

# 1 Phase electronic contactor (SC 1)



- Rated operational voltage up to 600VAC 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	Module-width
15A	15A 10A by 600 VAC	15A	15A	5-24 VDC	SC 1 DD 2315	SC 1 DD 4015	SC 1 DD 6015-1*	22.5mm
				24-230 VAC/DC	SC 1 DA 2315	SC 1 DA 4015	SC 1 DA 6015-1*	22.5mm
30A	15A	20A	15A	5-24 VDC	SC 1 DD 2330	SC 1 DD 4030	SC 1 DD 6030	45mm
				24-230 VAC/DC	SC 1 DA 2330	SC 1 DA 4030	SC 1 DA 6030	45mm
50A	15A	20A	15A	5-24 VDC	SC 1 DD 2350	SC 1 DD 4050	SC 1 DD 6050	90mm
				24-230 VAC/DC	SC 1 DA 2350	SC 1 DA 4050	SC 1 DA 6050	90mm
63A	30A	40A	30A	5-24 VDC	SC 1 DD 2363*	SC 1 DD 4063*	SC 1 DD 6063*	90mm
				24-230 VAC/DC	SC 1 DA 2363*	SC 1 DA 4063*	SC 1 DA 6063*	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	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@24 VDC	Control current / power max.	6 mA / 1.5VA@24 VDC
Max. control voltage	32 VDC	Max. control voltage	253 VAC/DC
Response time max.	1/2 cycle	Response time max.	1 cycle

## 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	<b>Environment</b>		
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. But not SC1 DX 6015-1 + SC1 DX XX63 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	

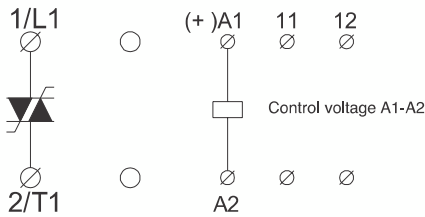
\* NOT cUL APPROVED

# 1 Phase electronic contactor (SC 1)

## 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 XX63A	Protection max. 80A gL/gG

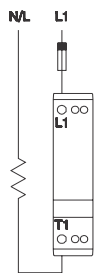
#### Co-ordination Type 2: Short-circuit protects the installation and the semi conductors inside the motor controller

SC 1 DX XX15	Protection max. $i^2t$ of the fuse 1800 A <sup>2</sup> S
SC 1 DX XX15-1	Protection max. $i^2t$ of the fuse 1800 A <sup>2</sup> S
SC 1 DX XX30	Protection max. $i^2t$ of the fuse 1800 A <sup>2</sup> S
SC 1 DX 6030	Protection max. $i^2t$ of the fuse 6300 A <sup>2</sup> S
SC 1 DX XX50	Protection max. $i^2t$ of the fuse 1800 A <sup>2</sup> S
SC 1 DX 6050	Protection max. $i^2t$ of the fuse 6300 A <sup>2</sup> S
SC 1 DX XX63	Protection max. $i^2t$ of the fuse 6300 A <sup>2</sup> S
SC 1 DX 6063	Protection max. $i^2t$ of the fuse 6300 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 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

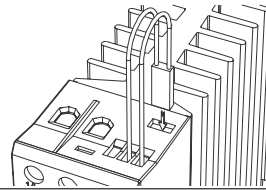
## EMC

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)

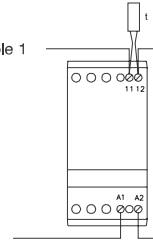
AC - 51	Switching of resistive loads
AC - 55a	Switching of electric discharge lamp controls
AC - 55b	Switching of incandescent lamps
AC - 56a	Switching of transformers

## 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

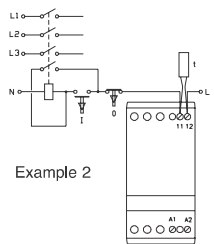


The thermostat can be connected in series with the control circuit of the electronic contactor. When the temperature of the heatsink exceeds 90°C the electronic contactor will switch Off.

