



CAPACITORS & PFC

12

Optimize your electrical efficiency with our Power Factor Correction and Capacitor solutions. Discover how our advanced technologies enhance energy utilization and reduce operational costs. From industrial applications to commercial environments, our comprehensive range ensures reliable performance and significant energy savings.

POWER FACTOR CONTROLLERS



For remote monitoring equipment & software see page 11.5



RG-8



RG-12T

NEW



RGI-12W



RG3-12CS

NEW



RGP-9/12

Features	RG-8T	RG-8B	RG-8BS	RG-12T	RGI-12W	RG3-12CS	RGP-9	RGP-12S
Type	Basic	Basic + Alarm	Comms + Alarm	Basic	Comms + Visual Status Indication	Comms + Alarm	Basic + Visual Status Indication	Basic + Visual Status Indication
Capacitor Steps	8	8	8	12	12	12	9	12
Size (mm)	144 x 144	96 x 96	96 x 96	144 x 144	144 x 144	144 x 144	144 x 144	144 x 144
Smart Switching		✓	✓		✓	✓	✓	✓
Phases Monitored	1 Phase, 1 Current Transformer					3 Phase, 3 Current Transformer		
Capacitor Type	3 Phase Capacitor					1 or 3 Phase Capacitor		
THD Protection		✓	✓		✓	✓	✓	✓
Dual Target Cosφ		✓	✓		✓	✓	✓	✓
Auto Setup		✓	✓		✓	✓	✓	✓
RS-485 Communication			✓			✓		✓
Thermal Control		✓(Int.)	✓(Int.)					✓(Ext.)
Compensation of Individual Phases						✓	✓	✓
Visual Alarm Indication	✓	✓	✓	✓	✓	✓	✓	✓
Measured Values								
Phase - Neutral Voltages (V_{LN})	✓	✓	✓	✓	✓	✓	✓	✓
Phase Current (I)	✓	✓	✓	✓	✓	✓	✓	✓
Cosφ	✓	✓	✓	✓	✓	✓	✓	✓
Active Power (P)(Q)(S)	✓	✓	✓	✓	✓	✓	✓	✓
Individual Harmonics		✓ (19th)	✓ (19th)		✓ (31st)	✓ (19th)	✓ (31st)	✓ (31st)
Total Harmonic Distortion (THD V)/(THD I)		✓	✓		✓	✓	✓	✓
3-Phase Currents (I)					✓	✓	✓	✓
Total Power (ΣP)(ΣS)(ΣQ)					✓	✓	✓	✓
Active Energy - Import/Export (kWh)					✓	✓	✓	✓
Capacitive Reactive Energy (kVARh C)					✓	✓	✓	✓
Inductive Reactive Energy (kVARh L)					✓	✓	✓	✓



8 Step Basic Power Factor Controller

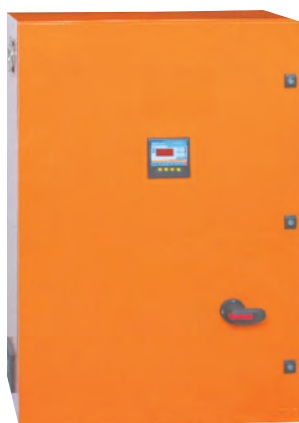
Features	ED8-96
Type	Basic
Capacitor Steps	8
Size (mm)	96 x 96
Smart Switching	✗
Phases Monitored	1 Ph, 1 CT
Capacitor Type	3 Phase Capacitor
Compensation of Individual Phases	✗
Visual Alarm Indication	✓
Measured Values	
Phase - Neutral Voltages (V_{LN})	✓
Phase Current (I)	✓
Cosφ	✓

- True RMS measurements: The controller measures the reactive power in the facility and will connect or disconnect available capacitors according to the setup data
- LED display with three digits
- Single phase or three phase configurable control
- Alarms for current harmonic distortion and for improper power factor correction

POWER FACTOR CORRECTION SYSTEMS

Active PFC Systems - 25-180 kVAr

- Fan cooled, thermostatically controlled
- Capacitors mounted within cabinet.
- Electric Orange cabinet supplied as standard.
- External CT to be ordered separately.



