

# ***Ener tools***

**LIVE MAINTENANCE TOOLS &  
TESTING/NETWORKING EQUIPMENT**



**Complete Range Of Tooling & Equipment For On-Site**

**Testing & Troubleshooting For Utilities & Contractors**

**MAIN SOLE AGENCIES :**

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ENERTEL GROUP – whose core business was initially to Import and Distribute electrical goods and equipment in SINGAPORE and INDONESIA - was established as early as November 1993 (ENERTEL) and September 29, 1994 (ENERTELINDO). Operations started in January 1994. We have our main HQ office located in Jakarta, INDONESIA.

We would like to welcome you for choosing us to provide your needs of electrical equipments and tools. This Enertools will guide you to explore a wide range of our products for improving your requirements, allowing you to choose appropriate products for your company and its unique needs. The final goal is to deliver the high quality products and services that reach "quality" for customers and their own benefits.



**Enertelindo**  
**PT. ENERTELINDO KENCANA**

#### SOME OF THE REFERENCES:

PT. PLN (Persero)  
PT. Meta Epsi Engineering  
PT. Areva T&D  
PT. Aryasada Persada  
PT. Siemens Indonesia  
PT. Guna Era Manufaktura  
PT. Unindo  
PT. Schneider Indonesia  
PT. Krakatau Steel



## ARC FLASH SAFETY

• Arc Flash Series	5-6
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# Knowing the correct personal protective equipment to use for your job can save your life.

## Personal Protective Equipment

Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits. All personal protective equipment should be safely designed and constructed, and should be maintained in a clean and reliable fashion. It should fit comfortably, encouraging worker use. If the personal protective equipment does not fit properly, it can make the difference between being safely covered or dangerously exposed. When engineering, work practice, and administrative controls are not feasible or do not provide sufficient protection, employers must provide personal protective equipment to their workers and ensure its proper use. If PPE is to be used, a PPE program should be implemented. This program should address the hazards present; the selection, maintenance, and use of PPE; the training of employees; and monitoring of the program to ensure its ongoing effectiveness.



## Arc Flash Safety

An arc-flash or an electric arc is the result of an electric short circuit conducted by the air. It is a violent eruption of thermal energy from a source of electricity, which can lead to serious or even irreversible burns and injuries, depending on the seriousness of the incident. Electric arc or arc flash hazards become an essential concern when the rated voltage of the installation is greater than 220 Volts

It is expressed in calories/cm<sup>2</sup>,

- 1 cal/cm<sup>2</sup> is equivalent to exposing a finger to a lighter flame for a second,
- With only 1.2 cal/cm<sup>2</sup>, individuals can suffer from second-degree burns,
- Standard non fire-retardant work clothing can ignite from energy levels of 2 calories.



### IDENTIFICATION

Standardised marking very visible on the garment, with ATPV level



### PROTECTION

jacket wrists with elasticated tightening



### EFFICIENCY

non-metallic zip + flap



**You are now protected from arc-flash risks**

## KITARC 8

### SET OF ARC FLASH PROTECTION for LOW VOLTAGE

The **8 cal / cm<sup>2</sup> range** is particularly adapted to your Low Voltage applications. These garments are very like conventional work clothing, offering you convenience and comfort, while keeping you safe from the risk of an arc flash.

#### 4-8 CAL / CM<sup>2</sup> ARC FLASH PROTECTION KIT

TC42ESBB	White E-Shark electrician's Helmet
TP05B	Single-shield safety glasses for protection from infrared and UV rays
AFHV-VES8	Arc flash high visibility jacket class 1
AFHV-PAN8	Arc flash high visibility trousers class 1
GLB00-36;GLB0-36	Insulating latex gloves class 0, length 36 cm
TG40 to TG48	Siliconized leather over gloves
C970	Safety ankle boots, S3CI fully non-metallic
S510	Arc Flash equipment carrying bag



## KITARC 12

### SET OF ARC FLASH PROTECTION for LOW VOLTAGE

While offering optimum comfort, the **12 cal / cm<sup>2</sup> range** provides additional protection for your low-voltage applications. The chest can be protected in different ways: shirt, long sleeved T-shirt or jacket or combining these items.

#### 8-12 CAL / CM<sup>2</sup> ARC FLASH PROTECTION KIT

TC4712	Helmet and face shield, TC4712 ATPV 12 cal/cm <sup>2</sup>
TP03T	Single-shield safety glasses for protection from UV rays
ARCCAG10	Flame-retardant hood
AFPRO-VES12	ARC FLASH jacket with retroreflective tapse class1
AFPRO-PAN12	ARC FLASH trousers with retroreflective tapse class1
GLB00-36;GLB0-36	LV insulating latex gloves class 0, length 360 mm
TG40 to TG48	Siliconized Leather over gloves
C970	S3CI safety ankle boots, fully non-metallic
S510	Arc flash equipment carrying bag



*Comfort for greater safety*

## KITARC 25

### SET OF ARC FLASH PROTECTION for above 1000V with low to medium risks energy level

The **25 cal / cm<sup>2</sup>** range has a lightweight and modern style, while offering high protection from the risk of an arc flash.

#### 25 CAL / CM<sup>2</sup> ARC FLASH PROTECTION KIT

TC4725	Helmet and face shield, TC4725 ATPV 25 cal/cm <sup>2</sup>
TP03T	Single-shield safety glasses for protection from UV rays
AFSIB-VES25	Arc flash jacket Sibille Safe class 2
AFSIB-PAN25	Arc flash trousers Sibille Safe class 2
GCA2-36—GCA4-41	Flash & grip composite gloves with arc flash protection
TG40 to TG48	Siliconized Leather over gloves
C99B-ISOL	20KV safety ankle boots
S510	Arc flash equipment carrying bag



## KITARC 40

### SWITCHING GEAR ARC FLASH

These suits are recommended for specific operations with significant arc flash risks, such as switching in an electrical substation. Suitable for use in explosive atmospheres (ATEX).

ARCVES40	Arc flash jacket Sibille Safe <b>40 cal/cm<sup>2</sup></b>
ARCSAL40	Arc flash bib and brace overalls Sibille safe <b>40 cal/cm<sup>2</sup></b>
ARCGAN40	Arc flash gloves Sibille Safe <b>40 cal/cm<sup>2</sup></b>
ARCCOI40	Arc flash hood Sibille Safe <b>40 cal/cm<sup>2</sup></b>
C99B-ISOL	20KV safety ankle boots
S510	Arc flash equipment carrying bag

ARCVES53	Arc flash jacket Sibille Safe <b>53 cal/cm<sup>2</sup></b>
ARCSAL53	Arc flash bib and brace overalls Sibille safe <b>53 cal/cm<sup>2</sup></b>
ARCGAN53	Arc flash gloves Sibille Safe <b>53 cal/cm<sup>2</sup></b>
ARCCOI53	Arc flash hood Sibille Safe <b>53 cal/cm<sup>2</sup></b>
C99B-ISOL	20KV safety ankle boots
S510	Arc flash equipment carrying bag



ARC53

ARC40

**Quality Designed for Safety**



## TC45B

Put this reference to order

### Industrial Safety Helmet for Linemen

Industrial safety helmet protects the wearer against accidental electrical contact.

- ◆ Regarding EN 397 : -30°C resistant.
- ◆ Regarding EN 50365 : 1 000V AC class 0
- ◆ Regarding ANSI : 20 000V AC class E
- ◆ PEHD shell without ventilation holes.
- ◆ Lateral inserts to fix accessories (ear muffs, head lamp ...)
- ◆ Textile harness with 4 points chinstrap.
- ◆ Removable headband, adjustable from 53 to 63 cm, adjustment made by ratchet knob or by slide.
- ◆ Life span : 4 years.
- ◆ Colour : White.



## E- SHARK

Put this reference to order

### Safety Helmet with integrated face screen for Electrician

- ◆ Intended for systems electrician (operation, industry, offices etc.) Designed for protection from short circuits and their effects.  
Certificate and tested at 20 000 V
  - ◆ Space behind the shield to wear glasses
- Long shield completely covers the face to protect against arc flash and splashes
- Technical specifications : Helmet :
- Polyethylene outer and inner shells.
  - Replaceable black textile harness.
  - Side and central inserts for the attachment of accessories (ear muffs, head lamps ...).
  - Replaceable absorbent antiperspirant headband.
  - Head size: 53 - 62 cm



## TC402B

Put this reference to order

APTV ELECTRICIAN HELMET WITH INTEGRATED FACE SHIELD, ATPV 8,4 CAL/CM<sup>2</sup>

Helmet:

Stroke absorption after conditioning in temperatures of -30°C and + 50°C,

Protection against molten metal splash (MM)

Protection against lateral deformations (LD)

Protection against electric shock (Class 0), 1000V (AC), 1500 V (DC), up to 2200 V (Class G regarding ANSI Z89.1)

Face Shield:

Optical class 1

Protection against UV radiation (2C-1,2)

Protection against thermal hazards of an electric arc (class 2) box test 7 kA/0,5 sec



## TC 47BC

Put this reference to order

### Safety Helmet For Linemen With Short Visor

**Use :** Industrial safety helmet protects the wearer against accidental electrical contact. For climbers, work in suspension, or mining work.

**Technical specifications :** Regarding EN 397 : -30°C resistant.

Regarding EN 50365 : 10 000 V a.c.

Regarding ANSI : 20 000 V a.c.

PEHD shell without ventilation holes, with short visor.

LV Polyethylene brackets.

Textile harness with 4 points chinstrap.

Removable headband, fitted with a comfort band and filler foam.

Life span : 4 years.

Colour : White. Other colours available on request (quantity of 200).

EN 397, EN 50365, ANSI Z89.1 – 2003



TP05B3

Put this reference to order



### Safety Glasses for Live Line Working

**Advantages:**

Anti-slip tips for a better support  
Welding filters grade 3  
Adjust itself to all face shapes

**Technical specifications:**

Protection against UV, bright light, flying particles and infrared light  
Polycarbonate lens, UV protection, anti-scratch and anti-fog  
Impact resistant (45m/s) and resistant to extreme temperatures (-5°C to +55°C)  
Optical quality : class 1

TL19

Put this reference to order



### CLEAR ANTI-UV SAFETY GLASSES

**Technical specifications:**

Lens : anti-scratch and anti-fogging PC  
Optical class : 1  
Visible light transmittance : 91,20 %, field of view 180°  
Sidearms in clear PC with lateral protection  
Colour : transparent  
Soft nose pad  
Marking = 2C-1,2 U 1 FT K

L5500

Put this reference to order



### SAFETY ANTI-FOGGING MASK

**Use:** Protection against low energy flying particles: liquids and dust

**Technical specifications:**

Lens : clear anti-UV PC, anti-fogging with lateral protection  
Frame : soft PVC with ventilation  
Large elastic band.  
Impact resistance : 120 m/s.  
Light transmittance : 99.5% UV absorption up to 385 nm.  
Visible light transmittance : above 95%.  
Heat resistance : up to 60°C.



## GLB INSULATING GLOVES

### Natural Rubber Insulating Gloves

Insulating rubber gloves available in all classes, many sizes, different lengths and colors. Leather protectors are recommended to be worn over Electrovolt gloves to ensure mechanical protection (local regulations, work practices and risk analysis apply).

Standard:

EN 60903:2004—IEC 60903:2014

PPE Category III (Directive 89/686/IEC)

Class	Operating Volt.	sizes	category	Length	Reff
00	500V AC	7 - 12	AZC	36 cm	GLB00-36-*
0	1000V AC	7 - 12	AZC	36 cm	GLB0-36-*
1	7500V AC	7 - 12	AZC	36 cm	GLB1-36-*
2	17000V AC	7 - 12	RC	36 cm	GLB2-36-*
3	26500V AC	8 - 12	RC	36 cm	GLB3-36-*
4	36000V AC	8 - 12	RC	41 cm	GLB4-36-*

\* size number



## GC INSULATING COMPOSITE GLOVES

### Insulating Composite Gloves

Standard

EN 60903:2003, IEC 60903:2014

PPE Category III (Irreversible risks)

Use:

Insulating gloves for low voltage (500 V), with mechanical protection.

Class	Operating Volt.	sizes	category	Length	Reff
00	500V AC	7 - 12	RC	36 cm	GC00-36-*
0	1000V AC	7 - 12	RC	36 cm	GC0-36-*
1	7500V AC	7 - 12	RC	36 cm	GC1-36-*
2	17000V AC	8 - 12	RC	36 cm	GC2-36-*
3	26500V AC	8 - 12	RC	36 cm	GC3-36-*
4	36000V AC	8 - 12	RC	41 cm	GC4-36-*

\*size number



## FLASH AND GRIP : GCA



## Composite and Arc Flash Gloves

**DESCRIPTION**

Bicolor composite gloves available in many sizes and different lengths

Integrated mechanical protection, so no need of leather protector

Arc flash rated by a third party notified body: box test and ATPV.

**STANDARD**

EN 60903:2003—IEC 60903:2014

PPE Category III (Directive 89/686/EEC)

IEC 61482-1-2

ASTM F2675

**TECHNICAL SPECIFICATIONS**

Length : 41 cm (36 available on demand)

Size : 6 to 12 (Size 6 for class 00 and 0 only; class 3 and 4: 8 to 12)

External color : Red

Internal Color : Black

Category : RC

**ADVANTAGES**

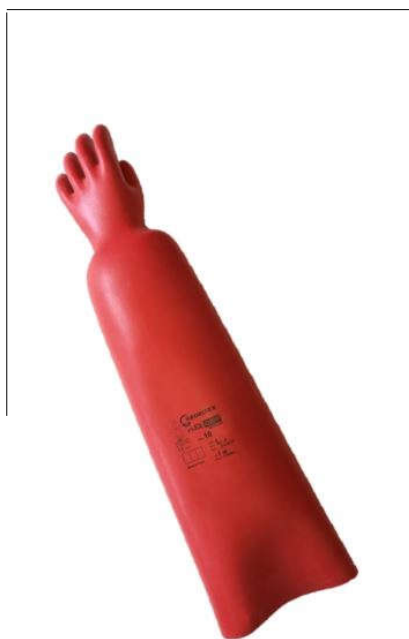
Insulating gloves 3 in 1: dielectric, mechanical, and arc flash protection

The unique formulation of the rubber compound makes Flas & Grip gloves extremely flexible

Bicolor: it makes the visual inspection easier.

