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2013
Products
Catalogue



REACTIVE POWER RELAYS

3 PHASE 3 CURRENT TRANSFORMER REACTIVE POWER RELAYS

new 4 Lines 20 Characters LCD Screen TRIMO Relays 144x144



General Technical Specifications	Code	Level
<ul style="list-style-type: none"> > Operation with threephase and monophase capacitors without sequencing. > Display and measure capasitor powers (KVar) automatically. > Identify capcitors powers manually. > Auto/Manual operation mod. > Auto detection of current flow direction. > Adjustable $\cos\phi$ within (0,8 ind - 0,8 cap). > Adjustable capacitor switching on/off delay time. > Adjustable over temperature protection (Fan contact output). > Adjustable over voltage protection. > Adjustable over harmonic protection (VTH%-ITHD%). > Measurement and display of total harmonic distortion for each phases current (ITHD%) and voltage (VTHD%). > Measurement and display of up to 21.harmonic for current (IHD%) and (VHD%) voltage. > Display and measurement of V, I, Cosp, PF, F values for each phase. > Display and measurement of KW,KVar and KVA for each phase. > Display and measurement of total KW,KVar and KVA values. > Active, inductive and capacitive energy counters. > 24 different alarm sources and one dedicated alarm output. > Password -protected. 	RKR-3P08S	8
	RKR-3PI3S	13
	RKR-3PI8S	18
	RKR-3PI3SC (with communication port)	13
	RKR-3PI8SC (with communication port)	18

2 Lines 16 Characters LCD Screen TRIMO Relays 144x144



<ul style="list-style-type: none"> > Operation with threephase and monophase capacitors without sequencing. > Auto/Manual operation mod. > Auto detection of current flow direction. > Automatic measurement (Detection) and display of capacitor powers (KVar). > Manual definition of capacitor powers. > Adjustable $\cos\phi$ within (0,8 ind - 0,8 cap). > Adjustable over voltage , tempereture protection (fan contact output) values. > Adjustable capacitors switching on-off time. > Current (IHD%,ITHD%) and voltage(VHD%,VTHD%) harmonic protection up to 13 Harmonic. > Displaying voltage,$\cos\phi$,frequency,harmonics and power factor. > Active, inductive and capacitive energy counters. > Password -protected. 	RKR-3PI3MT	13
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1 PHASE 1 CURRENT TRANSFORMER REACTIVE POWER RELAYS

2 Lines 16 Characters LCD Screen Hi-Tech Relays 144x144



<ul style="list-style-type: none"> > Operation with threephase and monophase capacitors without sequencing. > Auto/Manual operation mod. > Auto detection of current flow direction. > Display and measure capasitor powers (KVar) automatically. > Adjustable capacitor switching on/off delay time. > Measurement, display and protection of up to 13. harmonic for voltage (VHD%). > Adjustable over voltage, temperature protection (fan contact output) values. > Over -Low compensation alarm alert. (Alarm Output). > Display and measurement of $\cos\phi$, current, voltage and temperature value. > Adjustable $\cos\phi$, manual mod operation time and Harmonic protection time setting. > Stable group output. 	RKR-IT07C	7
	RKR-IT12C	12

GTS Type Reactive Power Controllers 144x144 - 96x96



<ul style="list-style-type: none"> > Operation with 3 phase capacitor without sequencing. > Auto/Manual operation mod. > Identify capacitor powers automatically. > Auto detection of current flow direction. > Over voltage protected (alarm output). > Adjutable capacitor switching On-Off Time setting. > Display voltage & $\cos\phi$. > Over-low compensasion alarm alert. > Identify alarms that occured on the screen. > Direct capacitors switching on & off upon system requirements, aimed for serial compensation. > Stable group output. 	RKR-5GTS	5
	RKR-7GTS	7
	RKR-13GTS	13
	RKR-5GTS 96	5
	RKR-7GTS 96	7

ACCESSORIES

> USB / RS-485 converter (Optical isolator)