Wall Mount



Floor Standing

Code			Nominal kVAr @ 400V	Steps @ 400V	Size (mm) H x W x D
With Isolator	With MCCB	No Isolator*			
Wall Mount					
VM-025*	VM-025CB*	VM-025X*	25	2x10.5 + 1x4	750 x 550 x 320
VM-040*	VM-040CB*	VM-040X*	40	1x20.5 + 1x10.5 + 1x8.5	750 x 550 x 320
VM-050*	VM-050CB*	VM-050X*	50	2x20.5 + 1x8.5	1000 x 800 x 320
VM-060*	VM-060CB*	VM-060X*	60	2x24.5 + 1x10.5	1000 x 800 x 320
VM-070*	VM-070CB*	VM-070X*	70	1x29 + 1x24.5 + 1x16.5	1000 x 800 x 320
VM-090*	VM-090CB*	VM-090X*	90	2x29 + 1x20.5 + 1x10.5	1200 x 800 x 320
VM-100*	VM-100CB*	VM-100X*	100	2x33 + 1x20.5 + 1x12.5	1200 x 800 x 320
VM-120*	VM-120CB*	VM-120X*	120	3x33 + 1x20.5	1200 x 800 x 320
VMW-150*	VMW-150CB*	VMW-150X*	150	2x50 + 2x25	1200 x 800 x 320
VMW-180*	VMW-180CB*	VMW-180X*	180	2x41 + 3x33	1200 x 800 x 320
Floor Standing					
VM-210*	VM-210CB*	VM-210X*	210	3x58 + 1x33	1900 x 800 x 600
VM-240*	VM-240CB*	VM-240X*	240	3x58 + 1x41 + 1x24.5	1900 x 800 x 600
VM-270*	VM-270CB*	VM-270X*	270	4x58 + 1x41	2100 x 800 x 800
VM-300*	VM-300CB*	VM-300X*	300	4x58 + 1x41 + 1x29	2100 x 800 x 800
VM-330*	VM-330CB*	VM-330X*	330	5x58 + 1x41	2100 x 800 x 800
VM-360*	VM-360CB*	VM-360X*	360	5x58 + 1x41 + 1x29	2100 x 800 x 800
VM-420*	VM-420CB*	VM-420X*	420	6x58 + 1x41 + 1x33	2300 x 800 x 800
VM-480*	VM-480CB*	VM-480X*	480	8x58 + 1x16.5	2300 x 800 x 800
VM-540*	VM-540CB*	VM-540X*	540	9x58 + 1 20.5	2100 x 1600 x 800
VM-600*	VM-600CB*	VM-600X*	600	10x58 + 1x20.5	2100 x 1600 x 800
VM-660*	VM-660CB*	VM-660X*	660	11x58 + 24.6	2100 x 1600 x 800

* Add **-C** to code for remote monitoring services using EDM I Smart Meter. See page 303 for more information on remote monitoring packages & costs.
Enclosures size to be confirmed on order.

* "No isolator" panels only allowed for direct connection as an addition to existing distribution boards which already include a dedicated MCCB / MCB for isolation of the PFC Panel. Panel must be labelled to indicate the location of isolating MCCB / MCB

Other Services - Available on Request

Dynamic PFC Systems

Systems in 50kVAr steps designed and manufactured for your solution, with or without anti-harmonic filtration. Each step is thyristor controlled and capacitors can be switched on and off within 20ms. This is ideal for fast changing loads such as spot welding machines, cranes and arc furnaces.

Site Surveys

Site surveys can be undertaken which will provide an accurate solution with firm cost savings. This applicable to all installations where either the electricity is being billed in kVA or where overloading is causing overheating of cables and nuisance tripping of the incoming circuit breaker. Please contact the industrial sales team for further details.

ACTIVE ANTI-HARMONIC PFC

Active Anti-Harmonic PFC Systems

Isolator	Code		kVAr @ 400V	Steps	Step Values		Size (mm) H x W x D
	MCCB	No Isolator*			@25kVAr	@50kVAr	
VMH-150*	VMH-150CB*	VMH-150X*	150	4	2	2	1700 x 1200 x 600
VMH-175*	VMH-175CB*	VMH-175X*	175	4	1	3	1700 x 1200 x 600
VMH-200*	VMH-200CB*	VMH-200X*	200	5	2	3	1700 x 1200 x 600
VMH-225*	VMH-225CB*	VMH-225X*	225	5	1	4	1700 x 1200 x 600
VMH-250*	VMH-250CB*	VMH-250X*	250	6	2	4	1900 x 1200 x 600
VMH-300*	VMH-300CB*	VMH-300X*	300	7	2	5	2100 x 1600 x 600
VMH-350*	VMH-350CB*	VMH-350X*	350	8	2	6	2100 x 1600 x 600
VMH-400*	VMH-400CB*	VMH-400X*	400	9	2	7	2100 x 1600 x 800
VMH-450*	VMH-450CB*	VMH-450X*	450	10	2	8	2300 x 2000 x 800
VMH-500*	VMH-500CB*	VMH-500X*	500	11	2	9	2300 x 2200 x 800
VMH-600*	VMH-600CB*	VMH-600X*	600	12	0	12	2300 x 2200 x 800