Each pair composite gloves is supplied with one pair of cotton fingerless under gloves to improve comfort; it's recommended to replace regularly the cotton gloves for hygienic reasons

## GICN80-2 and GICN80-3



## LONG COMPOSITE INSULATING GLOVES

**DESCRIPTION**

Bicolor chlorinated long composite gloves for medium voltage live working operations (gloving method). Integrated mechanical protection: no need of leather protector. Bell cuff and ergonomic hand shape. One piece only, with excellent leakage current properties (Category F): it is possible to work in wet conditions (if allowed by local regulations and work practices)

**STANDARD**

EN 60903:2003—IEC 60903:2014

PPE Category III (Directive 89/686/EEC)

ST HT 126A compliant

**TECHNICAL SPECIFICATIONS**

Length : 800 mm

Sizes : 09 and 10

Categories:

R : Acid, Oil, ozone

C : Extremely low temperature

F : Leakage current

External color : Red

Internal color : Black

**ADVANTAGES**

Insulating gloves 3 in 1: dielectric and mechanical resistances, protection up to shoulder.

Chlorination makes gloves easier to don without the use of talc; it improves some of the beneficial properties of latex and also eliminates soluble proteins that may cause allergic reactions

The hand's ergonomic shape offers the maximum level of dexterity; the bell cuff improves the comfort by increasing the natural ventilation and allowing worker's clothes to fit in.

Bicolor: it makes the visual inspection easier.

Gloves can be cut in order to fit user's arm length.

## C99H-ISOL

## High Safety Shoes 20 kV - Fully non-metallic

**STANDARD**

EN ISO 20345:2013

ASTM F2413—20KV

**USE**

Recommended for applications in the electrical industry in dry conditions.

**ADVANTAGES**

HRO = heat resistance of the sole (300 °C during 1 min),

EH = Dielectric resistance of the sole : up to 20 kV (regarding ASTM F2412)

SRA = antislip profile TECHNICAL SPECIFICATIONS

Entirely non-metallic.

Low upper : water repellant full grain leather, derby-type, thickness : 2 mm

Breathable micro-aerated inner lining.

Fastened with laces.

Removable antistatic and antibacterial insole

PU/Nitrile sole, resistant to oil and hydrocarbons, insulated up to 20 kV in dry conditions

**Protection :**

- Non-metallic toecap : 200 J, non-magnetic, lightweight
- Non-metallic flexible mid sole.



## TB 19

Put this reference to order

## Live Working Safety Boots 20 kV

Insulating boots that protect workers from risks of step voltage during live working operations with a maximum nominal voltage of 20 000V AC.

- + Made of dielectric rubber.
- + Hydrocarbons-resistant sole..
- + Individually tested at 13 000V.
- + Maximum leakage current : 7mA.

**Advantages**

Anti-puncture midsole made of high-tenacity fibres.

Non-metallic toecap.



## C99B-ISOL

Put this reference to order

## Safety Low Shoes S3 HRO with Dielectric Outsole up to 20 KV

**STANDARD**

EN ISO 20345:2013

ASTM F2413—20KV

**USE**

Recommended for applications in the electrical industry in dry conditions.

**ADVANTAGES**

HRO = heat resistance of the sole (300 °C during 1 min),

EH = Dielectric resistance of the sole : up to 20 kV (regarding ASTM F2412)

SRA = antislip profile TECHNICAL SPECIFICATIONS

Entirely non-metallic.

Low upper : water repellant full grain leather, derby-type, thickness : 2 mm

Breathable micro-aerated inner lining.

Fastened with laces.

Removable antistatic and antibacterial insole

PU/Nitrile sole, resistant to oil and hydrocarbons, insulated up to 20 kV in dry conditions

**Protection :**

- Non-metallic toecap : 200 J, non-magnetic, lightweight
- Non-metallic flexible mid sole.



## Newton

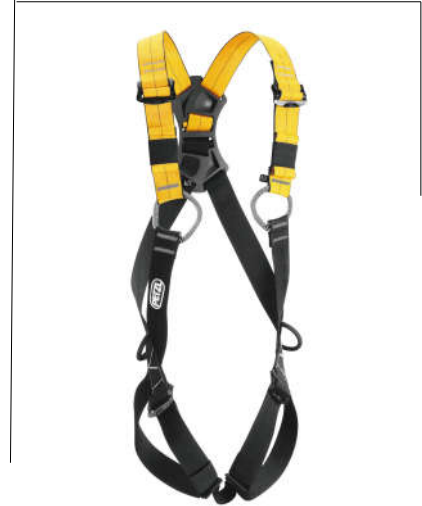
Put this reference to order

### Simple modular fall arrest harness for MV Overheadline daily works

Basic fall arrest harness is compatible for connection to a fall arrest system with its sternal and dorsal attachment points. The upper and lower straps are different colors to facilitate donning the harness correctly. The shoulder straps are equipped with self-locking Double-Back buckles for quick and easy adjustment.

- ◆ Upper and lower straps are different colors to facilitate donning the harness correctly
- ◆ A sternal and a dorsal attachment point for connecting a fall arrest system
- ◆ Shoulder straps equipped with self-locking DoubleBack buckles for quick and easy adjustment
- ◆ Two equipment loops with protective sheath
- ◆ Work positioning on the side attachment points is possible with the PAD FAST waistbelt
- ◆ Upright descent with the help of the LIFT spreader

References	C73000 1	C73000 2
Color(s)	black/yellow	black/yellow
Size	1	2
Waist belt	75-104 cm	97-125 cm
Leg loops	53-66 cm	55-75 cm
Stature	173-187 cm	180-195 cm
Weight	780 g	810 g



Specification:  
Sternal attachment point: yes  
Dorsal attachment point: yes  
Certification(s): CE EN 361, EAC

## Newton Fast JAK

Put this reference to order

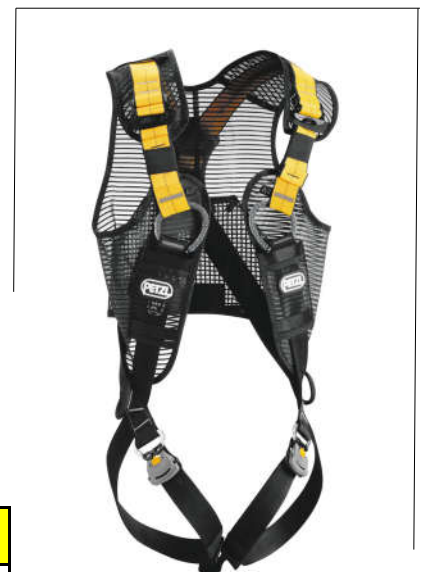
### Simple modular fall arrest harness with JAK vest

Basic fall arrest harness is compatible for connection to a fall arrest system with its sternal and dorsal attachment points. The JAK vest and the automatic FAST buckles make the harness easy to put on. The shoulder straps are equipped with self-locking DoubleBack buckles for quick and easy adjustment.

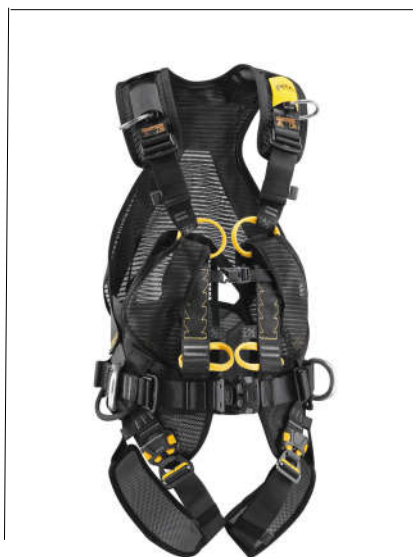
#### Description

- JAK vest facilitates proper donning of the harness
- FAST rapid buckles on leg loops allow the harness to be put on easily with both feet on the ground
- A sternal and a dorsal attachment point for connecting a fall arrest system
- Shoulder straps equipped with self-locking DoubleBack buckles for quick and easy adjustment
- Two equipment loops with protective sheath
- Work positioning on the side attachment points is possible with the PAD FAST waistbelt
- Upright descent with the help of the LIFT spreader

References	C73JF0 0	C73JF0 1	C73JF0 2	C73JFN 1S	C73JFN 2S
Color(s)	black/yellow	black/yellow	black/yellow	black	black
Size	0	1	2	1	2
Waist belt	68-95 cm	75-104 cm	97-125 cm	75-104 cm	97-125 cm
Leg loops	45-60 cm	53-66 cm	55-75 cm	53-66 cm	55-75 cm
Stature	165-180 cm	173-187 cm	180-194 cm	173-187 cm	180-194 cm
Weight	960 g	1020 g	1070 g	890 g	930 g



### Fall arrest and work positioning harness for HV



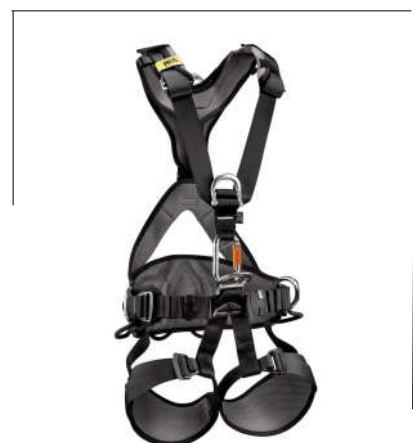
Fall arrest and work positioning harness that is easily donned thanks to its EASYFIT design. A vest ensures the harness keeps its shape and the FAST automatic buckles (waistbelt and leg loop) allow the harness to be donned with both feet on the ground. The VOLT harness' anatomical design and wide, semi-rigid waistbelt ensure comfort throughout the work day. Its LADDER CLIMB attachment point allows for ventral attachment of the fall-arrest trolley, thus ensuring optimal comfort during progression.

#### Specification

- LADDER CLIMB attachment point: for attaching the trolley of a rail or cable-based fall protection system
- Side attachment points: for attaching a positioning lanyard for use in double mode
- Sternal attachment point: for attaching a fall arrest system
- Dorsal attachment point: for attaching a fall arrest system
- Rear waistbelt attachment point: for attaching a restraint lanyard
- Certification(s): CE EN 361, CE EN 358, EAC
- Material(s): nylon, polyester, aluminum, steel

References	C72AFA 0	C72AFA 1	C72AFA 2
Size	0	1	2
Waist belt	65-80 cm	70-93 cm	83-120 cm
Leg loops	44-59 cm	47-62 cm	50-65 cm
Stature	160-180 cm	165-185 cm	175-200 cm
Weight	1955 g	2000 g	2080 g

### Comfortable harness for fall arrest, work positioning and suspension for HV Overheadline daily works



The AVAO BOD fall arrest, work positioning and suspension harness is designed for greater comfort in all situations. The X-shaped dorsal construction wraps to reduce pressure points during prolonged suspension. The harness also facilitates carrying and organizing work tools, with multiple equipment loops and retainers for attaching CARITOOL tool holders and TOOLBAG tool-holder pouches. The AVAO BOD harness has a specific architecture that allows the user to hang from the dorsal attachment point for a longer time in case of a fall. The harness has an integrated fall indicator on the dorsal attachment point and is fastened with a TRIACT-LOCK automatic locking carabiner. It is certified to North American and European standards. AVAO BOD features leg loops with DoubleBack self-locking buckles.

#### Specification

- Ventral attachment point: attachment for a descender or a positioning lanyard for use in single mode
- Lateral attachment points: attachment for a positioning lanyard for use in double mode
- Sternal attachment point: fall arrest system attachment
- Dorsal attachment point: fall arrest system attachment
- Rear attachment point on the waistbelt: restraint lanyard attachment
- Certification(s): ANSI Z359.11, NFPA 1983 classe III, CSA Z259.10, CE EN 361, CE EN 358, CE EN 813
- Material(s): nylon, polyester, aluminum, steel

References	C71AAA 0U	C71AAA 1U	C71AAA 2U
Color(s)	black/yellow	black/yellow	black/yellow
Size	0	1	2
Waist belt	60-90 cm	70-110 cm	80-130 cm
Leg loops	45-65 cm	45-65 cm	60-75 cm
Stature	160-180 cm	165-185 cm	175-200 cm
Weight	2055 g	2100 g	2180 g

### Grillon Hook

Put this reference to order

#### Adjustable work positioning lanyard with HOOK connector

The ULTRA VARIO's very powerful lighting for demanding, long-duration work. It has four constant lighting modes in order to adapt the beam to any situation: low intensity, close-range work, moving around, distance vision. Its great durability guarantees field reliability

##### Description:

- Headlamp keeps the hands free for work: maybe worn on the head with the headband, or mounted on a VERTEX (2011 version and later) or ALVEO helmet with removable plates (included)
- CONSTANT LIGHTING technology: guaranteed lighting performance that does not diminish during the entire rated burn time. Switches to reserve mode when rechargeable battery is nearly spent (minimum 1 hour at 43 lumens).
- Four modes adapt lighting to the situation: simple and convenient to use
- High performance rechargeable battery
- Rugged

##### Specification:

- Watertightness: waterproof (to 1 meter for 30 minutes) and dustproof (IP67)
- Weight: 370 g



### LIFT

Put this reference to order

#### Spreader for NEWTON harness (European version)

##### Description

Allows upright descent (for confined spaces)  
Triangular carabiners for easier insertion into harness slots  
Rigid structure keeps its shape around the head

##### Specifications

Weight: 520 g  
Colors: black/yellow  
Certification(s): CE



### ABSORBICA-Y International version

Put this reference to order

#### Double lanyard with integrated energy absorber, captive carabiner and MGO connectors

Double lanyard with integrated compact energy absorber, for continuous protection when passing intermediate anchors. It is available in 80 or 150 cm versions (without connectors).

