

Electrical safety Guide



Substation Equipment



CATU™



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

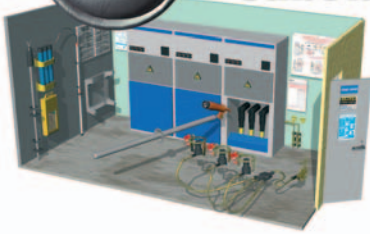
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ELECTRICAL SAFETY GUIDE

Substation equipment



Guide content

I - Warning signs

II - Intervention equipment

III - Voltage detectors and short-circuiting & earthing systems

IV - Additional equipment



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Warning signs and
Intervention equipment

Voltage detectors and
short-circuiting systems

Additional
equipment

I - Warning signs and accessories



Usual substation warning signs

Reference	Type	Dimensions (mm)	Characteristics	
1	AM-49/1	Aluminium	100 side	Black and yellow fixing 3 holes \varnothing 4.5mm
1	AT-49/1	Self-adhesive	100 side	Black and yellow high quality plastic
2	AM-61-GB/RM	Aluminium	150x200	Black and yellow on plain aluminium fixing 4 holes \varnothing 4.5mm
3	AM-20-GB	Aluminium	350x250	Blue letters on plain aluminium fixing 4 holes \varnothing 4.5mm
3	AM-20-RM	Aluminium	350x500	Blue letters on plain aluminium fixing 6 holes \varnothing 4.5mm
4	AM-7002	Aluminium	200x300	Black and yellow fixing 4 holes \varnothing 4.5mm
5	AM-215-RM	Aluminium	350x250	Black and yellow fixing 4 holes \varnothing 4.5mm
6	AM-344-GB	Aluminium	100 side	Black and yellow fixing 3 holes \varnothing 4.5mm
7	AM-345-GB	Aluminium	100 side	Black and yellow fixing 3 holes \varnothing 4.5mm
8	AP-510-GB	PVC	420x297	Golden Rules fixing 4 holes \varnothing 4.5mm
	AM-282/2-RM	Aluminium	200x60	Blue letters on yellow fixing 2 holes \varnothing 4.5mm



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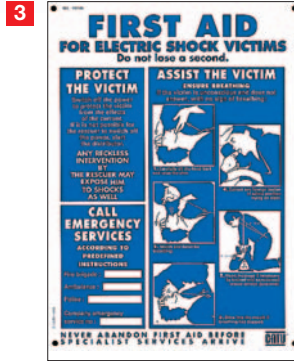
Warning signs and
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AM-20-RM



AM-20-GB



AM-49/1



AM-344-GB



AM-345-GB



AM-61-GB



AM-61-RM



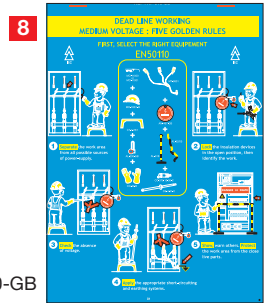
AM-7002



AM-282/2-RM



AM-215-RM



AP-510-GB

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 70

Warning sign for locking apparatus



Ref. AP-467-GB



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II - Intervention equipment

Intervention kits

CI-23



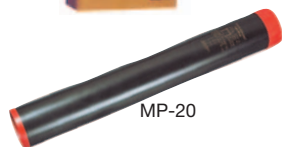
CG-30



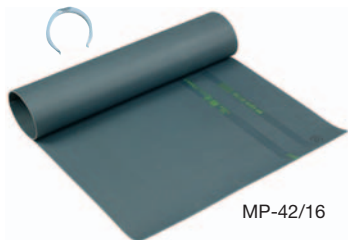
CG-35/1



CS-45



MP-20



MP-42/16



CI-06-D



CT-7-25/1

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

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





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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**



Ref. **MO-185-BL** White - Weight: 0.720 kg

Manœuvring insulating stick

Composite fiberglass/polyester

operating voltage	length overall	weight
45 kV	1.45 m	0.75 kg



Ref. **CM-45**

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.



Reference	Class	Voltage (V)	Thickness (mm)
CG-30-*	3	26 500	2.9
CG-40-*	4	36 000	3.6

* 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.

Reference	Rated insulation (V)	Height (mm)	Weight (kg)
CT-7-25/1	24 000	220	3.7
CT-7-40/1	40 000	260	3.8





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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*



CC-875

CE-4-21



CL-2



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 Voltage 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.

CL-4 serie



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Single pole phase comparators for indoor and outdoor use

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

IEC-61481



* Please specify type C or K when ordering.

Reference	Voltage (kV)	Length of antenna (m)
CL-7-06/18*	6-18	0.85
CL-7-10/30*	10-30	0.85
CL-7-10/30-1*	10-30	1.15
CL-7-12/36*	12-36	1.20

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-8-36 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



Reference	Icc (kA/1s)	Conductors (mm)	Composition	Connection set	Stick**
MT-5805	20	<ul style="list-style-type: none"> ● Ø 5-35 — 16-40 ▮ 5-40 	3 clamps MT-815-C 1 MT-840/1	3 cables 95 mm ² 1 earth cable 35 mm ²	CE-4-21-C
MT-8408	14.5	<ul style="list-style-type: none"> ● Ø 18-33 	3 clamps MT-815-C 1 MT-840/1	3 cables 70 mm ² 1 earth cable 35 mm ²	CE-4-21-C
MT-9801	10	<ul style="list-style-type: none"> ● Ø 5-16 — 0-16 ▮ 40 x 16 ● Ø 5-28 	3 clamps MT-817-C 3 clamps MT-814/2-C 1 MT-840/1	3 cables 50 mm ² 1 earth cable 25 mm ²	CE-4-21-C



** stick to be ordered separately
For other configurations please consult us



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IEC-61230/EN-61230 These equipment are intended for connection on: **permanent fixed points**

Reference	MT-1910	MT-1920
Icc (kA/1s)	20	30
Installation on fixed points	Ø 20 mm MT-2951 range	Ø 25 mm MT-3951 range
Composition	3 clamps MT-1911-E 1 MT-1911	3 clamps MT-1921-E 1 MT-1921
Connection set	3 cables 95 mm ² 1 earth cable 35 mm ²	3 cables 150 mm ² 1 earth cable 50 mm ²



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



M.V. substations with separable 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



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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-55R Delivered with instruction
in English

Ref. CZ-55MR Delivered with instruction
in English/Arabic

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 \varnothing 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

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

Safety Lamp

- Adjustable flood beam
- Power beam: 5.5 W
- Operates: 3 hours



Ref. CD-122 Weight: 1.2 kg



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