Connect ready Active Power Factor Correction Systems where harmful harmonics exist as caused by UPS, VSDs and other similar devices. It is always recommended that a detailed site analysis be undertaken before ordering.

- Robust design for systems subjected to VTHD <7% and ITHD <20%. VTHD<14% on application.
- Thermostatically controlled forced cooling
- Class 2 Surge Protection Included

* Add -C to code for remote monitoring services using EDMI Smart Meter. See page 303 for more information on remote monitoring packages & costs. Enclosures size to be confirmed on order.

* "No isolator" panels only allowed for direct connection as an addition to existing distribution boards which already include a dedicated MCCB / MCB for isolation of the PFC Panel. Panel must be labelled to indicate the location of isolating MCCB / MCB

ANTI-HARMONIC PFC COMPONENTS

Cylindrical 3-Phase Capacitors for Harmonic Filter Applications

Code	Rated Voltage	kVAr at		Current A	Wire Size	Ø x H mm
		440V	400V			
C440-330-RC	440V	30	25	46A	25mm ²	136 x 300

As per standard units except for the following

- VTHD Max 7%
- ITHD Max 30%
- Patented over pressure disconnection

De-Tuned Anti-Harmonic Reactors 400V

Code	400V Cap	Rated Voltage	Application Voltage	µH	Dimensions (mm)	Weight
AHR-17	25kVAr	440V	380-415V	1711	230H x 250W x 165D	25kg
AHR-08	50kVAr	440V	380-415V	855	230H x 250W x 156D	23kg

When used in conjunction with the above RTR capacitors, these provide the most efficient reactive compensation in harmonic conditions. VTHD <7% and ITHD <20%.

- De-tuning factor 7%
- Tuning frequency 189Hz
- Thermal protection - Built-in Thermistor to be wired into contactor control circuit.



POWER FACTOR CORRECTION CAPACITORS

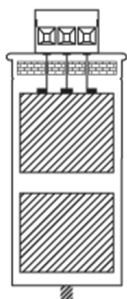
Technical Characteristics

• Standards:	IEC 30831-1/2, EN60831-1/2	• Maximum THD Current:	25%
• Capacitance Tolerance:	-5 +10%	• Discharge Resistance:	Incorporated
• Frequency:	50Hz (60Hz on request)	• Dielectric:	Metallized polypropylene film
• Temperature Range Operating:	-25°C + 55°C	• Protection:	IP20, Indoor Mounting
• Total Losses:	≤ 0.45 W/kVAr	• Humidity:	Max 95%
• Maximum over voltage:	1.1 x Un	• Expected Life:	120 000 Hrs (Temp. level C)
• Maximum over current:	1.5 x In	• Altitude:	Max. 2000 above Sea Level
• Maximum THD Voltage:	2%		

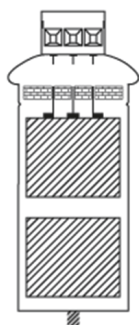
Cylindrical 3 Phase Power Factor Capacitors - 400V



Connected



Disconnected



Ideal for use with harmonic filters

- Terminals – clamp type
- Mounting via stud
- Overpressure disconnection
- Discharge resistors fitted

