# 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

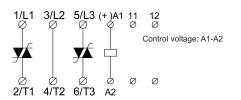
Max. control voltage  Response time max.  1/2 cycle  Response time max.  1/2 cycle  Response time max.  1 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  2.4 W/A x dutycycle  Natural convection  Natural convection  Natural convection  Max. control voltage Response time max.  1 cycle  1 cycle  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.  By 40°C  By 50°C  By 60°C	Item se	election and tec	hnical specificat	ions	5						
15A	AC-1/51 Heating-		12-240VAC 50/60Hz	z	in kW		24-480VAC 50/60Hz	in kW		Module-widt	h
24-230 VAC/DC	15A	5-24 VDC					RC 32 DD 4015	Max.	002 428	W = 45mm	
RC 32 DA 4025   17.3 kW   002 411   W = 90mm		24-230 VAC/DC					RC 32 DA 4015	10.4 kW	002 404	W = 45mm	
RC 32 DA 4025   17.3 kW   002 411   W = 90mm	254	5-24 VDC					RC 32 DD 4025	Max.	002 435	W = 90mm	
Leakage current   1mA ACmax.   100%   100%   100M	25A	24-230 VAC/DC					RC 32 DA 4025	17.3 kW	002 411	W = 90mm	
Duty cycle 100% RC 32 DA XXXX (AC/DC)  Control terminal specifications  RC 32 DD XXXX (DC)  Control voltage 5-24 VDC Control voltage max. 20.4 VAC/DC  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 min. 7.2 VAC/DC  Control current voltage max. 8mA / 2.5VA@24 VDC  Control current voltage min. 7.2 VAC/DC  Control current voltage min. 7.2 VAC/DC  Control current voltage min. 8mA / 2.5VA@24 VDC  Max. control voltage min. 7.2 VAC/DC  Control current / power max. 8mA / 2.5VA@24 VDC  Max. control voltage max. 1/2 cycle Response time max. 1 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  Cooling method Natural convection Wortical +/-30°  Mounting Vertical +/-30°  Operating temperature range EN 60947-4-2 8by 60°C  Max. operating temperature with current derating Storage temperature with current derating Storage temperature with current derating Storage temperature EN 60947-4-2 20°C to 80°C  Insulation specifications  Rated insulation voltage Uif 660 Volt Uimp. 4 kVolt	Output	load specificat	tion				•	· ·	·		
Control terminal specifications  RC 32 DD XXXX (DC)  Control voltage  5-24 VDC  Control voltage max.  4.25 VDC  Pick-up voltage max.  Drop-out voltage min.  1.5 VDC  Control current voltage min.  Control voltage  32 VDC  Max. control voltage  32 VDC  Max. control voltage  Thermal specification  Power dissipation for continuous operation PDm Ax  Power dissipation for intermittent operation PD  Cooling method  Mounting  Coperating temperature range EN 60947-4-2  Max. operating temperature with current derating  Storage temperature EN 60947-4-2  Insulation specifications  RC 32 DA XXXX (AC/DC)  Control voltage max.  Control voltage max.  2.4 VDC  Drop-out voltage min.  Control current / power max.  8mA / 2.5VA@24 VDC  Max. control voltage  2.53 VAC/DC  Max. control voltage  2.53 VAC/DC  Response time max.  1 cycle  Thermal specification  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 voltage with steady-state current or by reducing the voltage with steady-state current or by reducing the steady-state	Leakage current			1mA ACmax.			Min. operational current			10mA	
RC 32 DD XXXX (DC)  Control voltage 5-24 VDC Control voltage 224-230 VAC/DC  Pick-up voltage max. 4.25 VDC Pick-up voltage max. 20.4 VAC/DC  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 Power dissipation for intermittent operation PD  Cooling method Natural convection Wortical +/-30° Vertical +/-30° Vertical +/-30° Top-out voltage Avo Control current / power max. 8mA / 2.5VA@24 VDC  Max. control voltage 253 VAC/DC  Response time max. 1 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  Cooling method Natural convection Vertical +/-30° Top-out voltage Payo Control current or by reducing the steady-state current or by reducing the duty-cycle as shown in the table. Max. cycle time 15min. 89 40°C  By 50°C By 50°C By 60°C  100% load Duty-cycle max. 0.8 65% load Duty-cycle max. 0.8 10°C  Environment  Degree of protection PD Pollution degree 3  Insulation specifications  Rated insulation voltage Ui 660 Volt  Uimp. 4 kVolt	Duty cycle			100%							
