

## ESD141: BRAKE CONTROL UNIT

### 1. Description

ESD141 brake control unit is a rectifier for a DC disk brake. It is normally used with the brakes of MF13L16 (N4) and MF16L16 (N5) hoisting motors.

An ESD141 operates as a full bridge rectifier in order to open the brake of a hoisting motor quickly. After the brake has been opened, the ESD141 is switched to operate as a half bridge rectifier to keep the brake open.

The ESD141 is also equipped with a DC switch-off-circuit in order to achieve a quick closing of the hoisting motor's brake.

### 2. Technical info

Voltage range: 200...690 VAC

Output voltage  $U_{DC}$ :

- a) as a full bridge  $0,90 \cdot U_{AC}$
- b) as a half bridge  $0,45 \cdot U_{AC}$

### 3. Terminals and function

#### 3.1 Terminals

- 1. AC input 1 (phase L1)
- 2. AC input 2 (phase L2)
- 3. AC input 3 (phase L1 or L2; in full bridge operation)
- 4. DC switch-off-circuit, input
- 5. DC switch-off-circuit, output
- 6. DC output 1 (to brake coil)
- 7. DC output 2 (to brake coil)

#### 3.2 Function

When opening the brake, main voltage is connected to the terminals 1, 2 and 3. The rectifier operates as a full bridge rectifier ( $U_{DC} = 0,90 \cdot U_{AC}$ ) for a time (normally .3 sec) . After the time delay, the terminal 3 input is opened and the rectifier operates as a half bridge ( $U_{DC} = ,45 \cdot U_{AC}$ ).

When closing the brake, supply voltage L1 and L2 is removed from terminals 1 and 2, no D. C. output from terminals 4 and 5, A-K7 contacts open de-energizing brake coil.

