

# RAPIDUS 231R

**Klemsan**

606001

Power Factor Controller (3Ø - 12 level)

Category: Energy Management Products

Type: Reactive Power Management

Group: Electronics Products



## Commercial Information

Package Unit	1 pcs.
Customs Tariff Number	903289000000
Weight Per Unit Including Packaging	0,94

## Technical Information

CONNECTION DATA	
Connection Type	3F4T
GENERAL	
Measurement System	3Ø
LCD Screen	+
Language Support	Turkish, English, Russian

Password Protection	+
Voltage Transformer Ratio (VTR)	1 - 5000
Current Transformer Ratio (CTR)	1 - 5.000
Number of Measurements in One Period	512
LCD/Screen Refresh Rate	1
Networks	TT, TN, IT
Signal Waveforms	-
Battery	+
Real Time Clock	+
Four Quadrant Measurement	4
Demand Period	1-60 min. adjustable
Phase Diagram	Available
<b>COMPENSATION MODES</b>	
Linear	+
Circular	+
Rapidus (Smart Control Mode)	+
Manual	+
<b>STEP CONFIGURATIONS</b>	
Manual Definition	+
Predefined	1-1-1-1, 1-1-2-2, 1-2-2-4, 1-2-3-3, 1-2-4-4, 1-1-2-4, 1-2-3-4, 1-2-4-8, 1-1-2-3
Power (kVAr)	0.00-1000 adjustable
Type	3Ø capacitor, 3Ø shunt reactor adjustable

DCM	+
Fixed Step Assignment	+
<b>POWER FACTOR SETTINGS</b>	
Target 1 cosØ	0.8 cap. to 0.8 ind. adjustable
Target 2 cosØ	0.8 cap. to 0.8 ind. adjustable
Dual cosØ Target	-
4 Quadrant Operation for Generators	-
<b>ENERGY MEASUREMENT</b>	
Multiple Sub Tariffs (Peak, On-Peak and Off-Peak)	1
1Ø Phase Energy Measurement	-
3Ø Phase Energy Measurement	Available
<b>CURRENT MEASUREMENT INPUT</b>	
Measuring Range	10mA-6A AC
Overvoltage Category	300 V Cat III
Voltage Fluctuation Measurement	2 kV
Power Consumption	<0.2 VA
Intermittent Overload	100A for 1 sec.
Sampling Frequency Between 45-65 Hz	25.6 kHz
<b>VOLTAGE MEASUREMENT INPUT</b>	
Overvoltage Category	300 V Cat III
Measuring Range L-N	95-272 VAC ±10%
Measuring Range L-L	164-471 VAC ±10%

Frequency Measuring Range	45-65 Hz
Power Consumption	<0.1 VA
Sampling Frequency Between 45-65 Hz	25.6 kHz
<b>POWER QUALITY MEASUREMENTS</b>	
THD - Voltage (as %)	+
THD - Current (as %)	+
Harmonics for Current and Voltage Phases	Up to 51st
<b>MEASURING ACCURACY - IEC 61557-12</b>	
Total Active Power	Class 0.2
Total Reactive Power	Class 1
Total Reactive Energy	Class 2
Frequency	Class 0.05
Current	Class 0.2
Neutral Current	Class 0.5
Voltage	Class 0.2
Power Factor	Class 0.5
THDV, THDI	Class 1
Total Apparent Power	Class 0.2
Total Active Energy	Class 0.5
<b>MEASURING ACCURACY - IEC 62053-22</b>	
Total Active Energy	Class 0.2S
<b>MEASURING ACCURACY - IEC 62053-23</b>	
Total Reactive Energy	Class 2

## COMPENSATION RELAY OUTPUTS

Number of Outputs	12
Type	NO (SPST)
Max. Switching Current	2A
Max. Switching Voltage	250VAC
Max. Switching Power	1250VA
Mechanical Operating Life	= 10.0000000 operations
Electrical Operating Life (NO side)	5×104(5A@250VAC) 1×105(5A@30VDC)

## ALARM RELAY OUTPUTS

Number of Outputs	2
Type	NO (SPST)
Max. Switching Current	4A
Max. Switching Voltage	250 VAC
Max. Switching Power	1250 VA
Mechanical Operating Life	= 10.0000000 operations
Electrical Operating Life (NO side)	5×104(5A@250VAC) 1×105(5A@30VDC)

## GENERATOR / DAY-NIGHT INPUT

Number of Inputs	1
Frequency	45-65Hz
Input	95-240VAC

## INPUTS AND OUTPUTS

Digital Outputs	--
Analog Outputs	--

POWER SUPPLY	
Backup Supply Input	--
Voltage	L1-N den $\pm 10\%$ 95-272VAC
Frequency	45-65Hz
Consumption	< 10VA
MECHANICAL PROPERTIES	
Weight (g)	670
Protection Class	Front IP40 / Rear IP20
Mounting Type	Panel Mount
Packaging Quantity	1
CABLE CROSS-SECTIONS	
Voltage, Current, All Relay Outputs, Generator Input	2.5mm <sup>2</sup> - 14AWG with ferrule - 4mm <sup>2</sup> - 12AWG without ferrule, 2x1.5mm <sup>2</sup> - 2x16AWG
RS485	1.5mm <sup>2</sup> - 16AWG with ferrule - 1.5mm <sup>2</sup> - 16AWG without ferrule, 2x0.75mm <sup>2</sup> - 2x18AWG
ENVIRONMENTAL CONDITIONS	
Operating Temperature	-20°C +55°C
Storage Temperature	-30°C +80°C
Relative Humidity (Non-condensing)	Max. 95%
EMC-EMI	
EN 61000-6-1:2011	+
EN 61000-6-3 - A1 - AC:2013	+
DIAGRAMS	
Mains Connection	-

Step Output Connections	-
<b>COMMUNICATION</b>	
Protocol	Modbus RTU
Baud Rate	1200-38400 bps adjustable
Parity	---
Stop Bit	1
Slave ID	1-247
Isolation	2000V RMS
<b>CONTROL PROCESS AND FUNCTIONS</b>	
Phase Switching Angle	±45 degree adjustable
Average Time	±45 degree adjustable
<b>TIME RECORDED DATA STORAGE</b>	
Hourly Records	1920 Hours x 68 Different Paramaters
Daily Records	240 Days x 68 Different Paramaters
Monthly Records	36 Months x 68 Different Paramaters
Demand	4 Months x 16 Different Parameters