



## FREQUENCY DRIVE EK-CRP FOR CAGE INDUCTION MOTORS

### PURPOSE

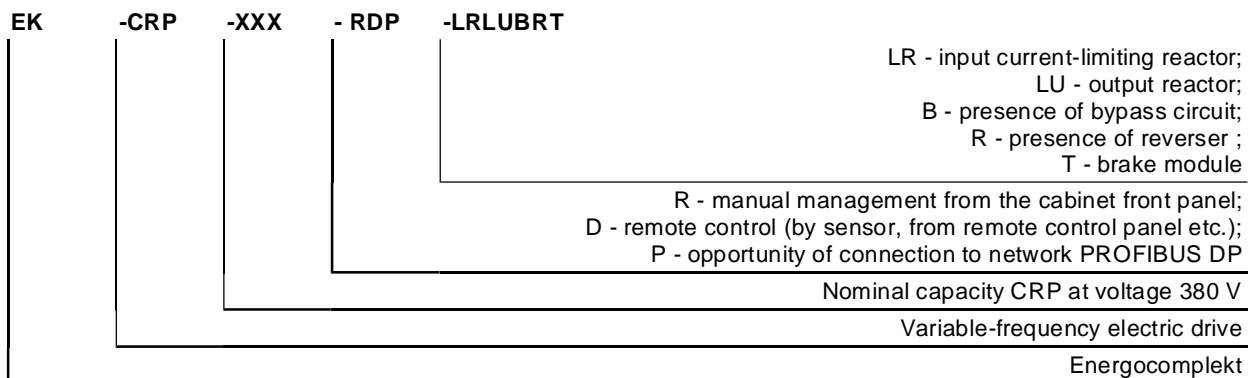
Frequency drive (cabinet EK-CRP) is intended for control of rotation frequency in induction motors of with a short-circuit armature in the following modes:

- I frequency control;
- I vector control without sensor;
- I vector control with sensor of angular movement with a sinusoidal or pulse output signal.

Cabinet EK-CRP can be used in many industries including the paper, textile, printing industry, processing of plastic, manufacturing of rubber, metal working, etc.

Cabinet EK-CRP can be used for control of rotation frequency for the synchronous motors in complex with a static field regulator series EX-SR, and it could be used for synchronous brushless motor in complex with an automatic field regulator AVR-XX-BR-Q1D.

### STRUCTURE OF LEGEND



Nominally, cabinet EK-CRP is made in climatic modification UHL and category of accommodation 4 with the following influencing climatic factors:

- I ambient temperature from 0 °C up to +35 °C (can be increased on inquiry);
- I height above sea level up to 3,000 m;
- I relative humidity 80% at most, at temperature +25 °C.

Concerning conditions of operation regarding mechanical factors, cabinet EK-CRP belongs to group of mechanical version M39; thus, acceleration of vibration of a room floor should not be excess 2.5 m/s<sup>2</sup> at frequencies in the range from 0.5 up to 100 Hz, degree of rigidity – 8. Degree of cabinet protection – IP43 (can be increased) in accordance with GOST 14254-96.

### CONTENTS

Cabinet EK-CRP represents a structurally completed block; its equipment list includes: PCH of series AVy (SIEI, Italy), an entrance reactor, power terminal-block line and terminal-block line of input of signals of management (Phoenix Contact, Germany), automatic switches (General Electric, USA), protection of a drive and logic circuits of management. Controls and signal systems are mounted at the cabinet door (various variants of elements are possible depending on customer's requirements). Cabinets made by Areta (Italy) or by Rittal (Finland) are used for mounting of all the elements.

### MAIN SPECIFICATIONS

- I Power supply voltage (standard): 230 V AC -15 % ... 480 V AC +10 %, 3-phased
- I Power range of motors: 0.75 – 630 kW (at power supply 380 V)
- I Range of nominal output currents: 2.4 – 1120 A
- I Maximal output voltage: 0.98 U<sub>sup</sub>
- I Maximal output frequency:
  - for CRP up to 37 kW inclusive 500 Hz
  - for CRP higher than 37 kW 200 Hz
- I Operation temperature (standard): from 0 °C up to 35 °C
- I Storage temperature: from -20 °C up to 55 °C

**Protection from:**

- I motor overload;
- I short circuit currents;
- I inadmissible decrease and increase of input voltage;
- I overheating of converter's radiator.



**Fig 1.** Cabinets EK-CRP

**CABINET EK-CRP PROVIDES:**

- I automatic control by frequency of rotation of the electric motor by feedback from the sensor practically of any technological parameter, by signal from the automatic control system, or by orders of the operator;
- I deenergizing of the electric motor in a cabinet: its long overload on time, short circuit, phase breakage, current outflow or overvoltage;
- I smooth start-up of the electric motor;
- I motor reversal;
- I automatic restart of the system after power supply failure (by order);
- I possibility to connect several cabinets on a uniform technological process (cabinets of special embodiment; installation of the industrial controller is required at presence of several feedback signals on technological parameter (in one of the cabinets or in a separate cabinet));
- I serial start-up of several motors and control of rotation frequency for one of these motors (a cabinet of special embodiment with group contactor).

The company performs installation supervision, setting-up, and testing of cabinets EK-CRP, guaranty and post-guaranty service, modernization of the systems in operation, training of service personnel, technical consultations on equipment selection. The equipment is delivered within 3 months from the date of contract execution and prepayment.

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