CARLO GAVAZZI
Automation Components

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CARLO GAVAZZI

RG series: 3-phase solid state switching solutions

Switches

RGC2 RGC3 series
3-phase switching solutions

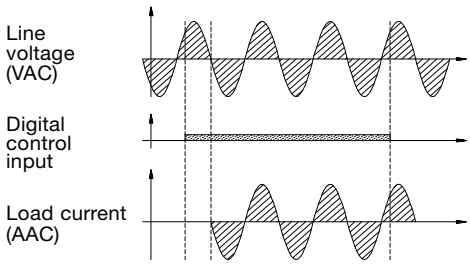
The 3-phase solid state switching solutions presented hereafter build on the success of the 1-phase version of the RG series whereby the same effective thermal design is adopted. This translates to one of the most compact 3-phase solid state switching solutions available in the market.

The solutions offered in the RGC2 and RGC3 series have an integrated heatsink making it easy for user to match product rating to application needs. Different switching modes are available catering for digital control signals, for example from PLCs, as well as analog signals, current or voltage, directly from temperature controllers output.

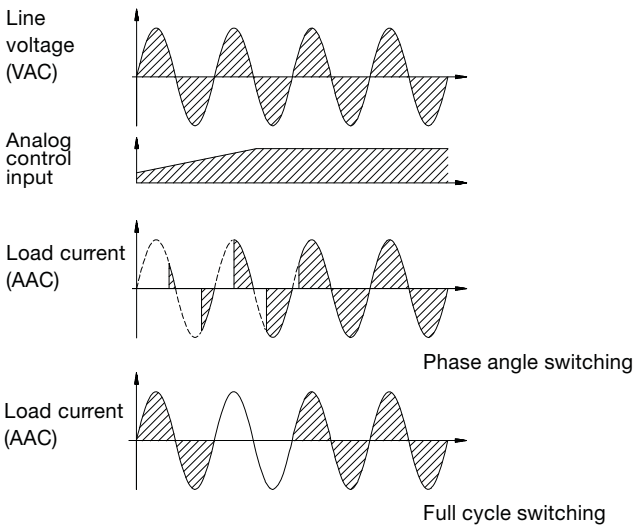
The RGC3 series covers 3-phase, 3-pole switching solutions whilst the RGC2 series is a more economic version consisting of 2 switching poles and a short link.

Solid state switching for 3-phase loads

RGC2A, RGC3A series
RGCM2A, RGCM3A series
'A': Zero cross switching, digital control



RGC2P, RGC3P series
'P': Proportional switching, analog control



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Applications

Plastic & Rubber

- Heater control in extrusion machinery
- Fan switching in extrusion machinery
- Heater control in blow moulding equipment
- Heater control in thermoforming machinery
- Heater control in plastic granules dryers
- Heater control in temperature control units

Benefits

- Long lifetime with a fully solid state solution
- Integrated output overvoltage protection reduces downtime
- Panel space optimisation thanks to the small footprint occupied with the RGC
- UL listing facilitates equipment certification process
- 100kA short circuit current rating enables high fault rating for panels according to UL508A

Food & Beverage

- Heater control in electrical ovens
- Heater control in coffee machines
- Heater control in fryers

Benefits

- Reliable operation in humid environments of 95% @ 40°C (104 °F)
- Conformance to legislation for restricted substances
- Glow wire flammability ratings for plastics conform to EN 60335 requirements

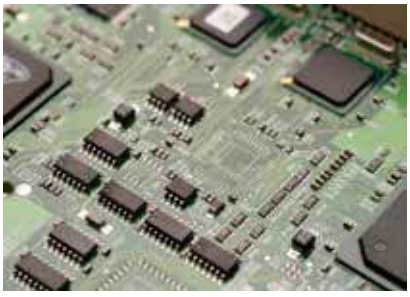
HVAC

- Heater control in building automation systems for comfort heating
- Heater control in dehumidifiers
- Compressor switching in refrigeration systems
- Fan speed control in air handling units

Benefits

- Trouble free operation over a large number of cycles
- Compact dimensions ensure panel space optimisation
- Possibility of proportional switching with an analog input fed directly to the RGC
- No annoying clicking sound (unlike with mechanical solutions)

Industrial ovens & furnaces



- Heater control in soldering ovens
- Heater control in ovens for drying of epoxy coating
- Heater control for paint drying
- Heater control in ovens used for battery packs production

Benefits

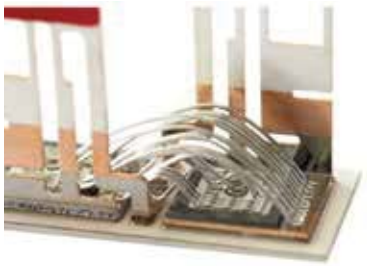
- Panel space optimisation thanks to the small footprint occupied with the RGC
- Wide product offering from a single source
- Integrated output overvoltage protection reduces downtime
- Easier fault diagnostics with optional load and system monitoring

RGC2 RGC3 series
3-phase switching solutions

Features and benefits

Long lifetime

The switching in the RGC 3-phase series is done with back to back thyristors which are well-known for their superior specificiations compared to other switching components. The technology used for the assembly of the power switching module reduces thermal and mechanical stresses of the output chips leading to a lifetime that is 2 to 3 times that of solder process technology.



