

ELECTRONICS PRODUCTS > ENERGY MANAGEMENT PRODUCTS > REACTIVE
POWER MANAGEMENT



RAPIDUS 231R-E

Stock Keeping Unit (SKU): 606005

Power Factor Controller (3Ø - 12 level)

Commercial Information

Product Sales Code	606005
Package Unit	1 pcs.
Customs Tariff Number	903289000000
Weight Per Unit Including Packaging	670g kg.

Technical Information

CONNECTION DATA

Connection Type	3F4T
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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
Lcdscreen Refresh Rate	1 sn.
Networks	TT, TN, IT
Signal Waveforms	
Battery	+

Real Time Clock	+
Four Quadrant Measurement	4
Demand Period	1-60 min. adjustable
Phase Diagram	Available
Minmaxdemand Values	+

Compensation Modes

Rapidus Smart Control Mode	+
Manual	+
Linear	+
Circular	+
Sequential	+

Step Configurations

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	+

Power Factor Settings

Target 1 Cos	0.8 cap. to 0.8 ind. adjustable
Target 2 Cos	0.8 cap. to 0.8 ind. adjustable
Dual Cos Target	+
4 Quadrant Operation For Generators	+
Learnable Step And Connections	+

Energy Measurement

Multiple Sub Tariffs Peak On Peak And Off Peak	1
1 Phase Energy Measurement	
3 Phase Energy Measurement	Available

Current Measurement Input

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

Voltage Measurement Input

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

Power Quality Measurements

Thd Voltage As	+
Thd Current As	+
Harmonics For Current And Voltage Phases	Up to 51st

Measuring Accuracy Iec 61557 12

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
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Measuring Accuracy Iec 62053 22

Total Active Energy	Class 0.25
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Measuring Accuracy Iec 62053 23

Total Reactive Energy	Class 2
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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 ±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	2.5mm² - 14AWG with ferrule - 4mm² - 12AWG without ferrule, 2x1.5mm² - 2x16AWG
Rs485	1.5mm² - 16AWG with ferrule - 1.5mm² - 16AWG without ferrule, 2x0.75mm² - 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	

Communication

Protocol	Modbus RTU
Baud Rate	2400-115200 bps adjustable

Parity	---
Stop Bit	1
Slave Id	1-247
Isolation	2000V RMS

Control Process And Functions

Phase Switching Angle	±45 degree adjustable
Average Time	Off, 5 sec, 10 sec, 20 sec, 30 sec, 40 sec, 50 sec, 60 sec adjustable
Step Deactivation Time	1-600 sec. adjustable
Step Discharge Time	3-1000 sec. adjustable
Step Activation Time	1-600 sec. adjustable

Time Recorded Data Storage

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
Alarm Records	50