#### Note:

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

Example 2



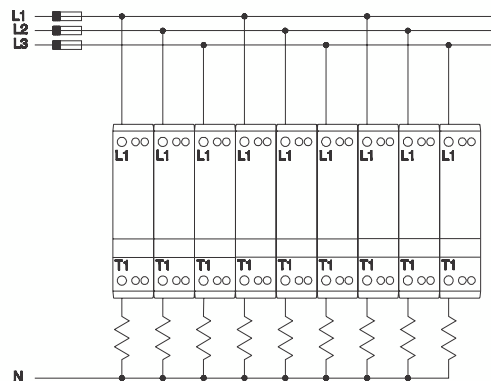
The thermostat is connected in series with the control circuit of the main contactor.

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 A<sup>2</sup>s  
e.g. Siemens SILIZED 5SD4 60  
Short Circuit Coordination type 2

### SC1 DX 6015

Max Fuse 450 A<sup>2</sup>s  
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

## Mounting and cable wiring information

Mounting information see page 44 / Cable wiring see page 45

# 1 Phase electronic contactor (RC 11 Heatingelement)



- Rated operational voltage up to 480VAC 50/60 Hz
- Rated operational current up to 10/15/30/50/63A 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	Control voltage	Item number by 12-240VAC 50/60Hz Line Voltage	Load in kW by 230V	EAN Nr. 5705 609	Item number by 24-480VAC 50/60Hz Line Voltage	Load in kW by 400V	EAN Nr. 5705 609	Module-width
10A	5-24 VDC	RC 11 DD 2310	2.3 kW	002 152				W = 22.5mm
15A	5-24 VDC	RC 11 DD 2315	Max. 3.5 kW	002169	RC 11 DD 4015	Max. 6.0 kW	002 206	W = 22.5mm
	24-230 VAC/DC	RC 11 DA 2315		002 077	RC 11 DA 4015		002 114	W = 22.5mm
30A	5-24 VDC	RC 11 DD 2330	Max. 6.9 kW	002 176	RC 11 DD 4030	Max. 12.0 kW	002 213	W = 45mm
	24-230 VAC/DC	RC 11 DA 2330		002 084	RC 11 DA 4030		002 121	W = 45mm
50A	5-24 VDC	RC 11 DD 2350	Max. 11.5 kW	002 183	RC 11 DD 4050	Max. 20.0 kW	002 220	W = 90mm
	24-230 VAC/DC	RC 11 DA 2350		002 091	RC 11 DA 4050		002 138	W = 90mm
63A	5-24 VDC	RC 11 DD 2363	Max. 14.5 kW	002 190	RC 11 DD 4063	Max. 25.2 kW	002 237	W = 90mm
	24-230 VAC/DC	RC 11 DA 2363		002 107	RC 11 DA 4063		002 145	W = 90mm

## Output load specification

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

## Control terminal specifications

RC 11 DD XXXX (DC)		RC 11 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 RC 11 DD 2310	8 mA@24 VDC	Control current / power max.	8 mA / 2.5VA@24 VDC
Control current voltage RC 11 DD XXXX	15 mA@24 VDC	Max. control voltage	253 VAC/DC
Max. control voltage	32 VDC	Response time max.	1 cycle
Response time max.	1/2 cycle		

## 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			
Mounting	Vertical +/-30°			
Operating temperature range EN 60947-4-3	-5°C to 40°C			
Max. operating temperature with current derating	60°C			
Storage temperature EN 60947-4-3	-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	65% load Duty-cycle max. 0.65
<b>Environment</b>				3
Degree of protection		IP 20	Pollution degree	

## Insulation specifications

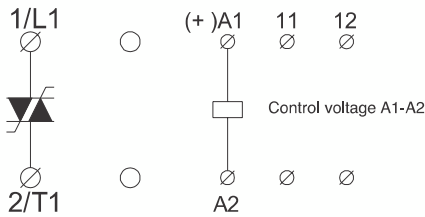
Rated insulation voltage	Ui 660 Volt
Rated impulse withstand voltage	Uimp. 4 kVolt
Installation category	III

# 1 Phase electronic contactor (RC 11 Heatingelement)

## Wiring specifications

RC 11 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

RC 11 DX 2310	Protection max. 16A gL/gG
RC 11 DX XX15	Protection max. 50A gL/gG
RC 11 DX XX30	Protection max. 50A gL/gG
RC 11 DX XX50	Protection max. 50A gL/gG
RC 11 DX XX63	Protection max. 80A gL/gG