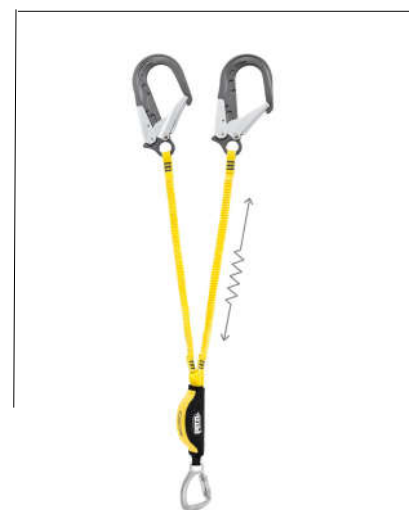
The 150 cm version has elasticated arms, to avoid hindering progression. Equipped with a captive carabiner and two MGO large-opening connectors, it is certified to U.S. and European standards.

##### Specification:

- Material(s): polyester, nylon, high-modulus polyethylene, aluminium
- Certification(s): ANSI Z359.13 12 feet, ANSI Z359.12, CE EN 355, CE EN 354, CE EN 362

##### Description:

- Designed for continuous protection when passing intermediate anchor points
- Abrasion resistance:
  - Durable zippered fabric pouch protects the energy absorber from abrasion or contaminants while allowing for regular inspection of the absorber
  - Lanyard and pouch reduce the risk of cuts and potential severing over edges
- Comes with captive steel carabiner with TRIACT-LOCK auto-locking system for attachment to the harness, and two MGO large-opening connector for connection to a metal structure
- Available in two lengths: 115 and 185 cm





### VERTEX® BEST

Put this reference to order



#### Comfortable helmet for work at height and rescue

With its strong chinstrap, the VERTEX BEST helmet sets the standard in head protection for workers at height. Its unventilated shell protects against electrical hazards and molten metal splash. Its six-point textile suspension ensures maximum comfort, and its CenterFit adjustment system adjusts the headband and keeps the helmet centered on the head. The VERTEX BEST is designed for optimal attachment of a PIXA or ULTRA VARIO headlamp, a VIZIR, VIZIR SHADOW or VIZEN protective shield, and hearing protection.

##### Technical specifications :

Head circumference: 53-63 cm

Weight: 455 g

Material(s): ABS, nylon, polycarbonate, high-strength polyester, polyethylene

Certification(s): CE\*, ANSI Z89.1-2009 type I class E

Meets requirements of the EN 397 and EN 12492 standard for impact protection. Meets the requirements of the EN 397 and EN 50365 standards for electrical insulation. Meets the optional requirements of the EN 397 standard for molten metal spray, lateral deformation and use in low temperature

### ALVEO BEST

Put this reference to order

#### Lightweight helmet for work at height and rescue

Featuring a strong chinstrap, the ALVEO BEST helmet is a very lightweight helmet for workers at height. Its unventilated shell protects against electrical hazards and molten metal splash. It is built to be lightweight and its CenterFit adjustment system adjusts the headband and keeps the helmet centered on the head. The ALVEO BEST is designed for optimal attachment of a headlamp, a protective shield, and hearing protection.

##### Specification :

- Head circumferences: 53-63 cm
- Weight: 350 g
- Material(s): ABS, expanded polystyrene, nylon, polycarbonate, high-strength polyester, polyethylene

##### Description :

- Optimal protection for work at height: impacts are absorbed by deformation of the expanded polystyrene liner its closed shell offers protection against electrical hazard and molten metal spray
- Strong chinstrap (more than 50 daN) limits the risk of losing the helmet during fall
- Build for reduced weight
- Comfortable to wear:- CenterFit adjustment system adjusts the headband and keeps helmet centered on the head.—comes with two sizes of headband foam
- Many accessories are available in order to adapt the helmet to its use: — PIXA or ULTRA VARIO headlamp (front and back slots) — headlamp with elastic headband (headlamp clips) — VIZIR, VIZIR SHADOW or VIZEN protective shield (side inserts) — hearing protection (side slots)



### LIFT

Put this reference to order

#### Eye shield with electrical protection for VERTEX helmets

##### Description

- Ultra-wrap shield completely protects face against danger of an electric arc
- Mounting inserts for easily installation on VERTEX
- Pivots quickly from work position to storage position on top of the helmet
- Scratch- and fog-resistant

Weight: 180 g

Certification(s): CE EN 166, 1B78, CE EN 170, 2C-1,2, ANSI Z87.1-2010, GS ET-29, classe 1



### ULTRA®VARIO

[Put this reference to order](#)

#### Ultra-powerful multi-beam headlamp with rechargeable

The ULTRA VARIO's very powerful lighting makes it perfect for demanding, long-duration work. It has four constant lighting modes in order to adapt the beam to any situation: low intensity, close-range work, moving around, distance vision. Its great durability guarantees field reliability.

##### Description:

- Headlamp keeps the hands free for work: may be worn on the head with the headband, or mounted on a VERTEX (2011 version and later) or ALVEO helmet with removable plates (included)
- CONSTANT LIGHTING technology: guaranteed lighting performance that does not diminish during the entire rated burn time. Switches to reserve mode when rechargeable battery is nearly spent (minimum 1 hour at 43 lumens).
- Four modes adapt lighting to the situation:  
Simple and convenient to use
- High-performance rechargeable battery
- Rugged

##### Specification:

- Watertightness: waterproof (to -1 meter for 30 minutes) and dustproof (IP 67)
- Weight: 370 g
- Certification(s): CE



### ACCU 2 ULTRA

[Put this reference to order](#)

#### Rechargeable battery for ULTRA VARIO or ULTRA VARIO BELT headlamps

High performance 2600 mAh rechargeable battery for ULTRA headlamps.

##### Description:

- Lithium-Ion technology offers high capacity (2600 mAh) with reduced weight and excellent performance at low temperatures
- Energy gauge allows monitoring of battery's charge level
- Quick connection system for instant battery removal
- Charges with the wall charger included with ULTRA VARIO headlamps.

##### Specification:

- Recharge time: 3 h
- Number of charging cycles: 500
- Watertightness: waterproof (to -1 meter for 30 minutes) and dustproof (IP 67). No maintenance required after immersion
- Weight: 165 g



### ULTRA QUICK CHARGER

[Put this reference to order](#)

#### Quick wall charger for ACCU 2 ULTRA and ACCU 4 ULTRA rechargeable batteries

EUR/US compatible quick wall charger for ACCU 2 ULTRA and ACCU 4 ULTRA rechargeable batteries

##### Description:

- 100/240 V EUR/US compatible wall charger
- End-of-charge indicator light

##### Specification:

- Certification(s): CE
- Comes with interchangeable European and North American wall charger



## Working on Power Systems

### Voltage detector

Before working on a power system that for reasons of safety must be de-energized, the worker in charge must ensure that the part of the system being worked on is isolated and grounded, and locked out as required by this Regulation. Barriers or distinctive identification must be used to differentiate high voltage electrical equipment which has been de-energized for safety reasons from similar energized equipment at the work location if lack of such identification would result in undue risk to workers.



### LOGOUT— TAGOUT

Isolating devices used for safety protection guarantees must provide for visual verification of the opening of the isolation point. Lockable isolating devices must be locked in the position or condition required to protect workers before work commences under a safety protection guarantee. A distinctive "DO NOT OPERATE" tag must be placed securely on each isolating device used for a safety protection guarantee.

### EARTHING and SHORTCIRCUITING

After a safety protection guarantee is in effect, the equipment to be worked on must be tested to verify isolation before grounding and blocking begins. After testing to verify isolation, the person at the worksite responsible for each crew must verify that required grounding and blocking devices are in place before work begins. Grounding and blocking of any equipment that may be hazardous to workers must be carried out as close as practicable to the worksite. If grounding and blocking is not safe or practicable, written safe work procedures acceptable to the Board must be followed. Grounding and blocking devices may be removed for the purpose of conducting tests.

If a safety protection guarantee involves 2 or more power systems, or 2 or more persons in charge of different parts of a system, appropriate written procedures must be established and followed to ensure that any safety protection guarantee will be effective.



## UNITAG

Put this reference to order

### Phase Tester for LV Network

UNITAG is a unipolar detector designed to test the presence of phase on insulated or bare LV conductors. The level of detection is indicated by a LED bargraph and a beeping sound which speed increases as device approaches a live source. It is commonly used for detecting stray voltage on poles and cross arms, conductor disconnection on overhead insulated LV conductors....

UNITAG will not replace a standard "proving dead" device but is an ideal complement to bipolar LV detector.

- Sound and light alert on voltage presence.
- UNITAG 1000V for using on networks.
- Can be used by hands or on insulating stick.
- Indication of detection level.
- Tip length designed for access to LV panel and test point.
- Audible beeping speed proportional to the level of detection.
- Visual indication of level of detection on a bright LED bar graph.
- Automatic self-test when switched on with green LED indication.
- Multi purpose detector : street light, insulating twisted cables, rescue team, fire fighters...



UNITAG can be combined with a telescopic stick for a cautious approach to potentially dangerous work or an anomaly

## VECTOR > MV

Put this reference to order

### Multi-sensor, multi-light MV voltage detector

**Use :** device designed to test for the absence of voltage on MV systems (indoor and outdoor).

- ◆ Its multiple sensor technology and microcomputer enable it to read the same voltage, whatever the network configuration and regardless of changes in temperature.
- ◆ Indicator lights on the side allow for easy reading in any configuration
- ◆ Adjusted to true voltage
- ◆ AC voltage range: can be adjusted from 3 to 80 kV
- ◆ Comes in a shoulder bag, with 40 mm V-shaped electrodes and 40 mm straight electrodes.



IEC 61243-1 2009	
REFERENCE	VOLTAGE RANGE
VEC0310	3 kV to 10 kV
VEC1036	10 kV to 36 kV

### LECTOR

Put this reference to order

#### Medium Voltage Indicator

**Standard:** Complying to European Directives CE and marking

**USE:**

This device is designed for medium voltage electrical network analysis

In the nominal voltage range of the device, this will give an indication of the value of any voltage level present on networks or substation

**ADVANTAGES:**

Accuracy setting and test on real voltage

Continuous self-test all the time the green light is on

Bright visual indications on bottom and sides

User remote displaying line to ground and nominal AC voltage with up to 30m distance between modules

Easy battery replacement

AC Voltage range from 3 to 36 kV, with frequency 50 and 60 Hz



### TRANSCHECK

Put this reference to order

#### Distribution Transformer Tester

The TRANSCHECK is a test instrument designed for distribution networks transformers from 5 kVA to 3MVA

It can determine the presence of short circuits or open circuits in the distribution transformer primary winding & also short circuits on the secondary winding.

The TRANSCHECK is designed to be operated without disconnecting the transformer's secondary windings from their loads.

**ADVANTAGES**

De-energized transformers from 5 kVA to 3 MVA

Measurement by contact on the transformer primary bushing

Detects primary transformer short-circuit, open circuit & secondary short circuits

Visual and audible warning

Automatic self-test & auto shut-off

Low battery indicator

Transformer size supported: 5 kVA to 3MVA



## TAG 220

Put this reference to order



### Voltage Detector for Substation and OHL

These devices feature an exclusive multi-sensor technology and come with an internal calculator, enabling them to provide at once :

- a wide safety margin for voltage detection, including in difficult configurations,
- better immunity to the influences of other voltages close to the point tested
- Designed to check absence of nominal voltage by direct contact to the line
- It is usually used prior to earthing operation of a three-phase voltage system

## TAG 330



### Electronic HV no-voltage tester, from 50 to 765 kV

Devices features an electronic detection system with miniature gas discharge tubes.

This original configuration gives it very high performances, especially in the case of high induction and/or parasitic electric fields.

Voltage detector with permanent standby by a built-in self test

Stability of detection sensitivity and threshold

High electromagnetic immunity

Sound and light indication to face most environment of work

Device designed to test for the absence of voltage on HV systems up to 735 kV

Indication of the absence of voltage and correct operation of the device by a green LED

Can be used in all weather

## HTAG



### 50 - 765 kV Voltage Detector

Designed to check absence of nominal voltage in a circuit of high voltage and very high voltage systems from 50 kV to 765 kV

The HTAG detects any nominal voltage on overhead lines or substation

The HTAG addresses all the needs and comment collected from users and experts in recent years.

Optimum sound indication (100 dB)

Direct access to the battery and sealed electronics compartment.

Functional reliability and optimal light indication



## C-PROBE LV

Put this reference to order



### Ammeter for Low Voltage single core Insulated cables "BLUETOOTH LINK FOR SMARTPHONE READOUT"

#### USE:

This device is designed to provide operators with a safe means to measure current on insulated LV overhead lines up to 2000A. During trouble shooting operation the operators need to pin point the reason of the failure like blown fuses or overloaded circuit. With the right insulating pole, the operator can reach overhead transformer or cables. The hook shaped sensor help to de separate the conductor to be measured from close by ones.

#### ADVANTAGES:

- To improve access to cables :
- The sensor is semi-flexible to be inserted between cables without stressing them.
- Adaptors for insulating telescopic sticks (sunrise/hook pole or hexagonal APV).
- To improve night use :
- Bright yellow coating of the sensor to be visible among black cables.
- Light on the top of the housing to light the sensor and the area of measurement.
- Back light of the LCD display and function « HOLD » to record the measure.
- Easy and secure access to the battery.