Control voltage  Pick-up voltage max.  4.25 VDC  Pick-up voltage max.  1.5 VDC  Drop-out voltage min.  1.5 VDC  Control current voltage min.  Control current / power max.  8mA / 2.5VA@24 VDC  Max. control voltage  8mA / 2.5VA@24 VDC  Max. control voltage  Response time max.  1/2 cycle  Response time max.  1/2 cycle  Response time max.  1/2 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  Autural convection  Mounting  Coperating temperature range EN 60947-4-2  Max. operating temperature with current derating Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Uii 660 Volt Uimp. 4 kVolt  Control voltage Pick-up voltage max.  20.4 VAC/DC Pick-up voltage max.  20.4 VAC/DC Pick-up voltage max.  20.4 VAC/DC Control current / power max.  8mA / 2.5VA@24 VDC Max. control voltage Posponse time max.  1 cycle  1 cycle  Coperation 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.  By 40°C By 50°C By 50°C By 60°C  65% load Duty-cycle max. 0.8  Environment  Degree of protection IP 20 Pollution degree  3  Environment  Degree of protection IP 20 Pollution degree  3	Contro	l terminal spec	ifications	-							
Pick-up voltage max.  4.25 VDC  Drop-out voltage min.  1.5 VDC  Drop-out voltage min.  1.5 VDC  Drop-out voltage min.  Control current voltage  20 mA@24 VDC  Max. control voltage  32 VDC  Max. control voltage  Response time max.  1/2 cycle  Respons	RC 32 DD XXXX (DC)						RC 32 DA XXXX (AC/DC)				
Drop-out voltage min.  1.5 VDC  Drop-out voltage min.  7.2 VAC/DC  Control current voltage  20 mA@24 VDC  Max. control voltage  32 VDC  Max. control voltage  Response time max.  1/2 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  Cooling method  Mounting  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.  By 40°C  By 40°C  By 60°C  100% load Duty-cycle max. 0.8  By 60°C  100% load Duty-cycle max. 0.8  65% load Duty-cycle max. 0.8  Fenvironment  Degree of protection  IP 20  Pollution degree  3  Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Rated inpulse withstand voltage  Uinp. 4 kVolt	Control voltage			5-24 VDC			Control voltage			24-230 VAC/DC	
Control current voltage  Max. control voltage  Response time max.  20 mA@24 VDC  Max. control voltage  Response time max.  1 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  Cooling method  Mounting  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.  By 40°C  By 50°C  By 60°C  Max. operating temperature range EN 60947-4-2  -5°C to 40°C  Max. operating temperature with current derating Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Rated impulse withstand voltage  20 mA@24 VDC  Max. control voltage Response time max.  1 cycle  253 VAC/DC  Ax. control voltage Response time max.  1 cycle  1 cycle  Depration 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.  By 40°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. 0.9  Environment  Degree of protection  IP 20  Pollution degree  3  Storage temperature with current derating	Pick-up voltage max.			4.25 VDC			Pick-up voltage max.			20.4 VAC/DC	
Max. control voltage Response time max.  1/2 cycle Response time max.  1/2 cycle Response time max.  1 cycle  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD Cooling method Mounting  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.  By 40°C By 50°C By 50°C By 60°C  Wertical +/-30° Operating temperature range EN 60947-4-2  -5°C to 40°C  Max. control voltage Response time max.  1 cycle  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.  By 40°C By 50°C By 50°C By 60°C  Fenvironment  Degree of protection IP 20 Pollution degree  3  Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage Rated impulse withstand voltage  Rated impulse withstand voltage	Drop-out voltage min.			1.5 VDC			Drop-out voltage min.			7.2 VAC/DC	
Response time max.  Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD Natural convection Mounting  Operating temperature range EN 60947-4-2 Storage temperature EN 60947-4-2 Patent En Gover time displays the dury-cycle of the duty-cycle as shown in the table. Max. cycle time 15min.  Degree of protection PD Natural convection	Control current voltage			20 mA@24 VDC		С	Control current / power max.			8mA / 2.5VA@24 VDC	
Thermal specification  Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD Cooling method  Mounting  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.  By 40°C By 50°C By 60°C 100% load Duty-cycle max. 0.8  By 60°C 100% load Duty-cycle max. 0.8  Environment  Degree of protection  IP 20  Pollution degree  3  Rated insulation voltage  Rated impulse withstand voltage  Rated impulse withstand voltage	Max. control voltage			32 VDC			Max. control voltage			253 VAC/DC	