PM-USB

new > Power Analyzers



General Technical Specifications	Code
<ul style="list-style-type: none"> > Voltage L1-N; L2-N; L3-N; L1-L2; L2-L3; L1-L3; average L-N; average L-L). > Current (L1; L2; L3; total). > Active power (L1; L2; L3; total). > Reactive power (L1; L2; L3; total). > Apparent power (L1; L2; L3; total). > Power factor (L1; L2; L3; total). > Voltage harmonics (L1,L2,L3 odd harmonics up to 13th of VHD, total VTHD). > Current harmonics (L1, L2, L3 odd harmonics up to 13th of IHD, total ITHD). > Active energy counter (Import-Export). > Inductive energy counter > Capacitive energy counter > Frequency. 	<p>PM-PA 96</p> <p>PM-PAC 96 (with communication port)</p>

Digital Multimeters



> 1 Ammeter + 1 Voltmeter, 72x72 mm dimensions.	PM-AV 72
> 1 Ammeter + 1 Voltmeter, 72x72 mm dimensions + Relay Outputs..	PM-AVR 72
> 1 Ammeter + 1 Voltmeter, 96x96 mm dimensions.	PM-AV 96
> 1 Ammeter + 1 Voltmeter, 96x96 mm dimensions + Relay Output.	PM-AVR 96
> 3 Ammeter + 3 Voltmeter + 1 Frequency meter + Min.-Max. Demand, 96x96 mm dimensions.	PM-DM 96
> 3 Ammeter + 3 Voltmeter + 1 Frequency meter + Min.-Max. Demand + Over Current, Under & Over Voltage Protected, 96x96 mm dimensions.	PM-DMR 96
> 3 Ammeter + 3 Phase Selective Voltmeter + 1 Frequency meter + 3 Selective Cos ϕ Meter, Min-Max, Demand, 96x96 dimensions.	PM-2DM 96
> 3 Ammeter + 3 Phase Selective Voltmeter + 1 Frequency meter + 3 Selective Cos ϕ Meter, Min-Max, Demand, 96x96 dimensions (2 Different protection contact output).	PM-2DMR 96

Digital Voltmeters



> 0-500VAC, 72x72 mm dimensions.	PM-V 72
> 0-500VAC, 3 Phase Selective, 72x72 mm dimensions.	PM-SV 72
> 0-500VAC, 96x96 mm dimensions.	PM-V 96
> 0-500VAC, 3 Phase Selective, 96x96 mm dimensions.	PM-SV 96
> 180-270VAC input - output voltage indicating, 72x72 dimensions. (For Regulators)	PM-DV 72

Digital Ammeters



> 1.....10000/5A Programmable, 72x72 mm dimensions.	PM-SA 72
> 1.....10000/5A Programmable, Relay Output, 72x72 mm dimensions.	PM-SAR 72
> 1.....10000/5A Programmable, 96x96 mm dimensions.	PM-SA 96
> 1.....10000/5A Programmable, Relay Output, 96x96 mm dimensions.	PM-SAR 96
> 50A Direct Connected, 72x72 mm dimensions.	PM-DA 72
> 50A Direct Connected, 96x96 mm dimensions.	PM-DA 96

Digital Frequency Meters



> 10.....90Hz, 72x72 mm dimensions.	PM-FM 72
> 10.....90Hz, Relay Output, 72x72 mm dimensions.	PM-FMR 72
> 10.....90Hz, 96x96 mm dimensions.	PM-FM 96
> 10.....90Hz, Relay Output, 96x96 mm dimensions.	PM-FMR 96

Digital Cos ϕ Meters



> Microcontroller, 72x72 mm dimensions.	PM-CM 72
> Microcontroller, (Relay Output), 72x72 mm dimensions.	PM-CMR 72
> Microcontroller, 96x96 mm dimensions.	PM-CM 96
> Microcontroller, (Relay Output), 96x96 mm dimensions.	PM-CMR 96
> Microcontroller, 144x144 mm dimensions.	PM-CM 144
> Microcontroller, (Relay Output), 144x144 mm dimensions.	PM-CMR 144

Digital Angle Measuring Devices

> Measures degree between 45 & 90, 72x72 mm dimensions.	PM-AC 72
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Dual Time Relays with Dual Contacts (220-240VAC)



General Technical Specifications	Code
> 1-30 sec. Adjustable (off delay).	RR-30R
> 1-30 sec. Adjustable (off delay). Panel Type, 48x48 mm dimensions.	RR-K30R
> 1-30 sec. Adjustable (off delay). Socket Type, 48x48 mm dimensions.	RR-S30R
> 1-30 sec. / 1-30 minutes Adjustable.	RR-2R
> 0,1-6 sec. Adjustable power-off, triggered off delay.	RR-DG