Benefits

- Trouble free operation over a large number of cycles
- Cost savings with less machine stoppages

One component, ready to use

The RGC 3-phase series has integrated heatsinks specifically designed to maximize the RGC thermal performance and at the same time keep very compact dimensions. A wide range of solutions is available for different current ratings. Ratings apply up to 40°C (104°F) without derating. Above this temperature, applicable derating curves are available to help user select the right product for the needed application.

Benefits

- Small occupied footprint for panel space saving
- No worries of incorrect heatsink sizing
- Wide product offering from a single source
- UL listing certification ensures no issues during the equipment certification process

Enhanced reliability

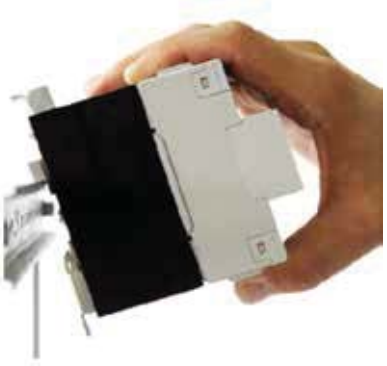
The integration of output overvoltage protection in the RGC 3-phase series ensures that in case of infrequent uncontrolled voltage transients the SSR does not get damaged. The RGC 3-phase is additionally certified as a motor switching device with associated motor ratings. This protection helps in preventing the SSR from damages related to back EMF when used for motor switching

Benefits

- Conformance to immunity standards without the need for external components
- Suitability for use in remote locations that may be subject to infrequent uncontrolled transients
- Suitability for motor switching.

User friendly

The RGC 3-phase is suitable both for back panel mounting and DIN mounting. In the latter case, the product is just placed on a DIN rail and secured by pushing downwards without the need of tools. Power connections for ratings > 30 AAC can easily handle large cables up to 25mm² / AWG3. This eliminates the need for special terminations to connect such large cables to the RGC 3-phase series. Frontal access to the PE terminal enables the PE to be connected with the SSR already in mounted position if required. Other components mounted atop the RGC 3-phase will not hinder accessability to the PE terminal.



Benefits

- Time saving in installing and wiring up

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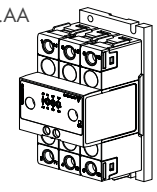
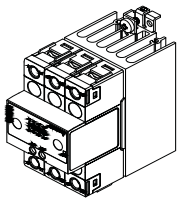
Product range overview

Model	RGC2A 2 pole switching + 1 pole direct	RGC3A 3 pole switching	RGC2A..M 2 pole switching + 1 pole direct	RGC3A..M 3 pole switching	RGC2P 2 pole switching + 1 pole direct	RGC3P 3 pole switching
Ratings						
Operational voltage	42-242 VAC 42-660 VAC	42-242 VAC 42-660 VAC	90-660 VAC	90-660 VAC	180-660 VAC	180-660 VAC
Size 1	10 AAC*	10 AAC*				
Size 2	25 AAC	20 AAC			25 AAC**	20 AAC**
Size 3	40 AAC	25 AAC 30 AAC			40 AAC**	30 AAC**
Size 4			25 AAC	20 AAC	25 AAC	20 AAC
Size 5			40 AAC	25 AAC 30 AAC	40 AAC	30 AAC
Size 6		40 AAC				
Size 7	75 AAC	65 AAC	75 AAC	65 AAC	75 AAC	65 AAC
Load configuration						
3-phase star (Y)	■	■	■	■	■	■
3-phase delta (Δ)	■	■	■	■	■	■
3-phase + N (4-wire)		■				■
Control input						
5-32 VDC	■	■	■	■		
20-275 VAC (24-190 VDC)	■	■	■	■		
0-20 mA, 4-20 mA, 12-20 mA					■	■
0-10 VDC, 0-5 VDC, 1-5 VDC					■	■
Potentiometer control					■	■
Switching mode						
Zero crossing	■	■	■	■		
Phase angle						■
Distributed Full Cycle(s)					■	■
Soft start						■
Soft start + 16 Full Cycles						■
Monitoring						
Mains loss			■	■	■	■
Load loss			■	■	■	■
Overtemperature protection	■ (75 AAC)	■ (65 AAC)	■	■	■	■
SSR open or short circuit			■	■	■	■