Power dissipation for continuous operation PDmax Power dissipation for intermittent operation PD  Cooling method Mounting  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.  By 40°C By 50°C By 60°C  100% load Duty-cycle max. 0.8 By 60°C  100% load Duty-cycle max. 0.8 By 60°C  100% load Duty-cycle max. 0.8 By 60°C  Environment  Degree of protection  IP 20 Pollution degree  3  Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage Rated impulse withstand voltage  Rated impulse withstand voltage	Response time max.			1/2 cycle			Response time max.			1 cycle	
Power dissipation for intermittent operation PD  Cooling method  Mounting  Operating temperature range EN 60947-4-2  Storage temperature EN 60947-4-2  Insulation specifications  Rated impulse withstand voltage  Autural convection  Vertical +/-30°  -5°C to 40°C  60°C  -20°C to 80°C  Ui 660 Volt  Uimp. 4 kVolt  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°C  80% load Duty-cycle max. 0.8  80% load Duty-cycle max. 0.8  65% load Duty-cycle max. 0.8  65% load Duty-cycle max. 0.8  Fenvironment  Degree of protection  IP 20  Pollution degree  3  Storage temperature with current derating  Ui 660 Volt  Uimp. 4 kVolt	Therma	al specification									
Power dissipation for intermittent operation PD Cooling method Natural convection Wounting  Operating temperature range EN 60947-4-2 Max. operating temperature with current derating Storage temperature EN 60947-4-2 Insulation specifications  Rated impulse withstand voltage  Autural convection Natural convection Vertical +/-30° Vertical +/-30° -5°C to 40°C 60°C -20°C to 80°C  Insulation specifications  Ui 660 Volt Uimp. 4 kVolt  The duty-cycle as shown in the table. Max.cycle time 15min.  By 40°C 100% load Duty-cycle max. 0.8  80% load Duty-cycle max. 0.8  65% load Duty-cycle max. 0.8  Favironment  Degree of protection  IP 20 Pollution degree  3  Storage temperature EN 60947-4-2  Uimp. 4 kVolt	Power dissipation for continuous operation PDmax			2.4 W/A			Operation in ambient temperatures exceeding 40°C is possible if the power				
Mounting  Vertical +/-30°  Operating temperature range EN 60947-4-2  Max. operating temperature with current derating Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Rated impulse withstand voltage  Vertical +/-30°  -5°C to 40°C  65% load Duty-cycle max. 0.8  65% load Duty-cycle max. 0.8  65% load Duty-cycle max. 0.8  Fenvironment  Degree of protection  IP 20  Pollution degree  3  Storage temperature EN 60947-4-2  Ui 660 Volt  Uimp. 4 kVolt	Power dissipation for intermittent operation PD			2.4 W/A x dutycycle							reducing
Operating temperature range EN 60947-4-2  Max. operating temperature with current derating Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Rated impulse withstand voltage  Ui 660 Volt Uimp. 4 kVolt	Cooling method			Natural convection		tion	By 40°C	By 50°C		By 60°C	
Max. operating temperature with current derating Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Rated impulse withstand voltage    Coordinate   Coo	Mounting			Vertical +/-30 <sup>0</sup>			100% load Duty-cycle 100%	80% load Duty-cycle max. 0.8		65% load Duty-cycle max. 0.65	
Max. operating temperature with current derating Storage temperature EN 60947-4-2  Insulation specifications  Rated insulation voltage  Ui 660 Volt Uimp. 4 kVolt  Uimp. 4 kVolt	Operating temperature range EN 60947-4-2			-5°C to 40°C			Environment				
Insulation specifications  Rated insulation voltage  Ui 660 Volt  Rated impulse withstand voltage  Uimp. 4 kVolt	Max. operating temperature with current derating			60°C					egree 3		
Rated insulation voltage  Ui 660 Volt  Uimp. 4 kVolt	Storage temperature EN 60947-4-2			-20°C to 80°C				<u> </u>	I	-	1
Rated impulse withstand voltage  Uimp. 4 kVolt	Insulati	ion specificatio	ons								
	Rated ins	sulation voltage		Ui	660 Volt						
Installation catagory III	Rated im	pulse withstand volt	tage	Uir	np. 4 kVolt						
	Installatio	on catagory		III							

# 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 qL/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<sup>2</sup>S RC 32 DX XX25 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**

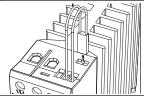
This component meets the requirements of the product standard EN 60947-4-3 and is CE marked according to this standard.

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.

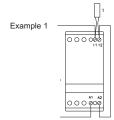
#### Mounting and cable wiring information

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

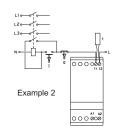


The thermostat can be connected in series with the control circuit of the electronic contactor.

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	Н	D	W
45 mm module	94 mm	124.3 mm	45 mm
90 mm module	94 mm	124.3 mm	90 mm

