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WARNING
HAZARDUS VOLTAGE CAN SHOCK, BURN, OR CAUSE DEATH.

Do not attempt to handle, install, use or service this product before reading this installation guide.

1. Safety Notices:
Must always follow the directions in the manual and good engineering practice.
Dangerous voltage can cause electric shock and burns.
– Do not perform any activity described in this document with the switch energized.
– ALWAYS follow your company’s or country’s Safety procedures before performing any work on this equipment.
– UEMC50 motor operating device should be installed only within the design limitation.
– All the activities listed on this document it must be performed with the switch completely de-energized, isolated, grounded and out of service.
– Must be observed appropriate guidance given in the manuals for all operations performed on the apparatus.
– This product is intended to be installed, operated and maintained by qualified personnel, thoroughly trained and knowledgeable with the regards of the hazards involved. This publication is written only for such qualified persons and is not intended to be a substitute for adequate training and experience in the safety procedures for this device.

Warning
Detailed descriptions of standard repair procedures, safety principles, and service operations are not included. It is important to note that this document contains some warnings and cautions against some specific service methods that could cause personal injury to service personnel, or could damage equipment or render it unsafe. These warnings do not cover every conceivable method in which service (whether or not recommended by ABB) may be performed.
Secondly, ABB cannot predict or investigate all potential hazards resulting from all conceivable service methods. Anyone using service procedures or tools, whether or not recommended by ABB, must satisfy himself thoroughly that either personal safety nor equipment safety will be jeopardized by the service method or tools selected.
All information contained in this manual is based on the latest product information available at the time of printing. The right is reserved to make changes at any time without notice.
2. General

Motor operating device type UEMC 50_ is intended for the operation of outdoor pole mounted switches: NPS, Sectos, ON. The device is available in two enclosure sizes and with two different operating speeds.

2.1 Type designation

Motor operating device
Construction type
L=Low speed, H=High speed
Enclosure size 1 or 5
Voltage
Circuit diagram or specific model

2.2 Enclosure size:

Size 1:
Dimension drawing 135 UEMC 1_
Height 480 mm
Width 300 mm
Depth 205 mm
Material stainless steel AISI 304
Degree of protection IP 55
Refer to fig. 2.1.

Size 5:
Dimension drawing 135 UEMC 45
Height 620 mm
Width 500 mm
Depth 330 mm
Material stainless steel AISI 304
Degree of protection IP 55
Refer to fig. 2.2.

2.3 Operation speed:

Speed L:
- operation time 3 s
- high torque

Speed H:
- operation time 1.2 s
- low torque
3. Standards
The motor operating device complies with the following standards:
- IEC 62271-1
- IEC 62271-103
- SS 428 12 00
- voltage withstand test 2 kV, 50 Hz, 1 min, except for the motor 1,5 kV

4. Transport and storage
It is preferable to transport the motor operating device with the door upwards. If the devices are to be stored for long periods they should be kept in a dry room.

5. Construction

5.1 Power transfer mechanism
The mechanism consists of a gear wheel and a screw system. The screw is self-locking, so that forces from the disconnector do not affect the operating mechanism.
Material:
- frame and axle stainless steel
- nut and gear wheel bronze
- fork lever aluminium alloy (Al-Si)
- screw steel

Control torque and time depend on which of the two alternatives is chosen.
UEMC 50 H_ fast operation 1,2 s and low torque
UEMC 50 L_ slow operation 3 s and high torque

5.2 Motor
UEMC 50 H_ series wound motor DC voltage
UEMC 50 L_ permanent magnet motor DC voltage

Alternative motor voltages see range of models point 18.

5.3 Relay sub-assembly
- The relay sub-assembly is fixed with two screws to the power transfer mechanism and is easily changed.
- Components and contactor voltages used in the relay sub-assembly are described in point 18.

Material: stainless steel

The power transfer mechanism, motor and relay subassembly form a functioning unit independent of the enclosure. See fig. 5.1.

5.4 Control lever and tube fixing elements
The effective length of the control lever can be adjusted by moving the pin to a suitable hole.
Tube clamp tube outside diameter 30 mm.

Material:
- control lever stainless steel
- tube clamp hot dipped galvanized steel
- pin and bolts stainless steel

5.5 Pole fixing elements
The pole fixing elements are intended for use with wooden poles, but can easily be modified for other fixing arrangements due to the detachable parts used.
See fig. 6.2.
Material: hot dipped galvanized steel
6. Installation of the motor operating devices

6.A Installation of the motor operating device to the pole
A.1 Place the motor operating device on the pole in a position permitting an easy installation of the operating tube between the disconnector and the operating device. See fig. 6.1.

A.2 Define the installation height H (Recommended H = 1400 mm)

A.3 Installation on wooden pole (See fig. 6.2.)
A.3.1 Drill 2 fixing holes in the pole, diameter 12 mm depth 75 mm
  Dimension A
  UEMC 50 H1_ and L1_: 525 ± 5 mm
  UEMC 50 H5_ and L5_: 665 ± 5 mm

*) The correct position is given in the installation instruction of the disconnector.

A.3.2 Install the operating device using screws a, washers b and tube clamp c provided, type UEMZ 1065. Move the clamping plates sideways if required so that the operating device fixing bracket does not rotate.

A.4 Installation on concrete pole (See fig. 6.3.)
A.4.1 Install suitable clamps for square or round pole. Keep distance A between holes in the clamps.
A.4.2 Fix the operating device using M20 screws and nuts.
A.5 Make the electrical connections and earth the operating device.
6.B Installation of UEMC 50 to drive NPS disconnector

This section describes the installation method for the motor operating device control lever, operating tubes, and adjustment of the tubes.

The operating tubes are to be adjusted so that there is a small pretension. The pretension is to be in the form of an upwardly directed force on the operating tubes which will ensure that the disconnector closes when operated, and compensates for the changes in dimensions, looseness or flexibility.

Pretension of the tubes is important to safeguard long trouble free operation of the disconnector.

B.1 Fit the control lever and tube fixing elements, type UEMZ 590, taking note of aligning the marks on the lever and shaft, see the mounting of washers fig. 6.6.

Remarks: If the tube is distinctly tilted from the vertical position, it could be necessary to rotate UEMZ590 lever on the main shaft from the standard position (factory marks).

Unscrew M12 screw, take off the lever from the shaft. Rotate the shaft, attach it to the shaft and tighten the M12 screw with torque 70Nm Fig 6.6.