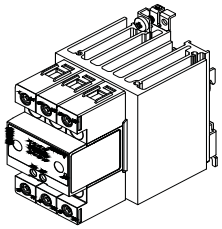
* max 9AAC for VDE
** applies only to RGC..AA



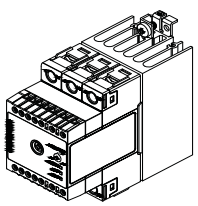
Size 1 (W x H x D)
54 x 106 x 60 mm



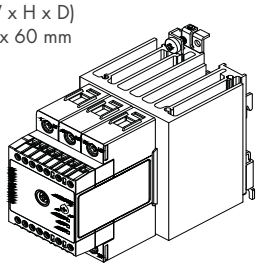
Size 2 (W x H x D)
54 x 110 x 103 mm



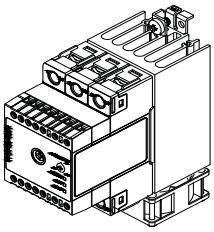
Size 3 (W x H x D)
70 x 110 x 126 mm



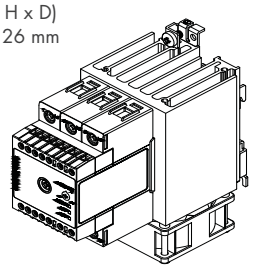
Size 4 (W x H x D)
54 x 110 x 118 mm



Size 5 (W x H x D)
70 x 110 x 141 mm



Size 6 (W x H x D)
54 x 135 x 118 mm



Size 7 (W x H x D)
70 x 141 x 141 mm

W = Width, H = Height, D = Depth

RGC2A RGC3A series
3-phase switching solutions

The RGC2A and RGC3A series offer a one component switching solution dedicated to 3-phase loads. The solutions available are ready to use since they are equipped with an integrated heatsink thus eliminating the possibility of incorrect heatsink sizing.

The high current ratings are achieved with integrated forced ventilation. These versions integrate over temperature protection to protect the solid state contactor against overheating in case of a fan malfunction. The fan operation is controlled and is switched only when necessary to extend its lifetime.

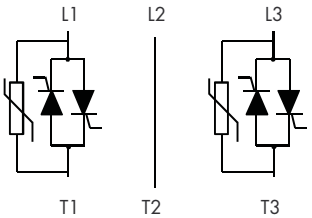
The RGC2A..M and RGC3A..M versions are more sophisticated variants that are able to detect malfunctions in the system. An electromechanical relay output is available for remote indication of such alarm conditions. Alarm LED flash sequence facilitates diagnostics. Additional LEDs indicate presence of control voltage and status of load.

Solid state contactors

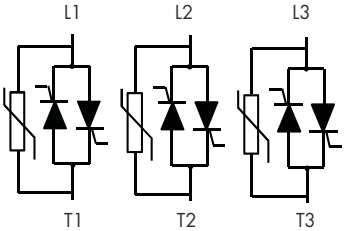
Features

- 3-phase zero cross switching
- Rated operational voltage up to 660 VAC
- Rated current up to 75 AAC @ 40 °C/ pole (RGC2A)
- Rated current up to 65 AAC @ 40 °C/ pole (RGC3A)
- Motor ratings up to 11 kW @ 400 VAC/25 HP @ 600 VAC
- Control voltages: 5-32 VDC, 20-275 VAC (24-190 VDC)
- Integrated output overvoltage protection
- 100 kArms short circuit current rating acc. to UL508
- Up to 15,000 A^2s for I^2t
- Controlled fan operation extending fan lifetime
- Overtemperature protection (for versions with fan)
- System monitoring with RGC..M

RGC2A series
2 pole switching + 1 pole direct



RGC3A series
3 pole switching



*applies only to RGC..10..

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The product range

RGC2A.., RGC3A..