Time Relays with Buzzer (220-240VAC)	Code
> 0,1-12 sec. Adjustable.	RR-BI2
> 0,1-12 sec. Adjustable (off delay).	RR-BI2M



Impulse Time Relays (220-240VAC)	Code
> 1-30 sec. Adjustable (off delay)	RR-30M
> 2-60 sec. Adjustable (off delay)	RR-60M



48x48 Panel Type Realtime Timer with LCD Screen	Code
> Real timer - 24 hours and 10 programs. (220-240VAC)	RR-RTC01
new > Weekly, 32 Programs selectable Real Timer. (24VAC-DC/220-240VAC)	RR-RT32
new > Weekly, 32 Programs selectable Real Timer with Dual Output. (24VAC-DC/220-240VAC)	RR-RT32R

CONTROL & SAFETY TIME RELAYS



48X48 Panel Type Digital, Star-Delta, Flasher or Inverser (left-right) Relays (220-240VAC)	Code
> Panel type, On-Off delay and 10ms-99 hours adjustable. Time, Flasher, Star-Delta and Inverser (4 Independent Time Adjustable); Relay Selectable.	RR-MDU



Multi-Time Flasher, Inverser (left-right), Star-Delta Relays (24VAC-DC / 220-240VAC)	Code
new > MCB Type multi-time, selectable, double adjustable, Inverser (Left-Right), Star-Delta Relay.	RR-WMT



Flasher Relays	Code
> Switch off 0,1-12 sec. Adjustable, switch on 0.5 sec. fixed (blink). (220-240VAC).	RR-FL
> Switch off 0,1-12 sec. Adjustable, switch on 0.5 sec. fixed with Triac Output (blink).	RR-FLT
> Switch on 2-60 sec. Switch off 2-60 min. Double Adjustable with single contact.	RR-FL1
> Switch on 2-60 sec. Switch off 2-60 min. Double Adjustable with dual contact.	RR-FL2
new > MCB Type Double adjustable, multi-time flasher relay. (24 VAC-DC / 220-240VAC)	RR-WFL2
> Slim Type. Switch on 2-60 sec. Switch off 2-60 min. Double adjustable with dual contact.	RR-FLV2



Inverser (left-right) Relays	Code
> Switch on 2-60 sec. Adjustable, switch off 6 sec. Fixed (220-240VAC).	RR-SX2
> Switch on 2-60 sec, Switch off 2-60 sec. Double adjustable (220-240VAC).	RR-SX2T
new > MCB Type double adjustable, multi-time inverser (right-left) Relays. (24VAC-DC/220-240VAC).	RR-WSX2T
> 4 Independent time adjustable. (220-240VAC).	RR-SX4T



Star - Delta Relays	Code
> Switch on 0,1-12 sec. Adjustable star-delta relay. (220-240VAC).	RR-YΔ
> Slim type 0,1-12 sec. Adjustable (24VAC-DC /220-240VAC).	RR-VYΔ
new > MCB Type Double Adjustable, 0,1-30 Sec. Adjustable. Transfer Delay: 0.02Sec.-1Sec. Adjustable, star-delta relay (24VAC-DC/220-240VAC).	RR-WYΔ



Control & Safety Relays	Code
new > MCB Type Start - Stop relay (220-240VAC).	RR-WSTR
> Start - Stop relay (220-240VAC).	RR-STR
> Press button safety relay (220-240VAC).	RR-PKR
new > MCB Type Press button safety relay (220-240VAC).	RR-WPKR



Multi-Time Time Relays (For Industrial Dish Washer)	Code
> Multi-time time relay (220-240VAC).	RR-5T
new > Multi-time time relay (220-240VAC).	RR-5TB
new > Multi-time time relay (220-240VAC).	RR-5TAB
new > MCB Type, Multi-time time relay (220-240VAC).	RR-W5TB



Slim Type Dual Adjustable Flasher & Time Relay with Digital Display (24VAC-DC/220-240VAC)

- > 1 sec.-99 hours adjustable or dual adjustable flasher relay.
- > 0.01 sec.-99 minutes adjustable or dual adjustable flasher relay.