#### TECHNICAL SPECIFICATION:

Range : 2000 A	Frequency : 50 et 60 Hz
Sensor : 140mm; opening 45 mm	Functions "Track" and « HOLD »
Field of use LV insulated single core cables	Battery: 2 x 1,5 V - CEI / IEC AA
Protective soft carrying case	Dimensions : 650 x 140 mm Weight : 850 g

## TP13CS

Put this reference to order



### Voltage detector 5-36 kV with compact stick

#### USE:

Voltage detector with compact insulating stick to check the presence of the nominal voltage by direct contact inside MV substations.  
Specially adapted for Ø 50 mm pole access holes in MV substations.

#### TECHNICAL SPECIFICATION:

- Detector :
- Use : indoor
  - Voltage range : 5 kV to 36kV.
  - Frequency : 50 Hz or 60Hz
  - Integrated self monitoring function that checks the integrity of the electronics as well as the battery level
  - Indication of voltage presence : red light signal and audible signal
  - Indication of proper functioning : green light signal
  - Supply : 9 V alkaline battery 6LR61
  - Sturdy white polycarbonat casing
  - 40 mm Y-shaped universal contact probe (straight, V-shaped and hook probes are available upon request)
  - Temperature range : -20°C to +40°C
- Stick :
- Red telescopic stick with 6 elements
  - Soft handle with handguard

Length with extended stick : 900mm  
Length with folded stick : 320 mm  
Delivered in a soft case with contact probe D40.

## ALADIN

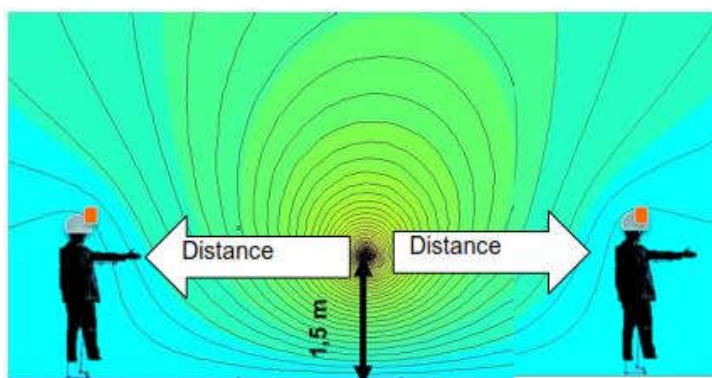
### Individual Voltage Alarm with

ALADIN is designed to provide extra safety level for workers operating near energized equipment (during maintenance, rescue operations, painting, pruning,...) in electrical environment. This device combines a head light and a personal voltage alarm



Example of situation where ALADIN provided an efficient warning.

- Misunderstanding: the operator approach the wrong spot
- Voltage unexpected return: Mistake during an operation on disconnected network
- Involuntary approach: Quick move in direction of energized area during operation
- Diversion: the operator is diverted by a bad news or urgency and moves toward a high potential energized conductor unconsciously



Reference	Voltage Range
ALADINMVOHCEFC	10— 69 kV
ALADINHVCEFC	50— 400 kV

## TT 7415

### Insulating Stick and Rope Checking Device



**Use :** The TT7415 insulation tester can be used to check alternatively whether the dielectric properties of a material are sufficient and consistent and to locate potential insulation faults.

It has the ability to find internal faults, and is therefore not limited to identifying surface faults. It provides in-depth testing, making this a unique device, especially for ropes.

Insulating rod, Ø 10 to 15 mm

Insulating sticks and tube, Ø 32 - 39, 51, 64 and 77 mm

Rope, Ø 8 to 13 mm

#### For Detecting of Pole, rod and rope insulation failure

- for : - rods 10 mm and 15 mm
- - poles 32, 39, 51, 64 and 77 mm
- - ropes from 8 mm to 13mm
- test position
- power supply by refillable battery
- adapter 230 V 50 Hz
- delivered in case with adapter and test tube
- dimensions (device alone) : 190 x 120 x 135 mm
- approx. weight (device alone) : 1.8 kg

## TTR2 / TTR2LW

### Hot Stick Tester



#### USE:

- The TTR2LW detector checks the insulating quality of your poles
- The tester does not only identify surface defects. Its capacitive principle of measurement allows to detect internal and external insulation faults.
- If green indication appears, the dielectric properties of the pole are in accordance to the IEC 60855-1, 100kV by 30cm.
- It provides in-depth control which makes it a unique device.

#### Specifications:

Calibrated for the following diameters:

- rods Ø10 mm and Ø15 mm
- poles Ø28- 32, Ø39, Ø51, Ø64 and Ø77 mm
- ropes Ø8 mm to Ø14 mm

- Power supply by rechargeable battery
- Adapter 100-240 V 50/60 Hz
- Delivered in robust carrying case with adapter and the tube



#### Advantages:

The TTR2LW is a mobile device designed for field testing, allowing to inspect the electric insulation's defects or cleanliness on equipment before using, or within the preliminary frame of the periodical and inspection (minimum requested).

#### Secured information:

- Full internal self-test which tests all active parts of the tester.
- Self test with external test tube.
- Light indication bar graph with crossing the green area to red in case of default.
- Rechargeable battery operated device.
- Low battery indication and battery charge indication.
- Compact and robust.
- 100% safe device => no danger for the user
- Less than 5 minutes to test your hot sticks on the field

## PVD

Put this reference to order

### Proximity Voltage Detector

The PVD is a new water-proof design tool for checking the presence of AC high and low voltages.

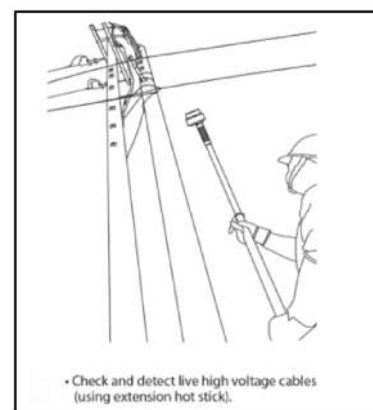
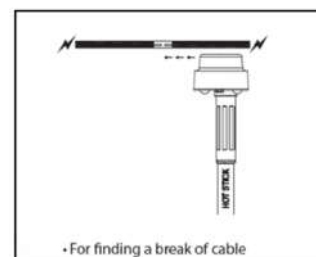
- It has more than eight voltage detection settings from 240 Vac up to 500 kV ac (depending on version)

#### Advantage

- PVD provides a proximity detection of AC voltages with an internal pickup sensor plate
- Voltage detection range up to 500 kV
- Could be use with Penta Pole hot stick for high voltage detection (Insulating stick to be ordered separately)
- High visual and audible indication

#### Technical Specification

- Protection class : IP65
- High bright LED visual indication
- 3 LED indicators in a circle for easier viewing in any directions (360° LED indication)
- More than 10 versions of voltage setting
- With the longer shelter to make the 3 LED indicators brighter under the sun
- Sound indication
- Easy-to-prove method
- Self-test function
- Power source : 1.5V "C" type battery x 3
- High impact nylon casing
- Non-contact work by proximity
- Universal end fitting
- Suitable for indoor and outdoor use
- Operating temperature : -10°C ~ 50°C
- Storage temperature : -20°C ~ 60°C
- Humidity : 85 % R.H. at 40°C
- Easy access to batteries
- Provided with disconnect hook and fuse extractor
- Delivered in robust carrying case
- (dimension : 350mm x 265mm x 117mm)
- Weight: ~600g



Reference	Sage Ref	Voltage Range (KV)	Number of	Voltage Level (KV)
PVD500L08A	281640	0.24-500	8	0.24 - 4.2 - 15 - 69 - 115 - 230 - 345 - 500
PVD500L10B	281648	0.24-500	10	0.24 - 3.3 - 11 - 22 - 33 - 66 - 110 - 220 - 330 - 500

\* Specific range on request

PDD

Put this reference to order

## PDD - DISCHARGE STICK



Insulating stick (telescopic or with sections), equipped with a discharge resistor, with or without cable and an earthing clamp (PTS38)  
Available without discharge resistor.

Dimensions of the discharge resistor : 330 x 51 x 51 mm  
Weight of the discharge resistor : 500 g

Reff	Resistor Value ( $\Omega$ )	Pole Dimension		Weight (kg)	Resistance Dimension		Weight Resistance	Section and lenght of the cable	
		Folded (mm)	Unfolded (mm)		L (mm)	$\varnothing$ (mm)		S (mm <sup>2</sup> )	L (m)
PDDS001	---	1795	3245	4	---	---	---	16	10
PDDS002	---	1500	---	2.5	---	---	---	16	3
PDDS003	---	1500	---	3	---	---	---	16	5
PDDS006	---	---	1350	3	330	51	0.5	16	3.5
PDD001	115	2155	3605	4.5	330	51	0.5	16	10
PPD002	6000	2155	3605	4.5	330	51	0.5	16	10
PDD003	10000	1300	---	4	330	51	0.5	16	10
PPD004	1500	2460	4220	---	330	51	0.5	35	10
PDD005	15000	2460	4220	---	330	51	0.5	35	10
PDD006	6000	---	1700	3.5	330	51	0.5	16	3.5
PDD007	2500	2250	2250	---	330	51	0.5	25	5

TE17AUD - TE12AUD

Put this reference to order

## Rope-Operated Insulating Extension Ladders With 2 or 3 Sections

### Use :

Ladder for live working below 1000 VAC/1500 VDC

*Rugged and reliable construction: the ladder is assembled by bolting, allowing the replacement of rungs and uprights.*

*Improved ergonomics through the use of rectangular composite profiles with rounded edges.*

### SPECIFICATIONS

Automatically engaging aluminium double-safety rung lock.

Ø 10 mm extension rope, strength 1800 daN.

Anti-slip rubber feet.

Guided by nylon-coated low-friction guides.

Ribbed anti-slip aluminium rungs, tri-oval shape, inclined to have an horizontal foot position.

Anatomic 250 mm distance between rungs making it possible to support the knee and make work safer and more comfortable.

Standard wall wheels make it easier to extend the ladder and protect the fibreglass surface.

The uprights are made of fibreglass/polyester composite material.

The material offers high mechanical performance.

A fibreglass surface finish makes them more efficient and improves UV resistance.

In addition to its insulation qualities, the material is non-rotting and lightweight for user convenience.

The optional V-shaped pole support has an anti-slip rubber profile.

### ADVANTAGES :

- Rugged and reliable construction: the ladder is assembled by bolting, allowing the replacement of rungs and uprights.
- Improved ergonomics through the use of rectangular composite profiles with rounded edges.
- New tri-oval shape rungs.





## PENTAPOLE

Put this reference to order

### PPOL- Multi-purpose telescopic insulating stick

The Pentapole insulating stick is FAMECA's new telescopic stick for medium voltage overhead networks.

Ergonomically designed, five-sided grip fits snugly in the hand. The five-sided shape prevents the parts from turning on each other. Very lightweight stick meaning your operations require less effort. Very good flexural rigidity provides optimum control in the different uses.

Made of between 2 and 9 segments, this stick adapts to all types of uses and can reach great heights, up to 12m. With a view to making the stick more comfortable to use, we have optimized the pentapole weight, achieving a saving of up to 13% compared to other sticks.



#### PENTAGONAL SHAPE, ERGONOMIC DESIGN :

The curved pentagonal shape is unique and provides a better grip than other sticks on the market. It gives the users perfect dexterity and enables them to maintain optimum control. The stick's five sides fit perfectly in the palm of the hand in the working position.

Also, its special shape prevents the tubes rotating on each other, which considerably increases the effectiveness of the technician's work during different operations on overhead lines.

The pentagonal shape is the result of a great deal of research into the best way to combine ergonomics and mechanical strength.

This shape provides a high rigidity and the ability to transmit torsional efforts during tightening or loosening operations.



#### PUSHBUTTON : SIMPLE OPERATION

The sections are locked together automatically when the stick is extended by a large and very robust red button.

Unlocking to retract the stick simply involves pressing the button, with no risk of trapping fingers or gloves in the mechanism.



#### OUR STICK RANGE

Reference	Number of sections	Length when extended		Length when retracted		Average weight
PPOL3/035U	3	3,80 m	12' 5"	1,45 m	4' 9"	1,89 kg
PPOL4/050U	4	5,00 m	16' 4"	1,54 m	5' 0"	2,48 kg
PPOL5/060U	5	6,40 m	21' 0"	1,60 m	5' 2"	3,16 kg
PPOL6/075U	6	7,80 m	25' 7"	1,67 m	5' 5"	3,96 kg
PPOL7/090U	7	9,20 m	30' 2"	1,74 m	5' 8"	4,70 kg
PPOL8/105U	8	10,60 m	34' 9"	1,80 m	5' 10"	5,52 kg
PPOL9/120U	9	12,00 m	39' 4"	1,84 m	6' 0"	6,35 kg

Sticks come with a universal end fitting and an operating hook.

If you would like another type of end fitting, complete the reference with the code corresponding to the end fitting required (in this case, the stick comes without the operating hook).

**APV** : multi-purpose end fitting, 12 mm 6-sided with automatic locking

**U** : notched universal end fitting

**B** : bayonet end fitting

**Other end fittings** : on request, please enquire



## AUTOCLAM

Put this reference to order

### Earthing to post for Overhead Lines



#### USE :

Three-phase (or more) device for short-circuiting and earthing bare overhead lines, with an allowable short-circuit current of 8 kA/1 s to 17.5kA/1s. Function : earthing for overhead lines with 2 to 5 conductors.

