



## CATALOGUE

ELECTRICAL DRIVES  
supplied separately as self-contained units

TYP **SP – CB**

Unser Handelspartner in Deutschland



ISO 9001:2009  
ISO 14001:2005

**ivep**<sup>®</sup>

## GENERAL INFORMATION

Electric motor operated drives of SP-CB type are intended to be used for remote control of MV disconnectors. They are of self-contained design and contain the following components: electric motor with gearbox, limit switches, indication cam-controlled switch and mechanism for emergency hand driven operation.

## APPLICATION

The electrical drives can be used as a constituent part of the following devices and systems:

### **1) The new range of QAK and QAKZ disconnectors**

- Disconnectors for rated voltages of 12 kV; 25 kV and 36 kV (38.5 kV) and rated currents of 630 A; 1250 A and 1600 A. These use the SP-CB 40 drive, model S1; S2 and S3.

- Disconnectors for rated voltages of 12 kV and 25 kV and the rated currents of 2000A; 2500 A; 3150 A and 4000 A. These use the SP-CB 50 drive, model S1; S2 and S3.

### **2) Replacement of pressure air drives installed in the existing disconnectors from another manufacturers**

This relates to the OM, OMZ, TLJA, TLJB, ODT, ODTV, TOBA and other types.

- Disconnectors for rated voltages of 12 kV; 25 kV and 36kV (38.5 kV) and the rated currents of up to 1250 A use the SP-CB 40 drives, model S1; S2 and S3.

- Disconnectors for rated voltages of 12 kV and 25 kV and rated currents of up to 3150 A. These use the SP-CB 50 drives, model S1; S2 and S3.

- Disconnectors with voltage series of 12 kV and 25 kV, with rated current up to 4000A. These use the SP-CB 70-S1 drive unit.

- Disconnectors for 12 kV; 6000 A rated values, type designation TSPD 10/6000-31 have the SP-CB 85-S1; S2; S3 drive unit allocated.

### **3) The SP-CB 110-S1 electric motor drive unit is intended to be used for:**

- encapsulated generator-type disconnectors, type ZF 15/101; 15 kV; 10 000 A (single-phase encapsulation of the disconnector)

disconnectors of the same design, however without encapsulation, and with the 15 kV/6000 A rated values

## STANDARDS AND REGULATIONS

The electrical motor operated drives comply with the ČSN EN 62271-1 and ČSN EN 62271-102 standards.

The electric motor operated drive units are designed for indoor mounting and normal operating conditions as specified by the ČSN EN 62271-1 standard, section 2.1.

## DESCRIPTION

The SP-CB electric motor operated drive units consist of the following sub-assemblies:

- corrosion proof, galvanized supporting steel frame. The frame incorporates one grounding terminal and two assembly footings to be secured to the disconnecter frame.
- The driving modules of SP-CB S1; S2 and S3 types are equipped with one worm gearbox with a pre-arranged gear.
- end switches with instantaneous operation that ensure the proper functioning of the electrical motor of the drive control unit. The switches are provided with one making and one breaking contact.
- annunciation (signalling) block, equipped with a signal changeover switch, terminal board and cable clamps to fasten the powering and LV control cabling of up to 25 mm diameter. The signalling block is secured to the supporting frame of the drive unit. An additional indication switch, manufactured by the company Obzor Zlín, may be supplied with the following combination of making, breaking and changeover contacts: 12C – 120 (highest number of contacts).

The disconnecter can be operated manually by using the following two operation modes:

- insulated handling rod of the following length: 2.0 m; 2.5 m and 3 m. This kind of operation is intended to be used for disconnecters mounted to switchgear cell wall, at a level of 1.7 m to 3.3 m above the floor;
- short metallic handle, fitted onto a metallic handling rod which is linked through a joint with the emergency control mechanism. The handling rod is mounted on the cell side wall and secured in a supporting bearing.

Any other non-conventional disconnecter mounting positions in the inside of the cell, i.e. with disconnecter shaft mounted at a level lower than 1.7 m or more than 3.3 m above the floor, or in vertical position, need to be discussed with the manufacturer in advance.

## INSTALATION AND COMMISSIONING

The fastening of the drive block to the frame of a retrofitted disconnecter can take place either when working on a disassembled disconnecter at the outside of the cell area, or in an assembled position on the switchgear mountend to the cell wall. The connection of the drive to the disconnecter and the adjustment of the retrofitted system is an easy process which does not necessitate the use of any special tools or equipment. The process of assembly and adjustment is described in the accompanying documents.