RGC2A..F, RGC3A..F
Versions with integrated fan

Selection guide

No. of switching poles	Current rating @ 40°C T_A	Operating voltage	Control voltage	External supply voltage	ON/ OFF switching	ON/OFF switching with integrated OTP (integrated fan)
2-pole switching + 1 pole direct (RGC2 series)	**10 AAC** (1800 A²s)	42 - 660 VAC	5 - 32 VDC	-	**RGC2A60D10KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC2A60A10KKE**	-
	25 AAC (1800 A²s)	42 - 242 VAC	5 - 32 VDC	-	**RGC2A22D25KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC2A22A25KKE**	-
		42 - 660 VAC	5 - 32 VDC	-	**RGC2A60D25KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC2A60A25KKE**	-
	40 AAC (6600 A²s)	42 - 660 VAC	5 - 32 VDC	-	**RGC2A60D40KGE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC2A60A40KGE**	-
	75 AAC (15000 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	-	**RGC2A60D75GGEDF**
				90 - 250 VAC	-	**RGC2A60D75GGEAF**
			20 - 275 VAC	90 - 250 VAC	-	**RGC2A60A75GGEAF**
3-pole switching (RGC3 Series)	**10 AAC** (1800 A²s)	42 - 242 VAC	5 - 32 VDC	-	**RGC3A22D10KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC3A22A10KKE**	-
		42 - 660 VAC	5 - 32 VDC	-	**RGC3A60D10KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC3A60A10KKE**	-
	20 AAC (1800 A²s)	42 - 242 VAC	5 - 32 VDC	-	**RGC3A22D20KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC3A22A20KKE**	-
		42 - 660 VAC	5 - 32 VDC	-	**RGC3A60D20KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC3A60A20KKE**	-
	25 AAC (1800 A²s)	42 - 660 VAC	5 - 32 VDC	-	**RGC3A60D25KKE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC3A60A25KKE**	-
	30 AAC (6600 A²s)	42 - 660 VAC	5 - 32 VDC	-	**RGC3A60D30KGE**	-
			20-275VAC / 24 - 190 VDC	-	**RGC3A60A30KGE**	-
	40 AAC (6600 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	-	**RGC3A60D40GGEDF**
			20 - 275 VAC	90 - 250 VAC	-	**RGC3A60A40GGEAF**
	65 AAC (15000 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	-	**RGC3A60D65GGEDF**
				90 - 250 VAC	-	**RGC3A60D65GGEAF**
			20 - 275 VAC	90 - 250 VAC	-	**RGC3A60A65GGEAF**

3-phase switching solutions

Time saving with integrated monitoring for malfunction detection

Detectable faulty conditions with the RGC..M

Mains Loss Alarm
Issued when mains voltage is missing on either L1, L2 and / or L3

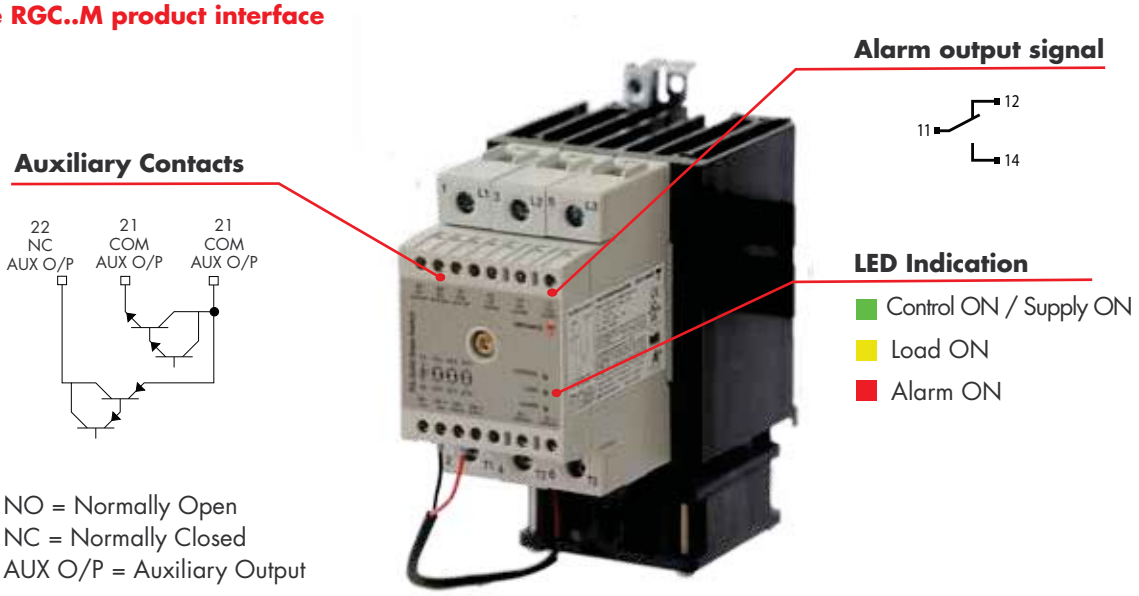
Load Loss Alarm
Issued in case of a heater break or no connection on either T1, T2 or T3 terminals.
This alarm is also present on the RGC2A version

Over Temperature Alarm
Issued in case of an SSR overheat. Ouput is switched off to protect the SSR from damages. Restart occurs automatically once the SSR cools down if control voltage is still ON

SSR malfunction
This alarm is issued when the SSR does not operate as intended due to an internal short circuit or open circuit

