1 Phase electronic contactor (RC 11 Heatingelement)

- Rated operational voltage up to 480VAC 50/60 Hz
- Rated operational current up to 15/30/50 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 = 22.5 mm
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			002 084	RC 11 DA 4030		002 121	W = 45mm
50A	5-24 VDC		Max. 11.5 kW	002 183	RC 11 DD 4050	Max. 20.0 kW	002 220	W = 90mm
	24-230 VAC/DC			002 091	RC 11 DA 4050		002 138	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
Power dissipation for intermittent operation PD	1.2 W/A x dutycycle
Cooling method	Natural convection
Mounting	Vertical +/-30^{o}
Operating temperature range EN 60947-4-2	-5^{o}C to 40^{o}C
Max. operating temperature with current derating	60^{o}C
Storage temperature EN 60947-4-2	-20^{o}C to 80^{o}C

Operation in ambient temperatures exceeding 40^{o}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.

By 40^{o}C	By 50^{o}C	By 60^{o}C
100% load Duty-cycle 100%	80% load Duty-cycle max. 0.8	65% load Duty-cycle max. 0.65

Insulation specifications

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

Environment

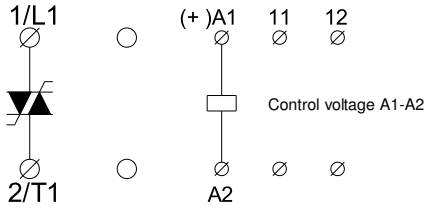
Degree of protection	IP 20	Pollution degree	3

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 semiconductors inside the motor controller

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

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)

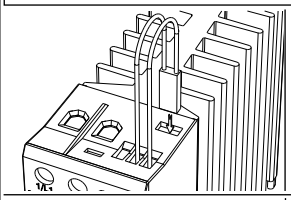
AC - 51 Switching of resistive loads

AC - 55a Switching of electric discharge lamp controls

AC - 55b Switching of incandescent lamps

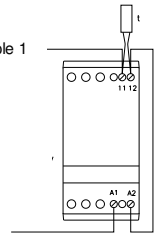
AC - 56a Switching of transformers

Thermal overload protection (see also page 44)



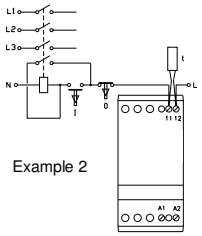
Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62

Example 1



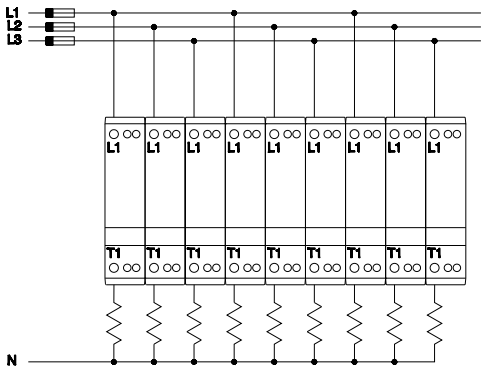
The thermostat can be connected in series with the control circuit of the electronic contactor.
When the temperature of the heatsink exceeds 90°C the electronic contactor will switch Off.
Note:
When the temperature has dropped approx. 30°C the electronic contactor will automatically be switched on again.

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 RC 11 DX XX15



Dimensions (se 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 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[1] accumulated	5-24 VDC			002 282	RC 22 DD 4030	Max. 12.0 kW	002 305	W = 45mm
	24-230 VAC/DC			002 244	RC 22 DA 4030		002 268	W = 45mm

[1]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
Power dissipation for intermittent operation PD	1.2 W/A x dutycycle
Cooling method	Natural convection
Mounting	Vertical +/-30^{o}
Operating temperature range EN 60947-4-2	-5^{o}C to 40^{o}C
Max. operating temperature with current derating	60^{o}C
Storage temperature EN 60947-4-2	-20^{o}C to 80^{o}C

Operation in ambient temperatures exceeding 40^{o}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.

By 40^{o}C	By 50^{o}C	By 60^{o}C
100% load Duty-cycle 100%	80% load Duty-cycle max. 0.8	65% load Duty-cycle max. 0.65

Insulation specifications

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

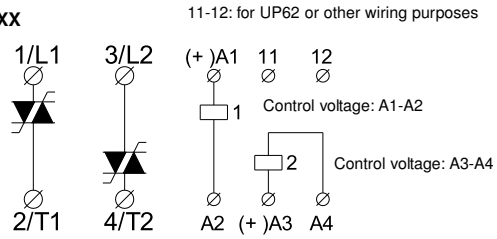
Environment

Degree of protection	IP 20	Pollution degree	3

1 Phase dual pole electronic contactor (RC 22)

Wiring specifications

RC 22 DX XXXX



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

Co-ordination Type 2: Short-circuit protects the installation and the semiconductors inside the motor controller
RC 22 DX XX30 Protection max. i^2t of the fuse 610 A^2S

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

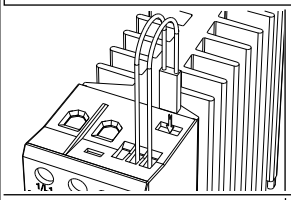
EMC

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

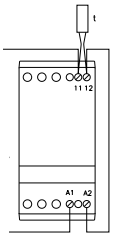
Mounting information see page 44 / Cable wiring see page 45

Thermal overload protection (see also page 44)



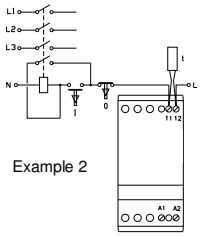
Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62

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.

