

3-Phase electronic reversing contactor (SRC)



- Rated operational voltage up to 480 VAC 50/60Hz
- Rated operational current up to 10A AC-53
- Two separate control inputs with mutual interlock
- Control voltage from 5-24VDC or 24-230VAC/DC
- LED Status indication
- Meets EN 60947-4-2 requirements
- Requires only 45 mm DIN rail space

Item selection and technical specifications

| Load ratings AC-53 motor load stand. AC-4 motor load inching / plugging | Control voltage | | Item number by 24-480VAC 50/60Hz Line Voltage | Module-width |
|--|-----------------|--|---|--------------|
| 10A AC-53 / 8A AC-4 | 5-24 VDC | | SRC 3 DD 4010 | 45mm |
| 10A AC-53 / 8A AC-4 | 24-230 VAC/DC | | SRC 3 DA 4010 | 45mm |

Output load specification

| | | | |
|---------------------------|------|--------------------------|------------|
| Operational current AC-53 | 10A | Leakage current | 5mA ACmax. |
| Operational current AC-4 | 8A | Min. operational current | 50mA |
| Duty cycle | 100% | | |

Control terminal specifications

| SRC 3 DD 4010 | | SRC 3 DA 4010 | |
|-----------------------|-------------|------------------------------|-------------------|
| Control voltage | 5 - 24 VDC | Control voltage | 24- 230 VAC/DC |
| Pick-up voltage max. | 4.25 VDC | Pick-up voltage max. | 20.4 VAC/DC |
| Drop-out voltage min. | 1.5 VDC | Drop-out voltage min. | 7.2 VAC/DC |
| Control current | 25mA @ 4VDC | Control current / power max. | 6mA / 1.5VA@24VDC |
| Response time max. | 1/2 cycle | Response time max. | 1cycle |
| Interlock time max. | 80 msec. | Interlock time max. | 150 msec. |

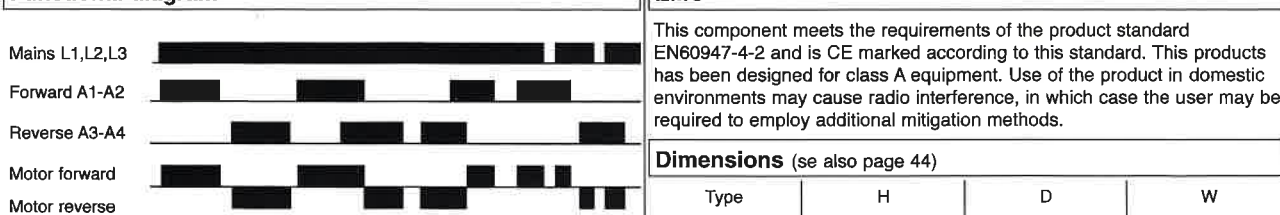
Thermal specification

| | | | | |
|--|---------------------|--|------------------------------|-------------------------------|
| Power dissipation for continuous operation PDmax | 2.2 W/A | Operation in ambient temperatures exceeding 40°C is possible if the power dissipation is limited either by reducing the steady-state current or by reducing the duty-cycle of the contactor as shown in the table. Max.cycle time 15min. | | |
| Power dissipation for intermittent operation PD | 2.2 W/A x dutycycle | | | |
| Cooling method | Natural convection | | | |
| Mounting | Vertical +/-30° | | | |
| Operating temperature range EN 60947-4-2 | -5°C to 40°C | | | |
| Max. operating temperature with current derating | 60°C | | | |
| Storage temperature EN 60947-4-2 | -20°C to 80°C | | | |
| | | By 40°C | By 50°C | By 60°C |
| | | 100% load Duty-cycle 100% | 80% load Duty-cycle max. 0.8 | 70% load Duty-cycle max. 0.65 |

Insulation specifications

| | | |
|---------------------------------|---------------|---|
| Rated insulation voltage | Ui 660 Volt | *UL:Use thermal overload protection as required by the National Electric Code. When protected by a non-time delay K5 or H Class fuse, rated 266% of motor FLA, this device is rated for use on a circuit capable of delivering not more than 5,000 rms. symmetrical amperes, 600 V maximum. Maximum surrounding temperature 40°C. |
| Rated impulse withstand voltage | Uimp. 4 kVolt | |
| Installation category | III | |

Functional diagram



EMC

This component meets the requirements of the product standard EN60947-4-2 and is CE marked according to this standard. This product has been designed for class A equipment. Use of the product in domestic environments may cause radio interference, in which case the user may be required to employ additional mitigation methods.