#### Specifications:

The device is composed of :

- 3 clamps GDC24
- 3 short-circuiting cables
- 1 earthing cable
- 1 earthing clamp

According to models, the device can also be equipped with an insulating stick with soft cover, an earthing rod and a transport case.

Standard models :

Short-circuit cables : 35 mm<sup>2</sup>, 2.75 m

Earth cable : 16 mm<sup>2</sup>, 16 m

Clamp holder GDC24 equipped with a universal end fitting. This allows the angle to be adjusted, facilitating installation from the pole.

Isc : 8 kA/1s

The short-circuit cable can be aluminium instead of copper (please enquire).

#### ADVANTAGES :

The stackable or "piggy-back" design of the GDC325 removes the need for bulky standard clamp holders and can accommodate 2, 3, 4 or 5 clamps. Weight of one line clamp: 0.560 kg

Ergonomics: all the clamps are in line, making it easier to adjust the position of the device on the cable.

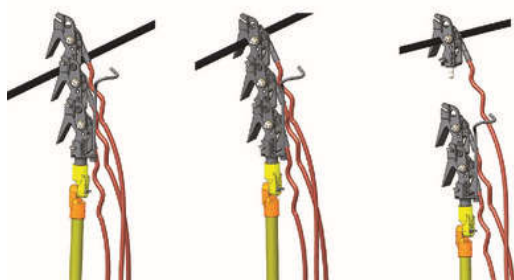
Patented clamp locking system : only the top clamp can be activated. The clamps are automatically released as soon as they are locked onto the conductor. This allows earthing to be done in the right sequence with no risk of error.

The upper surface of the clamp nose is lined up with the jaw of the clamp above it. Each clamp facilitates the installation of the next clamp up on the cable.

The clamps are retrieved using the removal hook fixed onto the clamp holder adapter.



### SETTING UP



### DISMANTLING



EY3221NG

Put this reference to order

## Earthing and short-circuit equipment for overhead lines, 8kA/1s

### USE :

The earthing and short-circuiting device EY322NG is designed for bare MV overhead lines with 3 cables

Installation from the pylon or from the ground.

Clamps MT330N from the device are spring clip with prior armament allowing its automatic clamping on the conductor.

They are made of a body and a mobile jaw in aluminum alloy.

The plate PEY3AP in aluminium can support the 3 clamps MT330N. It is equipped with an APV fitting to be fixed to an insulating stick and a hook for removing the clamps.



Spring-loaded clamps for overhead lines for 3 to 32 mm conductor diameters.

Max Isc : 8 kA/1s or 13 kA/1s according to model.

The device includes :

- 3 clamps MT330N connected by 2 short-circuiting cables,
- 2 short-circuiting copper cables, cross-section 35 mm<sup>2</sup> or 50 mm<sup>2</sup>, length 2.25 m or 2.75 m
- 1 reel for earthing cable (T7021616) equipped with earthing clamp for earthing rod and with earthing copper cable, cross-section 16 mm<sup>2</sup>, length 16 m,
- 1 plate PEY3AP for 3 clamps equipped with an APV fitting and a hook,
- 1 hexagonal earthing rod, ref.701, length 1 m,
- 1 insulating stick TR276APV

The set is delivered in :

- 1 metal case TD386
- 1 waterproof canvas soft case HTR11100 containing the stick and the earth rod



### SETTING UP



### DISASSEMBLING



PIMT ( MV Dead Underground Network )

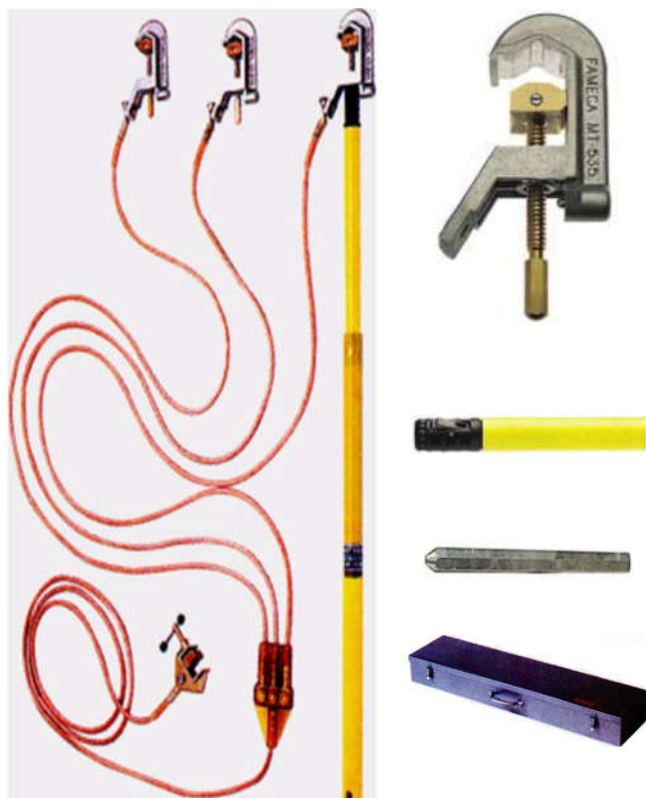
Put this reference to order

**Earthing and short-circuiting device for MV substations**

**IEC 61230**

Standard composition:

- ◆ A set of 3 identical clamps with AP end fitting (reference of choice)
- ◆ A TRIFURCATION kit: set of extra flexible sheathed copper jumper cables with sealed cable lugs, connected by a junction block. Length of short-circuit cables: 0.8 m Length of earth cable: 2 m
- ◆ An earth clamp, capacity  $\varnothing 6$  to 27 mm / flat surface 0 to 25 mm / hexagonal 19 mm
- ◆ 1 2-part telescopic insulating stick, length when extended 2 m
- ◆ A metal case



ICC	Trifurcation : Short circuit cable section and Earth cable section
8 kA/1s	35 mm <sup>2</sup>
8 kA/1s	35 mm <sup>2</sup>
13 kA/1s	50 mm <sup>2</sup>
13 kA/1s	50 mm <sup>2</sup>
14,5 kA/1s	sc: 70 mm <sup>2</sup> / earth: 35 mm <sup>2</sup>
8 kA/1s	35 mm <sup>2</sup> (lgth sc cable = 2 m, earth = 5 m)

Model	Clamp set capacity
PIMT66	Cylindrical conductors $\varnothing$ 5-35 mm
PIMT76	Cylindrical conductors $\varnothing$ 5-35 mm Flat conductors 16-40 mm and 5-40 mm
PIMT610	Cylindrical conductors $\varnothing$ 5-35 mm
PIMT710	Cylindrical conductors $\varnothing$ 5-35 mm Flat conductors 16-40 mm and 5-40 mm
PIMT49	Cylindrical conductors $\varnothing$ 5-35 mm
PIMT48	Cylindrical conductors $\varnothing$ 5-35 mm Flat conductors 16-40 mm and 5-40 mm



## HV Earthing Set

Put this reference to order

### 275 KV EARTHING SET FOR OVERHEAD LINES



#### Earthing set for 70-150 KV system / One set includes :

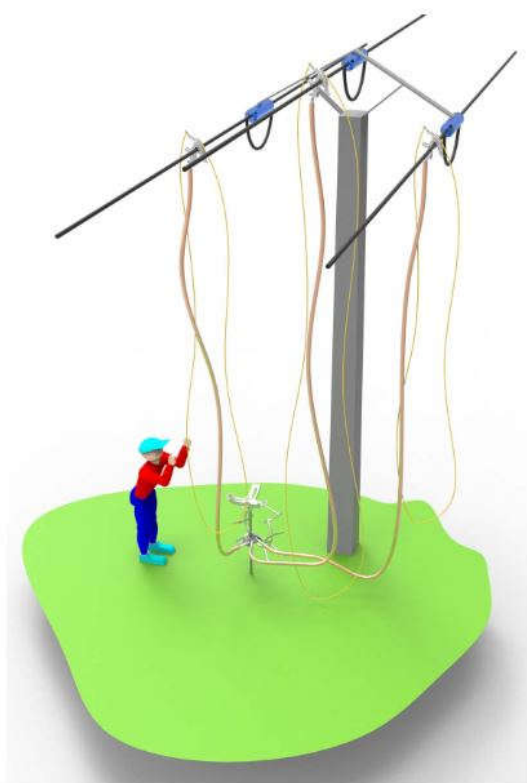
- ◆ 1 insulating fiber glass stick made by tube by epoxy resin in 2 elements with female DIN bayonet type head – Total length 4.10m - ref. PRE2-400
- ◆ 3 conductor clamp with Bayonet type DIN connector ref. (B) for clamping diameter 15 to 60 mm on OHL-over head lines with Icc max.31,5KA/1s (weight 1,3Kg/clamp )
- ◆ 3 copper earthing cable 70mm<sup>2</sup> - length 10 meter each – ref.TFK7010
- ◆ 3 earth clamp ref.N3B8 –clamping capacity 30 mm / Icc 40KA/1s (weight 1 Kg/clamp)
- ◆ 1 carrying bag for above – ref.S520SF
- ◆ total weight for earthing equipment : 24 Kg
- ◆ 1 soft carrying bag for stick – ref.H32

Comply to IEC 61230 and IEC 60855 international standards

GWIR8HP

Put this reference to order

## Earthing device using insulating rope for bare MV overhead lines



### Use:

This clamp is placed and unhooked from the ground using an insulating rope passed over the conductor. The clamp is raised onto the conductor by pulling on the 1st rope. The clamp is unhooked by pulling on the 2nd rope. The rope can be passed over the conductor using an insulating stick fitted with the MAGICROU.

### Advantage:

Ease of use on all types of terrain without ascent. Automatic release without manual tightening. Earthing operations up to heights of 12.5 m from the ground.

### Characteristics

Spring clamp for conductors  $\varnothing 3$  to  $\varnothing 32$ mm

Maximal short-circuit current : 8 kA/1s

The device includes:

- 3 clamps PAC332SC
- 1 cable reel with 3x15m of copper braid, 35mm<sup>2</sup> an earth clamp
- 3x30m of insulating rope (CI30M), with 3 cable reel (ENRCC)
- 1 plate to support the clamps after armement and before installing (this accessory helps you to no longer touch any metal parts when installing the 3 clamps)
- 1 earth rod (701)
- 1 insulating telescopic stick (PPOL8/105USC)

The set is delivered in:

- 1 soft bag containing the cables, clamps and accessories
- 1 soft bag containing the earth rod
- 1 soft bag containing the stick



DMTBTT

Put this reference to order

## LV Short-Circuiting and Earthing Device Fuseboards and Cabinets

### USE:

Portable device for earthing and short-circuiting a panel board or cabinet in a LV network equipped with NH00, NH1, NH2, NH3 or NH4a fuse links.

### SPECIFICATIONS:

Trifurcation kit with crimped central connector sealed by heat shrinkable tubing :

- 3 phase cables L1, L2, L3, cross-section 16 to 50 mm<sup>2</sup>, variable length (see table of references or can be made to measure) equipped at the ends with screw-type connections,
- 1 earthing cable, cross-section 16 to 50 mm<sup>2</sup>, variable length (see table of references or can be made to measure) equipped at the ends with a lug with a stud hole  $\varnothing$  of 10 mm.

NB : This trifurcation kit is usually made with IEC 61138 extra flexible transparent cable, but can also be HO7RNF (on request).

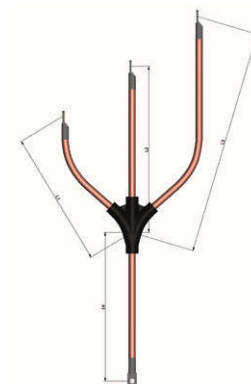
- |  |  |
|--|--|
| - Fuse links with M10 thread : ref. SPH00    | - Fuse links with M10 thread : ref. SPH123   |
| - Fuse links with M12 thread : ref. SPH00TW  | - Fuse links with M12 thread : ref. SPH123TW |
| - Insulating operating handle : ref.MIEBTMAY | - Earth clamp : ref.ETEBTMAY                 |
| - Storage case : ref.CTEBTMAY (optional)     |  |

Standard quantity of SPH123 : 3

Standard quantity of SPH00 : 3

### ADVANTAGES:

New design for the fuses : the fuses are now integrating a keying system that makes them impossible to be plugged in the wrong way.