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

RC 11 DX 2310	Protection max. $i^2t$ of the fuse	180 A <sup>2</sup> S
RC 11 DX XX15	Protection max. $i^2t$ of the fuse	610 A <sup>2</sup> S
RC 11 DX XX30	Protection max. $i^2t$ of the fuse	610 A <sup>2</sup> S
RC 11 DX XX50	Protection max. $i^2t$ of the fuse	1800 A <sup>2</sup> S
RC 11 DX XX63	Protection max. $i^2t$ of the fuse	6300 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 45

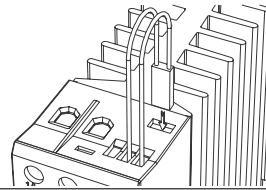
## EMC

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.

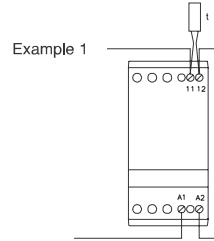
## Utilisation Categories (EN 60947-4-3)

- 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)



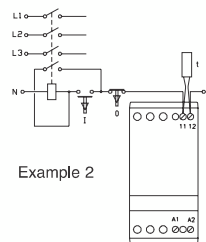
Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62



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.

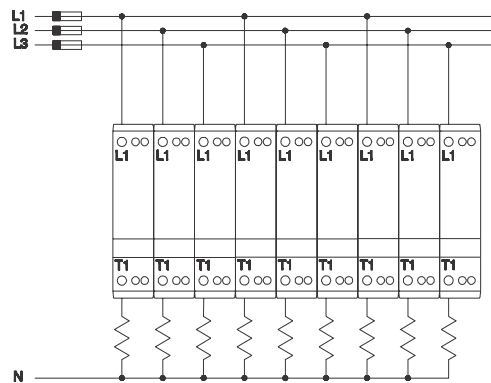


The thermostat is connected in series with the control circuit of the main contactor. When the temperature of the heatsink exceeds 90°C the main contactor will switch Off.

### Note:

A manual reset is necessary to restart this circuit.

## Common Short Circuit Protection RC 11 DX XX15



## 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

# 1 Phase electronic contactor (SC 1 L for domestic applications)



- Electronic contactor for use in domestic applications
- Rated operational voltage up to 480VAC 50/60 Hz
- Rated operational current up to 30 or 50A AC-1
- Control voltage from 24-230 VAC/DC
- Compact modular design 45 or 90 mm
- Meets EN50081-1 / EN50082-2 requirements
- 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 110-230VAC 50/60Hz Line Voltage	Item number by 380-415VAC 50/60Hz Line Voltage	Module-width
				24-230 VAC/DC	SC 1 DA 2330 L	SC 1 DA 4030 L	45mm
				24-230 VAC/DC	SC 1 DA 2350 L		90mm

## Output load specification

Min. operational current	10 mA	Filter capacitor / 110-230 VAC	1uF
Leakage current	1 mA AC max.	Filter capacitor current / 110-230 VAC	85/105 mA
		Filter capacitor / 400 VAC	0.68uF
		Filter capacitor current / 400 VAC	100/120 mA
Load power by 30A/110-120VAC	3.3kW	Load power by 50A/230VAC	11.5kW
Load power by 50A/110-120VAC	5.5kW	Load power by 30A/400VAC	12kW
Load power by 30A/230VAC	6.9kW		

## Control terminal specifications

Control voltage	24-230 VAC/DC	Control current / power max.	6 mA / 2.5VA@24 VDC
Pick-up voltage max.	20.4 VAC/DC	Max. control voltage	253 VAC/DC
Drop-out voltage min.	7,2 VAC/DC	Response time max.	1 cycle

## 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	<b>Environment</b>		
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

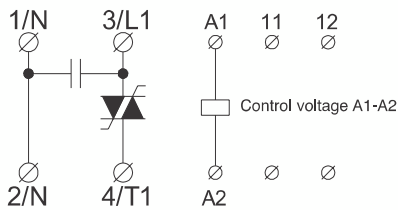
Rated insulation voltage	Ui 660 Volt	<b>EMC</b> This component meets the requirements of the product standard EN 60947-4-3 / EN50081-1, EN50082-2 and is CE marked according to this standard. This products has been designed for class B equipment. Meets EN50081-1 / EN50082-2 requirements. (use of the product in domestic environments)
Rated impulse withstand voltage	Uimp. 4 kVolt	
Installation category	III	