## MAIN TECHNICAL DATA

**Table 1**

| Type         | Type of electrical drive | Rated voltage<br>( V ) | Motor power<br>( W ) | Rated current fo<br>( A ) | Motor shaft revolutions<br>min -1 | Output torque<br>( Nm) | Starting torque max.<br>( Nm) |
|--------------|--------------------------|------------------------|----------------------|---------------------------|-----------------------------------|------------------------|-------------------------------|
| SP-CB 40-S1  | ACA 63 B-4               | 3 PEN<br>50 Hz 400 V   | 180                  | 0,7                       | 11                                | 100                    | 200                           |
| SP-CB 50-S1  | ACA 71 B-4               | 3 PEN<br>50 Hz 400 V   | 370                  | 1,05                      | 11                                | 280                    | 530                           |
| SP-CB 40-S2  | <i>permanent magnet</i>  | 110 V DC               | 200                  | 2,3                       | 11                                | 125                    | 320                           |
| SP-CB 40-S3  | <i>permanent magnet</i>  | 220 V DC               | 200                  | 1,1                       | 11                                | 125                    | 320                           |
| SP-CB 50-S3  | <i>permanent magnet</i>  | 220 V DC               | 300                  | 2,0                       | 11                                | 205                    | 512                           |
| SP-CB 50-S2  | <i>permanent magnet</i>  | 110 V DC               | 300                  | 3,4                       | 11                                | 205                    | 512                           |
| SP-CB 70-S1  | ACA 80 A-4               | 3 PEN<br>50 Hz 400 V   | 550                  | 1,5                       | 6,5                               | 467                    | 982                           |
| SP-CB 85-S1  | R 3 M                    | 220 V DC               | 325                  | 2,1                       | 6,5                               | 245                    | 1350                          |
| SP-CB 110-S1 | ACA 90 L-4               | 3 PEN<br>50 Hz 400 V   | 1500                 | 3,7                       | 11                                | 900                    | 2160                          |

## ORDERING CODE OF ELECTRICALLY OPERATED DRIVES OF SP-CB TYPE

| Basic desing of disconnectors              | SP-CB 40  |  |  |  |  |
|--|-----------|--|--|--|--|
|  | SP-CB 50  |  |  |  |  |
|  | SP-CB 70  |  |  |  |  |
|  | SP-CB 85  |  |  |  |  |
|  | SP-CB 110 |  |  |  |  |
| Control unit electric motor rated voltage: |           |  |  |  |  |
| 3 PEN 50 Hz 400 V                          | S1        |  |  |  |  |
| DC 110 V                                   | S2        |  |  |  |  |
| DC 220 V                                   | S3        |  |  |  |  |
| AC 230 V DC 220 V + (rectifier)            | S4        |  |  |  |  |
| installation:                              |           |  |  |  |  |
| to the left from the disconnector          | L         |  |  |  |  |
| to the right from the disconnector         | P         |  |  |  |  |
| Contacts of the drive auxiliary switch     |           |  |  |  |  |
| 12C-12O                                    | 12 (max)  |  |  |  |  |
| 11C-11O-2P                                 | 11        |  |  |  |  |
| 10C-10O-2P                                 | 10        |  |  |  |  |
| 7C-7O-2P                                   | 7         |  |  |  |  |
| 5C-5O-2P                                   | 5         |  |  |  |  |
| 3C-3O-2P                                   | 3         |  |  |  |  |

Example of coding when placing and order:  
SP-CB 40-S1L.7

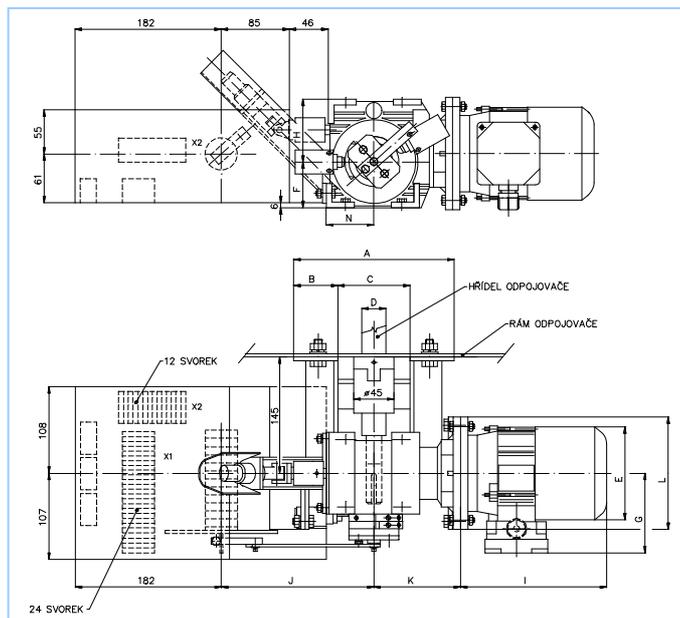
## ORDERING DATA

When ordering the customer has to pass the following data to the manufacturer:

- type of the retrofitted disconnector and its parameter
- location of the disconnector inside the switchgear cell – dimension drawing
- kind of emergency control system used (insulated rod – metallic handle)
- delivery date required

Special requirements shall be specified in the order specification.

## ELECTRIC MOTOR OPERATED DRIVE UNIT TYPE SP-CB 50-S1



| Drive type  | A   | B  | C   | D        | E * | F  | G * | H  | I * | J   | K   | N  |
|-------------|-----|----|-----|----------|-----|----|-----|----|-----|-----|-----|----|
| SP-CB 40-S1 | 200 | 55 | 90  | 25<br>30 | 126 | 57 | 100 | 78 | 182 | 190 | 108 | 59 |
| SP-CB 50-S1 | 260 | 70 | 120 | 35       | 141 | 69 | 107 | 97 | 212 | 199 | 134 | 69 |

Note: \* the dimensions shown apply for 3-phase electrical motors

*Due to continuous development of the products some dimensions, weights, drawings and descriptions may differ from that shown in this data sheet. In order to satisfy the ever increasing needs of the customers the manufacturer reserves the right to provide modifications to the product described, without previous notice.*



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