Manufactured to EN60831-1/2

Code	Rated Voltage	kVAr at		Current per phase	Backup Fuse	Wire Size	Size (mm) Ø x H
		440V	400V				
C440-010	440V	1	0.8	1.2A	2A	2.5mm ²	70 x 260
C440-015	440V	1.5	1.2	1.7A	4A	2.5mm ²	70 x 260
C440-020	440V	2	1.4	2.0A	4A	2.5mm ²	70 x 260
C440-025	440V	2.5	2	2.9A	4A	2.5mm ²	70 x 260
C440-030	440V	3	2.5	3.6A	6A	2.5mm ²	70 x 260
C440-040	440V	4	3.3	4.8A	8A	2.5mm ²	70 x 260
C440-050	440V	5	4.2	6A	8A	2.5mm ²	70 x 260
C440-075	440V	7.5	6.2	9A	16A	6mm ²	85 x 260
C440-100	440V	10	8.2	12A	16A	6mm ²	70 x 260
C440-125	440V	12.5	10.3	15A	20A	6mm ²	85 x 260
C440-150	440V	15	12.3	18A	25A	6mm ²	85 x 260
C440-200	440V	20	16.4	24A	32A	10mm ²	100 x 260
C440-250	440V	25	20.5	30A	40A	16mm ²	120 x 260
C440-300	440V	30	24.6	36A	50A	16mm ²	120 x 260
C440-350	440V	35	29	42A	63A	25mm ²	136 x 260
C440-400	440V	40	33	48A	63A	25mm ²	136 x 260
C440-500	440V	50	41	60A	80A	50mm ²	136 x 300

Cylindrical 3 Phase Power Factor Capacitors - 525V

Code	Rated Voltage	kVAr at		Current per Phase	Backup Fuse	Wire Size	Size (mm) Ø x H
		550V	400V				
D2800	525V	5	2.6	3.7A	6A	4mm ²	70 x 215
C550-75	525V	7.5	4	5.6A	10A	4mm ²	85 x 260
C550-100	525V	10	5.3	7.5A	16A	4mm ²	85 x 260
C550-125	525V	12.5	6.6	9.3A	16A	4mm ²	100 x 260
C550-150	525V	15	7.9	11.2A	20A	6mm ²	100 x 260
C550-200	525V	20	10.6	14.9A	25A	6mm ²	100 x 345
C550-250	525V	25	13.2	18.6A	30A	10mm ²	120 x 345
C550-300	525V	30	15.9	22.4A	40A	10mm ²	120 x 345
C550-400	525V	40	21.1	29.8A	50A	16mm ²	136 x 345
C550-500	525V	50	26.4	37.30A	60A	25mm ²	136 x 345

Cylindrical 3 Phase Power Factor Capacitors - 690V

Code	Rated Voltage	kVAr at		Current per Phase	Backup Fuse	Wire Size	Size (mm) Ø x H
		690V	400V				
C690-075	690V	7.5	2.5	6.3A	10A	2.5mm ²	70 x 260
C690-100	690V	10	3.4	8.4A	16A	4mm ²	85 x 260
C690-125	690V	12.5	4.2	10.5A	20A	4mm ²	100 x 260
C690-150	690V	15	5.1	12.6A	25A	6mm ²	100 x 260
C690-200	690V	20	6.8	16.7A	32A	10mm ²	120 x 260
C690-250	690V	25	8.4	20.9A	40A	10mm ²	120 x 265
C690-300	690V	30	10.1	25.1A	40A	10mm ²	136 x 265

POWER FACTOR CORRECTION CAPACITORS

3 Phase Capacitors – Steel Enclosed Type



- Terminals – stud type
- Discharge resistors fitted
- Manufactured to EN60831-1/2

Code	Rated Voltage	kVAR at		Current per Phase	Backup Fuse	Wire Size	Dimensions mm H x A x P
		440V	400V				
R0440-050	440V	5	4.1	6A	10A	2.5mm ²	300 x 115 x 115
R0440-075	440V	7.5	6.2	9A	16A	4mm ²	300 x 115 x 115
R0440-100	440V	10	8.2	12A	20A	4mm ²	300 x 115 x 115
R0440-125	440V	12.5	10.3	15A	25A	6mm ²	300 x 115 x 115
R0440-150	440V	15	12.3	18A	32A	10mm ²	300 x 115 x 115
R0440-200	440V	20	16.4	24A	40A	10mm ²	425 x 165 x 150
R0440-250	440V	25	20.5	30A	50A	10mm ²	425 x 165 x 150
R0440-300	440V	30	24.6	36A	63A	16mm ²	425 x 165 x 150
R0440-350	440V	35	28.7	42A	80A	16mm ²	425 x 165 x 150
R0440-400	440V	40	32.8	48A	80A	25mm ²	425 x 165 x 150
R0440-450	440V	45	36.9	54A	100A	25mm ²	425 x 165 x 150
R0440-500	440V	50	41.0	60A	100A	50mm ²	425 x 165 x 150
R0440-600	440V	60	49.2	72A	125A	70mm ²	425 x 320 x 150
R0440-700	440V	70	57.4	83A	160A	70mm ²	425 x 320 x 150
R0440-800	440V	80	65.6	95A	160A	95mm ²	425 x 320 x 150