# 1 Phase electronic contactor (SC 1 L for domestic applications)

## Wiring specifications

SC 1 DA XXXX L

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

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 2330 L Protection max. 50A gL/gG  
 SC 1 DX 2350 L / 4030 L Protection max. 50A gL/gG

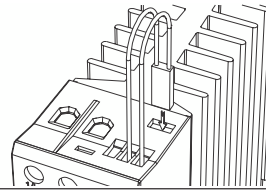
### Co-ordination Type 2: Short-circuit protects the installation and the semi-conductors inside the motor controller

SC 1 DX XX30 Protection max.  $i^2t$  of the fuse 1800 A<sup>2</sup>S  
 SC 1 DX XX50 Protection max.  $i^2t$  of the fuse 1800 A<sup>2</sup>S

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

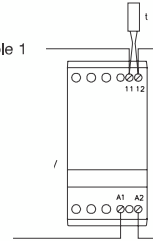
More information concerning Co-ordination Type 2 see page 45

## 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

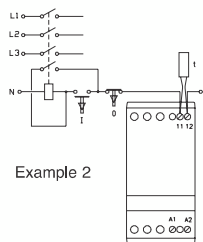
Example 1



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.

## Mounting and cable wiring information

Mounting information see page 44 / Cable wiring see page 45

## Applications hints SC 1 DA ... L

### 1-Phase 230 VAC

SC 1 DA 2330 L = 6.9 kW Max  
 SC 1 DA 2350 L = 11.5 kW Max



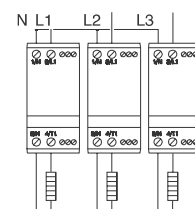
### 1-Phase 400 VAC

SC 1 DA 4030 L = 12 kW Max



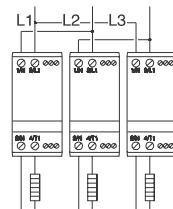
### 3-Phase with N / 230 VAC

3 x SC 1 DA 2330 L = 20.7 kW Max  
 3 x SC 1 DA 2350 L = 34.5 kW Max



### 3-Phase without N / 400 VAC

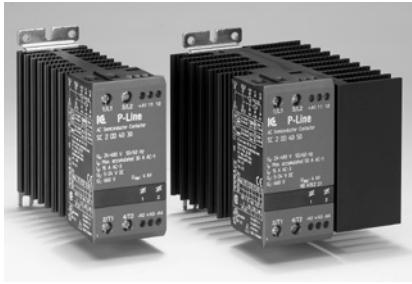
3 x SC 1 DA 4030 L = 36 kW Max



## Dimensions (see also page 44)

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

# 1 Phase dual pole electronic contactor (SC 2)



- Rated operational voltage up to 600VAC 50/60 Hz
- Rated operational current up to 30/50A AC-1 (accumulated)
- 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 24-600VAC 50/60Hz Line Voltage	Module-width
30A <sup>1</sup> accumulated	15A	20A	15A	5-24 VDC	SC 2 DD 2330	SC 2 DD 4030	SC 2 DD 6030	45mm
				24-230 VAC/DC	SC 2 DA 2330	SC 2 DA 4030	SC 2 DA 6030	45mm
50A <sup>1</sup> accumulated	15A	20A	15A	5-24 VDC	SC 2 DD 2350	SC 2 DD 4050	SC 2 DD 6050	90mm
				24-230 VAC/DC	SC 2 DA 2350	SC 2 DA 4050	SC 2 DA 6050	90mm

<sup>1</sup>The indicated loads are accumulated. E.g. the total sum of the current in L1 & L2 (1x30A or 2x15A)

## Output load specification

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

## Control terminal specifications

SC 2 DD XXXX (DC)		SC 2 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@24 VDC	Control current / power max.	6mA / 1.5VA@24 VDC
Max. control voltage	32 VDC	Max. control voltage	253 VAC/DC
Response time max.	1/2 cycle	Response time max.	1 cycle

## Thermal specification

Power dissipation for continuous operation PDmax	2.2 W/A accumulated	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	2.2 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	<b>Environment</b>		
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

