

Lovato control solutions

Contactors



Control accessories



Automatic battery chargers



Automatic transfer switches



Generating set controller RGK 60



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PO32 GB 09/02



RGK - TOTAL CONTROL

Comfort and safety
24 hours a day

The RGK 60 is a microprocessor module for the control of generating sets. It is a complete metering system with excellent measurement technology. The main goal of this new unit has been the elimination of the communication barriers between man and machine. The use of a large display screen and supervision software dedicated to rationally interact with the operator has consented to reach this intent.

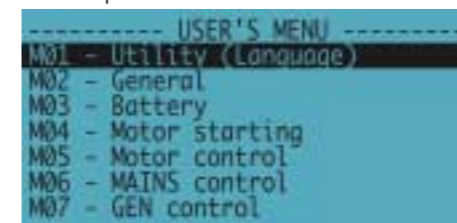
Viewable measurements

- Battery voltage
- Phase, line and system mains voltage values
- Phase, line and system generator voltage values
- Phase current
- Active, reactive and apparent power values

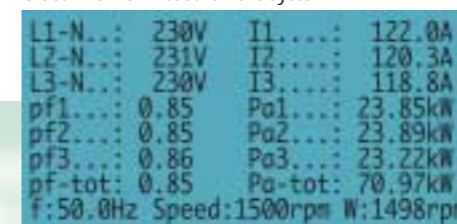
- Active-reactive energy meters
- Power factor per phase
- Mains and generator frequency
- Engine speed (rpm)
- Oil pressure
- Water temperature
- Fuel level
- Engine running hour counter
- Hours remaining before next maintenance
- Total number of starting attempts
- Percentage of successful starting attempts.



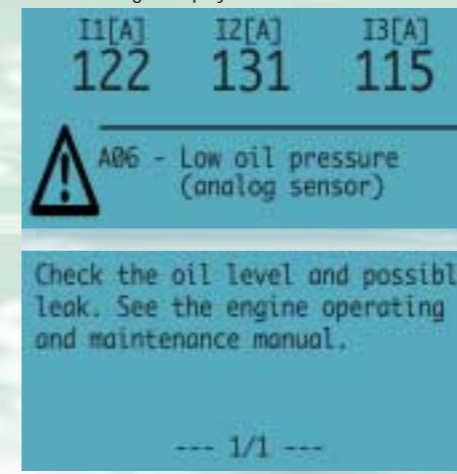
Main setup menu



Global view of measurement system



Alarm messages display



Help text

General characteristics

- Large-sized 192 x 64 pixel graphic LCD
- Three-phase mains-generator voltage control range: 50 to 620VAC
- Three-phase current control range: 0.02 to 6A (CT input)
- 12 digital inputs
- 7 relay outputs
- 1 "W" engine speed measuring input
- 3 analog inputs for pressure, temperature and fuel level monitoring
- Retentive energy meters
- RS-232 port for setup, remote control, normal or GSM modem connection

- Single device for either 12V or 24VDC battery
- Fast setup via keypad or PC
- User friendly via interactive interface
- Context sensitive on-line help prompts
- Choice of text language
- Icon detail and alarm viewing
- Programmable inputs and outputs
- Programmable alarms with customisable texts
- Event log for alarms, status and events
- Operating data recording
- Safety copy of parameters in flash memory
- Customisable page for information concerning the application.

Option card

- Plug-in option card RGK X01 available for the following functions:
- Clock calendar with energy backup capacitor
 - Isolated RS-485 port
 - 1 relay output
 - 1 static output.

Setup software

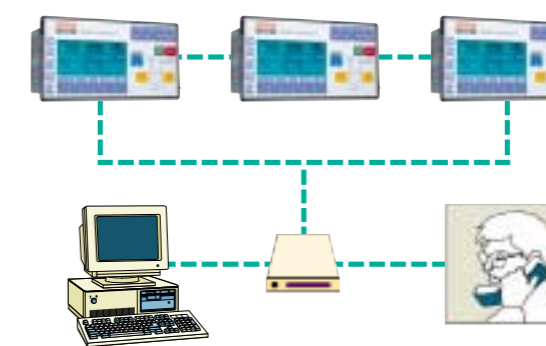
- It allows an easy and fast parameters setting via PC. RGK SW10 can also be used to:
- Write additional help text
 - Set curve characteristics of oil pressure, temperature, etc.
 - Insert personalised logo on LCD display.

Remote control communication software

- It enables the remote supervision of one or more RGK 60 units through RS-485 or RS-232, normal or GSM modem network. The RGK SW20 software (which includes RGK SW10 software) consents to:
- Set parameters
 - Converge all data and information of the RGK 60 units, connected through the RS-485 network, on to a central personal computer (PC)
 - Display data by means of graphic, analog and digital instrument drawings, bar graphs and pages with all measurement details

- Configure data-logger
- Display event-log (alarms, events, etc.)
- Customise display page, with type and number of required instruments
- Access to setup parameters, protected by password
- Read, edit and save on disk the setup parameters
- Configure the program in different languages
- Make automatic calls via modem.