MOTOR STARTING & LIGHTING CAPACITORS

Lighting Capacitors – 250VAC. Supplied with 150mm flying leads and M8 mounting stud



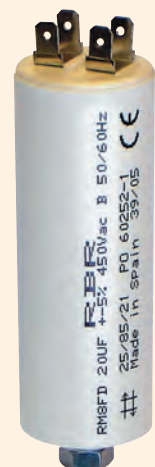
Code	Capacitance (μF)	Size Ø x H mm	Code	Capacitance (μF)	Size Ø x H mm	Code	Capacitance (μF)	Size Ø x H mm
CA-02MF	2	25 x 53	CA-08MF	8	30 x 73	CA-18MF	18	35 x 73
CA-02.5MF	2.5	25 x 53	CA-09MF	9	30 x 73	CA-20MF	20	35 x 96
CA-03MF	3	25 x 53	CA-10MF	10	30 x 73	CA-25MF	25	35 x 96
CA-03.5MF	3.5	25 x 53	CA-11MF	11	30 x 73	CA-30MF	30	40 x 95
CA-04MF	4	25 x 53	CA-12MF	12	35 x 73	CA-32MF	32	40 x 95
CA-04.5MF	4.5	25 x 53	CA-13MF	13	35 x 73	CA-35MF	35	40 x 95
CA-05MF	5	25 x 69	CA-13.5MF	13.5	35 x 73	CA-40MF	40	50 x 100
CA-06MF	6	25 x 69	CA-14MF	14	35 x 73	CA-45MF	45	50 x 100
CA-06.3MF	6.3	25 x 69	CA-15MF	15	35 x 73	CA-50MF	50	50 x 100
CA-07MF	7	25 x 69	CA-16MF	16	35 x 73	CA-55MF	55	50 x 100
CA-07.5MF	7.5	30 x 73	CA-17.5MF	17.5	35 x 73	CA-60MF	60	50 x 100

Specifications

- Dielectric material: Metalised polypropylene, low loss non-inductive winding.
- Case and cover: self-extinguishing thermoplastic resin.
- Lead: 2 x 0.75mm². PVC 90°C.
- Reference standards: CEI 33-3; VDE 560-8; ASE 1029; VDE EN60252.

- Climatic category: 25/85/21.
- Standard tolerance: ±5%; -2+8%.
- Rated frequency: 50 – 60Hz.
- Voltage: 1.1 Un at 50Hz.
- Dissipation factor at 20°C, V = Un, 50Hz: ≤15:10-4

Motor Run Capacitors – 480VAC



With mounting stud M8

Code	Capacitance (μF)	Size Ø x H mm
CAR-01.5MF	1.5	25 x 55
CAR-02MF	2	25 x 55
CAR-03MF	3	30 x 63
CAR-04MF	4	32 x 73
CAR-05MF	5	32 x 73
CAR-06MF	6	32 x 73
CAR-08MF	8	32 x 73
CAR-10MF	10	32 x 73
CAR-12MF	12	35 x 75
CAR-14MF	14	35 x 75
CAR-16MF	16	35 x 75
CAR-18MF	18	35 x 98
CAR-20MF	20	35 x 98
CAR-25MF	25	35 x 98
CAR-30MF	30	40 x 94
CAR-40MF	40	50 x 100
CAR-50MF	50	50 x 100
CAR-60MF	60	55 x 120

Motor Start Capacitors – 275VAC



Code	Capacitance (μF)	Size Ø x H mm
CAS-030MF	30 - 36	50 x 85
CAS-050MF	53 - 64	50 x 85
CAS-080MF	65 - 80	50 x 85
CAS-100MF	88 - 106	50 x 85
CAS-125MF	124 - 149	50 x 85
CAS-130MF	130 - 156	50 x 85
CAS-160MF	145 - 174	50 x 85
CAS-300MF	270 - 324	50 x 110
CAS-328MF	328 - 454	60 x 110

Motor Run Capacitors with Flylead – 440VAC



Code	Capacitance (μF)	Size Ø x H mm
CAR-20MF-FL	20	41 x 75
CAR-25MF-FL	25	41 x 75
CAR-30MF-FL	30	44 x 93