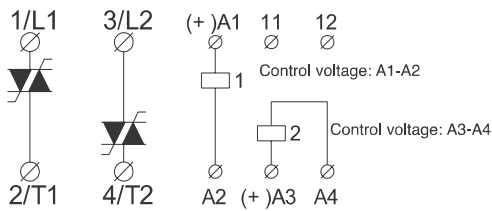
Rated insulation voltage	Ui 660 Volt	<b>Approval</b> ULc Std No. 508 UL:Use thermal overload protection as required by the National Electric Code. When protected by a non-time delay K5 or H Class fuse, rated 266% of motor FLA, this device is rated for use on a circuit capable of delivering not more than 5,000 rms. symmetrical amperes, 600 V maximum. Maximum surrounding temperature 40°C.
Rated impulse withstand voltage	Uimp. 4 kVolt	
Installation category	III	

# 1 Phase dual pole electronic contactor (SC 2)

## Wiring specifications

SC 2 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

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

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

SC 2 DX XX30 Protection max. 50A gL/gG  
 SC 2 DX XX50 Protection max. 50A gL/gG

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

SC 2 DX XX30 Protection max.  $i^2t$  of the fuse 1800 A<sup>2</sup>S  
 SC 2 DX XX50 Protection max.  $i^2t$  of the fuse 1800 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 45

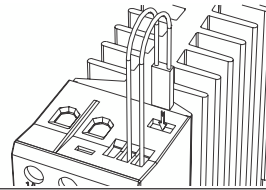
## EMC

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.

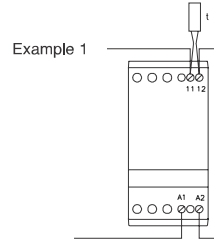
## Dimensions (se also page 44)

Type	H	D	W
45 mm module	94 mm	124.3 mm	45 mm

## Thermal overload protection (see also page 44)



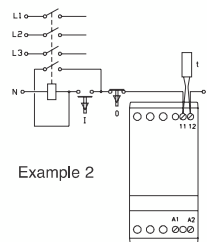
Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62



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)

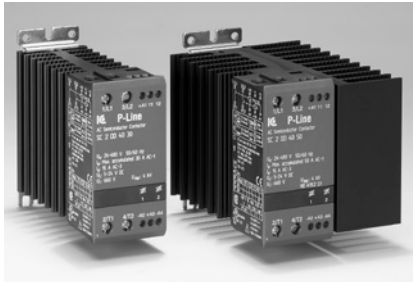
- AC - 51 Switching of resistive loads
- AC - 55a Switching of electric discharge lamp controls
- AC - 55b Switching of incandescent lamps
- AC - 56a Switching of transformers

## Mounting and cable wiring information

Mounting information see page 44 / Cable wiring see page 45



# 1 Phase dual pole electronic contactor (RC 22 Heatingelement)



- Rated operational voltage up to 480VAC 50/60 Hz
- Rated operational current up to 30 / 50A AC-1 (accumulated)
- 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	Control voltage	Item number by 12-240VAC 50/60Hz Line Voltage	Load in kW by 230V	EAN Nr. 5705 609	Item number by 24-480VAC 50/60Hz Line Voltage	Load in kW by 400V	EAN Nr. 5705 609	Module-width
30A <sup>1</sup> accumulated	5-24 VDC	RC 22 DD 2330	Max. 6.9 kW	002 282	RC 22 DD 4030	Max. 12.0 kW	002 305	W = 45mm
	24-230 VAC/DC	RC 22 DA 2330		002 244	RC 22 DA 4030		002 268	W = 45mm
50A <sup>1</sup> accumulated	5-24 VDC	RC 22 DD 2350	Max. 11.5 kW	002 374	RC 22 DD 4050	Max. 20.0 kW	002 312	W = 90mm
	24-230 VAC/DC	RC 22 DA 2350		002 336	RC 22 DA 4050		002 275	W = 90mm

<sup>1</sup>The indicated loads are accumulated. E.g. the total sum of the current in L1 & L2 (1x30A / 1x 50A or 2x15A / 2x25A)

## Output load specification

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

## Control terminal specifications

RC 22 DD XXXX (DC)		RC 22 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@24 VDC	Control current / power max.	8mA / 2.5VA@24 VDC
Max. control voltage	32 VDC	Max. control voltage	253 VAC/DC
Response time max.	1/2 cycle	Response time max.	1 cycle