B.2 Using the hand crank move the operating device to the closed position, i.e. the power transfer mechanism nut is at the bottom and the control lever at about 45° upwards.

B.3 Fit the pin and tube clamp in the correct hole. For NPS disconnectors:

- R110 mm  NPS 24 A2
- NPS 24 B1
- NPS 24_-K4
- NPS 24_-K5
- NPS 36;
- R155 mm  NPS 24 A2-K2

Refer to fig. F6.4

Tighten the nut of the pin with torque 110 Nm

B.4 Place the lower end of the control tube clamp on the motor operating device without tightening the screws so that the tube still moves freely.

B.5 Drive the disconnector to the fully closed position by pushing the control tube upwards against the limiter. Remove any free-play by pushing the control tube upwards and pulling the lever downwards. Mark on the tube with a felt-tip pen, the position of the upper edge of the tube clamp. Refer to fig. 6.8.

B.6 Operate the motor operating device in the opening direction with the crank until the mark on the tube moves about 20 mm upwards, Y = 20 mm. Tighten the tube clamp screw to a torque of 20 Nm. Refer to fig. 6.4.

B.7 Check the minimum opening gap of the disconnector when it is in the open position. Refer to the disconnectors installation instructions.

B.8 Test operate electrically.

B.9 Cut the tube leaving at least 20 mm for adjustment.

6.C Installation of UEMC 50 to drive SECTOS type NXA_A1

The installation of the control levers and operation tube is described in this chapter. Adjustment is made by marking the fully closed and open end positions and then adjusting the operating tube.

C.1 Fit the cast metal lever to the SECTOS-switch taking note of aligning the marks on the lever and shaft. Fit the pin to the outer hole, R = 155 mm. See fig. 6.5.

C.2 Fit the operating lever and tube fixing elements, type UEMZ 590, to the motor operating device taking note of aligning the marks on the lever and shaft. See the mounting of washers fig. 6.6.

Remarks: If the tube is distinctly tilted from the vertical position, it could be necessary to rotate UEMZ590 lever on the main shaft from the standard position (factory marks). Unscrew M12 screw, take off the lever from the shaft. Rotate the shaft, attach it to the shaft and tighten the M12 screw with torque 70Nm Fig 6.6.

Fit the pin to the hole in the lever, R = 190 mm. See fig.6.6. Tighten the nut of the pin with torque 110 Nm.
C.3 Insert the control tube into the tube clamp of the switch, and tighten the screws to 20 Nm (14.7 lbf ft). Install the insulator and tube guides according to the installation instructions of the switch.

C.4 Check that both the switch and motor operating device are in open positions and the operating levers are pointing inclined downwards. See fig. 6.5 and 6.6.

C.5 Put the control tube into the tube clamp of the lever of the motor operating device, but do not tighten the screws. The tube shall easily slide inside the clamp.

C.6 Pull the control tube downwards against the end position of the open switch, and simultaneously push the lever on the motor operating device upwards. In this position, make a mark onto the tube on top of the tube clamp e.g. a felt-tip pen. See fig. 6.7.

C.7 Turn the motor operating device to closed position by the hand crank, letting the tube slide inside the tube clamp. Move also the switch to closed position by pushing the tube upwards.

C.8 Keep the operating tube pushed upwards against the stop and simultaneously pull the operating lever downwards. In this position make a second mark onto the tube on top of the clamp. See fig. 6.8.

C.9 Measure the distance between the two marks. If the distance is more than 22 mm, increase the lever length by changing the pin to the next hole outwards, and repeat the points C.6...C.9. If the first mark stays inside the tube clamp, reduce the lever length by changing the pin to the next hole inwards.

C.10 Make a third mark in the middle of the two marks. Adjust the operating tube until this mark is in line with the top of the tube clamp and tighten the screws to 20 Nm (14.7 lbf ft). See fig. 6.9.

C.11 Cut the operating tube leaving min. 20 mm adjustment area.

C.12 Test the operation by using the hand crank, and check the function of the switch. The switch should open and close with some margin of operating angle in the operating device, and the operating device should easily reach its end positions. Finally test operate by the motor.
6.D Installation of UEMC 50 to drive SECTOS types
NXA_A3, NXA_A4
NXB_A3, NXB_A4
NXBD_A3, NXBD_A4

D.1 Fit the shaft and the cast metal lever to the switch with the screw M12*100 mm, so that the arrow on the lever is pointing to about 40°, when the free-play is removed by pushing the lever upwards.
NOTE! The length of the screw should not exceed 100 mm.
Fit the pin to the outer hole, R = 155 mm.
See fig. 6.10.

D.2 Fit the operating lever and tube fixing elements, type UEMZ 590, to the motor operating device taking note of aligning the marks on the lever and shaft. See the mounting of washers fig. 6.11.
Remarks: If the tube is distinctly tilted from the vertical position, it could be necessary to rotate UEMZ590 lever on the main shaft from the standard position (factory marks). Unscrew M12 screw, take off the lever from the shaft. Rotate the shaft, attach it to the shaft and tighten the M12 screw with torque 70Nm Fig 6.11
Fit the pin to the hole in the lever, R = 190 mm.
See fig. 6.11.

D.3 Insert the control tube into the tube clamp of the switch, and tighten the screws to 20 Nm (14.7 lbf ft).
Install the insulator and tube guides according to the installation instructions of the switch.
D.4 Check that both the switch and motor operating device are in open positions and the operating levers are pointing inclined downwards.
See fig. 6.10 and 6.11.
D.5 Put the control tube into the tube clamp of the lever of the motor operating device, but do not tighten the screws. The tube shall easily slide inside the clamp.
D.6 Make a mark on the tube at 30 mm above the top of the tube clamp, with a felt tip pen. Check that the tube can be pulled down by hand until this mark is in line with the top of the tube clamp. Operate by using the hand crank until the mark is in line with the top of the tube clamp and tighten the screws to 20 Nm (14.7 lbf ft).
D.7 Cut the operating tube leaving min. 20 mm adjustment area.
D.8 Test the operation by using the hand crank, and check the function of the switch. The switch should open and close with some margin of operating angle in the operating device, and the operating device should easily reach its end positions. Finally test operate by the motor.
7. Installation of accessories
Normally the manufacturer installs all accessories. However, if the client wishes to complete the assembly refer to:
– 31 UEMC 129 (Point 22)
– 31 UEMC 130 (*)
– 31 UEMC 138 (*)
– accessories (Point 17)

8. Operating instructions

8.1 Electrical control
OPEN, CLOSED Push buttons – for local control

MOTOR Miniature circuit breaker
I and O – for motor protection

REMOTE Remote selector switch
I and O – functions as remote control switch
– can affect local control see point 16.2 for details

8.2 Manual operation
The operating device is equipped with a hand crank for manual operation. Method of manual operation:
– switch the m.c.b. „MOTOR“ to the 0-position
– fit the crank to the bottom of the operating device and operate
– the operation is complete when the nut presses against the limit switch and the crank becomes heavy to turn
– return the m.c.b. „MOTOR“ to the 1-position

Blocking switch S3 will open the electrical operating circuit automatically when the device is being manually operated to increase safety.