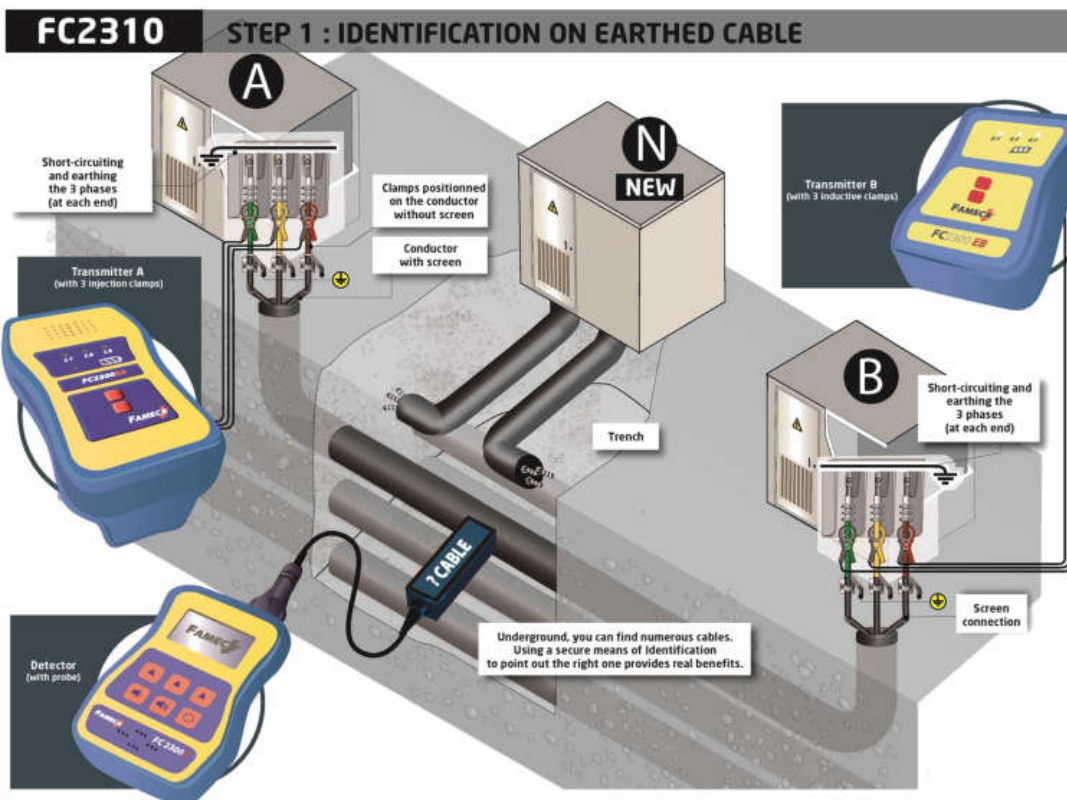
FC2310

Put this reference to order

## CABLE, PHASE IDENTIFIERS FOR DE-ENERGIZED WORKS: CONTINUITY TESTING, PHASING, COMMISSIONING NEW NETWORKS PRIOR TO RE-ENERGIZE THEM LV & MV

When a new connection is needed on an underground cable, following a fault location (fault repair), As part of scheduled works, the identification of de-energised cables is part of the safety procedure. And The purpose of safety procedures is to ensure that the network operator and the works supervisor Have definitely identified the part of the network to be modified and have taken all the measures possible to avoid injury to people and damage to the installations.

The safety procedure, in the case of a new connection, requires both "Earthing" and "Certain identification". Network operators wanted to have a means of identifying cables, one that is compatible with the safety procedure, i.e. with earthing. In practice, removing earth connections means extra toing and froing on the site during each phase of the work. This more complex procedure did not meet the regulatory requirements and generated a greater risk of error.



With FC2310 This operation does not require any extra movements to and from the site It means that the necessary information is available as soon as the lockout-tagout procedure is completed, it enables the installations to be transferred from operator to the "work" team simply and in one go. Unlike existing devices the signal are injected into and confined to the three phase conductors. No signal circulates in the earth circuits as the sum of the currents injected is always zero. No signal can be induced on a parallel cable as the sum of the currents circulating in

the cable is always zero.

By definition of the demand, the identification of the cable is no longer an exception from the safety procedure (earth connection left in places). Since then, the French regulations have adopted, as mandatory, a new procedure concerning the no-voltage testing of cables, including :

Pre-identification with a device like the FC2310

The no-voltage test itself by spiking and cutting the pre-identified cable

Checking of the continuity between the earth connection and the section of the pre-identified and cut cable, using the FC2300 type device

These three operations together are known as :CERTAIN IDENTIFICATION

After the operation to pre-identify MV cables offline, the **PICOU** allows you to test for absence of voltage on the cable. If there is a voltage, the picou limits the short circuit by creating a single phase fault. The cable can then be cut in total safety

FC2310

Put this reference to order



#### STANDARD:

Specific design complying with current safety regulations related to operation and access to electrical de-energized networks and installations.

#### USE:

This cable identifier is designed to work on a 3 phase de-energized cable short-circuited and earthed at both ends.

This cable identifier is in line with the safety procedure called «**SECURE IDENTIFICATION** » and for this provides:

- Cable identification between its ends, in a trench among other cables energized or not, before spiking and cutting
- Checking of continuity between two ends of this cable before and after cutting on both sides of the cut.

Positive identification of the 3 phase conductors of this cable before and after cutting on both sides of the cut

#### ADVANTAGES

**SECURED SIGNAL:** coded and confined between cable shorted ends, the transmitted signals cannot be jammed or detected on nearby cables.

**SECURED & PAIRED VOICE MESSAGE:** messages related to the different transmitters can also be recorded on the receiver. The right message will be delivered upon confirmed reception of cable identification signal to give a secure labeling of each information.

**SIMPLE SIGNAL INDUCTION:** done by 3 transducer clamps on cable terminals at one of its ends as the cable is grounded and short-circuited at both ends (Earthing switch or temporary grounding at both ends).

**ALL INFORMATION NEEDED AVAILABLE PERMANENTLY** along the cable as soon as the transmitter is connected. No need of commuting between job site and feeder pillar or substations until the end of the job.

**NETWORK CONFIGURATION CHECKING BEFORE RESTORATION:** With the use of the second transmitter B included in the pack, identification of phase conductors can be directly performed on both ends of the identified and cut cable and at the new switchgears, without having to move the transmitters and with identification of the source (A or B, with 3 possible codes).



**DETECTOR (D) WITH LCD DISPLAY:** Choice of the function on the receiver according to the expected information:

- Identification of energy cable.
- Identification of phase conductors at opposite cable end and at both sides of the cut
- Identification of phase conductors on both reconnected cable segments before switching them back live
- Checking conductor continuity between site and terminal equipped with transmitter.

#### UNIVERSAL POINTER PROBE:

**POINTER:** the probe pin points the right cable beside and among many others.

**UNIVERSAL:** Identification of cable including XLPE/paper-lead/steel armored cables up to 10 km

**UNITS BATTERIES:** can easily be replaced by the user

#### TECHNICAL SPECIFICATIONS

**Convenient for:**

- Paper-lead or dry cables, steel armored cables up to 10 km
- Overhead and underground

#### Availability:

- The transmitter can operate on battery or mains supply
- Battery charging automatically stops when fully charged
- Device packaged in 3 separated robust plastic coated foamed bags
- Carrying in watertight wheeled yellow case



### FC3000

Put this reference to order

#### Live LV feeder and cable identifier - 6 to 12 feeders



Simple to use, this device enables a technician working alone to **quickly identify and check the substation, the feeders (from 6 to 12 feeders) and the phase supplying each customer connection**, in seconds !

Applications :

- Checks the network layout in seconds while maintaining energy distribution – updates cable mapping
- Helps to balance the loads on the phases of the low voltage network
- Also enables you to find a subscriber's LV power distribution substation different tone according to voltage level (**discontinuous tone up to 230V and continuous tone above 400V**).

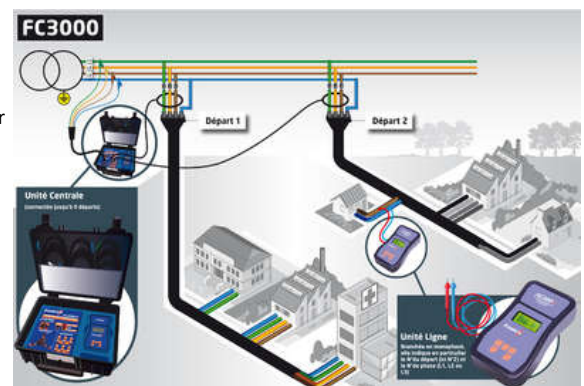
#### ADVANTAGES

All probes and connection are HPC fused.

Extractible compact Central Unit to be enclosed in "Pillar boxes" or pad mounted transformer station.

Smart Meter friendly : compatible with CPL communication of Smart grid.

Give one operator all parameter of any customer connection (Phase, circuit, source).



### ECC100-VAT-V2

Put this reference to order

#### Security Cable Cut

Cutting the cable to check and ensure the absence of voltage not tension on LV and MV underground cables before cutting

Cables section up to 3x240mm<sup>2</sup> with reinforced steel wire

Cutting capacity: max diameter 100 mm

Benefits:

Operating from a distance of 10 meter, protecting the operator in case of hitting a live cable,

Robust design and easy of use

Specifications:

Cutting head: Cutting blades made of **reinforced heat treated steel**

Cutting force: **9 600 kg**

Weight: 8,2 kg

Hydraulic pump: dual stage foot pump, with 0,9 L oil reservoir

Nominal pressure: 700 bars

Max effort on the lever: 41 kg

Weight 8kg

Earthing flexible braid of 5 meters long for the cutting head

Earthing flexible braid of 1 meter long for the pump

Easy Case: Plastic case with ergonomic caster

Dimension: 850 x 350 x 300 mm, 8 kg





## PICOUP® 250

Put this reference to order

### Remote controlled hydraulic spiking and cutting tool



#### USE

**SPIKING** cable to check and ensure the absence of voltage not tension on LV and MV underground cables before cutting them

- LV cable 3x240mm<sup>2</sup> with reinforced steel wire
- MV cable 3x240mm<sup>2</sup> with reinforced steel wire

The spiking of the multipolar cable Enables the user to limit any resulting short circuit to a single-phase / ground fault when spiking multi core cables. This causes any protective devices to trip before a 2 or 3 phase fault can be created.

**CUTTING** after spiking operation in full safety MAX cable diameter : Ø100mm

Cutting, after the spiking operation the so disconnected cable may then be safely cut.

#### Technical specification

- Cutting head
  - Single stage hydraulic jack
  - Nominal pressure : 700 bars
  - Blade guard to install and maintain the tool on the cable
  - Flexible copper earthing braid of 2 meters long. Section 70mm<sup>2</sup>
  - Cutting blades made of reinforced heat treated steel specifically engineered to cut cable
  - Manual lever for opening and closing the blades
  - Max Cutting capacity : up to 140 mm outer diameter
  - Metal armature : all except round wires
  - Maximum section : 3 x 240 mm<sup>2</sup> copper
  - Cutting force : 13 000 Kg
  - Dimensions L x W x H : 628 x 165 x 328 mm
  - Weight : 14 kg

- Remote control (868MHz)
  - Encoded radio (Single encoding)
  - Indication of cutting progress (LED)
  - Powered by 1.5 V battery (AAA)
  - Range up to 150 meters

#### • Plastic box with wheels :

Storage box in foam lined compartmentalized containing all the equipment for the C.A.T.(Checking Absence of Tension)

- Spiking and cutting tool
- 2 batteries 24V
- Keys dismantling blades and earthing braid- 1 blade removal tool
- 1 cleaning brush
- 1 flash protective mat : 0,7m x 1m
- External dimensions L x W x H : 687 x 528 x 376 mm
- Total weight : 35kg
- Flexible copper cable and earthing rod
- 1 fast charger
- 1 replacement spiking and cutting blade
- Procedure
- wheel weight : 12kg

- Charger
  - Fast Charger
  - 220V



#### • Power

- Voltage : 24V 3Ah
- Battery level with LED indication
- 20 Cut capacity



## PICOUP® 400

Put this reference to order

### Remote controlled hydraulic spiking and cutting tool

#### USE

**SPIKING** cable to check and ensure the absence of voltage not tension on LV and MV underground cables before cutting them

- LV cable 3x500mm<sup>2</sup> with reinforced steel wire
- MV cable 3x500mm<sup>2</sup> with reinforced steel wire

The spiking of the multipolar cable Enables the user to limit any resulting short circuit to a single-phase / ground fault when spiking multi core cables. This causes any protective devices to trip before a 2 or 3 phase fault can be created.

**CUTTING** after spiking operation in full safety MAX cable diameter : Ø140mm

Cutting, after the spiking operation the so disconnected cable may then be safely cut.



#### Technical specification

- Cutting head
- Single stage hydraulic jack
- Nominal pressure : 700 bars
- Blade guard to install and maintain the tool on the cable
- Flexible copper earthing braid of 2 meters long. Section 70mm<sup>2</sup>
- Cutting blades made of reinforced heat treated steel specifically engineered to cut cable
- Manual lever for opening and closing the blades
- Max Cutting capacity : up to 140 mm outer diameter
- Can cut armored cable: up to 4 mm diameter steel wire
- Maximum section : 3 x 500 mm<sup>2</sup> copper
- Cutting force : 21 000 Kg
- Dimensions L x W x H : 678 x 188 x 320 mm
- Weight : 20 kg



- Remote control (868MHz)
- Encoded radio (Single encoding)
- Indication of cutting progress (LED)
- Powered by 1.5 V battery (AAA)
- Range up to 150 meters

#### • Charger

- Fast Charger
- 220V



#### • Plastic box with wheels :

Storage box in foam lined compartmentalized containing all the equipment for the C.A.T.(Checking Absence of Tension)

- Spiking and cutting tool
- 2 batteries 24V
- Keys dismantling blades and earthing braid- 1 blade removal tool
- 1 cleaning brush
- 1 flash protective mat : 0,7m x 1m
- External dimensions L x W x H : 687 x 528 x 376 mm
- Total weight : 42kg
- Earthing flexible braid & earthing rod
- 1 fast charger
- 2 straps for fixing gallery. Length : 2m
- Procedure
- wheel weight : 12kg

#### • Power

- Voltage : 24V 3Ah
- Battery level with LED indication
- 20 Cut capacity





### PECC 10

Put this reference to order

#### Pentapole Electric Cable Cutter

##### USE Conditions

Cutting cable to:

- Possibility to place the cable cutter on an aerial cable by remaining at 12 meters distance for the security operation
- Cutting overhead cable for dismantling operation

Cutting capacity: max diameter : Ø 10mm

##### BENEFITS

- Operating with a Pentapole telescopic insulating stick to operate with high security level (standards IEC 62193, IEC 60855-1, ASTM F 1826, ASTM F711)
- Sticks come with universal end fitting to set and turn the cable cutter in the best position for the cutting operation
- Operating with radi remote or by phone (application on playstore) for full security
- Cutting blades made of reinforced heat treated steel and profile special designed to cut aerial cable

##### SPECIFICATIONS

- PECC10-01
  - Power: 18 VDC
  - Cutting capacity: max diameter: 10mm
  - Cutting force: 1,5 kN
  - Reservoir capacity: 40cc
  - Fixing system for pentapole (adjustable)
  - Weight; 2,4 kg (battery included)
  - Length: 333 mm
- PHE71-RADIO-TEL
  - Remote control Frequency 2,4 GHz
  - Distance: 25m
- EASYCASE-PECC
  - Plastic casr with ergonomic casters (2 handles, wheel to travel)
  - Total Weight: 4 kg

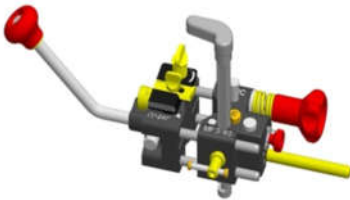


## A Few Extra Minutes Spent in the Cable Preparation and Jointing Could Save Thousands in The Long Term

Controlling the initial installation costs of any power system is critical to operating companies and contractors alike. System maintenance and repair are also substantial factors in overall cost. It is important that installations are not only completed efficiently and quickly, but also done correctly. No matter how well a cable accessory is designed, it will fail if the cable is not properly prepared before installation. Here are some of the more common causes of failure due to poor workmanship.

