



Application

Recording unit RG-3 is used to record signals of mine shaft winder, required and specified in the regulations and additional signals determined by user. RG-3 allows for registering signals from a winding machine devices assembly and control and signalling devices or shaft signalling device. Design of RG-3 and method of its operation meets in full the requirements specified in the Decision of the Board of Ministers of 30 April 2004 on approving products for use in mining companies (Journal of Laws No 99, item 1003, Journal of Laws of 2005 No 80 item 695 as well as Journal of Laws of 2007 no 249 item 1853 as amended).

Design of the recording unit

Recording unit RG-3 is an integrated microcomputer system and executes all functions related to recording and storing signals as well as statuses of mine shaft winder.

Recording unit RG-3 was designed as a result of development of previously applied recording units RG-1 and RG-2 and based on own vast experience in their operation. Basic features that characterize the recording unit RG-3:

- option to supply with voltage 230 V AC from two sources, using emergency power supply UPS, which parameters enable recording for at least 10 minutes – this allows for closing all applications, thus saving the data,
- option to receive and record signal proportional to rate of winding drum, sent e.g. by techogenerator, incremental transducer or other suitable automation module,

- saving signals and statuses of mine shaft winder operation in to separate mass storages in separate zones secured against unauthorized access,
- application of signal receiver DCF77 or signal transducer GPS to DCF77 in order to synchronize clock of the recording unit time with the actual time,
- complete auto-control of operation correctness of the whole device and generating signal confirming correctness of the whole device operation. Absence of operation correctness signal RG-3 activates the call of lock signal in the winding machine control system,
- option to equip the central unit (+RJC) with extension units (+RJR), that allows for recording two-stage signals using intermediate relays,
- transparency of folders structure (containing recorded files) facilitating fast access to data within a selected period of time using specialised program Charts Analysis,
- compact design of RG-3 secures all components (WAGO-I/O-IPC controller together with connected modules and storage elements, operator panel CP502, programmable relay controlling operation of the controller EASY512, emergency power supply UPS and other) against adverse working environment impact,
- high quality of used components and subassemblies manufactured in large-lot production by renowned manufacturers of automation systems, guarantying availability of spare parts and technical advisory.

Specifications and operating parameters

Supply voltage	230VAC, 50Hz
Power consumption	max. 100W
Ambient temperature during work	5°C ÷ 40°C
Ambient temperature during storage	-30°C ÷ 60°C
Relative humidity during work (25°C)	no less than 85% without condensation
Relative humidity during transport (25°C)	no less than 95% without condensation
Weight	+RJC: ~28 kg; +RJR: ~ 17 kg
Dimensions	+RJC: 600x600x210; +RJR: 380x600x210
Two-stage inputs	max. 256
Analogue inputs	max. 12
Recording frequency	max. 50 Hz
Number of relay outputs	2 or 4
Protection degree	min. IP54

Charts Analysis

The Charts Analysis program is installed on remote PC with operating system Microsoft Windows XP-SP3, Microsoft Windows Vista or Microsoft Windows 7. It allows for receiving

recording files, displaying and printing selected signals as well as current preview of the selected signals – “on-line” mode.