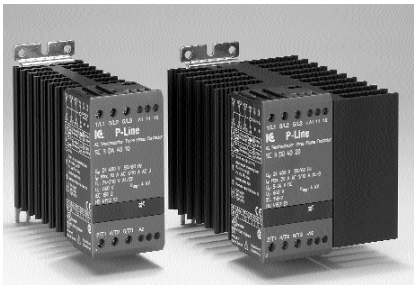
Utilisation Categories (EN 60947-4-3)

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	W = 45mm
	24-230 VAC/DC				RC 32 DA 4015		002 404	W = 45mm
25A	5-24 VDC				RC 32 DD 4025	Max. 17.3 kW	002 435	W = 90mm
	24-230 VAC/DC				RC 32 DA 4025		002 411	W = 90mm

Output load specification

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

Control terminal specifications

RC 32 DD XXXX (DC)		RC 32 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	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
Power dissipation for intermittent operation PD	2.4 W/A x dutycycle
Cooling method	Natural convection
Mounting	Vertical +/-30^{o}
Operating temperature range EN 60947-4-2	-5^{o}C to 40^{o}C
Max. operating temperature with current derating	60^{o}C
Storage temperature EN 60947-4-2	-20^{o}C to 80^{o}C

Operation in ambient temperatures exceeding 40^{o}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.

By 40^{o}C	By 50^{o}C	By 60^{o}C
100% load Duty-cycle 100%	80% load Duty-cycle max. 0.8	65% load Duty-cycle max. 0.65

Insulation specifications

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

Environment

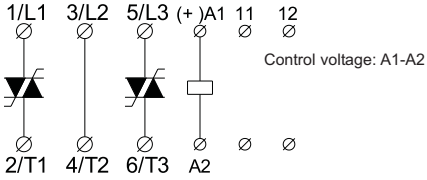
Degree of protection	IP 20	Pollution degree	3

3 Phase dual pole electronic contactor (RC 32 Heatingelement)

Wiring specifications

RC 32 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 32 DX XX15	Protection max. 50A gL/gG
RC 32 DX XX25	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 XX15	Protection max. i^2t of the fuse	610 A^2S
RC 32 DX XX25	Protection max. i^2t of the fuse	610 A^2S

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

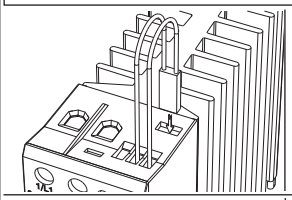
EMC

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

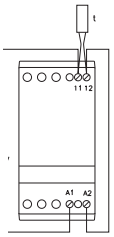
Mounting information see page 44 / Cable wiring see page 45

Thermal overload protection (see also page 44)

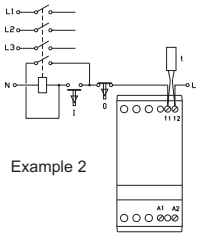


Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62

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.

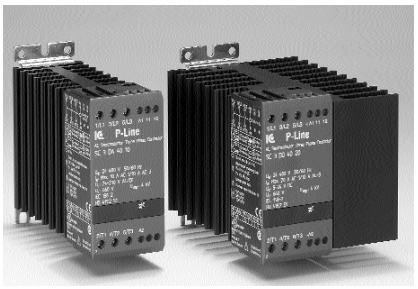
Utilisation Categories (EN 60947-4-3)

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 electronic contactor (RC 33)



- 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			002 367	RC 33 DD 4010	Max. 6.9 kW	002 381	W = 45mm
	24-230 VAC/DC			002 329	RC 33 DA 4010		002 343	W = 45mm
20A	5-24 VDC			002 374	RC 33 DD 4020	Max. 13.9 kW	002 398	W = 90mm
	24-230 VAC/DC			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
Power dissipation for intermittent operation PD	3.6 W/A x dutycycle
Cooling method	Natural convection
Mounting	Vertical +/-30^{o}
Operating temperature range EN 60947-4-2	-5^{o}C to 40^{o}C
Max. operating temperature with current derating	60^{o}C
Storage temperature EN 60947-4-2	-20^{o}C to 80^{o}C

Operation in ambient temperatures exceeding 40^{o}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.

By 40^{o}C	By 50^{o}C	By 60^{o}C
100% load Duty-cycle 100%	80% load Duty-cycle max. 0.8	65% load Duty-cycle max. 0.65

Insulation specifications

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

Environment

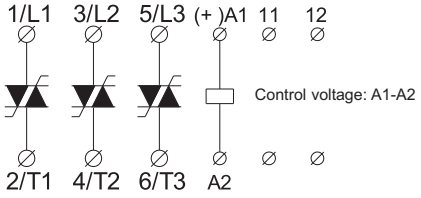
Degree of protection	IP 20	Pollution degree	3

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 33 DX XX10	Protection max. 50A gL/gG
RC 33 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 33 DX XX10	Protection max. i^2t of the fuse 610 A^2S
RC 33 DX XX20	Protection max. i^2t of the fuse 610 A^2S

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

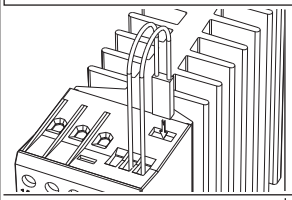
EMC

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

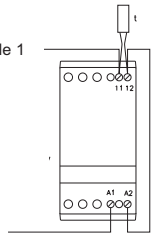
Mounting information see page 44 / Cable wiring see page 45

Thermal overload protection (see also page 44)

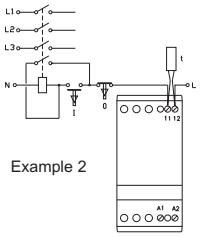


Optional thermal overload protection is possible by inserting a thermostat in a slot on the right hand side of the electronic contactor. Type number UP62

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