RGC..M is suitable only for resistive loads

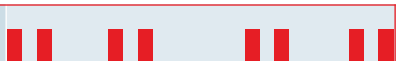
The RGC..M product interface



NO = Normally Open
NC = Normally Closed
AUX O/P = Auxiliary Output

Red LED flashes for easy identification of detected fault

A specific flash rate of the red LED is adopted to help identify the type of failure detected

Mains Loss	2 flashes	
Load loss, SSR short circuit	3 flashes	
SSR open circuit	4 flashes	
SSR over temperature	100%	

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RGC...M - Selection guide for versions with integrated monitoring

No. of switching poles	Current rating @ 40°C T_A	Operating voltage	Control voltage	External supply voltage	ON/OFF switching with integrated monitoring
2-pole switching + 1 pole direct (RGC2 series)	**25 AAC** (1800 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC2A60D25GKEDM**
				90 - 250 VAC	**RGC2A60D25GKEAM**
			20 - 275 VAC	90 - 250 VAC	**RGC2A60A25GKEAM**
	40 AAC (6600 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC2A60D40GGEDM**
				90 - 250 VAC	**RGC2A60D40GGEAM**
			20 - 275 VAC	90 - 250 VAC	**RGC2A60A40GGEAM**
	75 AAC (15000 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC2A60D75GGEDFM**
				90 - 250 VAC	**RGC2A60D75GGEAFM**
			20 - 275 VAC	90 - 250 VAC	**RGC2A60A75GGEAFM**
3-pole switching (RGC3 series)	**20 AAC** (1800 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC3A60D20GKEDM**
				90 - 250 VAC	**RGC3A60D20GKEAM**
			20 - 275 VAC	90 - 250 VAC	**RGC3A60A20GKEAM**
	25 AAC (1800 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC3A60D25GKEDM**
				90 - 250 VAC	**RGC3A60D25GKEAM**
			20 - 275 VAC	90 - 250 VAC	**RGC3A60A25GKEAM**
	30 AAC (6600 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC3A60D30GGEDM**
				90 - 250 VAC	**RGC3A60D30GGEAM**
			20 - 275 VAC	90 - 250 VAC	**RGC3A60A30GGEAM**
	65 AAC (15000 A²s)	42 - 660 VAC	5 - 32 VDC	24 VDC	**RGC3A60D65GGEDFM**
				90 - 250 VAC	**RGC3A60D65GGEAFM**
			20 - 275 VAC	90 - 250 VAC	**RGC3A60A65GGEAFM**

Accessories

Fans

The fan utilised on variants of size 6 and 7 (refer to page 5) can be easily replaced in case of breakages.

Reference code: **RGC3FAN40**
This is a 40 x 40mm fan suitable for size 6 models

Reference code: **RGC3FAN60**
This is a 60 x 60mm fan suitable for size 7 models

RGCM, REC2R
3-phase solutions for motor switching

When frequent switching is required, solid state switching guarantee a longer lifetime compared to electromechanical switching solutions. The RGCM and REC series are fully solid state solutions that enable trouble free operation over a large number of switching cycles. The 45mm product width asscociated with these series allow easy replacement of minitaure mechanical contactors.

The RGCM2A and RGCM3A are 3-phase switching solutions certified both for resistive as well as motor switching.

The REC2R is a 3-phase reversing solution with integrated interlocking certified with motor ratings.

45mm miniature solid state contactors

RGCM2A, RGCM3A series

- 45mm product width
- 2 pole switching + 1 direct (RGCM2A) or 3-pole switching (RGCM3A)
- Rated operational voltage up to 660 VAC
- Rated current up to 20 AAC @ 40 °C/pole (RGCM2A)
- Rated current up to 15 AAC @ 40 °C/pole (RGCM3A)
- Motor ratings up to 3 kW (400 VAC) / 5 HP (600VAC)
- Control voltage: 5-32 VDC, 20-275 VAC (24-190VDC)
- Integrated output overvoltage protection
- Pluggable control terminal

REC2R series

- 45mm product width
- Reverse switching with integrated interlocking
- Rated operational voltage up to 600 VAC
- Motor ratings up to 3 kW (400 VAC) / 5 HP (600VAC)
- Blocking voltage up to 1600Vp
- Control voltage: 24 VDC, 90-253 VAC
- LED ON indication: Green for Forward, Red for Reverse
- Pluggable control terminal

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RGCM2A - Selection guide for 2-pole switching + 1-pole direct

Current rating, AC-51 @ 40°C T_A	Motor Rating @ 400 VAC	Operating voltage	Control voltage	Reference
20 AAC (1800 A²s)	3 kW / 3 HP	42 - 660 VAC	5 - 32 VDC	**RGCM2A60D20GKE**
			24-275 VAC / 24-190 VDC	**RGCM2A60A20GKE**

