

## 3 Phase electronic contactor (SC 3)



- Rated operational voltage up to 600VAC 50/60 Hz
- Rated operational current up to 10 / 20A AC-1
- Control voltage from 5-24 VDC or 24-230 VAC/DC
- Compact modular design 45 or 90 mm
- LED Status indication
- Meets EN 60947-4-3 requirements
- Requires no additional components
- Built-in varistor protection
- IP-20 Protection

### Item selection and technical specifications

| Load AC-1/51 Heating-element | Load AC-3 Motor | Load AC-55b Lamp | Load AC-56a Transformer | Control voltage | Item number by 12-240VAC 50/60Hz Line Voltage | Item number by 24-480VAC 50/60Hz Line Voltage | Item number by 48-600VAC 50/60Hz Line Voltage | Module-width |
|------------------------------|-----------------|------------------|-------------------------|-----------------|---|---|---|--------------|
| 10A                          | 10A             | 10A              | 5A                      | 5-24 VDC        | SC 3 DD 2310                                  | SC 3 DD 4010                                  | SC 3 DD 6010                                  | 45mm         |
|                              |                 |                  |                         | 24-230 VAC/DC   | SC 3 DA 2310                                  | SC 3 DA 4010                                  | SC 3 DA 6010                                  | 45mm         |
| 20A                          | 10A             | 10A              | 5A                      | 5-24 VDC        | SC 3 DD 2320                                  | SC 3 DD 4020                                  | SC 3 DD 6020                                  | 90mm         |
|                              |                 |                  |                         | 24-230 VAC/DC   | SC 3 DA 2320                                  | SC 3 DA 4020                                  | SC 3 DA 6020                                  | 90mm         |

### Output load specification

|                 |            |                          |      |
|-----------------|------------|--------------------------|------|
| Leakage current | 1mA ACmax. | Min. operational current | 10mA |
| Duty cycle      | 100%       |                          |      |

### Control terminal specifications

| SC 3 DD XXXX (DC)           |             | SC 3 DA XXXX (AC/DC)         |                    |
|-----------------------------|-------------|------------------------------|--------------------|
| 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 voltage     | 15 mA@4 VDC | Control current / power max. | 6mA / 2.5VA@24 VDC |
| Max. control voltage        | 32 VDC      | Max. control voltage         | 253 VAC/DC         |
| Response time max. (ON/OFF) | 1/2 cycle   | Response time max. (ON/OFF)  | 1 cycle            |

### Thermal specification

|  |                     |   |                              |                               |
|--|---------------------|---|------------------------------|-------------------------------|
| Power dissipation for continuous operation PDmax | 3.3 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 as shown in the table. Max.cycle time 15min. |                              |                               |
| Power dissipation for intermittent operation PD  | 3.3 W/A x dutycycle |   |                              |                               |
| Cooling method                                   | Natural convection  | By 40°C   | By 50°C                      | By 60°C                       |
| Mounting   | Vertical +/-30°     | 100% load Duty-cycle 100%   | 80% load Duty-cycle max. 0.8 | 70% load Duty-cycle max. 0.65 |
| 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       |   |                              |                               |

### Environment

|                      |       |                  |   |
|----------------------|-------|------------------|---|
| Degree of protection | IP 20 | Pollution degree | 3 |
|----------------------|-------|------------------|---|

### Approval

cUL Std No. 508 / CAN/CSA-C22.2  
 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.

### Insulation specifications

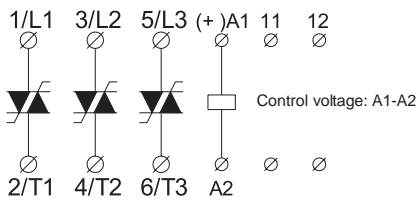
|                                 |               |
|---------------------------------|---------------|
| Rated insulation voltage        | Ui 660 Volt   |
| Rated impulse withstand voltage | Uimp. 4 kVolt |
| Installation category           | III           |

# 3 Phase electronic contactor (SC 3)

## Wiring specifications

SC 3 DX XXXX

11-12: for UP62 or other wiring purposes



## 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 semiconductors inside the motor controller

### b) Short-circuit protection by fuses

Type 1: SC 3 DX XX10      Protection max. 50A gL/gG  
 Type 1: SC 3 DX XX20      Protection max. 50A gL/gG

Type 2: SC 3 DX XX10      Protection max.  $i^2t$  of the fuse 610 A<sup>2</sup>S  
 Type 2: SC 3 DX XX20      Protection max.  $i^2t$  of the fuse 610 A<sup>2</sup>S

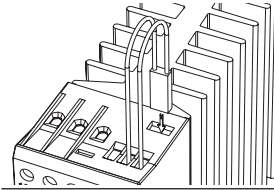
Fuses from e.g. Ferraz, Siba, Bussmann can be used as short-circuit protection Type 2

More information concerning Co-ordination Type 2 see page 37

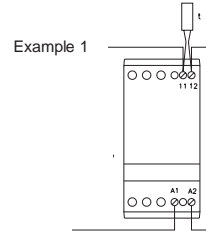
## EMC

This component meets the requirements of the product standard EN 60947-4-3 and is CE marked according to this standard. This products 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.

## Thermal overload protection (see also page 36)



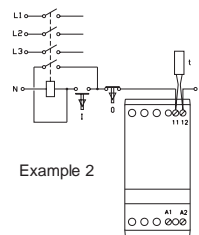
Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62



The thermostat can be connected in series with the control circuit of the electronic contactor. When the temperature of the heatsink exceeds 90°C the electronic contactor will switch Off.

**Note:**

When the temperature has dropped approx. 30°C the electronic contactor will automatically be switched on again.



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.

## Utilisation Categories (EN 60947-4-3)

- AC - 51      Switching of resistive loads
- AC - 55a    Switching of electric discharge lamp controls
- AC - 55b    Switching of incandescent lamps
- AC - 56a    Switching of transformers

## Dimensions (se also page 36)

| Type         | H     | D        | W     |
|--------------|-------|----------|-------|
| 45 mm module | 94 mm | 124.3 mm | 45 mm |
| 90 mm module | 94 mm | 124.3 mm | 90 mm |

## Mounting and cable wiring information

Mounting information see page 36 / Cable wiring see page 37