## Thermal specification

Power dissipation for continuous operation PDmax	1.2 W/A accumulated	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	65% load Duty-cycle max. 0.65
Operating temperature range EN 60947-4-3	-5°C to 40°C			
Max. operating temperature with current derating	60°C			
Storage temperature EN 60947-4-3	-20°C to 80°C			

## Environment

Degree of protection	IP 20	Pollution degree	3
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## Insulation specifications

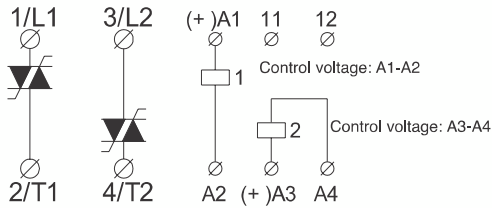
Rated insulation voltage	Ui 660 Volt
Rated impulse withstand voltage	Uimp. 4 kVolt
Installation category	III

# 1 Phase dual pole electronic contactor (RC 22 Heatingelement)

## Wiring specifications

RC 22 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

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

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

RC 22 DX XX30 Protection max. 50A gL/gG  
RC 22 DX XX50 Protection max. 50A gL/gG

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

RC 22 DX XX30 Protection max.  $i^2t$  of the fuse 610 A<sup>2</sup>S  
RC 22 DX XX50 Protection max.  $i^2t$  of the fuse 1800 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 45

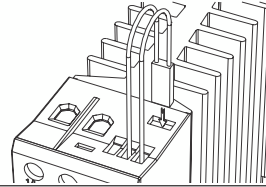
## EMC

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.

## Mounting and cable wiring information

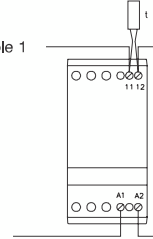
Mounting information see page 44 / Cable wiring see page 45

## 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

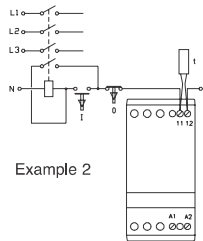
Example 1



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.

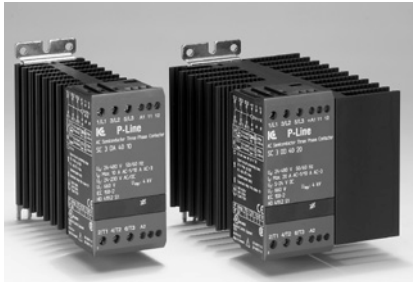
## Utilisation Categories (EN 60947-4-3)

- 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 44)

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

### 3 Phase dual pole electronic contactor (RC 32 Heatingelement)



- Rated operational voltage up to 480VAC 50/60 Hz
- Rated operational current up to 15 / 25A 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	Control voltage	Item number by 12-240VAC 50/60Hz Line Voltage	Load in kW by 230V	EAN Nr. 5705 609	Item number by 24-480VAC 50/60Hz Line Voltage	Load in kW by 400V	EAN Nr. 5705 609	Module-width
15A	5-24 VDC				RC 32 DD 4015	Max. 10.4 kW	002 428 002 404	W = 45mm
	24-230 VAC/DC				RC 32 DA 4015			W = 45mm
25A	5-24 VDC				RC 32 DD 4025	Max. 17.3 kW	002 435 002 411	W = 90mm
	24-230 VAC/DC				RC 32 DA 4025			W = 90mm

#### Output load specification

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

#### Control terminal specifications

RC 32 DD 40XX (DC)		RC 32 DA 40XX (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	20 mA@24 VDC	Control current / power max.	8mA / 2.5VA@24 VDC
Max. control voltage	32 VDC	Max. control voltage	253 VAC/DC
Response time max.	1/2 cycle	Response time max.	1 cycle