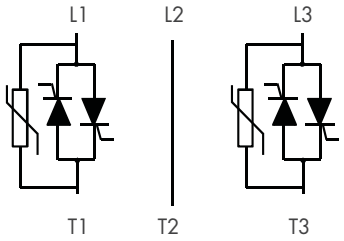
RGCM3A - Selection guide for 3-pole switching

Current rating, AC-51 @ 40°C T_A	Motor Rating @ 400 VAC	Operating voltage	Control voltage	Reference
15.5 AAC (1800 A²s)	-	42 - 242 VAC	5 - 32 VDC	**RGCM3A22D15GKE**
			24-275 VAC / 24-190 VDC	**RGCM3A22A15GKE**
	2.2 kW / 2 HP	42 - 660 VAC	5 - 32 VDC	**RGCM3A60D15GKE**
			24-275 VAC / 24-190 VDC	**RGCM3A60A15GKE**

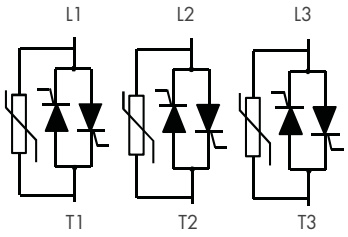
REC2R - Selection guide for 3-phase motor reversing

Current rating, AC-51 @ 40°C T_A	Motor Rating @ 400 VAC	Operating voltage	Control voltage	Reference
n/a	2.2 kW / 2 HP	48 - 530 VAC	24 VDC	**REC2R48D20GKE**
			90-253 VAC	**REC2R48A20GKE**
	3.0 kW / 2 HP		24 VDC	**REC2R48D30GKE**
			90-253 VAC	**REC2R48A30GKE**
	3.0 kW / 2 HP	48 - 600 VAC	24 VDC	**REC2R60D30GKE**
			90-253 VAC	**REC2R60A30GKE**

RGCM2A series
2 pole switching + 1 pole direct



RGCM3A series
3 pole switching

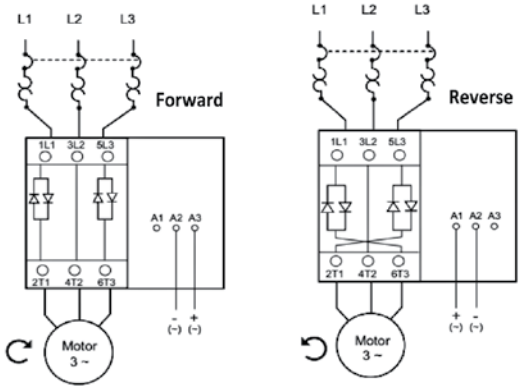


RGCM / REC series
Connection to overload relays

Solid state contactor

External overload relay

REC2R series



RGC2P, RGC3P
3-phase proportional switching solutions

The RGC2P and RGC3P series cover 3-phase solid state switching controllers that deliver output power in proportion to the control input voltage or current. This series of solid state contactors can be controlled directly through the analog output of auxiliary components present in the system without the need for additional modules to convert such analog signals to digital signals.

Switching modes available with RGC2P and RGC3P series:

- **Phase Angle** (Mode E)
- **Distributed Full Cycle** x1, x4, x16 (Mode C1, Mode C4 and Mode C16)
- **Soft Start** (Mode S16 and Mode S)

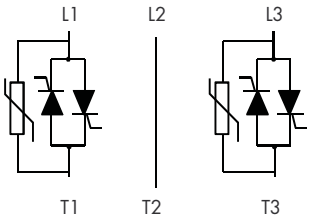
Proportional controllers (Analog input)

Features

- 2-pole + 1 direct (RGC2P) or 3-pole (RGC3P) switching
- Rated operational voltage up to 660 VAC
- Rated current up to 75 AAC @ 40°C/ pole (RGC2P)
- Rated current up to 65 AAC @ 40°C/ pole (RGC3P)
- Current control input: 0-20 mA, 4-20 mA or 12-20 mA
- Voltage control input: 0-10 V, 0-5 V or 1-5 V
- Local setting possible with external potentiometer
- Integrated output overvoltage protection
- Soft start feature with selectable ramp time
- 100kArms short circuit current rating acc. to UL508
- System monitoring for SSR and load malfunction

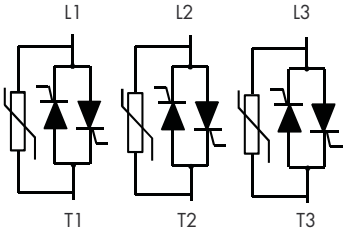
RGC2P

2 pole switching + 1 pole direct



RGC3P

3 pole switching



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

The product range

RGC..AA.. models

Analog input = 4-20mA

LED Indication

Control ON

Flashes to indicate:
Mains loss & Internal error

RGC..I.., RGC..V.. models

Analog input = 0-20 mA, 4-20 mA, 12-20 mA

Alarm output signal

LED Indication

Control ON / Supply ON

Load ON

Alarm ON

Flashes to indicate identified failure

Integrated monitoring with RGC..I, RGC..V models

Mains Loss Alarm
Issued in case mains voltage is not present on either L1, L2 or L3.