RR-VDU
RR-VDU01

new> MCB Type Time Relays (12VAC-DC/24VAC-DC/220-240VAC)



- > 0,01-1 sec. Adjustable
- > 0,1-3 sec. Adjustable
- > 0,1-6 sec. Adjustable
- > 0,1-12 sec. Adjustable
- > 1-30 sec. Adjustable
- > 2-60 sec. Adjustable
- > 0,1-3 min. Adjustable
- > 0,1-6 min. Adjustable
- > 0,1-12 min. Adjustable
- > 1-30 min. Adjustable
- > 2-60 min. Adjustable

RR-W01
RR-W03
RR-W06
RR-W12
RR-W30
RR-W60
RR-W03D
RR-W06D
RR-W12D
RR-W30D
RR-W60D

Slim Type Time Relays (24VAC-DC/220-240VAC)



- > 0,01-1 sec. Adjustable
- > 0,1-3 sec. Adjustable
- > 0,1-6 sec. Adjustable
- > 0,1-12 sec. Adjustable
- > 1-30 sec. Adjustable
- > 2-60 sec. Adjustable
- > 0,1-3 min. Adjustable
- > 0,1-6 min. Adjustable
- > 0,1-12 min. Adjustable
- > 1-30 min. Adjustable
- > 2-60 min. Adjustable

RR-V01
RR-V03
RR-V06
RR-V12
RR-V30
RR-V60
RR-V03D
RR-V06D
RR-V12D
RR-V30D
RR-V60D



Multitime Selectable Time Relays (24VAC-DC/220-240VAC)

- > Slim Type, On & Off, Time Delay, 8 different time selection, microcontroller. (1sec.-10sec.-60sec.-5min.-10min.-60min.-10hours-60hours)

RR-VTS

- new> MCB Type On & Off, Time Delay, 8 different time selection, microcontroller. (1sec.-10sec.-60sec.-5min.-10min.-60min.-10hours-100hours)

RR-WTS

Classic Time Relays (220-240VAC)



- > 0,01-1 sec. Adjustable
- > 0,1-3 sec. Adjustable
- > 0,1-6 sec. Adjustable
- > 0,1-12 sec. Adjustable
- > 1-30 sec. Adjustable
- > 2-60 sec. Adjustable
- > 0,1-3 min. Adjustable
- > 0,1-6 min. Adjustable
- > 0,1-12 min. Adjustable
- > 1-30 min. Adjustable
- > 2-60 min. Adjustable

RR-01
RR-03
RR-06
RR-12
RR-30
RR-60
RR-03D
RR-06D
RR-12D
RR-30D
RR-60D

48x48 Panel Type Time Relays (24VAC-DC/220-240VAC)



- > 1-30 sec. Adjustable
- > 2-60 sec. Adjustable
- > 1-30 min. Adjustable
- > 2-60 min. Adjustable

RR-K30
RR-K60
RR-K30D
RR-K60D

48x48 Socket Type Time Relays (24VAC-DC/220-240VAC)



- > 1-30 sec. Adjustable
- > 2-60 sec. Adjustable
- > 1-30 min. Adjustable
- > 2-60 min. Adjustable

RR-S30
RR-S60
RR-S30D
RR-S60D

28x34 Miniature Type Time Relays with Double Contact (220-240VAC)



- > 1-30 sec. Adjustable
- > 2-60 sec. Adjustable
- > 1-30 min. Adjustable
- > 2-60 min. Adjustable

RR-M30
RR-M60
RR-M30D
RR-M60D



Voltage Protection Relays (3X220VAC)

General Technical Specifications	Code
> Over voltage protection relay (Voltage, 0,2-15 sec. Delay adjustable).	GR-A
> Under voltage protection relay (Voltage, 0,2-15 sec. Delay adjustable).	GR-D
> Over-Under voltage protection relay (Voltage, 0,2-15 sec. Delay adjustable).	GR-AD
> Phase sequence, Over-Under voltage protection relay (Voltage, 0,2-15 sec. Delay Adjustable).	GR-ADF
> Phase sequence, Over-Under voltage protection relay (0,2-15 sec. Delay Adjustable) with PCT.	GR-ADFP
> MCB type, phase sequence, Over-Under voltage protection relay (Voltage, 0,1-10 sec. Delay adjustable).	GR-WADFP
> Socket type (48x48), phase sequence, under voltage protection relay (Voltage Adjustable).	GR-SDF48