#### Thermal specification

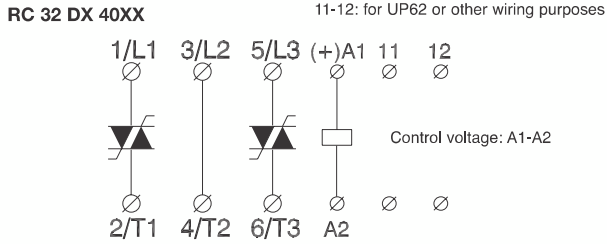
Power dissipation for continuous operation PDmax	2.4 W/A	Operation in ambient temperatures exceeding 40°C is possible if the power dissipation is limited either by reducing the steady-state current or by reducing the duty-cycle as shown in the table. Max.cycle time 15min.		
Power dissipation for intermittent operation PD	2.4 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	65% load Duty-cycle max. 0.65
Operating temperature range EN 60947-4-3	-5°C to 40°C	<b>Environment</b>		
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
Rated impulse withstand voltage	Uimp. 4 kVolt
Installation category	III

# 3 Phase dual pole electronic contactor (RC 32 Heatingelement)

## Wiring specifications



## Short-circuit protection by fuses

Two type of short-circuit protection can be used:

### 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  
 RC 32 DX 4015 Protection max. 50A gL/gG  
 RC 32 DX 4025 Protection max. 50A gL/gG

**Co-ordination Type 2:** Short-circuit protects the installation and the semi-conductors inside the motor controller  
 RC 32 DX 4015 Protection max.  $i^2t$  of the fuse 610 A<sup>2</sup>S  
 RC 32 DX 4025 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 45

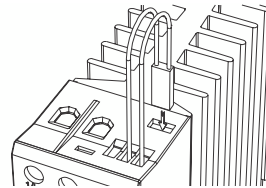
## EMC

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.

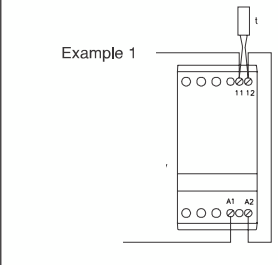
## Mounting and cable wiring information

Mounting information see page 44 / Cable wiring see page 45

## Thermal overload protection (see also page 44)

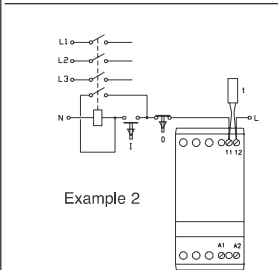


Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62



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.

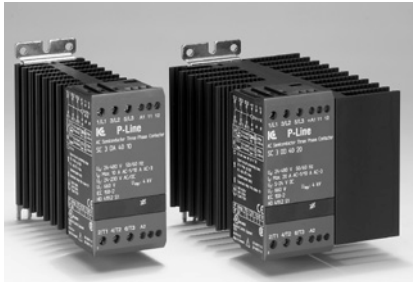
## Utilisation Categories (EN 60947-4-3)

- 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 44)

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

# 3 Phase electronic contactor (SC 3)



- Rated operational voltage up to 600VAC 50/60 Hz
- Rated operational current up to 10 / 20 A 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 24-600VAC 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@24 VDC	Control current / power max.	6mA / 1.5VA@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

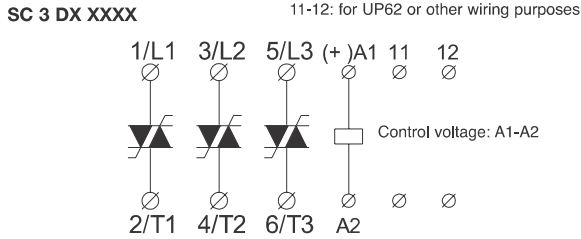
Power dissipation for continuous operation PDmax	3.3 W/A	Operation in ambient temperatures exceeding 40°C is possible if the power dissipation is limited either by reducing the steady-state current or by reducing the duty-cycle as shown in the table. Max.cycle time 15min.		
Power dissipation for intermittent 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 60947-4-3	-5°C to 40°C	<b>Environment</b>		
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	<b>Approval</b> cUL Std No. 508 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	

# 3 Phase electronic contactor (SC 3)

## Wiring specifications



## Short-circuit protection by fuses

Two type of short-circuit protection can be used:

**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  
SC 3 DX XX10 Protection max. 50A gL/gG  
SC 3 DX XX20 Protection max. 50A gL/gG

**Co-ordination Type 2:** Short-circuit protects the installation and the semi-conductors inside the motor controller  
SC 3 DX XX10 Protection max.  $i^2t$  of the fuse 610 A<sup>2</sup>S  
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 45

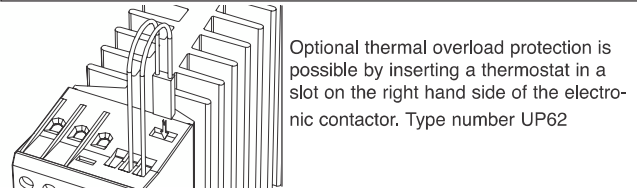
## EMC

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.