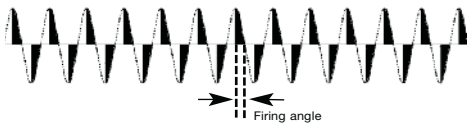
Monitoring Alarm
Issued in case of load loss, SSR open circuit or SSR short circuit.
Load loss not available on RGC3P..E.

Internal Error Alarm
Issued in case of an internal malfunction of the SSR.

Over Temperature Alarm
Issued in case of SSR overheat. Ouput is switched off to protect the SSR.

Phase angle switching - Mode E

The power delivered to the load is controlled by the firing of the thyristors over each half cycle. The lowest resolution is a half cycle and hence response is very fast. Due to the chopping of the waveform, however, electromagnetic disturbance is created with this switching mode.
Applications: dimmers, speed control, temperature control



Selection Guide

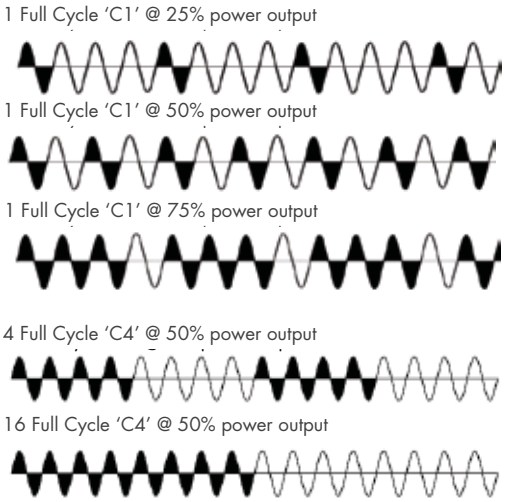
No of switching poles	Current rating @ 40°C T_A	Control input	External supply voltage	Proportional switching Phase angle Mode E
3-pole switching (RGC3P series)	20 AAC (1800 A²s)	4-20 mA	24 VDC	RGC3P60AA20E
		0-20, 4-20, 12-20 mA		RGC3P60I20EDP
		0-10, 0-5, 1-5 VDC, pot		RGC3P60V20EDP
	30 AAC (6600 A²s)	4-20mA	-	RGC3P60AA30E
		0-20, 4-20, 12-20mA	24 VDC	RGC3P60I30EDP
			90 - 250 VAC	RGC3P60I30EAP
		0-10, 0-5, 1-5VDC, pot	24 VDC	RGC3P60V30EDP
			90 - 250 VAC	RGC3P60V30EAP
	65 AAC (15000 A²s)	0-20, 4-20, 12-20mA	24 VDC	RGC3P60I65EDFP
			90 - 250 VAC	RGC3P60I65EAFP
		0-10, 0-5, 1-5VDC, pot	24 VDC	RGC3P60V65EDFP
			90 - 250 VAC	RGC3P60V65EAFP

RGC2P, RGC3P
3-phase proportional switching solutions

Distributed full cycle switching - Mode C1, Mode C4 and Mode C16

Only full cycles are switched in this mode and so noise emission is reduced since switching is done at zero crossing. The lowest resolution is 1 full cycle and hence response is relatively fast. the number of full cycles switched is determined by the control input. This mode can be utilised also with eceonomy switching and hence with the RGC2P as well as the RGC3P.
Applications: temperature control

4 Full Cycles and **16 Full Cycles** switching mode work on the same principle but the lowest resolution is 4 and 16 full cycles respectively. These modes are utilised with heater types which have a low thermal inertia.