8.3 Interlocking
The operating device can be mechanically locked with a padlock to prevent both the motor and the manual operation mechanism being used. Method of locking:
– switch the m.c.b. „MOTOR“ to the 0-position
– fit a padlock to the locking flap under the operating device, see fig. 2.1.

Blocking switch S3 will open the control circuit automatically when the unit is padlocked.
To ensure additional safety it is suggested that the m.c.b. is also open.

The locking point is also designed to withstand the motor’s torque if the motor should start.

NOTE! Remember to switch the m.c.b. to the 1-position when removing the padlock.

The door of the enclosure can also be locked with a padlock.

9. Service
Grease the power transfer mechanism screw and gears every 5 years or after 1000 operations.

Grease: Isoflex Topas NCA 52.

Check the functioning of the heater.

Charging batteries for UEMC 50_1 (small enclosure):
– loosen battery charger and fixing bracket
– move the battery to the upper corner and then it can be pulled out

10. Repairs
The operating device is assembled from several modules which can be easily changed or removed for repair.

NOTE! Isolate the supply voltage to the heater and motor before commencing repair work.

10.1 Relay sub-assembly
The relay sub-assembly is attached to the power transfer mechanism by two screws and connected to the motor via a plug and socket.

When fitting the relay sub-assembly as a spare part:
UEMC 50 H_ relay sub-assembly fits directly
UEMC 50 L_ limit switches S1 and S2 are to be moved outwards to the next fixing holes

10.2 Motor
Changing the motor
a) Remove the relay sub-assembly and motor plug.
b) Remove the motor’s fixing base – 2 pcs M8-bolts.
c) Transfer the motor’s fixing base and gear wheel to the new motor. Drill diameter 2,5 mm for the gear wheel on the motor axle.
d) Fit the motor and relay sub-assembly.
e) Check the motor’s direction of rotation as follows:
– using the hand crank move the operating device to the middle position
– press the „0“ push button. The nut should then move upwards.
– if it does not, immediately switch off the „MOTOR“ m.c.b. and swap the motor’s anchor circuit wiring (red wires on the motor in the UEMC 50 H_ device).
10.3 Power transfer mechanism

Removal and repairs
– remove the relay sub-assembly and motor plug.
– remove the operating lever
– remove the power transfer mechanisms fixing bolts M8 and then the whole power transfer mechanism.

If the power transfer mechanism is disassembled
– note the use of spring washers. The outer washers are to be turned so that they press onto the outer rings of the bearings.
– gear wheel tightening torque 60 Nm.

11. Spare parts
When ordering spare parts, all details on the rating plate are to be mentioned.

Typical spare parts:

<table>
<thead>
<tr>
<th>Spare part</th>
<th>Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay sub-assembly</td>
<td>UEZJ N/U</td>
<td>N = circuit diag. eg. 121 U = voltage eg. 24 VDC</td>
</tr>
<tr>
<td>Motor + gear Wheel</td>
<td>UEZM2/U/1</td>
<td>UEMC 50 H_</td>
</tr>
<tr>
<td></td>
<td>UEZM5/U1</td>
<td>UEMC 50 L_</td>
</tr>
<tr>
<td>Power transfer mechanism</td>
<td>UEZA7</td>
<td>UEMC 50 H_</td>
</tr>
<tr>
<td></td>
<td>UEZA6</td>
<td>UEMC 50 L_</td>
</tr>
<tr>
<td>Contactor K1+K2</td>
<td>– ABB VBC6- 30-01/U</td>
<td>U = Voltage for DC</td>
</tr>
<tr>
<td></td>
<td>– ABB VB6- 30-01/U</td>
<td>U = Voltage for AC</td>
</tr>
<tr>
<td>Micro switch S1, S2</td>
<td>– OMR Z-15GW22-B7</td>
<td></td>
</tr>
<tr>
<td>Diode</td>
<td>SK 1/16</td>
<td></td>
</tr>
<tr>
<td>Heater</td>
<td>UEZR1 -220V</td>
<td>230 VAC</td>
</tr>
<tr>
<td></td>
<td>UEZR1 -110V</td>
<td>110 VAC</td>
</tr>
<tr>
<td></td>
<td>– TEG HG45</td>
<td>45 W, 110...250 V AC/DC</td>
</tr>
<tr>
<td>Rectifier</td>
<td>– REC 36 MB 160 A</td>
<td></td>
</tr>
</tbody>
</table>

12. Cable selection

If the power source is outside the operating device, choose the cross sectional area of the supply cables in accordance with the following list:

<table>
<thead>
<tr>
<th>L/m</th>
<th>24 V a/mm²</th>
<th>48 V a/mm²</th>
<th>60 V a/mm²</th>
<th>110 V a/mm²</th>
<th>220 V a/mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2,5</td>
<td>1,5</td>
<td>1,5</td>
<td>1,5</td>
<td>1,5</td>
</tr>
<tr>
<td>10</td>
<td>6,0</td>
<td>2,5</td>
<td>2,5</td>
<td>1,5</td>
<td>1,5</td>
</tr>
<tr>
<td>20</td>
<td>10,0</td>
<td>4,0</td>
<td>4,0</td>
<td>1,5</td>
<td>1,5</td>
</tr>
<tr>
<td>40</td>
<td>10,0</td>
<td>6,0</td>
<td>1,5</td>
<td>1,5</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td>2,5</td>
<td>1,5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td></td>
<td>4,0</td>
<td>1,5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td></td>
<td>6,0</td>
<td>1,5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td></td>
<td></td>
<td>2,5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For 24 V voltages, we recommend the use of battery and charger in each operating device, for longer distances.

13. Heating the operating device

The motor operating device includes heater which prevents condensation in the box and increases the reliability of the electric components. Therefore it's important that heater is electrically connected!