Dimensions (se also page 44)

| Type | H | D | W |
|--------------|-------|----------|-------|
| 45 mm module | 94 mm | 128.1 mm | 45 mm |

3-Phase electronic reversing contactor (SRC)

Wiring specifications

SRC 3 DX 4010 11-12: for UP 62 or other wiring purposes

Control voltage A1-A2 Control voltage A3-A4

Combining Reversing Electronic Contactor & Soft Starter

Soft-reversing of motors up to 10A
A Soft-Reversing of a motor can easily be achieved by connecting a reversing relay to the Soft Starter. The reversing relay type SRC 3 DX will determine the direction of rotation Forward or Reverse and the Soft Starter type SMC 3/32/33 will perform soft-starting and soft-stopping of the motor. If soft-stop is not required the application can be simplified by connecting the control circuit of the Soft Starter to the main terminals as shown under Line Controlled Soft-Start. A delay of approx. 0.5 sec. between forward and reverse control signal must be allowed to avoid influence from the voltage generated by the motor during turn Off.

Short-circuit protection by circuit breaker or fuses

Two type of short-circuit protection can be used:
a) Short-circuit protection by circuit breaker.
b) Short-circuit protection by fuses.

Short-circuit protection is divided into 2 levels **Type 1 or Type 2**

Co-ordination Type 1: Short-circuit protects the installation

Co-ordination Type 2: Short-circuit protects the installation and the semi-conductors inside the motor controller

Thermal overload protection (see also page 44)

Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the contactor. Type number UP62

a) Short-circuit protection
Co-ordination type 1 will be obtained when using magnetic circuit breakers or standard gI/GI fuses.
Co-ordination type 2 will be obtained when using semiconductor fuses. When using semiconductor fuses the SCR will not be damaged due to transients and short circuits. The table indicates suitable fuses for co-ordination type 2 protection.

Example 1

The thermostat can be connected in series with the control circuit of the contactor. When the temperature of the heatsink exceeds 90°C the soft starter will switch Off.
Note: When the temperature has dropped approx. 30°C the contactor will automatically be switched on again.

b) Short-circuit protection by fuses

| | |
|-----------------------|---|
| Type 1: SRC 3 DX 4010 | Protection max. 50 A gL/gG |
| Type 2: SRC 3 DX 4010 | Protection max. i^2t of the fuse 610 A ² S |

Fuses from e.g. Ferraz, Siba, Bussmann can be used as short-circuit protection Type 2
More information concerning Co-ordination Type 2 see page 45

Example 2

The thermostat is connected in series with the control circuit of the main contactor. When the temperature of the heatsink exceeds 90°C the main contactor will switch Off.
Note: A manual reset is necessary to restart this circuit.

Overload Protection in Motor Control Reversing

Overload protection of the motor is easily achieved by installing a manual thermal magnetic circuit breaker on the supply side of the motor. The circuit breaker provides means for padlocking and the necessary clearance for use as a circuit isolator according to EN 60204-1.

Adjust the current limit on the MCB according to the rated nominal current of the motor
*Use UL approved Magnetic Circuit Breaker or UL specified back-up fuse type K5 or H Class

Utilisation Categories EN60947-4-2

- Category AC-53:** Starting, switching off motors during running
- Category AC-4:** Starting, plugging, reversing the motors rapidly while the motor is during.

Mounting and cable wiring information

Mounting information see page 44 / Cable wiring see page 45