

Remote monitoring technology SkyLog

SkyLog improves serviceability of lifting mechanisms by remote-monitoring over the Internet for its work.

Technology features:

- transmission the datalogger information to the company's server. The system periodically connects to the server and sends the next portion of accumulated datalogger information. The data is transmitted via a cellular network;
- the analysis of collected data is performed by LogSystem software. LogSystem via Internet receives data from the server for a selected system. It may track datalogger information in real-time;
- remote firmware upgrade of system components;
- SkyLog technology available as an option of operator console, installation of additional units is not required.



Technical data

Measuring range:	
oil pressure in the hydraulic system	< 40 MPa
the crane boom angulation	0-90 degrees
the crane arm extension	<30 m
the rotation angle of cranes platform	360 degrees
The distance of air power line detection:	
voltage 220 V-1 kV	1,5-4 m
voltage 1-35 kV	2-7 m
voltage 35-110 kV	4-10 m
voltage 110-450 kV	6-15 m
voltage more than 500 kV	9-20 m
The response error of overload safety by load moment	±5%
The setting and indication current time error (at +25C°)	±4 sec./day
Number of records in datalogger:	
operational data	150 000
overload data	2 000

The period of operational data recording to the datalogger	1-25 seconds
Nominal size of datalogger operational memory	<24 hours
Supply voltage	10-32 V DC or 380 V AC
Power consumption (at +25C°)	<40 W
Protection class (to IEC 60529) of component parts OGM240:	
operator console	IP55
sensors	IP67
Operating temperature range	40+55 °C
Storage/Transport temperature range	50+65 °C
Vibration resistance	<50 m/sec ² (at 50200 Hz)
Impact resistance	<100 m/sec ²

REZONANS

Rezonans plc.
Phone/Fax +7 351 731-30-00
10-b, Ulitsa Mashinostroiteley, Chelyabinsk, 454119, Russia
www.rezonans-tech.com, rez@rez.ru

DS-453618004100830-EN

Regional service center:

REZONANS



OGM240

Rated capacity limiter system
for lattice boom cranes

ISO 9001
registered company

Description

The rated capacity limiter system OGM240 is intended to aid the crane operator in efficient crane operation by monitoring the load and warning of an approach to an overload and other conditions.

Features

- Graphical LCD indication of all key parameters on display;
- easy calibration procedure for accurate weight setting single reference load is required;
- internal datalogger;
- built-in cut-off relays no external relays are necessary;
- datalogger and setup data redout via USB flash disk;
- SkyLog technology (optional) for remote monitoring of the crane operation.

System components

AC Field Detector DL220

The AC field detector (high-voltage sensor) measures electric field intensity of AC power transmission lines with frequency of AC 50 Hz. It was designed for mobile control systems. Is used to detect too near approach to power transmission lines.



Tiltmeter SN

The tiltmeters (inclinometers) SN series are intended for measure and indicate length-wise and transversal angles. The tiltmeter has light indicator 2 interperpendicular LED bars (to indicate deviation from the level position) and central horizontal position LED. For installing on the ramp, the device has discrete input for set the zero position.



Operator Console BI04

Operating console for external or free-standing installation with back-lit monochrome display. Eight buttons keyboard for menu navigation and functions selection. On customers demand the rated capacity limiter system might be equipped with graphical multicolor TFT-display display for representation of data and diagnostic message. It contains a set of standard wire interfaces (CAN, LIN, USB), as well as inputs for two video cameras.



Control Module SM8

SM8 series controllers were designed for commutating of resistive and inductive loads and converting analog and discrete inputs. It is used in electronic control and rated capacity limiter systems.



Functionality

Rated Capacity Limiter

OGM240 generates signals for switching off hoisting mechanisms, which decrease crane stability when weight of load is over normative.

Limits of the crane movements

The system blocks crane mechanisms automatically:

- hook lifting winch at uppermost (anti two-block system) and lowermost (last wire rope wrap) positions;
- luffing at stroke positions;
- boom movements upon AC field detection.

Monitoring load and geometry variables of crane

Operator console indicates:

- load variables actual load, maximum permitted capacity for current radius and percentage of rated capacity;
- geometry variables radius, boom length (for telescopic boom cranes), height of the boom head;
- current date and time.

Boundary and zone protection

Boundary and zone protection intended for protection crane from collisions with fixed obstacles.

OGM240 has three types of boundary and zone protection:

- limitation of boom head height;
- limitation of radius by line at any angle;
- limitation of boom rotation angles.

Wind Speed Sensor MS

The sensor provides measurement of wind speed in m/sec. The MS was designed for mobile control systems. It is used to detect strong wind gusts.



Tension Force Transducer TRS, TKS

The Tension Force Transducer provides measurement of stretching force upto 10000 kgf. Used for measurement of force in electronic control systems for construction machinery and rated capacity limiter systems on the lifting machines.



Anti-two block switch VM

On customers demand the rated capacity limiter system might be equipped with anti-two block switches. VM safety limit switches were designed for cranes, winches and hoisting appliances, and restrict the height of the hook lifting equipment.



Angle Sensor DUG5

The DUG5 angle sensors measures the angles of slope, elevation or inclination of an item with respect to gravity. The sensors are fully electronic and contains no mechanical moving parts.



Rotation Transducer DUA

The rotation transducer DUA provides measurement of crane boom rotation angle. It was designed for mounting on a slewing ring or axis of crane rotation.



Datalogger

The internal datalogger records geometry, load variables and states of inputs and outputs into nonvolatile memory. The datalogger memory includes three parts for short-time, long-time data and information about crane overload.

The short-time and crane overload data consist of recordset. One record has the next fields:

- recording time and date;
- actual load;
- maximum permitted capacity;
- percentage of rated capacity;
- angle of the main boom;
- radius of the load;
- length of the main boom (for telescopic boom cranes);
- height of the boom head;
- rotation angle of the slewing crane;
- crane configuration;
- information about crane overloads;
- states of inputs and outputs;
- time moments when limiter is positive locking.

The long-term storage data consist of:

- hour meter;
- total quantity of working cycles;
- load statistics;
- crane characteristic number;
- serial numbers of crane and rated capacity limiter system;
- date of mounting.

Monitoring parameters of crane engine and hydraulics

Operator console indicates:

- engine oil pressure;
- engine coolant temperature;
- hydraulics oil pressures (in 3 points);
- hydraulics oil temperature.

Control of crane and cranes truck electrics

The system generates next commands for:

- solenoids of crane motions;
- electromagnet of winch accelerated motion ;
- marker lamp of the boom head;
- headlamps;
- cooling fan of hydraulics oil temperature.

Each type of mobile cranes has their version of OGM240 system. OGM240 versions have different package contents, sensors, displays, software and supply voltage.

The system conforms to safety requirements of Rostekhnadzor (Russian Federal Service for Ecological, Technical and Atomic Supervision).