### Avoid Damage to the insulation during semi conductive screen removal

This is probably the number one cause of all joint and termination failures. Care must be taken when removing the semi-conductive screen, any damage or nick to the insulation at this stage will result in creating an unscreened air void. Since the dielectric strength of air is less than that of the XLPE insulation, the concentration of electrical stress in this area will exceed the dielectric strength of air. The air will ionize causing corona discharge to occur. These discharges bombard the surrounding insulation 100 times a second, and will result in cutting through the insulation and ultimate failure



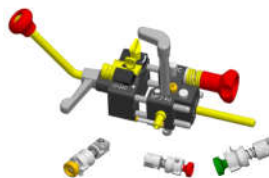
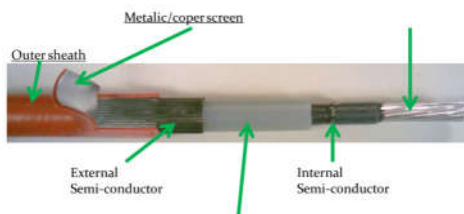
### Avoid Damage to the conductor during insulation removal

By not taking care or using incorrect methods, conductors can, quite often, be nicked, this, particularly in the case of aluminium conductors, can result in individual strands breaking free, leading to a resistive "hot spot" around the connector area, causing thermal runaway and eventual failure.

### Contamination of the insulation surface

It is important that the cable insulation be free from all moisture and contamination. Common contaminants include, mud on the outside surfaces and semi-conductive particles, left on the surface of the insulation, after the conductive screen has been removed. If these contaminants remain on the insulation surfaces being jointed or terminated, a conductive path can exist, and the difference in potential, between the energised conductor and earth screen will cause current to flow through the contamination, resulting in erosion and ultimately breakdown. To avoid this happening, all care must be taken to ensure the installer keeps his hands, as well as his tools clean and dry. Further to this, the insulation surfaces should be cleaned prior to the installation of the accessory and protected from further contamination until the installation is complete.

Most accessories from reputable manufacturers will meet and surpass normal operating requirements. However, good preparation will help a lower quality accessory, and poor preparation will hinder a better product. Take care when installing any accessory, remember the cost of a termination or joint is a fraction of the worth of the total installation. Any system is only as good as the weakest link, a joint or termination failure could bring down the whole system, with all the costs that entails.



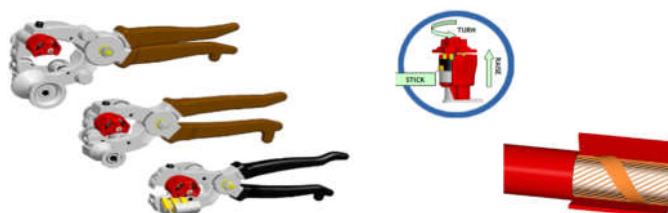
## PRG4 Outersheath

Put this reference to order

## Remove the Outer sheath

Function: PRG4 are specially made to remove cable sheath, changing longitudinal cutting penetration by rotation and indication of a 3 position head or changing longitudinal head

Reff	Sheat diameter	Weight
PR4	9mm to 30mm	600 g
PRG3	26mm to 52 mm	600 g
PRG4	47mm to 75mm	600 g



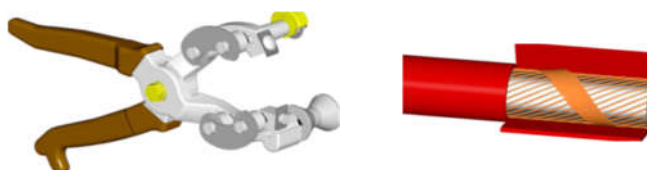
## PRG5 HTB

Put this reference to order

## Remove the Outer sheath

Function: The PG HTB (brown handles) pliers remove PE, PVC, PR, rubber sheaths from medium voltage cables

Reff	Sheath diameter
PG5 HTB	69mm to 95mm
PG6 HTB	80mm to 125mm
PG7 HTB	120mm to 170mm



## MF3-40 / MF3-60

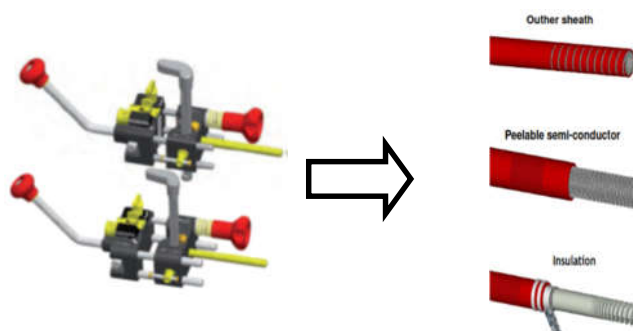
Put this reference to order

## Sheath and insulation multifution tool

Function: The MF3 is an adjustable multifunction tool which allows to:

- ◆ Perform a straight helicoidal regular cutting on the cable outer sheath PE,PVC,PR
- ◆ Perform a straight and helicoidal regular incision of cable peelable semi conductor to unsticket manually
- ◆ Perform a straight and helicoidal regular cutting of the insulation to the required length

Model	MF3/40	MF3/60
Diameter	16 - 40 mm	16 - 58 mm
Sections	25 <sup>2</sup> - 240 <sup>2</sup>	25 <sup>2</sup> - 630 <sup>2</sup>
Lenght	165 mm	185 mm
Widht	80 mm	90 mm
Height	100 mm	120 mm
Weight	1.520 kg	1.650 kg



## CWB 18-60 Bonded Semi-Conductor

Put this reference to order

### Remove Bonded Semi-conductor

Functions : The CWB enables the user to remove the bonded semi-conductor and chamfer the semi-conductor in a clean and swift manner.

NO SILICON NEEDED

- ◆ Removal of the bonded semi conductor without lubrication
- ◆ Blade is adjustable from 0.4mm to 1.4mm with "clicking knob" (1/10 mm for each click).
- ◆ The angle of the chamfer is 8°

L: 235 mm      l: 125 mm  
H: 90 mm      poids: 850 g



## SCR

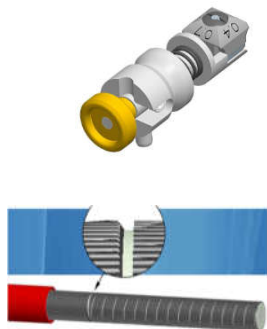
Put this reference to order

### Remove the Pelable Semi-conductor

SCR stylet allows to cut pelable semi-conductor by performing a chamfer on the stop of the semi-conductor.

Can be used in following tools:

- ◆ MF3/40
- ◆ MF3/60
- ◆ MF1+/25



## SCH

Put this reference to order

### Perform XLPE Chamfer

SCH stylet allows to perform a chamfer on the cable insulation



## SBA

Put this reference to order

### Perform cut on the armour

Cable's strip hanksaw, strip iron cutting.

SBA saw allows to cut the strip iron from LV cables during the outer voltage labours



## DSP— - Peelable Semi-Conductor

Put this reference to order

### Remove Pelable Semi-conductor

DSP tool remove the end of the medium voltage cable peelable semi-conductor after the incision of the LHM1R30/45E tool



## GRI—

Put this reference to order

### Remove Bonded Semi-conductor

GRI scraper allows to remove external bonded semi-conductor residue stayed on the cable insulation

- ◆ Scraping of the semi-conductor residue
- ◆ Capacity : section from 50mm<sup>2</sup> to 1200mm<sup>2</sup>



## TC240

Put this reference to order

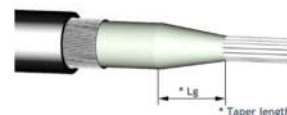
### Perform Taper

ALROC TC tools taper the insulation from all medium voltage cable

ALROC TC tool is previously adjusted

Standar taper lenght : 30 to 40 mm

Ask for special taper lenghts : 65 mm, 95 mm, 120 mm.....



F201

Put this reference to order



### Multimeter Clamps

The F201 clamp is ideal for the needs of both self-employed electricians and SME contractors in the electrical sector.

Equipped with a fast 12-bit TRMS digital acquisition system, F201 clamps offer particularly accurate measurements whatever the signal's waveform.

#### Specifications:

Clamping diameter: 34 mm  
 Current: 600 A AC  
 AC and DC voltage up to 1,000 V  
 Resistance and audible continuity  
 Temperature  
 Automatic AC/DC detection  
 TruInrush current measurement  
 Hold, Min, MAX  
 CAT IV 600 V

F201

Put this reference to order



### Multimeter Clamps

To deal with the highest level of low-voltage electrical installations, the F400 Series has a high protection rating and is ideal for maintenance, testing, monitoring and diagnostics on medium-power installations.

Equipped with a fast 12-bit TRMS digital acquisition system, F403 clamps offer particularly accurate measurements whatever the signal's waveform.

#### Specifications:

Clamping diameter: 48 mm  
 Current: 1,000 A AC / 1,500 A DC  
 AC and DC voltage up to 1,000 V  
 Resistance and audible continuity  
 Temperature  
 Automatic AC/DC detection  
 TruInrush current measurement  
 Hold, Min, MAX  
 RELative ( $\Delta X$ ) and differential ( $\Delta X/X$ ) measurements  
 Adapter function  
 CAT IV 1000 V  
 IP54 protection rating





## CA 5233

Put this reference to order

### Digital Multimeter

This compact, comprehensive digital multimeter is equipped with all the functions required by electricians for maintenance of low and medium-power residential and tertiary equipment and installations.

Ergonomic and simple to use, it is exceptionally easy to read with its 6,000-count backlit display with bargraph, 2 "Off" positions for greater effectiveness and a compact casing with a non-slip protective coating for excellent handling.

CAT IV 600V

TRMS measurements

Large 6,000-count backlit display (digits 8 mm high)

61-segment bargraph

Double OFF position

No-contact voltage detection (NCV)

VLow Z low-impedance voltage measurement to avoid stray voltages.

Min, MAX and RELative functions

Measurement up to 600 V

AC or DC current measurement up to 10 A

Frequency measurement

Temperature measurement

Capacitance measurement

60 mV range

Compact IP54 casing with built-in shockproof protection

Compatible with the multi-function mounting accessory



600 V  
CAT IV

IEC 61010-2-033

TRMS

IP  
54

## CA 5273

Put this reference to order

### Digital Multimeter

The C.A 5273 is a comprehensive multimeter for electrical maintenance of installations and small AC and DC machines, with a double 6,000-count backlit display and a 61+2-segment bargraph with remanent effect.

Its 600V CAT IV safety is backed by IP54 ingress protection.

Designed and manufactured in France by CHAUVIN ARNOUX, this multimeter comes with a 3-year warranty.

CAT IV 600V / CAT III 1,000V

TRMS measurements

Bi-mode double 6,000-count backlit display and 61+2-segment bargraph (full scale / central zero)

Auto AC/DC selection

Automatic or manual range selection

VLowZ low-impedance voltage measurement with low-pass filter

1,000 V

10 A

Resistance / audible continuity

Temperature

Capacitance

Max / Min storage

3-year warranty



1000 V  
CAT IV

IP  
54

TRMS

3 YEAR  
WARRANTY

IEC 61010-2-033

600 V  
CAT IV

### Raycam 1888

Put this reference to order



#### High-Resolution Infrared Cameras

The RayCams' design and the technologies used to manufacture them provide a wide range of advantages. Their ergonomic design means comfortable measurement even in places where access is difficult:

- ◆ IP 54 leakproofing,
- ◆ excellent legibility thanks to its multidirectional screen, even in places where access is difficult
- ◆ comfortable handling due to its pistol shape
- ◆ Temperature up to 600°C (1500°C optional)
- ◆ Detector UFPA microbolometer 8~14 micron 384x288
- ◆ IFOV (spatial resolution): 1,3 mrad

#### Standard state at delivery:

**C.A 1886 or C.A 1888:** delivered in a case with 1 battery charger, 2 batteries, a 2 GB mini-SD Card, 1 SD card reader, 1 video cable, RayCAM Report software and a measurement report

#### Applications:

**Circuit-breaker / Generator**

detection of damaged fuses and bad connections  
verification of correct heat diffusion in the generator  
Motor detection of internal component anomalies

**Water leaks / energy losses**

#### Performance:

automatic detection of hottest/coldest point

parameter settings affecting measurement:

adjustable emissivity

adjustment of measurement distance

parameters for defining relative humidity and ambient temperature

### Raycam 1888



#### Applications

The C.A 1950 is ideal for all the applications in the building, electrical maintenance

and mechanical maintenance sectors:

- Thermal audits
- Troubleshooting: thermal bridges, infiltrations, presence of humidity
- Electrical maintenance: detection of faulty contacts, unbalance, etc.
- Mechanical maintenance: detection of wear points, motor overheating, lubrication problems, etc

**The CAMReport software provided free of charge can be used for automatic generation of reports** which can be exported in Word or pdf format.

