Medium Voltage Products

UEMC 41
Motor Operating Device
1. General information
The UEMC 41 – motor operating devices are intended for indoor mounting on medium voltage switch-disconnectors, disconnectors and earthing switches. The operating device is reliable in changing temperature and humidity conditions. Operation can be performed both electrically and manually by operating lever. Operating time is from 4 to 10 s depending on the type of device and loading conditions.

2. Standards
The motor operating device complies with: IEC 60335-1, IEC 62271-1; IEC 62271-102; IEC 62271-103.

3. Transport and storage
The motor operating device can be transported in any position. Drive should be stored indoors in a dry area.

4. Rated data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical and electrical locking</td>
<td>Yes</td>
</tr>
<tr>
<td>Nominal torque Nm</td>
<td>150</td>
</tr>
<tr>
<td>Max. torque Nm</td>
<td>300</td>
</tr>
<tr>
<td>Max external dimensions (without control cabinet) [mm] HxWxD</td>
<td>415x135x140</td>
</tr>
<tr>
<td>Auto blocking</td>
<td>Yes</td>
</tr>
<tr>
<td>Rotation angle adjustment</td>
<td>Yes</td>
</tr>
<tr>
<td>Default rotation angle setting °</td>
<td>150</td>
</tr>
<tr>
<td>Rotation angle °</td>
<td>from 0 to 300</td>
</tr>
<tr>
<td>Max. mechanical endurance Cycles</td>
<td>5000</td>
</tr>
<tr>
<td>Supplying voltages V</td>
<td>24VDC, 48VDC, 110/125 AC/DC, 220/230 AC/DC</td>
</tr>
<tr>
<td>Working temperature °C</td>
<td>-40 +75</td>
</tr>
<tr>
<td>Weight (depends on versions) kg</td>
<td>8.2-11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Rated current</th>
<th>Max. peak current</th>
<th>Microswitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
<td>12 A</td>
<td>40 A</td>
<td>S201 K8</td>
</tr>
<tr>
<td>48 VDC</td>
<td>6 A</td>
<td>20 A</td>
<td>S202 K4</td>
</tr>
<tr>
<td>60 VDC</td>
<td>5 A</td>
<td>17 A</td>
<td>S202 K4</td>
</tr>
<tr>
<td>110 VDC</td>
<td>2 A</td>
<td>5.5 A</td>
<td>S202 K2</td>
</tr>
<tr>
<td>220 VDC</td>
<td>1 A</td>
<td>3 A</td>
<td>S282 UCK 1</td>
</tr>
<tr>
<td>110 VAC</td>
<td>2 A</td>
<td>6 A</td>
<td>S202 K2</td>
</tr>
<tr>
<td>230 VAC</td>
<td>1 A</td>
<td>3 A</td>
<td>S202 K1</td>
</tr>
</tbody>
</table>

Contactor:
Closing power: 3W
Holding power: 3W
Minimum control signal time: 100 ms

5. Customer benefits
– Easy to use – compact design,
– Wide range of applications and supplying voltages: 24, 48, 110/125, 220/230 VAC/VDC,
– Wide range of working temperature (from -40°C to +70°C),
– Easy adjusting of rotation angle in wide range from 0” up to 300”;
– Reliability:
  • high number of operation – up to 5000 cycles,
  • max. torque 300 Nm,
– Safety:
  • mechanical and electrical locking,
  • maintenance free (5000 cycles, 10 years)
– Low noise operation

6. Design

Drawing 1 UEMC 41 drive design

1 – Gearbox,
2 – Motor,
3 – Drive cover,
4 – Microswitch (service lock),
5 – Shaft output for manual operating,
6 – Selector (for selecting drive mode – see more in point “Mechanical selector description”),
7 – Microswitch (for setting angle of rotation),
8 – Coupling bush,
9 – Locking coil (optional)
7. Mechanical selector description
There is a selector added to choose correct drive mode. This selector could be locked by padlock.

**Note:**

It is advice by manufacturer to put padlock after changing position for safety reasons.

Drive is equipped in mechanical and electrical locking systems. Mechanical locking is performed by changing the position of selector – there are three positions of mechanical lock:
- first one when lever is in vertical position (motor drive) there is not possible to operate the motor drive by operating handle;
- second position (drive blocked) when the lever is moved slightly to the right and there is not possible to operate motor drive by operating handle, the voltage supply is disconnected by microswitch and shaft of motor drive is mechanically locked;
- third position (manual drive) when the lever is in horizontal position and the voltage supply is disconnected by microswitch, shaft of motor drive is mechanically locked but there is possibility to operate manually of apparatus connected to motor drive.

There is optional accessory called locking coil – there blocks selector in any possible positions. Position of selector (See Drawing 1 item 6.) could be changed only in case when voltage is applied to locking coil. Moreover there is possibility to use padlock for each positions of selector.