– Heater 20 W, 220 VDC/230 VAC, for all types, except for types UEMC 50 H5_/11, L5_/11 and for voltage 110VDC/VAC
– Heater 20W, 110VDC/110VAC when motor voltage 110VDC/VAC
– Self-regulating heater 45 W, 110...250 V AC/DC, only for types UEMC 50 H5_/11 and UEMC L5/11

It is also important to note that the life time of the batteries is reduced with increased temperature.

A thermostat is available for disconnecting the heater at higher temperatures. See section 17.9.
14. Selection of operating device

a) for NPS disconnectors UEMC 50 L_ slow operation
   – NPS 24 kV disconnectors
   – NPS 36 kV disconnectors

   UEMC 50 H_ fast operation
   – NPS 24kV switch disconnectors with wips and NPAK4 chamber (making capacity 5kA)
   – NPS 24kV switch disconnectors with NPAK5 chamber (making capacity 12kA)

b) for Sectos disconnectors
   UEMC 50 L_ slow operation
   – NXA
   – NXB
   – NXBD

   UEMC 50 H_ fast operation
   – NXA_A1 disconnectors if fast operation is needed

c) for ON disconnectors
   UEMC50 L_ slow operation
   – ONI 20, ONI 30
   – ONIII 20, ONIII 30

d) Enclosure size
   The enclosure can be delivered in two different sizes and can be chosen according to the space requirements for the different accessories to be installed. See dimension drawings in section 21 and range of models section 18.

   The smallest type UEMC 50_1_ is usually big enough, if no other accessories are to be installed besides the batteries and charger.

   If a remote control unit and radio are to be installed the bigger enclosure may have to be used UEMC 50_5

e) Electrical components
   Circuit diagram 31 UEMC 121
   Included in types UEMC 50_/1
   UEMC 50_/21

   This is the recommended circuit diagram for most applications.

   Circuit diagram 31 UEMC 311
   Included in types UEMC 50 H1_/11
   UEMC 50 L5_/11

   This circuit diagram is recommended if the motor operating device is to be equipped with remote monitoring and control device REC601/603 or REC 523. Other circuit diagrams are also available. See section 18 and 22.

15. Changing direction of rotation
   Sometimes it is necessary to change the direction of rotation:
   – swap I and O push-buttons
   – swap I and O labels of push-buttons
   – swap position indication labels on enclosure outside.
   – swap terminals X1:7 and X1:8 incoming I and O control impulse signals.

16. Circuit diagram key

16.1 Alarm function
   Terminal block X1:3 is live under normal conditions. During an alarm, the voltage to terminal block X1:3 is interrupted, the reason being:
   – F1 has tripped
   – S6 is open
   – voltage supply to operating device is interrupted Refe to circuit diagram for respective type.
   See also points 17.7 and 17.12.

16.2 Remote control
   CLOSE Impulse to terminal X1:7
   OPEN Impulse to terminal X1:8

   The voltage for the impulse can be taken from
   a) terminal X1:3 via the relay contact
   b) directly from the remote control unit

16.3 Separate motor and control circuits
   Type UEMC 50_ UU/1
   Circuit diagram 31 UEMC 166
   For this type, the voltage for the motor and control circuit can be different, however if separate circuits are required for the motor and control with the same voltage then this type will be delivered.

   A zero-voltage relay is required so that the standard alarm circuit will give an alarm when the m.c.b. operates, or when the motor voltage is interrupted. Refer to point 17.14.
17. Accessories

Accessories are to be ordered separately using the type numbers given.

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Type number</th>
<th>Description</th>
<th>Suitable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.1 Extra aux. Contact</td>
<td>UEZS 2/S10</td>
<td>3NC/NO</td>
<td>UEMC 50 L_</td>
</tr>
<tr>
<td></td>
<td>UEZS 3/S10</td>
<td>&quot;</td>
<td>UEMC 50 H_</td>
</tr>
<tr>
<td></td>
<td>UEZS 2/S11</td>
<td>6NC/NO</td>
<td>UEMC 50 L_</td>
</tr>
<tr>
<td></td>
<td>UEZS 3/S11</td>
<td>&quot;</td>
<td>UEMC 50 H_</td>
</tr>
<tr>
<td></td>
<td>UEZS 2/S12</td>
<td>4NC/NO+1NC/C+1NO/D</td>
<td>UEMC 50 L_</td>
</tr>
<tr>
<td></td>
<td>UEZS 3/S12</td>
<td>&quot;</td>
<td>UEMC 50 H_</td>
</tr>
<tr>
<td>17.2 Batteries (B1, B2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGM types (standard)</td>
<td>UEZGP 17 Ah-24 V</td>
<td>AGM 24VDC 17Ah</td>
<td>All models</td>
</tr>
<tr>
<td></td>
<td>UEZGL 24 Ah-24 V</td>
<td>AGM 24VDC 24Ah</td>
<td>Only UEMC50_5</td>
</tr>
<tr>
<td></td>
<td>UEZGL 38 Ah-24 V</td>
<td>AGM 24VDC 38Ah</td>
<td>Only UEMC50_5</td>
</tr>
<tr>
<td>Gel types</td>
<td>UEZGG 18 Ah-24 V</td>
<td>Gel 24VDC 18Ah</td>
<td>All models</td>
</tr>
<tr>
<td></td>
<td>UEZGG 26 Ah-24 V</td>
<td>Gel 24VDC 26Ah</td>
<td>Only UEMC50_5</td>
</tr>
<tr>
<td></td>
<td>UEZGG 44 Ah-24 V</td>
<td>Gel 24VDC 44Ah</td>
<td>Only UEMC50_5</td>
</tr>
<tr>
<td>Spare parts (single batteries)</td>
<td>1YM000113m0001</td>
<td>AGM 12VDC 17Ah</td>
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<td>1YM000113m0002</td>
<td>AGM 12VDC 24Ah</td>
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<td>1YM000113m0003</td>
<td>AGM 12VDC 38Ah</td>
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<td>1YM000282M0001</td>
<td>Gel 12VDC 18Ah</td>
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<td>1YM000282M0003</td>
<td>Gel 12VDC 44Ah</td>
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<td>17.3 Charger (G1) – set</td>
<td>UEZGC 24V/3A/230 VAC</td>
<td>24V, 3A, 230VAC</td>
<td>All models</td>
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<td>UEZGC 24V/3A/110VAC</td>
<td>24V, 3A, 110VAC</td>
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<td>1YM000124M0002</td>
<td>24V, 3A, 110VAC</td>
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<td>Charger (G2) – set</td>
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<td>24V, 3.5A, 230VAC</td>
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<td>POL PWS-100RB2 110VAC</td>
<td>24V, 3.5A, 110VAC</td>
<td>Only UEMC50_5</td>
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<tr>
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<td>24V, 3.5A, 230VAC</td>
<td>All models</td>
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<td>1YM000252MP0002</td>
<td>24V, 3.5A, 110VAC</td>
<td>Only UEMC50_5</td>
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<td>17.4 Heater switch (S7)</td>
<td>UEMZ 199</td>
<td>HEATING</td>
<td>All models</td>
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<td>17.5 Charg. and heat. Switch (S8)</td>
<td>UEMZ 200</td>
<td>CHARG. AND HEAT.</td>
<td>All models</td>
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<td>17.6 Heater</td>
<td>UEZR 1 – 110 V 20W</td>
<td>Spare part</td>
<td>Standard in UEMCS0___110V models</td>
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<td>UEZR 1 – 220 V 20W</td>
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<td>17.7 Voltage free alarm circuit</td>
<td>UEMZ 247</td>
<td>Closing circuit</td>
<td>All models</td>
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<td></td>
<td>UEMZ 247</td>
<td>&quot;</td>
<td>Standard in all other models</td>
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<td>17.8 Interlocking coil (Y1)</td>
<td>UEZY 2/U</td>
<td>U = Voltage</td>
<td>All models</td>
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<td>UEZY 2/U</td>
<td>U = Voltage</td>
<td>All models</td>
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<td>17.9 Thermostat (T1)</td>
<td>UEMZ 318</td>
<td>Thermostat for heater</td>
<td>All models</td>
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<td>17.10 M.c.b. for charging heater circuit (F2)</td>
<td>UEMZ 319</td>
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<td>All models</td>
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<td>17.11 M.c.b. for heater (F2)</td>
<td>UEMZ 376</td>
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<td>17.12 Separate alarm circuits</td>
<td>UEMZ 450</td>
<td>Opening circuits</td>
<td>All models</td>
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<td>17.13 Counter</td>
<td>UEMZ 444</td>
<td>Mechanical</td>
<td>All models</td>
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<td>17.14 Zero voltage relay (K4)</td>
<td>UEZK 2/U</td>
<td>U = Voltage</td>
<td>UEMC 50_UU/1</td>
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<td>17.15 Lifting hook</td>
<td>UEMZ 1010</td>
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<td>UEMC50_5</td>
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<td>17.16 Ice protection for doorknob and padlock</td>
<td>UEMZ 1144</td>
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<td>All models</td>
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<td>17.17 Door-retainer</td>
<td>UEMZ 1276</td>
<td></td>
<td>UEMC50_5</td>
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</table>
17.1 Extra auxiliary contacts
Type UEZS
Extra auxiliary contacts can not be wired to terminal blocks. Each contact is 3-way, and the user can choose the contact function for example NC or NO. See circuit diagram no 31 UEMC 129.