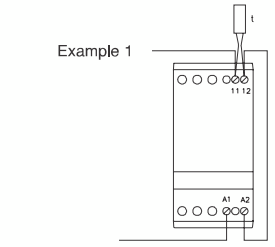
## Mounting and cable wiring information

Mounting information see page 44 / Cable wiring see page 45

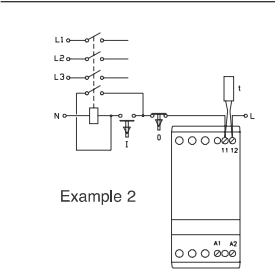
## Thermal overload protection (see also page 44)



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



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 44)

Type	H	D	W
45 mm module	94 mm	124.3 mm	45 mm

# 3 Phase electronic contactor (RC 33 Heatingelement)



- Rated operational voltage up to 480VAC 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	Control voltage	Item number by 12-240VAC 50/60Hz Line Voltage	Load in kW by 230V	EAN Nr. 5705 609	Item number by 24-480VAC 50/60Hz Line Voltage	Load in kW by 400V	EAN Nr. 5705 609	Module-width
10A	5-24 VDC	RC 33 DD 2310	Max. 4.0 kW	002 367	RC 33 DD 4010	Max. 6.9 kW	002 381	W = 45mm
	24-230 VAC/DC	RC 33 DA 2310		002 329	RC 33 DA 4010		002 343	W = 45mm
20A	5-24 VDC	RC 33 DD 2320	Max. 8.0 kW	002 374	RC 33 DD 4020	Max. 13.9 kW	002 398	W = 90mm
	24-230 VAC/DC	RC 33 DA 2320		002 336	RC 33 DA 4020		002 350	W = 90mm

## Output load specification

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

## Control terminal specifications

RC 33 DD XXXX (DC)		RC 33 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	25 mA@24 VDC	Control current / power max.	8mA / 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	3.6 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	3.6 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	65% load Duty-cycle max. 0.65
Operating temperature range EN 60947-4-3	-5°C to 40°C			
Max. operating temperature with current derating	60°C			
Storage temperature EN 60947-4-3	-20°C to 80°C			

## Environment

Degree of protection	IP 20	Pollution degree	3
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## Insulation specifications

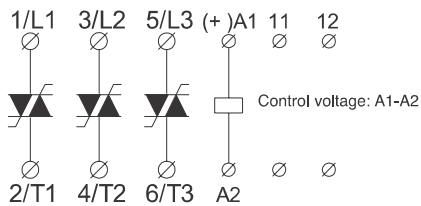
Rated insulation voltage	Ui 660 Volt
Rated impulse withstand voltage	Uimp. 4 kVolt
Installation category	III

# 3 Phase electronic contactor (RC 33 Heatingelement)

## Wiring specifications

RC 33 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

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

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

RC 3 DX XX10 Protection max. 50A gL/gG  
RC 3 DX XX20 Protection max. 50A gL/gG

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

RC 3 DX XX10 Protection max.  $i^2t$  of the fuse 610 A<sup>2</sup>S  
RC 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 45

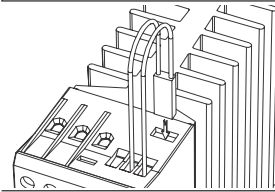
## EMC

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.

## Mounting and cable wiring information

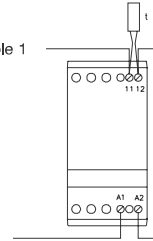
Mounting information see page 44 / Cable wiring see page 45

## 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

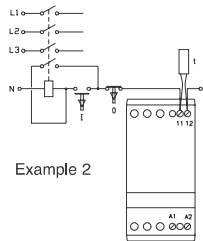
Example 1



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.

## 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 44)

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