Welcome to the world of electrical safety

PERSONNEL PROTECTIVE EQUIPMENT

WARNING SIGNS

VOLTAGE DETECTORS AND COMPARATORS

SHORT CIRCUITING AND EARTHING SYSTEMS

INSULATED TOOLS

HOT LINE TOOLS

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Guide content

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### Usual substation warning signs

<table>
<thead>
<tr>
<th>Reference</th>
<th>Type</th>
<th>Dimensions (mm)</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 AM-49/1</td>
<td>Aluminium</td>
<td>100 side</td>
<td>Black and yellow fixing 3 holes ø4.5mm</td>
</tr>
<tr>
<td>1 AT-49/1</td>
<td>Self-adhesive</td>
<td>100 side</td>
<td>Black and yellow high quality plastic</td>
</tr>
<tr>
<td>2 AM-61-GB/RM</td>
<td>Aluminium</td>
<td>150 x 300</td>
<td>Black and yellow on plain aluminium fixing 4 holes ø4.5mm</td>
</tr>
<tr>
<td>3 AM-20-GB</td>
<td>Aluminium</td>
<td>350 x 250</td>
<td>Blue letters on plain aluminium fixing 4 holes ø4.5mm</td>
</tr>
<tr>
<td>3 AM-20-RM</td>
<td>Aluminium</td>
<td>350 x 500</td>
<td>Blue letters on plain aluminium fixing 6 holes ø4.5mm</td>
</tr>
<tr>
<td>4 AM-7001</td>
<td>Aluminium</td>
<td>200 x 300</td>
<td>Black and yellow fixing 4 holes ø4.5mm</td>
</tr>
<tr>
<td>5 AM-215-RM</td>
<td>Aluminium</td>
<td>350 x 250</td>
<td>Black and yellow fixing 4 holes ø4.5mm</td>
</tr>
<tr>
<td>6 AM-344-GB</td>
<td>Aluminium</td>
<td>100 side</td>
<td>Black and yellow fixing 3 holes ø4.5mm</td>
</tr>
<tr>
<td>7 AM-345-GB</td>
<td>Aluminium</td>
<td>100 side</td>
<td>Black and yellow fixing 3 holes ø4.5mm</td>
</tr>
<tr>
<td>8 AP-510-GB</td>
<td>PVC</td>
<td>420 x 297</td>
<td>Golden Rules fixing 4 holes ø4.5mm</td>
</tr>
<tr>
<td>AM-282/2-RM</td>
<td>Aluminium</td>
<td>200 x 60</td>
<td>Blue letters on yellow fixing 2 holes ø4.5mm</td>
</tr>
</tbody>
</table>
### Accessories

Padlocks with warning signs
Brass ring bow 50 or 70 mm.
Diameter of the ring bow 6 mm.
* Add n° of key: 111 or 222

- Ref. AL-230-(*)-EX  Brass ring bow 50
- Ref. AL-230-S-(*)-EX  Brass ring bow 50

Warning sign for locking apparatus

- Ref. AP-467-GB
**Warning signs and Intervention equipment**

## II - Intervention equipment

### Intervention kits

<table>
<thead>
<tr>
<th>Reference</th>
<th>Designation</th>
<th>Characteristics</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG-30-C</td>
<td>Insulated rubber gloves class 3 CEI 60903</td>
<td>26 500 V max</td>
<td>Size C (10)</td>
</tr>
<tr>
<td>CG-35/1</td>
<td>Rubber gloves storage box with window</td>
<td>60 x 210 x 460 mm</td>
<td></td>
</tr>
<tr>
<td>CI-23</td>
<td>Fuse holder Ø max 85 mm</td>
<td>90 x 240 x 260 mm</td>
<td></td>
</tr>
<tr>
<td>CS-45</td>
<td>Rescue stick</td>
<td>45 000 V max</td>
<td>Longueur : 1,65 m</td>
</tr>
<tr>
<td>CI-06-D</td>
<td>Wall mounted supports delivered with CS-45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT-7-25/1*</td>
<td>Insulating platform</td>
<td>24 000 V max</td>
<td>500 x 500 x 220 mm</td>
</tr>
<tr>
<td>MP-42/16**</td>
<td>1 insulating mat CEI-61111 3 mm thickness</td>
<td>≤ 33 kV</td>
<td>0,6 x 1 m</td>
</tr>
</tbody>
</table>

