

ENGINE, GENERATOR AND ATS CONTROLLERS

Automatic Mains Failure Gen-set Controllers



Paralleling controllers for mains-generator and generator-generator



RGK 900SA - RGK 900



EXP 10...

EXP series expansion modules
See Section 16.

Order code	Description	Qty per pkg	Wt [kg]
		n°	[kg]

Stand-alone controller.

RGK 900SA	Paralleling control among generating sets. 12/24VDC, graphic LCD, RS485 port and USB/optical and Wi-Fi point programming port on front. Expandable with EXP... modules	1	1.040
------------------	--	---	-------

AMF (Automatic Mains Failure) controller.

RGK 900	Mains-generator paralleling control. 12/24VDC, graphic LCD, with RS485 port, USB/optical and Wi-Fi point programming port on front. Expandable with EXP... modules	1	1.040
----------------	--	---	-------

Mains-ATS (Automatic Transfer Switching) controller.

RGK 900 MC	Control of mains, automatic transfer switching (ATS), and paralleling on multiple generators controlled by RGK 900SA. 12/24VDC, graphic LCD, with RS485 port and USB/optical and Wi-Fi point programming port. Expandable with EXP... modules	1	1.040
-------------------	---	---	-------

Order code	Description
------------	-------------

EXPANSION MODULES FOR RGK 900... Inputs and outputs.

EXP10 00	4 opto-isolated digital inputs
EXP10 01	4 opto-isolated static outputs
EXP10 02	2 digital inputs and 2 static outputs, opto-isolated
EXP10 03	2 relay outputs rated 5A 250VAC
EXP10 04	2 opto-isolated analog inputs 0/4-20mA or PT100 or 0-10V or 0...±5V
EXP10 05	2 opto-isolated static outputs 0/4-20mA or 0-10V or 0...±5V
EXP10 08	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC

Communications interface.

EXP10 10	Opto-isolated USB interface
EXP10 11	Opto-isolated RS232 interface
EXP10 12	Opto-isolated RS485 interface
EXP10 13	Ethernet interface with web server function

General characteristics

- VAC inputs: Mains L1-L2-L3-N for RGK 900 only
- VAC inputs: Generator L1-L2-L3-N
- Voltage measurement rated value: 600VAC (UL/CSA)
- Voltage measurement range: 30-720VAC
- Frequency measurement range: 45...65Hz or 360...440Hz
- Programmable VT ratio
- Current measurement input (3 PH+N): 0.05-6A or 0.05...1.2A
- Fourth CT for neutral measurement or earth/ground leakage detection
- Graphic LCD, 128x112 pixels with backlight
- 13 digital inputs
- 3 relay outputs rated 8A 250VAC
- 6 static outputs rated 2A, protected
- 1 static output 50mA
- Engine running detection: "D+" generator voltage and frequency
- 1 engine speed input: "W" or "Magnetic Pick-up"
- 3 analog ohmic inputs for oil pressure, engine temperature and fuel level control
- 1 programmable analog input
- 2 analog outputs for engine speed control (governor) / voltage regulator (AVR)
- Alarm-event-parameter text in 5 languages (Web upload)
- Alarm text customisable (16 alarms)
- Event log
- Modbus-RTU, Modbus-ASCII and Modbus-TCP communication protocols
- Boolean logic for inputs, outputs and internal status
- Customisation manager software available; compatible with Synergy and Xpress software
- Degree of protection: IEC IP65 on front; suitable for use with UL/CSA Type 4X outdoor enclosure installation
- Built-in buzzer
- Multi-level passwords
- Sleep function (power saving mode)
- Synchronising and load sharing.

MAIN FUNCTIONS

- Menus for quick selection of rated parameter settings
- "Autocall" function for automatic sending of emails and/or SMS at predefined events/alerts
- Mains (for RGK 900 only) / Generator controls: Phase sequence, phase loss, max and min voltage and frequency, voltage asymmetry
- Programmable maintenance at various intervals
- Current leakage control towards earth/ground
- Mains-generator synchronising (ATS closed transition)
- Mains in base-load with generator in peak shaving
- Paralleling supervision of generators (island mode)
- Generating set start scheduling.

Certifications and compliance

Certifications obtained: EAC; UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices, Generator controllers.
Compliant with standards: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL 508, CSA C22.2 n° 14.

MAINS-GENERATOR PARALLELING	ISLAND MODE	ATS AND PARALLELING OF MAINS WITH MULTIPLE GENSETS
<p>RGK 900 is designed for mains-generator synchronising applications, such as:</p> <ol style="list-style-type: none"> Single generator in maintained parallel with the mains in "base-load" mode (generator power supplied at a steady rate) Single generator in maintained parallel with the mains, in peak-shaving mode (import-export – mains power is limited to constant value and load peaks during heavy demand for power are supplied by generator) Single generator in AMF with temporary parallel with the mains (for emergency, with AMF in closed transition). 	<p>RGK 900SA is designed for applications with load sharing on an isolated bus, without mains:</p> <ol style="list-style-type: none"> Parallel among generators working together in island mode on power bus with load shared among them Generators connected together to maintain the power reserve (total power available minus load power) within a preset range, switching on and off generators according to a priority level. 	<p>Combination of RGK 900SA and RGK 900MC units is designed for load govern controls with multiple generators in parallel on power bus and mains. In these circumstances, the RGK 900MC unit controls, in base-load or peak-shaving mode, the mains and power bus composed by multiple generators, each controlled by an RGK 900SA.</p>