NOTE! All models already have 1NC + 1NO contacts as standard. Refer to table of models, point 18.

Charger can not be fitted in models UEMC 50 _1_ when using extra auxiliary contacts.

17.2 Batteries
The batteries are hermetically sealed, with suspension electrolytes, maintenance-free and usable in any position.

For special request UEMC50 control cabinet can be equipped with gel type batteries.

AGM types:

type      NPL 24-12 (long life type)
NPL 38-12 (long life type)
NP 17-12
Operating temperature -15°C to +50°C

Gel types:
type      HZY12-18
HZY12-26
HZY12-44
Operating temperature -20°C to +50°C

When ordering batteries from ABB, please use the type designations mentioned in points a...e.

The expected life of batteries depends on ambient temperature:

Designed life for NPL batteries (information by YUASA Battery GmbH).

<table>
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<tr>
<th>Designed battery life (20°C)</th>
</tr>
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<td>AGM types:</td>
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<td>NP 17-12 5years</td>
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<tr>
<td>NPL 24-12, NPL 38-12 10years</td>
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<tr>
<td>Gel types:</td>
</tr>
<tr>
<td>– HZY12-18, HZY12-26, HZY12-44 12years</td>
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</tbody>
</table>

The battery voltage chosen is to be 24 V.

The battery capacity is dependent on what type of radio and remote control system is to be supplied, and how long the station is to operate after battery charging voltage is removed. Without other loading a 24 V-17 Ah battery can be used to operate a motor operating device open-closed 800 times without needing recharging.
Motor Operating Device UEMC 50
Installation, operating and recycling guide

a. NPL batteries for 24V
Type UEZGL 24Ah-24V
Includes 2 pcs NPL batteries connected in series and fixing components
Suitable for UEMC 50_5

Type UEZGL 38Ah-24V
Includes 2 pcs NPL batteries connected in series and fixing components
Suitable for UEMC 50_5

b. NP batteries for 24V
Type UEZGP 17Ah-24V
Includes 2 pcs. NP batteries connected in series and fixing components
Suitable for All models

c. HZY batteries for 24V
Type UEZGG 18Ah-24V
Includes 2 pcs. HZY batteries connected in series and fixing components
Suitable for All models

Type UEZGG 26Ah-24V
Includes 2 pcs. HZY batteries connected in series and fixing components
Suitable for UEMC 50_5

Type UEZGG 44Ah-24V
Includes 2 pcs. HZY batteries connected in series and fixing components
Suitable for UEMC 50_5

d. Spare part batteries
NOTE! The types do not include fixing components and cables.

Type -YUA NP17-12 - 1YMU000113m0001
Dimensions 181 x 76 x 167 mm (length, width, height)
Weight 5.6 kg/pc

Type -YUA NPL24-12 - 1YMU000113m0002
Dimensions 166 x 175 x 125 mm (length, width, height)
Weight 9 kg/pc

Type -YUA NPL38-12 - 1YMU000113m0003
Dimensions 197 x 165 x 170 mm (length, width, height)
Weight 13.8 kg/pc

17.3 Chargers
Standard types G1:
UEZGC 24V/3A/110VAC
UEZGC 24V/3A/230VAC

With additional functions G2:
– voltage supply monitoring
– battery condition monitoring
– deep battery discharge protection
– additional 12VDC for radio