**Ref. KIT-01***: Intervention kit with insulating platform

**Ref. KIT-10***: Intervention kit with insulating mat delivered with a protective P.V.C. container (ref. MP-20)

* Only in KIT-01
** Only in KIT-10
**Helmet with built-in face shield**

Panoramic face shield in non-scratch and anti-mist polycarbonate.
Chinstrap (with Velcro fastening) Head fit adjustment by milled wheel. *EN 166 /EN 170*

**Manœuvring insulating stick**

Composite fiberglass/polyester

<table>
<thead>
<tr>
<th>operating voltage (V)</th>
<th>length (m)</th>
<th>weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 kV</td>
<td>1.45</td>
<td>0.75</td>
</tr>
</tbody>
</table>

**Insulated rubber gloves**

Insulating rubber gloves conform to international IEC-60903 standard.

Our gloves are made of latex especially treated to obtain high dielectric characteristics; they are individually tested and delivered in sealed plastic bags.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Class</th>
<th>Voltage (V)</th>
<th>Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref. CG-30-*</td>
<td>3</td>
<td>26 500</td>
<td>2.9</td>
</tr>
<tr>
<td>Ref. CG-40-*</td>
<td>4</td>
<td>36 000</td>
<td>3.6</td>
</tr>
</tbody>
</table>

* References to be completed by size C or D
Correspondence with standard sizes: C = 10, D = 11

**Insulating platforms**

Moulded insulating material, one-piece. Top 50 x 50 cm.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Rated insulation (V)</th>
<th>Height (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT-7-25/1</td>
<td>24 000</td>
<td>220</td>
<td>3.7</td>
</tr>
<tr>
<td>CT-7-40/1</td>
<td>40 000</td>
<td>260</td>
<td>3.8</td>
</tr>
</tbody>
</table>
III - Voltage detectors and short-circuiting systems

M.V. substations with bare conductors or fixed points

IEC electronic voltage detectors for indoor and outdoor use
IEC 61243-1

Compact and light it offers:
- a wide band: 10/36 kV
- a universal application (50/60 Hz)

Characteristics:
- Detectors have unitary adjustment and are checked by routine test
- Dielectrically tested on substation bars (bridging test)
- Precise and stable operating threshold
- Reduced sensitivity to induced voltages
- Reduced sensitivity to interference field
- High environmental resistance (impacts, vibrations, moisture)

Use from 50 to 60 Hz

Temperature conditions: class N (IEC 61243-1 standard).
Storage and operation: -25/+55 °C
Robust housing.
Power supply: 1 x 9 V alkaline battery type 6LR61
Weight: 1.1 kg size: 340 x 275 x 83 mm
Recommended stick: CE-4-21

Ref. CC-875-10/36-* Delivered in case, specify type of mounting when ordering: C or K

* When ordering, please specify type of mounting: C or K

Led’s Voltages detectors for indoor use

Built-in device for checking operation of the led’s indicator via a piezo-electric generator.
High-brightness led’s indicator.
Sturdy thermo-plastic moulded case providing. Pivoting contact electrode enabling wire contact at any angle.

Ref. CL-4-41-M Operating voltage: 5/40 kV fix length
Ref. CL-4-41-2 Operating voltage: 5/40 kV telescopic length
Ref. CL-2-10/30-2 Operating voltage: 10/30 kV telescopic length compact serie

For other voltage please consult us.
Single pole phase comparators for indoor and outdoor use

Frequency and voltage phase memory.
Integrated TEST push-button.
Powered by a LF 22 9 V battery.
Delivered in carrying case.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Voltage (kV)</th>
<th>Length of antenna (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL-7-06/18*</td>
<td>6-18</td>
<td>0.85</td>
</tr>
<tr>
<td>CL-7-10/30*</td>
<td>10-30</td>
<td>0.85</td>
</tr>
<tr>
<td>CL-7-10/30-1*</td>
<td>10-30</td>
<td>1.15</td>
</tr>
<tr>
<td>CL-7-12/36*</td>
<td>12-36</td>
<td>1.20</td>
</tr>
</tbody>
</table>

* Please specify type C or K when ordering.

Two pole phase comparators for indoor use

Detect differences in voltage between any two points of an installation indicated by LED’s. It also enables assessment of the order of magnitude of the residual voltage induced by nearby live lines or circuits, and thus differentiates it from the one provided directly from a high voltage source.