8. Ordering code
Motor drive can be order separately based on below code.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Operation voltage</th>
<th>Control box</th>
<th>Locking coil</th>
<th>Type of connection with apparatus</th>
<th>Compatible switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>UEMC 41</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>24 V DC</td>
<td>/</td>
<td>ICB</td>
<td>W/O</td>
<td>A</td>
<td>NAL</td>
</tr>
<tr>
<td>48 V DC</td>
<td>/</td>
<td>ECB</td>
<td>24 V DC</td>
<td>B</td>
<td>E/EB</td>
</tr>
<tr>
<td>110 V DC</td>
<td>/</td>
<td>CC</td>
<td>48 V DC</td>
<td>C</td>
<td>OW III</td>
</tr>
<tr>
<td>125 V DC</td>
<td>/</td>
<td></td>
<td>110 V DC</td>
<td>D</td>
<td>OWD</td>
</tr>
<tr>
<td>220 V DC</td>
<td>/</td>
<td></td>
<td>125 V DC</td>
<td>W/O*</td>
<td>EK6</td>
</tr>
<tr>
<td>110 V AC</td>
<td>/</td>
<td></td>
<td>220 V DC</td>
<td></td>
<td>OJON</td>
</tr>
<tr>
<td>125 V AC</td>
<td>/</td>
<td></td>
<td>110 V AC</td>
<td></td>
<td>OJWN</td>
</tr>
<tr>
<td>230 V AC</td>
<td>/</td>
<td></td>
<td>125 V AC</td>
<td></td>
<td>other</td>
</tr>
</tbody>
</table>

Control box:
ICB: Internal Control Box,
ECB: External Control Box,
CC: Control components.

Type of connection with apparatus:
A – Front mounting motor with connection up to 40 degrees,
B – Front mounting motor with 90° connection,
C – Motor drive installed directly on the shaft (left side),
D – Motor installed on the wall,
W/O* – UEMC 41 drive with cardan joint without additional connection.

Example of ordering code:
UEMC 41 / 24 V DC / ICB / 230 V AC / A / NAL

UEMC 41 – drive with:
- Operation voltage 24 V DC,
- Internal control box,
- Locking coil voltage 220 V DC,
- Front mounting motor with connection up to 40 degrees,
- Compatible with NAL switch
ICU
(Internal Control Box)

Drawing 3 UEMC 41 drive with internal control box

ECB
(External Control Box)

Drawing 4 UEMC 41 drive with control components.

CC
(Control components to assembly by customer)

Drawing 5 UEMC 41 drive with control components.
9. Connection kits

a. Connection A - Front mounting motor with connection up to 40°

Connection kit includes:
1 UEMC 41 drive
2 Connecting rod L=1,3 m*
3 Bevel gear
4 Manual operating handle
* Other lengths available on request

Drawing 6. NAL mounted on the wall. Drive mounted on the front panel. Connection with cardanic joint.

b. Connection B – Front mounting motor with 90° connection

Connection kit includes:
1 UEMC 41 drive
2 Manual operating handle
3 Vertical connecting rod L=2 m*
4 Bevel gear
5 Transmission 90° complete
6 Connecting rod
* Other lengths available on request

c. Connection C - Motor drive installed directly on the shaft (left side)

Connection kit includes:
1 UEMC 41 drive
2 Shaft connector
3 Manual operating handle

Drawing 8 Motor drive mounted directly on the switch shaft on left hand side

d. Connection D – Motor drive installed on the wall

Connection kit includes:
1 UEMC 41 drive
2 Support with bevel gear
3 Connecting rod L=2 m
4 Bevel gear
* Other lengths available on request

Drawing 9 Example of switch with drive mounted on common wall with a switch.
10. Control box description

a. UEMC 41 / … / ICB /… – drive with integrated control box

KA1, KA2 – Contactors, SB – Pushbuttons (close/open), SS – Local/Disabled/Remote selector, RZ – Braking resistor,
QF1 – MCB main power supply, X1 – Connection terminals, K10 – Lock coil, SB1 – Lock release button, H1 – Lock release

b. UEMC 41 / … / OCB /… – drive with external control box

X0/X1/X2 – Connection terminal, KA1/KA2 – contactors, QF1 – Motor power supply MCB, S1 – MCB auxiliary, SB1 – Lock enable pushbutton, H1 – Lock enabled lamp, SS – selector switch, SB – close/open pushbuttons.
c. UEMC 41 / ... / CC /... drive with control components

Drawing 41 UEMC 41 – drive without integrated control box (control components available separately).
11. Dimensions

a. UEMC 41 / ... / ICB /... - UEMC 41 with integrated control box

<table>
<thead>
<tr>
<th>No</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>305,5 x 165,5 x 138 x 90 x 90 x 135 x 415 x 66 x 4x M10x22</td>
</tr>
</tbody>
</table>

**Drawing 15 Drive with long shaft**

<table>
<thead>
<tr>
<th>No</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>305,5 x 165,5 x 138 x 90 x 90 x 135 x 415 x 66 x 4x M10x22</td>
</tr>
</tbody>
</table>

**Drawing 16 Drive with short shaft**
b. UEMC 41 / ... / OCB /... and UEMC 41 / ... / CC /... - UEMC 41 drive without integrated control box

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**Drawing 17 Drive with cardan joint**

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**Drawing 18 Drive with long shaft**

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Drawing 19 Drive with short shaft

Drawing 20 Drive with cardan joint
12. Accessories

Drawing 21 Manual operating handle 1YMX053235M0001

Drawing 22 Transmission 90° complete.
Drawing 23 HE Bevel gear

Drawing 24 NRK 2/1 or NRK 2/2 Bevel gear
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