POL PWS-100RB2 230VAC
POL PWS-100RB2 110VAC

Includes 1 pc charger and fixing components

Spare part chargers
a. Type G1 1YMU000124M0001
Charging current 3 A
Charging voltage 28,8 V
Maintenance voltage 27,6 V
Supply voltage 170–260 VAC, 40–60 Hz
Operating temperature range -40°C – +45°C
Circuit diagram no 31 UEMC 130
Suitable for all models *)

b. Type G1 1YMU000124M0002
Charging current 3 A
Charging voltage 28,8 V
Maintenance voltage 27,6 V
Supply voltage 87–132 VAC, 40–60 Hz
Operating temperature range -40°C – +45°C
Circuit diagram no 31 UEMC 130
Suitable for all models *)
c. Type G2  1YMU000252MP001
Charging current  3.5 A
Charging voltage  28.8 V
Maintenance voltage  27.3 V
Supply voltage  180–265 VAC,
Operating temperature range  -10°C – +55°C
Circuit diagram no  31 UEMC 130
Suitable for  all models *)

d. Type G2  1YMU000252MP002
Charging current  3.5 A
Charging voltage  28.8 V
Maintenance voltage  27.3 V
Supply voltage  87–132 VAC,
Operating temperature range  -10°C – +55°C
Circuit diagram no  31 UEMC 130
Suitable for  all models *)

*) Charger can not be fitted in models UEMC 50 _1_ when using extra auxiliary contacts.

17.4 Heater switch (S7)
Type UEMZ 199

– label text  HEATING
– circuit diagram 31 UEMC 130
Suitable for  all models

17.5 Charging and heating switch (S8)
Type UEMZ 200

– label text  CHARGING AND HEATING
– circuit diagram 31 UEMC 130
Suitable for  all models

17.6 Heater 20 W, 110 V
Type  UEZR 1-110 V
Power  20 W
Voltage  110 V
Suitable for  all models

17.7 Voltage free alarm circuit
Type  UEMZ 247
Circuit diagram  31 UEMC 130
Suitable for  UEMC50 _1_/1
UEMC 50 _/2_ *

*) Alarm circuit from S6 omitted.

Refer to detailed description of operating devices normal alarm circuit, point 16.
17.14 Zero-voltage relay (K4)
Type    UEZK 2/U
Circuit 31 UEMC 166
Suitable for UEMC 50_UU/1 The zero-voltage relay interrupts the contactor holding voltage when the motor voltage is broken. This prevents the motor operating device from responding to an earlier operating impulse and from automatically starting the motor when the voltage returns. The power required by the zero-voltage relay is 3 W continuous. Refer to point 16.3

Function

NOTE! The zero-relay is required only for separate motor and control circuits, for types UEMC50_UU/1.

17.15 Lifting hook
Type    UEMZ 1010
Suitable for UEMC 50 _5 models

17.16 Iceprotection for doorknob and padlock
Type    UEMZ 1144
Suitable for all models (only with standard lock)

17.17 Door-retainer
Type    UEMZ 1276
Suitable for UEMC 50 _5 models

17.18 Service light
Type    UEMZ 1191/24 VDC
        UEMZ 1191/110 VAC
        UEMZ 1191/230 VAC
Suitable for UEMC 50_5 models
Circuit diagram 31 UEMC 410

17.19 Fixing bracket for concrete or steel pole
Type    UEMZ 1066
Measure A  <300 mm
Measure B  200...300 mm
Suitable for All models
Type    UEMZ 1146
Measure A  <500 mm
Measure B  520...680 mm
Suitable for All models
17.19 Fixing bracket for circular concrete or steel pole
Type 1YMU000054M0003
Diameter up to 400mm
Suitable for All models

Type 1YMU000128M0001
Diameter 400-550mm
Suitable for All models

17.21 Surge voltage protection
Type UEMZ 1263/230 VAC
Used for 230 V AC supplies
Suitable for UEMC 50 ___/11
Circuit diagram 31 UEMC 410

17.22 Safety socket outlet with integrated residual current device
Type UEMZ 1249
Used for 230 V AC supplies
Suitable for UEMC 50 ___/11
Circuit diagram 31 UEMC 420

17.23 Service socket
Used for 230/110 V AC supplies
Type:

<table>
<thead>
<tr>
<th>Type</th>
<th>Circuit diagram</th>
</tr>
</thead>
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<tr>
<td>1YMU000139M0001</td>
<td>1YMU000278P0001</td>
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<tr>
<td>Modular socket with pin</td>
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<tr>
<td>Modular socket Schuko type</td>
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</tbody>
</table>

Suitable for All models

17.24 Three point lock
Type 1YMU000161M0001
Suitable for UEMC 50 ___/5 models

Suitable for installation:
- padlock <10,5mm
- standard door cylinder

NOTE! If ordered separately, also special door is needed.
18. Range of models

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Fast Operation (1-2 s)</th>
<th>Slow Operation (3 s)</th>
<th>Enclosure no. 1</th>
<th>Enclosure no. 5</th>
<th>Limit switches</th>
<th>Blocking switch</th>
<th>Heater</th>
<th>Operating-contactor (1 NC + 1 NO aux. contacts)</th>
<th>I- and O-push buttons</th>
<th>M.C.B.</th>
<th>Remote control selector</th>
<th>31 UEMC 121</th>
<th>31 UEMC 122</th>
<th>31 UEMC 128</th>
<th>31 UEMC 127</th>
<th>31 UEMC 165</th>
<th>31 UEMC 166</th>
<th>31 UEMC 311</th>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>-110 VAC/1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>-230 VAC/1 xx)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>-UU/1 *)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>UEMC 50 L1-24 VDC/2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>-24 VDC/3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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<tr>
<td>-24 VDC/4</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UEMC 50 L5-24 VDC/21</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UEMC 50 L5-230 VAC/21</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UEMC 50 L5-24 VDC/11</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

*) Type _UU/1 for device with different motor and auxiliary voltages. Voltages to be specified when ordering.