The automatic call ("Autocall") function enables the RGK 60 unit to automatically connect itself to the remote PC, through normal or GSM modem, at any alarm event. The GSM modem thereby enables to transmit event messages by SMS (cellular telephone system) or e-mail.



TECHNICAL CHARACTERISTICS

Power supply	
Battery rated voltage	12 or 24VDC indifferently
Voltage range	9 to 33VDC
Minimum voltage at starting	6.7VDC
Maximum current consumption	320mA at 12VDC and 160mA at 24VDC
Stand-by current	150mA at 12VDC and 75mA at 24VDC
Immunity time for microbreakings	200ms
Digital inputs	
Input type	Negative
Current input	≤10mA
Input "low" voltage	≤1.5V (typical 2.9V)
Input "high" voltage	≥5.3V (typical 4.3V)
Input delay	≥50ms
Speed input "W"	
Input type	AC coupling
Voltage range	5 to 50Vpp
Frequency range	40 to 2000Hz
Engine running control circuit (500rpm) for permanent magnet generator	
Voltage range	0 to 40VAC
Engine running control circuit (500rpm) for pre-excited generator	
Voltage range	0 to 40VDC
Maximum input current	12mA
Maximum voltage at +D terminal	12 or 24VDC (battery voltage)
Pre-excitation current	170mA 12VDC - 130mA 24VDC
Relay output 4.1 - 4.2 / 4.3 - 4.4 terminals (voltage free)	
Contact type	1 NC for mains + 1 NO for generator
Rated voltage	250VAC (440VAC max)
Rated current at 250VAC	8A AC1 (2A AC15)
Relay output 5.3 - 5.4 - 5.5 terminals (voltage free)	
Contact type	1 changeover
Rated voltage	250VAC max
Rated current at 250VAC	8A AC1 (2A AC15)
Relay output 6.2 / 6.3 / 6.4 / 6.5 terminals (+ battery voltage output)	
Contact type	1 NO
Rated voltage	30VDC
Rated current at 30VDC	5A (DC1)
Analog inputs	
Pressure sensor current	20mA max
Temperature sensor current	7mA max
Level sensor current	10mA max
Analog ground voltage	-0.5 to +0.5V
Voltage inputs	
Maximum rated voltage Ue	480VAC L-L (277VAC L-N)
Voltage range	50 to 620V L-L (358VAC L-N)
Frequency range	45 to 65Hz
Measuring method	True RMS
Measuring input impedance	>1.1MΩ L-L (>570kΩ L-N)
Wiring mode	1, 2 or 3 phases, with or without neutral

Current inputs	
Rated current Ie	5A
Current range	0.02 to 6A
Measuring method	True RMS
Overload capacity permanent	+20% Ie
Overload peak	50A for 1 second
Power consumption	<0.3VA
Measuring conditions	
Temperature	+23°C±1°C
Relative Humidity	≤60% R.H.
Voltage	0.1 - 1.2 Ue
Current	0.2 - 1.2 Ie
Voltage	±0.2% full scale ±1digit
Current	±0.5% full scale ±1digit
Apparent power	±0.5% full scale ±1digit
Active power	±1.7% full scale ±1digit (cosφ 0.7-1)
	±2% full scale ±1digit (cosφ 0.3-0.7)
Reactive power	±1.4% full scale ±1digit (senφ 0.7-1)
	±1% full scale ±1digit (senφ 0.3-0.7)
Additional errors	
Relative umidity	±1digit 60% to 90% R.H.
Temperature	±1digit -20° to +60°C
Ambient operating conditions	
Operating temperature	-20 to +60°C
Storage temperature	-30 to +80°C
Relative humidity	<90%
Maximum pollution degree	3
Connections	
Terminal type	Plug-in
Cable cross section (min - max)	0.2 to 2.5 mm² (24/12 AWG)
Tightening torque	0.5 Nm (4.5 lbin)
Housing	
Version	Flush mount
Dimensions	196.5x106.5x120mm
Panel cutout	181x91mm
Material	Noryl SE1GFN2
Degree of protection	IP64 on front (with seal)
Weight	750g
Certifications and reference standards	
Certifications obtained	cULus
Compliant to standard	
IEC/EN 60255-6, IEC 60664-1, IEC/EN 61000-4-5, IEC/EN 61000-4-4, IEC/EN 61000-4-3, IEC/EN 61000-4-6, IEC/EN 60255-22-2, IEC/EN 55011, IEC/EN 60255-21-2, IEC/EN 60068-2-6 (LLOYD'S), IEC/EN 60068-2-52 (RINA), IEC/EN 60028-2-61, IEC/EN 61010-1 and UL 508/C22.2_N14_95.	

ORDER CODES

Order Code	Description	Quantity per package n°	Weight kg
RGK 60	Gen-set controller	1	0.750
RGK X01	Option card (clock calendar, RS-485 port, and 2 digital outputs)	1	0.050
RGK SW10	Setup software	1	0.091
RGK SW20	Remote control communication software (includes RGK SW10 software)	1	0.091

Dimensions (mm)