This makes printing and archiving much simpler.

The C.A 1950 is delivered ready to use in a site-proof case with all its accessories, including the Bluetooth earphone

**The DiaCAM2 is balanced:** it doesn't move even when stood on a benchtop. The display uses a **wide 2.8 inch screen with automatic brightness adjustment**. **The C.A 1950 is focus-free with a 20° x 20° field of view**. The flap protecting the lens is built into the instrument, so it does not get in the way and cannot be lost. Contextual help guides users to limit the risk of error.

#### Specification:

- ◆ 80 x 80 UFPA microbolometer-type detector, 8 ~14 µm
- ◆ IFOV (spatial resolution): 4.4 mrad
- ◆ Temperature range: -20 °C to +250 °C
- ◆ Display mode: thermal image, real image. Merging of images possible with the PC software
- ◆ Measurement tools: 1 manual cursor + 1 automatic detection + Min Max on adjustable area + Temperature profile + Isotherm
- ◆ Modifiable parameters: emissivity, environmental temperature, distance, relative humidity
- ◆ Storage on 2 GB SD micro-card (approx. 4,000 images) or removable card up to 32 GB
- ◆ IP 54 protection
- ◆ Weight: 700 g with rechargeable batteries
- ◆ Dimensions: 225 x 125 x 83 mm

#### Standard state at delivery:

C.A 1950: delivered in hard case with 4 NiMH batteries and battery charger, 1 micro SD HD card, 1 USB cable, 1 set of Bluetooth earphones, CAMReport software on CD ROM, operating manuals

## PEL 105

Put this reference to order

### Power and energy logger

- > Ideal for mounting on electricity poles
- > All-terrain shockproof casing resistant to UV light and high temperatures
- > Self-powered by its voltage inputs up to 1,000 V
- > Continuous recording at 200 ms intervals


**DataView<sup>®</sup>**

**NEW**


	<b>PEL 105 P01157155</b>
<b>Référence</b>	
<b>Display</b>	With backlit triple digital display
<b>Type of installation</b>	Single-phase, split-phase, three-phase with or without neutral and many other specific configurations
<b>Number of inputs</b>	5 voltage inputs, 4 current inputs
<b>Number of channels</b>	4 voltage channels, 4 current channels
<b>Measurements</b>	
<b>Network frequency</b>	DC, 50 Hz, 60 Hz and 400 Hz
<b>Voltage (measurement ranges / best accuracy)</b>	10.00 V to 1,000 VAC @ 50/60 Hz, or 600 VAC @ 400 Hz / 1,000 VDC
<b>Current (depending on sensors) (measurement ranges / best accuracy)</b>	5 mAAC to 10 kAAC / 50 mADC to 1.4 kADC
<b>Calculated measurements</b>	
<b>Ratio</b>	Up to 650,000 V / up to 25,000 A
<b>Power</b>	20 W to 10 GW / 20 var to 10 Gvar / 20 VA to 10 GVA
<b>Energy</b>	Up to 4 EWh / 4 EVAh / 4 Evarh (E = 1018)
<b>Phase</b>	cos $\phi$ , tan $\phi$ , PF
<b>Phase sequence</b>	Automatic selection of the phase sequence
<b>Harmonics</b>	Up to the 50th order
<b>Additional functions</b>	
<b>Phase sequence</b>	Indication of valid connection
<b>Min / Max</b>	On all quantities
<b>Recording</b>	
<b>Sampling rate/ Acquisition rate / Aggregation</b>	128 samples/period - 5 measurements/s - from 1 min to 1 hr
<b>Storage</b>	SD card, 8 GB (up to 32 GB with SD-HC card)
<b>Communication</b>	Ethernet, Bluetooth, Wifi and USB
<b>Power supply</b>	Self-powered internally from 94 to 1,000 V @ 50-60 Hz & 400 Hz / DC
<b>Safety</b>	IEC 61010 1,000 V CAT IV
<b>Mechanical specifications</b>	
<b>Dimensions</b>	245 x 270 x 180 mm
<b>Weight</b>	< 4 kg
<b>Protection</b>	IP 67

## State at delivery

### PEL 105 delivered with:

- 5 x 3 m black silicone cables, straight banana / straight banana, 5 black 1,000 V CAT IV crocodile clips, 1 set of inserts/rings,
- 4 AmpFLEX IP67 A196 3 m long, 1 set of waterproof plugs, 1 SD card, 1 USB cable, 1 bag, 1 safety datasheet, USB key containing 1 quick start-up guide and 1 user manual.

## Accessories

### Clamps for PEL - see page 24

AmpFlex A196-450 mm clamp	P01120552
Set of waterproof plugs	P01102147
Pole-mounting kit	P01102146
DataVIEW <sup>®</sup> software	P01102095
Crocodile clips kit (x 5)	P01102099
Set of inserts/rings	P01102080
5 A adapter	P01101959
Leads kit (x 5) BB196	P01295479
Reeling Box	P01102149
E3N adapter	P01102081
PA30 mains power pack	P01102057

## CA 6550, 6555

Put this reference to order

Wide measurement range from 10 kΩ to 30 TΩ

- ◆ 5 mA charging current
- ◆ Large backlit LCD screen with digital display, bargraph and  $R(t)+u(t)$ ,  $i(t)$  and  $i(u)$  graphs
- ◆ Automatic calculation of DAR / PI / DD /  $\Delta R$  (ppm/V) ratios
- 3 filters to optimize measurement stability



	C.A 6550	C.A 6555
	Expert tools	
Reference	P01139705	P01139706
Voltage	10 kV	15
Insulation		
Range	500/1,000/2,500/5,000/10,000 V	500/1,000/2,500/5,000/10,000/15,000 V
Continuity	10 kΩ to 25 TΩ	10 kΩ to 30 TΩ
Resistance		
Capacitance		
Current		
Voltage ramp mode		
R calcul. (ref. T°)		
Alarms		
Smoothed display		
Chronometer		
Prog. test time		
Quality ratios		
R(t)		
R(t) + U(t), I(t), I(u)		
Storage		
Communication		
Power supply		
Safety		
Backlighting		
Dimensions		
Weight		

## State at delivery

Delivered with bag containing 2 safety leads 3m long equipped with an HV connector at each end (red / blue), shielded safety lead 3 m long equipped with an HV connector at one end and an HV connector with rear connection (black) at the other end, 3 crocodile clips (red, blue, black), 2 x CAT IV 1000 V test probes (red, black) for voltage measurement, 1 blue lead with rear connection, 1 mains power cable 2 m long, DataView® software, 1 optical / USB communication lead, 1 operating manual in 5 languages on CD-ROM

## Accessories

3 HV leads with croc. clips for 10/15 kV ..	P01295466
Blue 8 m HV lead with croc. clips .....	P01295468
Red 8 m HV lead with croc. clips .....	P01295469
Black 8 m HV lead with croc. clips .....	P01295470
Blue 15 m HV lead with croc. clips .....	P01295471
Red 15 m HV lead with croc. clips .....	P01295472
Black 15 m HV lead with croc. clips .....	P01295473
3 x 3 m HV leads for 10/15 kV. ....	P01295465
50 cm HV lead with rear connection .....	P01295467
2 red/black test probes .....	P01295454Z
3 crocodile clips: red/blue/black .....	P01103062
Bag .....	P01298066



### CA 6472 (Main Unit)

Put this reference to order

#### Tester for all types of earth measurements

The C.A 6472 offers the possibility of analysing the frequency behaviour of the earth connections thanks to its extensive measurement frequency range (41 to 5,078 Hz). The use of a high-frequency measurement signal makes it

##### Functions:

- 3P measurement up to 10 k $\Omega$  and stray voltages up to 60 V RMS
- 4P and selective 4P measurement
- Earth loop measurement with 2 clamps from 0.01  $\Omega$  to 500  $\Omega$
- Earth coupling measurement
- Soil resistivity measurement: simply program the distances used for the measurement and the tester then calculates  $r$  using the Wenner or Schlumberger methods
- Ground potential measurement



##### Other specifications:

- Storage of 512 test results
- USB optical link
- Ground Tester Transfer PC software to process the stored data
- Power supply: NiMH battery with external charger
- IP53 protection
- IEC 61557 -1 -4 -5
- IEC 61010 50V CAT IV

### CA 6474 (Slave Unit)

Put this reference to order

#### The C.A 6474 is designed for use with the C.A 6472 earth tester to measure pylon earths

When used with the C.A 6472, the C.A 6474 allows the following types of measurements:

- Global earth of pylons
- Earth resistance of each of the pylon's footings
- Quality of the overhead protective earth cable connection
- Active measurement (injection by the C.A 6472)
- Passive measurement (use of stray currents)

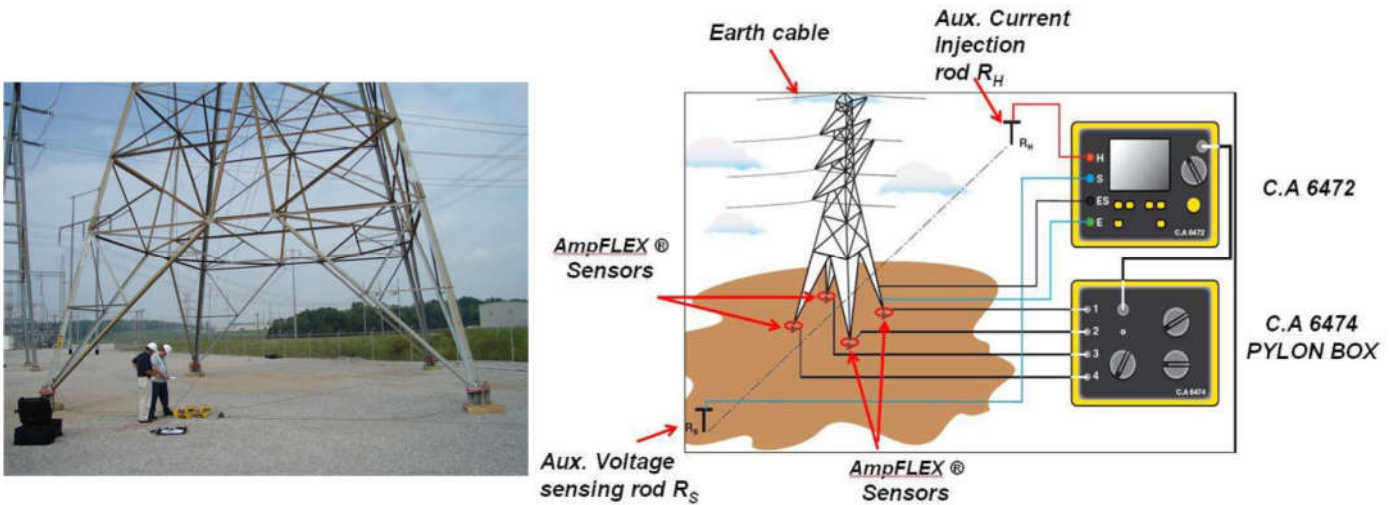
##### Main technical specifications

measurement range: 0.001  $\Omega$  to 99.99 k $\Omega$

- resolution: 0.001  $\Omega$  to 10  $\Omega$
- voltage: 16 to 32 VRMS
- frequency: 41 Hz to 5,018 Hz
- ground-rod resistance measurement: 0.01  $\Omega$  to 100 k $\Omega$
- IP53 protection
- dimensions: 272x250x128 mm, weight: 3.2 kg



## Test Ground resistance of towers **without** disconnecting the overhead ground conductor



## Reliable, accurate and quick for comprehensive earth testing

### Major Benefits

- ◆ Test ground resistance of towers WITHOUT disconnecting the Overhead ground wire - major time, money saver and safety improvement
- ◆ Tests both ground resistance of tower legs (individually and total) and Overhead ground wires
- ◆ Test leakage current through tower legs
- ◆ Test the overhead ground conductor connectivity
- ◆ Test at frequency up to 5 kHz to profile impedance, important to characterize for lightning strike

### Multi Function

- ◆ • All types of earth resistance measurements and earth measurement on pylons (C.A. 6474 option)
- ◆ • Resistivity (Wenner and Schlumberger methods)
- ◆ • Earth coupling
- ◆ • Ground potential measurement
- ◆ • Continuity / resistance

## STATE OF DELIVERY

### • C.A 6472 earth and resistivity tester ..... P01.1265.04

Delivered with: mains adapter + 2-pole mains cable for recharging the battery from the mains supply, one operating manual in 5 languages on CD-ROM, 5 simplified operating manuals and 5 specific labels, each in a different language.  
Data export software + USB/optical



### • C.A 6474 adapter for pylon earth measurement

(PYLONBOX) ..... P01.1265.10

Delivered with a carrying bag for accessories containing: One C.A 6472 – C.A 6474 connection lead, 6 BNC / BNC cables 15 m long, 4 AmpFLEX flexible current sensors 5m long, 1 set of 12 AmpFLEX identification rings, 2 cables (5 m green, 5 m black) with safety connectors on winder, 5 spade lug/banana plug converters Ø 4 mm, 3 clamps, 1 loop, 5 manuals and labels, each language



## ACCESSORIES

- 100 m earth and resistivity kit ..... P01.1020.24
- 150 m earth and resistivity kit ..... P01.1020.25
- C.A 647X continuity kit (m<sup>∧</sup> position) ..... P01.1020.37
- MN82 CLAMP (Ø 20 mm) for C.A 6474 ..... P01.1204.52
- Adapter for battery charging on cigarette lighter ..... P01.1020.36
- DataView® PC software..... P01.1020.06
- Optical / RS232 communication cable..... P01.2952.52







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