Range of voltage: 2/36 kV

Ref. CL-8/36 CL-B-36 tester in metal case 150 x 195 x 650 mm - Weight: 7.5 kg

Short circuiting and earthing systems

IEC-61230/EN-61230 These equipment are intended for connection on: bare conductors

<table>
<thead>
<tr>
<th>Reference</th>
<th>Icc (kA/1s)</th>
<th>Conductors (mm)</th>
<th>Composition</th>
<th>Connection set</th>
<th>Stick**</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-5805</td>
<td>20</td>
<td>Ø 5-35 16-40 5-40</td>
<td>3 clamps MT-815-C</td>
<td>3 cables 95 mm² 1 MT-840/1</td>
<td>CE-4-21-C</td>
</tr>
<tr>
<td>MT-8408</td>
<td>14.5</td>
<td>Ø 18-33</td>
<td>3 clamps MT-815-C 1 MT-840/1</td>
<td>3 cables 70 mm² 1 earth cable 35 mm²</td>
<td>CE-4-21-C</td>
</tr>
<tr>
<td>MT-9801</td>
<td>10</td>
<td>Ø 5-16 0-16 40 x 16 Ø 5-28</td>
<td>3 clamps MT-817-C 1 MT-840/1</td>
<td>3 cables 50 mm² 1 earth cable 25 mm²</td>
<td>CE-4-21-C</td>
</tr>
</tbody>
</table>

** stick to be ordered separately
For other configurations please consult us
ICE-61230/EN-61230 These equipment are intended for connection on: permanent fixed points

<table>
<thead>
<tr>
<th>Reference</th>
<th>MT-1910</th>
<th>MT-1920</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icc (kA/1s)</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Installation on fixed points</td>
<td>Ø 20 mm MT-2951 range</td>
<td>Ø 25 mm MT-3951 range</td>
</tr>
<tr>
<td>Composition</td>
<td>3 clamps MT-1911-E 1 MT-1911</td>
<td>3 clamps MT-1921-E 1 MT-1921</td>
</tr>
<tr>
<td>Connection set</td>
<td>3 cables 95 mm² 1 earth cable 35 mm²</td>
<td>3 cables 150 mm² 1 earth cable 50 mm²</td>
</tr>
</tbody>
</table>

Stick to be ordered separately: CF-5-40-E

M.V. substations with separables connectors

Voltage tester

Check the absence of voltage on the capacitive terminals of plug-in M.V. bushings.
Sensor in the form of a bent finger enabling removal and reinstallation of the terminal insulating cover.
Signal via beeping and bright red flashing of electro-luminescent diodes.
Built-in function test via the “TEST” button which covers the entire device.
Permanent stand-by state.
Power supply: four 1.5 V, R-6 batteries.
Mounting on insulating stick via a universal end.
Specific insulating stick: CC-45-K : L = 1.25 m - 0.6 kg

Ref. CC-151-K delivered with pouch

Ref. CC-45-K special 45 kV insulating stick L: 1.25 m - Weight: 0.60 kg
Extinguisher
Carbon dioxide for B and C type fire for use until 35 kV. Designed for electrical fires
Weight: 14.6 kg
Ref. CD-306 Homologation 70 B Capacity: 7.4 liters

Permanent luminous indicator
Permanently installed on bus bars, luminous indicator signals the presence of voltage at a glance.
Single-pole 5 to 75 kV indicators. Signaling the presence of voltage by 7 electroluminescent diodes. For indoor use.
Ref. CL-40010 For round 5 to 20 mm ø wires and 1 to 20 mm flat bars

Safety lamp
Delivered with a wall mounted support
Bulb: 6 W/12 W Operates: 1 hour (12 W), 2 hours (6 W)
Rechargeable on 230 V 50/60 Hz 3 positions switch: Off, 6 W, 12 W.
Ref. CD-124 100 x 190 x 220 mm - weight: 1.9 kg

Wall mounted saving kit
It includes:
- 1 rescue telescopic stick
- 1 voltage detector with flexible contact antenna (with autotest)
- 1 cable cutter with insulated handles Forged steel blades maximum opening: 30 mm
- 1 insulating platform 36 kV
- Insulating gloves
- Insulating boots
- Safety instructions on the plastic board
- 1 talcum powder can.
Ref. CZ-55MR Delivered with instruction in English/Arabic

Warning signs and Intervention equipment Voltage detectors and short-circuiting systems Additional equipment