Selection Guide

No. of switching poles	Current rating @ 40°C T_A	Control input	External supply voltage	Proportional switching 1x Full cycle Mode C1	Proportional switching 4x Full cycles Mode C4	Proportional switching 16x Full cycles Mode C16
2-pole switching + 1 pole direct (RGC2P series)	**15 AAC** (1800 A²s)	4-20 mA	-	**RGC2P60AA15C1**	-	-
	25 AAC (1800 A²s)	4-20 mA	-	**RGC2P60AA25C1**	-	-
		0-20, 4-20, 12-20 mA	24 VDC	**RGC2P60I25C1DM**	**RGC2P60I25C4DM**	-
		0-10, 0-5, 1-5 VDC, pot		**RGC2P60V25C1DM**	-	-
	40 AAC (6600 A²s)	4-20 mA	-	**RGC2P60AA40C1**	-	-
		0-20, 4-20, 12-20 mA	24 VDC	**RGC2P60I40C1DM**	**RGC2P60I40C4DM**	-
		0-10, 0-5, 1-5 VDC, pot		**RGC2P60V40C1DM**	-	-
	75 AAC (15000 A²s)	0-20, 4-20, 12-20mA	24 VDC	**RGC2P60I75C1DFM**	**RGC2P60I75C4DFM**	-
			90 - 250 VAC	**RGC2P60I75C1AFM**	**RGC2P60I75C4AFM**	-
		0-10, 0-5, 1-5VDC, pot	24 VDC	**RGC2P60V75C1DFM**	-	-
			90 - 250 VAC	**RGC2P60V75C1AFM**	-	-
3-pole switching (RGC3P series)	**20 AAC** (1800 A²s)	4-20 mA	-	**RGC3P60AA20C1**	-	-
		0-20, 4-20, 12-20 mA	24 VDC	**RGC3P60I20C1DM**	**RGC3P60I20C4DM**	**RGC3P60I20C16DM**
		0-10, 0-5, 1-5 VDC, pot		**RGC3P60V20C1DM**	**RGC3P60V20C4DM**	**RGC3P60V20C16DM**
	30 AAC (6600 A²s)	4-20mA	-	**RGC3P60AA30C1**	-	-
		0-20, 4-20, 12-20mA	24 VDC	**RGC3P60I30C1DM**	**RGC3P60I30C4DM**	**RGC3P60I30C16DM**
			90 - 250 VAC	**RGC3P60I30C1AM**	**RGC3P60I30C4AM**	**RGC3P60I30C16AM**
		0-10, 0-5, 1-5VDC, pot	24 VDC	**RGC3P60V30C1DM**	**RGC3P60V30C4DM**	**RGC3P60V30C16DM**
			90 - 250 VAC	**RGC3P60V30C1AM**	**RGC3P60V30C4AM**	**RGC3P60V30C16AM**
	65 AAC (15000 A²s)	0-20, 4-20, 12-20mA	24 VDC	**RGC3P60I65C1DFM**	**RGC3P60I65C4DFM**	**RGC3P60I65C16DFM**
			90 - 250 VAC	**RGC3P60I65C1AFM**	**RGC3P60I65C4AFM**	**RGC3P60I65C16AFM**
		0-10, 0-5, 1-5VDC, pot	24 VDC	**RGC3P60V65C1DFM**	**RGC3P60V65C4DFM**	**RGC3P60V65C16DFM**
			90 - 250 VAC	**RGC3P60V65C1AFM**	**RGC3P60V65C4AFM**	**RGC3P60V65C16AFM**

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Soft start switching - Mode S and Mode S16

Soft start switching is used to limit inrush currents of loads which change characteristics with temperature. This is typical of short wave infrared heaters which exhibit a very high inrush current peak when started from a cold condition.

Soft starting is hence performed either on power up or else when the control signal has been missing for the previous 5 seconds.

In the case of **Mode S**, following the soft starting, the SSR remains ON as long as the control signal is present.

In the case of **Mode S16**, following the soft starting, mode C16 comes into play and hence the SSR switches proportionally according to mode C16 (16x full cycles) based on the control input.

Soft start switching on power up

Soft start switching in case control signal has been missing in the previous 5 seconds

No soft starting in case control signal has been present in the previous 5 seconds

Selection Guide for soft start with analog input

No. of switching poles	Current rating @ 40°C T_A	Control input	External supply voltage	Proportional switching Soft start + 16x Full cycles Mode S16
3 pole switching (RGC3P series)	**20 AAC** (1800 A^2s)	0-10, 0-5, 1-5 VDC, pot	24 VDC	**RGC3P60V20S16DM**
	30 AAC (1800 A^2s)	0-10, 0-5, 1-5VDC, pot	24 VDC	**RGC3P60V30S16DM**
	65 AAC (1800 A^2s)	0-10, 0-5, 1-5VDC, pot	24 VDC	**RGC3P60V65S16DFM**

Selection Guide for soft start with digital input

No. of switching poles	Current rating @ 40°C T_A	Control input	External supply voltage	ON/OFF Switching with Soft start Mode S
3 pole switching (RGC3P series)	**20 AAC** (1800 A^2s)	5 - 10 VDC	24 VDC	**RGC3P60V20SDM**
	30 AAC (1800 A^2s)	5 - 10 VDC	24 VDC	**RGC3P60V30SDM**
	65 AAC (1800 A^2s)	5 - 10 VDC	24 VDC	**RGC3P60V65SDFM**

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