MOTOR PROTECTION RELAYS



Motor Protection Relays (3x220VAC)

> Motor protection relay.	MKR-01
new > MCB type motor protection relay.	MKR-W01
> Motor protection relay with PTC.	MKR-01P
> Slim type motor protection relay with PTC.	MKR-01PV
> Asymetry adjustable motor protection relay with PTC.	MKR-04P
> Asymetry, hysteresis, 0,2-15 sec. Delay adjustable motor protection relay with PTC.	MKR-05P



Phase Sequence Motor Protection Relays (3x220VAC)

new > MCB type, phase sequence motor protection relay.	MKR-W01F
> Phase sequence motor protection relay with PTC.	MKR-01PF
new > MCB type, phase sequence motor protection relay with PTC.	MKR-W01PF
> Slim type phase sequence motor protection relay with PTC.	MKR-01PVF
> Asymetry, hysteresis, Off delay adjustable phase sequence motor protection relay with PTC.	MKR-05PF
> Phase sequence relay.	MKR-F
new > MCB type phase sequence relay.	MKR-WF



No Neutral Motor Protection Relays (3x220VAC)

> No neutral motor protection relay.	MKR-02
new > MCB type, No neutral motor protection relay.	MKR-W02
> No neutral, phase sequence motor protection relay with PTC.	MKR-02PF
> No neutral, asymetry, hysteresis, phase sequence, 0,2-15 sec. Delay adjustable motor protection relay with PTC.	MKR-02PFA



Monophase - Three-Phase Motor Protection Relays (220VAC/3X220VAC)

> MCB Type Over - Under voltage protection relay (5-15 min. delay).	MKR-W09
> MCB Type Over - Under voltage protection relay (0,1-10 sec. delay).	MKR-W10
> MCB Type Over -Under voltage protection relay (0,1-10 min. delay).	MKR-W10D



Monophase Motor Protection Relays (220VAC)

> Thermistor relay (PTC).	MKR-PTC
> MCB Type , Thermistor relay (PTC).	MKR-WPTC
> Monophase motor protection relay (under 140-200 VAC adjsutable/over 240VAC fixed).	MKR-03



Motor Sequence Relays (24VAC-DC / 220-240VAC) - (for hydrophore)

new > MCB type, dual motor sequence relay.	MKR-WMS2
new > MCB type, triple motor sequence relay.	MKR-WMS3

Current Protection Relays (220-240VAC)



General Technical Specifications	Code
> 0,5-5A Over Current Protection Relay with Start-up & Tripping Delay.	MKR-AKA05
> 1,5-15A Over Current Protection Relay with Start-up & Tripping Delay.	MKR-AKA15
> 0,5-5A Under Current Protection Relay with Start-up & Tripping Delay.	MKR-AKD05
> 1,5-15A Under Current Protection Relay with Start-up & Tripping Delay.	MKR-AKD15

LIQUID LEVEL CONTROL RELAYS



10-50 KΩ Adjustable Liquid Level Control Relays (220-240VAC)

> Liquid level control relay with adjustable accuracy.	SSR-17
> Slim type liquid level control relay with adjustable accuracy.	SSR-VI7
new > MCB type, liquid level control relay with adjustable accuracy.	SSR-WI7
> Liquid level control relay (for steam iron machines).	SSR-27
> Liquid level control relay (for steam iron machines with double depot).	SSR-37
> Socket type (48x48) liquid level control relay.	SSR-07S
> Liquid level electrode.	SSE-07

PHOTOCELL RELAYS



1-10 Lux Adjustable Photocell Relays (220-240VAC)

> Photocell Relay (Photo-Electric).	FR-5
new > MCB type, Photocell Relay (Photo-Electric).	FR-W5
> Photocell Relay with Manual Switch & Fuse Protection.	FR-5GL
> Photocell Relay with Manual Switch, Fuse Protection & Triac Output.	FR-5GLT
> Photocell Relay with Manual Switch, Fuse Protection & Midnight Timer.	FR-5GLR
> Photocell Relay (Photo-Electric) in a Special Case with LDR.	FR-5S
> LDR with Special Case.	FR-G



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