



EK-AV6 SOFT STARTER FOR MEDIUM VOLTAGE CAGE SYNCHRONOUS AND CAGE INDUCTION MOTORS

APPLICATION

EK-AV6-XX-AS-VX medium voltage soft starter (SS), produced by CC "Energocomplekt", is designed for smooth stepless acceleration and braking of medium voltage (3, 6 and 10 kV) cage synchronous and cage induction drives of various mechanisms. The power part of SS is realized on thyristors, the control system is completely digital and microprocessor-based, due to which the device can be applied in the automated manufacture, be controlled and supervised by a top level control system.

STRUCTURE OF SYMBOLS

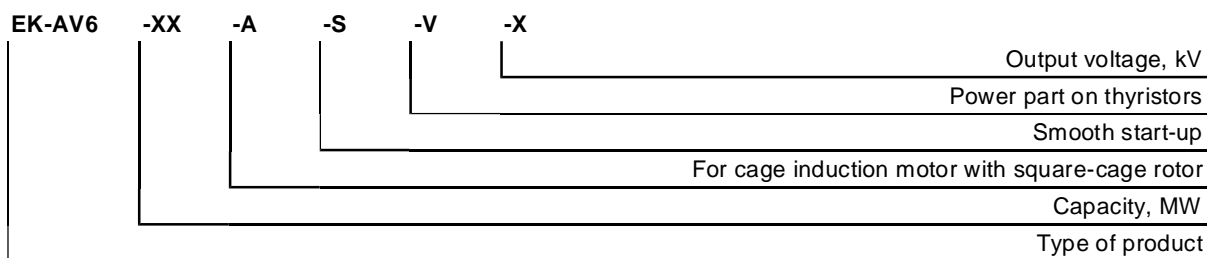


Fig. 1. The EK-AV6-1.2-AS-V6 medium voltage soft starter, 6 kV, 1200 kW

ADVANTAGES

The power part of EK-AV6-XX-AS-VX is realized on antiparallel switched-on thyristors. The thyristors are controlled through optical fiber channels, as a consequence of which there is no electric connection between the control section and the medium voltage power part. Also with the use of optical fiber, synchronization of impulse delivery to thyristors is realized. Use of this technology allows obtaining a compact complete solution with high level of the control part interference resistance. EK-AV6 SS allows achieving the following advantages:

- providing stepless start-up and smooth acceleration with a preset restriction of starting current;
- reducing impact moments by the motor start-up;
- realizing several start-ups on end;
- switching the started-up motor to network;
- possibility to start-up an unlimited number of started-up motors from one device;

- capacity of the started-up motor from one SS can be different, the device parameters can be changed for a specific started-up motor;
- realizing the started-up motor protection;
- possibility of equipment testing from low voltage with the use of low-voltage motor;
- easiness of parameters adjustment by means of a control panel with LCD;
- realizing connection with process control system on ModBus RTU (Profibus DP) protocol.

STRUCTURE

Structurally the soft starter is located in the electrical cabinet with one-way maintenance. In the cabinet, there is an input voltage vacuum contactor, a power part, a control section located in a separate shielding chamber. On the cabinet front panel, there are control lamps, switches and a control panel with LCD, by means of which the system parameters are input, the coefficients adjusted and the event log looked.

The power part is cooled with natural air cooling. If necessary, the cabinet can be equipped with air heater, humidity sensor and air exhauster with a filter.

The cabinet protection class is as per GOST is IP44 (IP54). Power and control cables are input from below the cabinet through separate manholes.

When one motor is started-up from SS, one medium voltage cell can be activated; in this case, the medium voltage bypass contactor is located inside the cabinet. When the soft starter operates with several motors, output voltage commutation is realized by means of contactor distribution boxes (CDB), the number of which corresponds to the number of the started-up motors. Every CDB includes a medium voltage disconnecting-grounding device with hand drive providing safe performance of work in the switched-off section, and a medium voltage vacuum contactor with remote control from SS for the started-up motor commutation. CDB and SS doors, apart from key locks, have electromagnetic locks preventing access inside the energized cabinet.

SS and all the started-up motors are controlled with the use of a remote control panel (CP), which displays the current condition of EK-AV6 and all the motors, and also can be used for direct or indirect start-up of any selected motor. CP can be equipped with a sensor panel with functions of displaying necessary parameters, adjusting start-up modes for each motor, acceleration and braking processes oscillography, keeping an event log.

The company carries out installation supervision, adjustment of soft starters, warranty and post-warranty service, maintenance personnel training, technical advisory services on the equipment selection. Soft starters are delivered within 4 months from the date of contract execution and prepayment.
