

The Fire Jockey pump switchgear is used to control a pressure-maintaining (jockey) pump in automatic sprinkler systems, in accordance with EN 12845.

The device is used in residential and office buildings, hospitals, hotels, administrative and industrial buildings.

The pump is used in conjunction with suitable signal transmitters and it is switched on and off according to the pressure.

The intended use includes complying with these instructions.

Any other use is considered to be outside the intended use.

5 Product information

5.1 Type key

Example: W-CTRL-F-1x1.25-T4-DOL-FM-ND5-J	
W	W = WILO
CTRL	Control
F	F = fire fighting purposes
1x	Number of pumps
1.25A	Maximum rated motor current [A]
T4	T = 3 phases; 4 = 400 V
DOL	Direct online (direct starting)
FM	Frame mounted (on a base frame)
ND5	New Design switchgear measuring 300x500x250mm
J	Jockey pump switchgear

5.2 Technical data (standard version)

Mains supply voltage [V]:	3~400 V (L1, L2, L3, PE)
Frequency [Hz]:	50/60 Hz
Control voltage [V]:	24 VAC
Max. current consumption [A]:	See rating plate
Protection class:	IP 54
Max. fuse protection on mains side [A]:	See wiring diagram
Ambient temperature [°C]:	0 to +40°C
Electrical safety:	Degree of contamination II
Alarm/signalling contact	250 VAC, 1 A

5.3 Scope of delivery

- Switchgear
- Wiring diagram
- Installation and operating instructions for Fire Jockey pump
- Test report in accordance with EN 60204-1

5.4 Accessories

6 Description and function

6.1 Description of the product

6.1.1 Function description

The switchgear is used to control a pressure-maintaining (jockey) pump in sprinkler systems, in accordance with EN 12845. The pump can be switched on and off by the control depending on the pressure. The system's operating statuses (e.g. standby, pump operation and fault) are displayed visually by LEDs on the door. In addition, the operating mode can be changed using a rotary switch.

A potential-free contact is available for forwarding a fault signal to the building management system.

6.1.2 Switchgear set-up

The set-up of the switchgear depends on the capacity of the pump to be connected. It consists of the following main components:

- Main switch: for switching the switchgear on/off
- Human-machine interface (HMI): signal lamp for displaying the operating status (standby, pump operation and fault), rotary switch for selecting the operating mode
- Fuse protection for drives: fusing for the pump motor by means of a motor protection switch
- Contactors/contactor combinations: contactors for switching on the pumps
- Manual/auto rotary switch: switch for selecting "manual" operating mode (pump switched on manually) and "auto" (pump switched on depending on pressure)

6.2 Function and operation



DANGER! Risk of fatal injury!

When working on the open switchgear, there's a danger of electric shock from touching the live components.

This work must only be carried out by qualified personnel!

NOTE:

After connecting the switchgear to the supply voltage, as well as after every mains interruption, the switchgear returns to the operating mode set before the power interruption.



6.2.1 Switchgear operating modes (Fig. 1)


Switching the switchgear on/off

After connection to the mains supply, the switchgear can be switched on or off using the main switch. Once the main switch has been switched on, the system is instantly ready for operation. Operational readiness is displayed by the signal

lamp  lighting up green.

Pump request

If the pressure falls below the target pressure on the pressure switch, the connected pump is

switched on. The signal lamp  indicates that the pump is operating.

Once the target pressure is reached or exceeded, the pump immediately switches off. The signal

lamp  goes out.

6.2.2 Motor protection

Excess current protection

Direct-starting motors are protected by motor protection switches with thermal and electro-magnetic trip triggers. The trigger current must be set directly on the motor protection switch. The motor protection is also active in manual mode, and leads to deactivation of the corresponding pump.

6.2.3 Operation of the switchgear

Main switch
On/off (lockable in "off" position)



Manual/auto rotary switch

The rotary switch has two switch positions. In the upper position, the system is in "auto" operating mode. In the lower position, the system is in "manual" operating mode.

"Auto" operating mode:

If the rotary switch is set to "auto" (upper position), the pump is controlled according to the pressure switch or the pressure.

"Manual" operating mode:

If the rotary switch is set to "manual" (lower position), the pump is switched on immediately, regardless of the pressure switch or pressure. The pump remains continuously switched on for as long as the rotary switch is set to "manual".

6.2.4 Switchgear display elements

Operational standby



The "operational standby" signal lamp lights up green when the system has a power supply and is switched on via the main switch. The system is ready for operation.