**) For voltage 220...240 VAC
19. Technical data

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Operating time</th>
</tr>
</thead>
<tbody>
<tr>
<td>UEMC 50 H1</td>
<td>22 kg</td>
<td>1.2 s</td>
</tr>
<tr>
<td>L1</td>
<td>22 kg</td>
<td>3 s</td>
</tr>
<tr>
<td>UEMC 50 H5</td>
<td>36 kg</td>
<td>1.2 s</td>
</tr>
<tr>
<td>L5</td>
<td>36 kg</td>
<td>3 s</td>
</tr>
</tbody>
</table>

Contactors, power consumption 3 W
Min. operating impulse 0.1 s
Terminals Motor + heater = 10 mm², others = 6 mm²

Aux. contacts S1.2 and S2.2
norm. voltage/current 380 VAC/15 A, 125 VDC/0.5 A, 220 VDC/0.25 A

Motor

<table>
<thead>
<tr>
<th>Nom. voltage</th>
<th>Nom. current</th>
<th>Max. current</th>
<th>M.c.b</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>

Energy consumption: 0.01 Ah/operation equivalent to 800 OPEN- CLOSE operations with 24V- 17Ah battery without recharging.
20. Instruction for recycling the product

Contents
20.1 Introduction ............................................................ 22
20.2 The products casing ............................................... 22
20.3 Material of the product ............................................ 22
  20.3.1 Material of the main components .................. 23
  20.3.2 Spare parts and accessories ........................ 23
20.4 Possible recycling methods ................................. 23

20.1 Introduction
This document includes instructions for recycling the product UEMC 50. The document includes which material that are used in the products and handling instructions when the product is taking out of use. The document is to be used together with the installation- and operating guide.

The environment regulation varies from country to country and develops fast. Due to this it is recommended to contact the local waste handler who is authorized and specialized in disposing electronic waste including lead-acid batteries. These handlers can sort the material by using dedicated sorting processes and dispose of the product according to the local requirements.

Together with this document it should be given information to the local customers about returning of the product that is taking out of use.

Information that is in this document is not part of an extract or deal, it supposes to be the most correct and trustful and can be changed without notice. The publisher will not take any responsibility for the consequences.

20.2 The products casing
The product is cased in cardboard, paper and foamplastic. The cardboard and the paper can be recycled normally. The foamplastic can be i.e. used for energy production in a facility build for this purpose.

To avoid pollution when making unnecessary transports the manufacturer will not accept used package. Recycling has to be arranged locally according to local instructions.

Recycling is recommended when it saves raw material and reduces the waste.

20.3 Material of the product
Information about the construction, main parts and their material can be found in the installation- and operating guide, point 5. Construction on page 5.

20.3.1 Material of the main parts

<table>
<thead>
<tr>
<th>Parts</th>
<th>Material</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame, screw and axle</td>
<td>Stainless steel</td>
<td>3.9 kg</td>
</tr>
<tr>
<td>Nut and gear wheel</td>
<td>Bronze</td>
<td>0.5 kg</td>
</tr>
<tr>
<td>Operating lever</td>
<td>Aluminium (Al-Si)</td>
<td>2.3 kg</td>
</tr>
</tbody>
</table>

20.3.2 Spare parts and accessories

Motor
The materials depend on the type of the motor. Usually it consists of iron, copper, sink and aluminium.
Relay unit
Material Stainless steel
Weight 1,0 kg

Control lever and tube fixing elements

<table>
<thead>
<tr>
<th>Parts</th>
<th>Material</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating lever</td>
<td>Stainless steel</td>
<td>0,7 kg</td>
</tr>
<tr>
<td>Tube fixing element</td>
<td>Hotgalvanized steel</td>
<td>0,7 kg</td>
</tr>
<tr>
<td>Pin and bolt</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

Pole fixing elements
Material Hot dip galvanized steel
Weight 3,5 – 6,5 kg (depending on the model)

Box
Material Stainless steel AISI 304
Weight 8,3 – 19,2 kg (depending on the model)

20.3.2 Spare parts and accessories

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>Material</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Contactor</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Micro switch</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Diode</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Heating resistor</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Rectifier</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Auxiliary contacts</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Batteries</td>
<td>Several(*)</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Charger</td>
<td>Several(*)</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>M.c.b.</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Interlocking magnet</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Thermostat</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Counter</td>
<td>Several</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>0 voltage relay</td>
<td>Several</td>
<td></td>
</tr>
</tbody>
</table>

*) More information under point 20.4.3.

20.4 Possible recycling method

The mentioned way to recycle is one possible method but there are also many other methods:
- stainless steel recycles as material
- steel recycles as material
- bronze recycles as material
- plastic burns for energy production
- cables to cable granulating facility
- electronics to facility specially made for recycling electronics
- batteries to facility specially made for recycling batteries
- other to be burnt or is transported to a dumping ground

The weight for the light parts are not printed, the operating device also contains screws, nuts, washes and rivets of steel and also some parts that are not important when recycling.
70 – 90% of the weight of the product are big metal parts, which are easy to recycle (4.1 metal parts). The motor is 7 – 11% of the weight and it is also easy to recycle.
Motor Operating Device UEMC 50
Installation, operating and recycling guide

21. Dimension drawings 135 UEMC 1 G

UEMC 50 H1
UEMC 50 L1

Dimensions and tolerances as per ISO 20670.
Dimension drawings 135 UEMC 45 A

UEMC 50_5__/21...24

Open door

*) Free space

Batteries 24 V 17 Ah
Batteries 24 V 24 Ah
Batteries 24 V 38 Ah
Motor Operating Device UEMC 50
Installation, operating and recycling guide

Dimension drawings 135 UEMC 36 E

UEMC 50 H5_/11
UEMC 50 L5_/11

3 x Pg 16 + 1 x Pg 21
3 x Pk 16 + 1 x Pk 21
3 x Pr 22,5 + 1 x Pr 28,3
Motor operating device  UEMC 50_ - 24 VDC/1  UEMC 50_ - 24 VDC/21

M1  = Motor
K1, K2  = Operating contactors
S1.1  = Limit switch
S2.1  = Limit switch
S1.2  = Aux. contact NO (switch open)
S2.2  = Aux. contact NO (switch closed)
S3  = Blocking switch for hand operating and locking
S4, S5  = Push buttons
F1  = M.c.b.
R1  = Heater
S6  = Remote control switch
Motor Operating Device UEMC 50
Installation, operating and recycling guide

Circuit diagram 31 UEMC 122 D

Motor operating device UEMC 50_ - 24 VDC/2
M1 = Motor
K1, K2 = Operating contactors
S1.1 = Limit switch
S2.1 = Limit switch
S1.2 = Aux. contact NO (switch open)
S2.2 = Aux. contact NO (switch closed)
S3 = Blocking switch for hand operating and locking
S4, S5 = Push buttons
F1 = M.c.b.
R1 = Heater
Circuit diagram 31 UEMC 126 D

Motor operating device UEMC 50_ – 24 VDC/3

M1 = Motor
K1, K2 = Operating contactors
S1.1 = Limit switch
S2.1 = Limit switch
S1.2 = Aux. contact NO (switch open)
S2.2 = Aux. contact NO (switch closed)
S3 = Blocking switch for hand operating and locking
R1 = Heater
Motor Operating Device UEMC 50
Installation, operating and recycling guide

