

1 Phase electronic contactor (SC 1)



- Rated operational voltage up to 690VAC 50/60 Hz
- Rated operational current up to 15/30A/50/63A AC-1
- Control voltage from 5-24 VDC or 24-230 VAC/DC
- Compact modular design 22.5, 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 24-600VAC 50/60Hz Line Voltage	Item number by 24-690VAC 50/60Hz Line Voltage	Modul-breite
15A	15A 10A by 600 VAC	15A	15A	5-24 VDC	SC 1 DD 2315	SC 1 DD 4015	SC 1 DD 6015-1*	SC 1 DD 6915*#	22.5mm
				24-230 VAC/DC	SC 1 DA 2315	SC 1 DA 4015	SC 1 DA 6015-1*	SC 1 DA 6915*#	22.5mm
30A	15A	20A	15A	5-24 VDC	SC 1 DD 2330	SC 1 DD 4030	SC 1 DD 6030	SC 1 DD 6930*#	45mm
				24-230 VAC/DC	SC 1 DA 2330	SC 1 DA 4030	SC 1 DA 6030	SC 1 DA 6930*#	45mm
50A	15A	20A	15A	5-24 VDC	SC 1 DD 2350	SC 1 DD 4050	SC 1 DD 6050	SC 1 DD 6950*#	90mm
				24-230 VAC/DC	SC 1 DA 2350	SC 1 DA 4050	SC 1 DA 6050	SC 1 DA 6950*#	90mm
63A	30A	40A	30A	5-24 VDC	SC 1 DD 2363 *	SC 1 DD 4063 *	SC 1 DD 6063 *	SC 1 DD 6963*#	90mm
				24-230 VAC/DC	SC 1 DA 2363 *	SC 1 DA 4063 *	SC 1 DA 6063 *	SC 1 DA 6963*#	90mm

Output load specification

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

Control terminal specifications

SC 1 DD XXXX (DC)	SC 1 DA XXXX (AC/DC)
Control voltage	Control voltage
Pick-up voltage max.	Pick-up voltage max.
Drop-out voltage min.	Drop-out voltage min.
Control current voltage	Control current / power max.
Max. control voltage	Max. control voltage
Response time max.	Response time max.

Thermal specification

Power dissipation for continuous operation PDmax	1.2 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 as shown in the table. Max.cycle time 15min.		
Power dissipation for intermittent operation PD	1.2 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 60947-4-3	-5°C to 40°C	Environment		
Max. operating temperature with current derating	60°C	Degree of protection	IP 20	Pollution degree
Storage temperature EN 60947-4-3	-20°C to 80°C			3

Insulation specifications

Rated insulation voltage	Ui 660 Volt	cUL Std No. 508. Not approved SC1 DX 6015-1 + SC1 DX XX63 + SC1 DX 69XX 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 insulation voltage #	Ui 690 Volt	
Rated impulse withstand voltage	Uimp. 4 kVolt	
Installation category	III	

* NOT cUL APPROVED

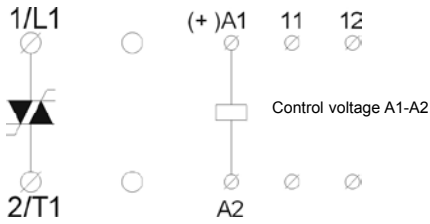
Specifications are subject to change without notice

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Wiring specifications

SC 1 DX XXXX

11-12: for UP62 or other wiring purposes



Short-circuit protection by fuses

Two type of short-circuit protection can be used:

Short-circuit protection by fuses

Fuse short-circuit protection is divided into 2 levels Type 1 or Type 2

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

SC 1 DX XX15	Protection max. 50A gL/gG
SC 1 DX XX15-1	Protection max. 50A gL/gG
SC 1 DX XX30	Protection max. 50A gL/gG
SC 1 DX XX50	Protection max. 50A gL/gG
SC 1 DX XX63	Protection max. 80A gL/gG

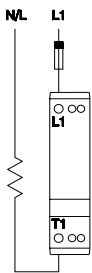
Co-ordination Type 2: Short-circuit protects the installation and the semi conductors inside the motor controller

SC 1 DX 2315 / 4015	Protection max. i _t of the fuse	1800 A ² s
SC 1 DX 6X15 / 6X15-1	Protection max. i _t of the fuse	610 A ² s
SC 1 DX 2330 / 4030	Protection max. i _t of the fuse	1800 A ² s
SC 1 DX 6X30	Protection max. i _t of the fuse	6300 A ² s
SC 1 DX 2350 / 4050	Protection max. i _t of the fuse	1800 A ² s
SC 1 DX 6X50	Protection max. i _t of the fuse	6300 A ² s
SC 1 DX XX63	Protection max. i _t of the fuse	6300 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

Short Circuit Protection with standard fuse for SC1DX..15



Short Circuit Protection for SC1 DX XX15 (15 A Type) Co-ordination Type 2

Line Voltage up to 480 V. Due to the oversized Output SCR's the contactor is fully protected by a standard fuse up to 16 A. Operating Class gL/gG..

No need for Ultra Fast Fuses
Max Load at 230 V: 3.5 kW
Max Load at 400 V: 6.0 kW
Max Load at 480 V: 7.2 kW

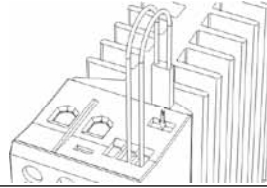
EMC

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.

Utilisation Categories (EN 60947-4-3)

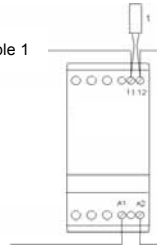
AC - 51	Switching of resistive loads
AC - 55a	Switching of electric discharge lamp controls
AC - 55b	Switching of incandescent lamps
AC - 56a	Switching of transformers

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 electronic contactor. Type number UP62

Example 1

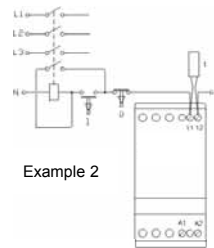


The thermostat can be connected in series with the control circuit of the electronic contactor. When the temperature of the heatsink exceeds 90°C the electronic contactor will switch Off.

Note:

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

Example 2



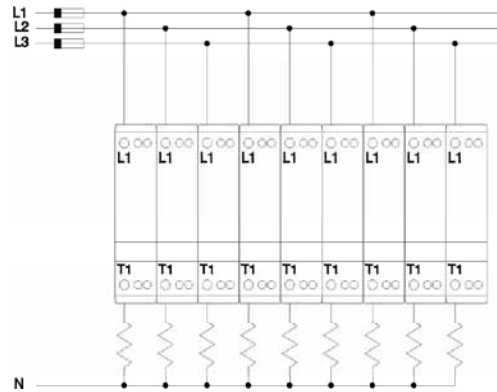
The thermostat is connected in series with the control circuit of the main contactor.

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.

Common Short Circuit Protection SC 1 DX XX15



Short Circuit Protection for several Contactors e.g. SC1 DX XX15

Max Fuse 50 A gL/gG for Short Circuit Coordination type 1

SC1 DX 2315 / SC 1 DX 4015
Max Fuse 1800 A²s
e.g. Siemens SILIZED 5SD4 60
Short Circuit Coordination type 2

SC1 DX 6015
Max Fuse 450 A²s
e.g. Siemens SILIZED 5SD4 50
Short Circuit Coordination type 2

Dimensions (see also page 44)

Type	H	D	W
22.5 mm module	94 mm	124.3 mm	22.5 mm
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 44 / Cable wiring see page 45