Pump operation



The "pump operation" signal lamp lights up green when the pump is switched on and there are no faults.

Fault



The "fault" signal lamp lights up yellow when the motor protection switch has been tripped by excess current in the pump.

7 Installation and electrical connection

Installation and electrical connection must be carried out in accordance with local regulations and only by qualified personnel!

WARNING! Risk of injury!

The existing directives for accident prevention must be adhered to.

Warning! Danger of electric shock!

Danger from electrical current must be eliminated.

Local directives or general directives [e.g. IEC] and instructions from local energy supply companies must be adhered to.

7.1 Installation

Install the switchgear/system at a dry location. Protect the place of installation from direct exposure to sunlight.

7.2 Electrical connection

DANGER! Risk of fatal injury!

Improper electrical connections can lead to fatal electric shocks.

- **Have the electrical connection established by an electrician approved by the local electricity supplier only and in accordance with local regulations.**
- **Observe the installation and operating instructions for the pumps and accessories.**
- **Disconnect the power supply before any work.**

Warning! Danger of electric shock!

There is a potentially fatal voltage on the supply side, even when the main switch is turned off.

- The type of mains, current and voltage of the mains connection must match the details on the rating plate of the control device.



NOTE:

- Fuse on mains side in accordance with the information in the wiring diagram
- Feed the ends of the mains cable through the threaded cable connections and cable inlets and wire them according to the markings on the terminal strips.
- Earth the pump/installation in accordance with the regulations.

7.2.1 Power supply connection

Connect the on-site 4-wire cable (L1, L2, L3, PE) for the supplying network to the main switch, in accordance with the circuit diagram.

7.2.2 Pump connection



Observe the installation and operating instructions for the pumps!

The pump is connected to the terminal strips as per the circuit diagram. The pump is operated via direct starting.

7.2.3 Pressure switch connection

The pressure switch is connected to the terminal strips as per the circuit diagram. The pressure switch contact closes when there is a pressure drop and switches on the pump.

7.2.4 Fault signal connection

At the fault signal terminal strip, a signal indicating a fault can be transferred to a potential-free contact (see circuit diagram).

8 Commissioning



WARNING! Risk of fatal injury!

Commissioning by qualified personnel only! Improper commissioning poses a risk of fatal injury. Have commissioning performed by qualified personnel only.



DANGER! Risk of fatal injury!

When working on the open switchgear, there's a danger of electric shock from touching the live components. This work must only be carried out by qualified personnel!

It is recommended that you have the switchgear commissioned by Wilo customer service.

Before switching on for the first time, the on-site wiring must be checked, in particular the earthing.



Tighten all connection terminals prior to commissioning!

8.1 Checking the motor direction of rotation

By briefly switching on the pump in "manual" operating mode (see 6.2.3), check that the direction of rotation of the pump in mains operation is correct. When the pump motor runs out, compare the direction of rotation of the fan wheel and the direction specified on the pump housing. If the direction of rotation of the pump in mains operation is wrong, swap over any two phases of the power cable.

8.2 Setting the excess current protection

In the case of direct starting, the motor protection switch must be set to rated current I_N for the pump. The rated current I_N is specified on the pump's rating plate.

9 Maintenance

Have maintenance and repair work carried out by qualified skilled personnel only!



DANGER! Risk of fatal injury!

There is a risk of fatal injury from electric shock when working on electrical equipment.

- **The switchgear should be electrically isolated and secured against unauthorised switch-on during any maintenance or repair work.**
- **Any damage to the connection cable should only ever be eradicated by a qualified electrician.**

- The switchgear must be kept clean.
- Visual inspection of the electric system parts in the switchgear.

10 Faults, causes and remedies



DANGER! Risk of fatal injury!

There is a risk of fatal injury from electric shock when working on electrical equipment.

Have faults remedied by qualified skilled personnel only! Follow the safety instructions in Section 2 Safety.


Before all work to remedy faults, disconnect the unit from the power supply, and make sure it cannot be switched back on by unauthorised persons.

10.1 Fault indication

If a fault occurs, the signal lamp for the fault signal



lights up yellow. The fault signal can be transferred to the potential-free contact.

Faults	Causes	Remedy
Signal lamp  is lit up yellow	Excess current protection device has tripped	Switch the motor protection switch back on

If the fault cannot be remedied, please contact your nearest Wilo customer service point or representative.



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