Circuit diagram 31 UEMC 127 C

Motor operating device UEMC 50_ – 24 VDC/4

M1 = Motor
S1.1 = Limit switch for closed position X1:5-6
S2.1 = Limit switch for open position X1:10-11
S3 = Blocking switch for hand operating and locking X1:15-16
R1 = Heater
Circuit diagram 31 UEMC 128 G

Motor operating device UEMC 50_ - 48 VDC/1
- 60 VDC/1
- 110 VDC/1
- 125 VDC/1
- 220 VDC/1

M1 = Motor
K1, K2 = Operating contactors
S1.1 = Limit switch

S2.1 = Limit switch
S1.2 = Aux. contact NO (switch open)
S2.2 = Aux. contact NO (switch closed)
S3 = Blocking switch for hand operating and locking
S4, S5 = Push buttons
F1 = M.c.b.
R1 = Heater
S6 = Remote control selector
K3 = Relay, only for UEMC 50 L_
Motor Operating Device UEMC 50
Installation, operating and recycling guide

Circuit diagram 31 UEMC 165 F

Motor operating device UEMC 50 - 110 VAC/1
- 110 VAC/21
- 230 VAC/1
- 230 VAC/21

S1.2 = Aux. contact NO (switch open)
S2.2 = Aux. contact NO (switch closed)
S3 = Blocking switch for hand operating and locking
S4, S5 = Push buttons
F1 = M.c.b.
R1 = Heater
S6 = Remote control selector
K3 = Relay, only for UEMC 50 L_
V5 = Rectifier

M1 = Motor
K1, K2 = Operating contactors
S1.1 = Limit switch
S2.1 = Limit switch
Motor operating device  UEMC 50_ – UU/1  UU Voltage to be specified when ordering

M1 = Motor
K1, K2 = Operating contactors
S1.1 = Limit switch
S2.1 = Limit switch
S1.2 = Aux. contact NO (switch open)
S2.2 = Aux. contact NO (switch closed)
S3 = Blocking switch for hand operating and locking
S4, S5 = Push buttons
R1 = Heater
F1 = M.c.b.
S6 = Remote control selector
K3 = Relay for UEMC 50 L_, 48-230 V
V5 = Rectifier only for AC
V1, V2 = Diodes only for DC
R2 = Resistor 110-230 V
Motor Operating Device UEMC 50  
Installation, operating and recycling guide

Circuit diagram 31 UEMC 311 B

Motor operating device  UEMC 50_  - 24 VDC/11
M1 = Motor
K1, K2 = Operating contactors
S1.1 = Limit switch
S2.1 = Limit switch
S1.2 = Aux. contact NO (switch open)
S2.2 = Aux. contact NO (switch closed)
S3 = Blocking switch for hand operating and locking
S4, S5 = Push buttons
F1 = M.c.b. for motor
R1 = Heater
S6 = Remote control selector
F6 = M.c.b. for remote control
F7 = M.c.b. for power supply
Circuit diagram 31 UEMC 129 C

<table>
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<tr>
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<td>0</td>
<td>I</td>
<td>1</td>
<td>NC</td>
<td>2</td>
<td>NO</td>
<td>3</td>
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<td>14</td>
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<td>16</td>
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<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Function of aux. contacts

- 3 NC/NO (CHANGE OVER)
- 6 NC/NO (CHANGE OVER)
- 4 NC/NO + NC/C + 1NO/D

Nominal voltage 500 V
Nominal current 16 A
Breaking capacity (L/R = 40 ms)

- 24 VDC = 16 A
- 48 VDC = 10 A
- 60 VDC = 10 A
- 110 VDC = 5 A
- 220 VDC = 2 A
- 230 VAC = 16 A

Disconnector

- NO
- NC
- C
- D

Cont. open
Cont. closed
Motor Operating Device UEMC 50
Installation, operating and recycling guide

Circuit diagram 31 UEMC 130 F

1. (L1) X1:20 (N) (R1)
   (R1) X1:21 (N) (R1)
   X1:20 (N) (R1)
   X1:21 (N) (R1)
   (R1)
   X1:1
   +
   -
   G1
   F10
   B1
   B2
   X1:2

2. (L1) X1:20 (N) (R1)
   (R1) X1:21 (N) (R1)
   X1:20 (N) (R1)
   X1:21 (N) (R1)
   (R1)
   X1:1
   +
   -
   G2
   F10
   B1
   B2
   X1:2

U1 -24VDC deep discharge protected output for the radio or telemechanics

3. X1:13
   11
   12
   21
   N.O.
   F1
   S6
   S3
   C
   X1:14

4. (L1) X1:20 (N) (R1)
   (L1) X1:20 (N) (R1)
   S7
   13
   14
   23
   24
   (R1)

5. (L1) X1:20 (N) (R1)
   (L1) X1:20 (N) (R1)
   S8
   13
   14
   23
   24
   (G1 or G2)
   (R1)

G1 Charger
G2 Charger Polwat
B1, B2 Batteries
R1 Heater
S3 Blocking switch for hand operating and locking
S6 Remote control selector switch
S7 Heating switch
S8 Charging and heater switch
F1 M.c.b.
F10 Fuse
Circuit diagram 31 UEMC 138 G

F1 = M.c.b. for motor
F2 = M.c.b. for heater
R1 = Heater
S6 = Remote control selector
S3 = Blocking switch for hand operating and locking
G1 = Charger

F2  M.c.b. for charging and heating
UEMZ 319

T1 Thermostat
UEMZ 318

Y1 Interlocking coil
S9 Aux. contact
UEZY 2/U

Seperate alarm circuits
UEMZ 450
Motor Operating Device UEMC 50
Installation, operating and recycling guide

Circuit diagram 31 UEMC 410 C

Type: UEMZ 1191/110 VAC
UEMZ 1191/230 VAC

Type: UEMZ 1191/24 VDC

S11 = Door switch
E1 = Service light
F20 = Surge voltage protection
X26 = Safety socket outlet with integrated current device

Circuit breaker A201 B10

Socket ABB type M1174 (with pin) or ABB type F1175 (Schuko)

Type: UEMZ 1249

Type: UEMC 1249

Type: UEMC 420 B

Type......1YMU000139M0001
.............1YMU000139M0002

Type......1YMU000139M0001
.............1YMU000139M0002