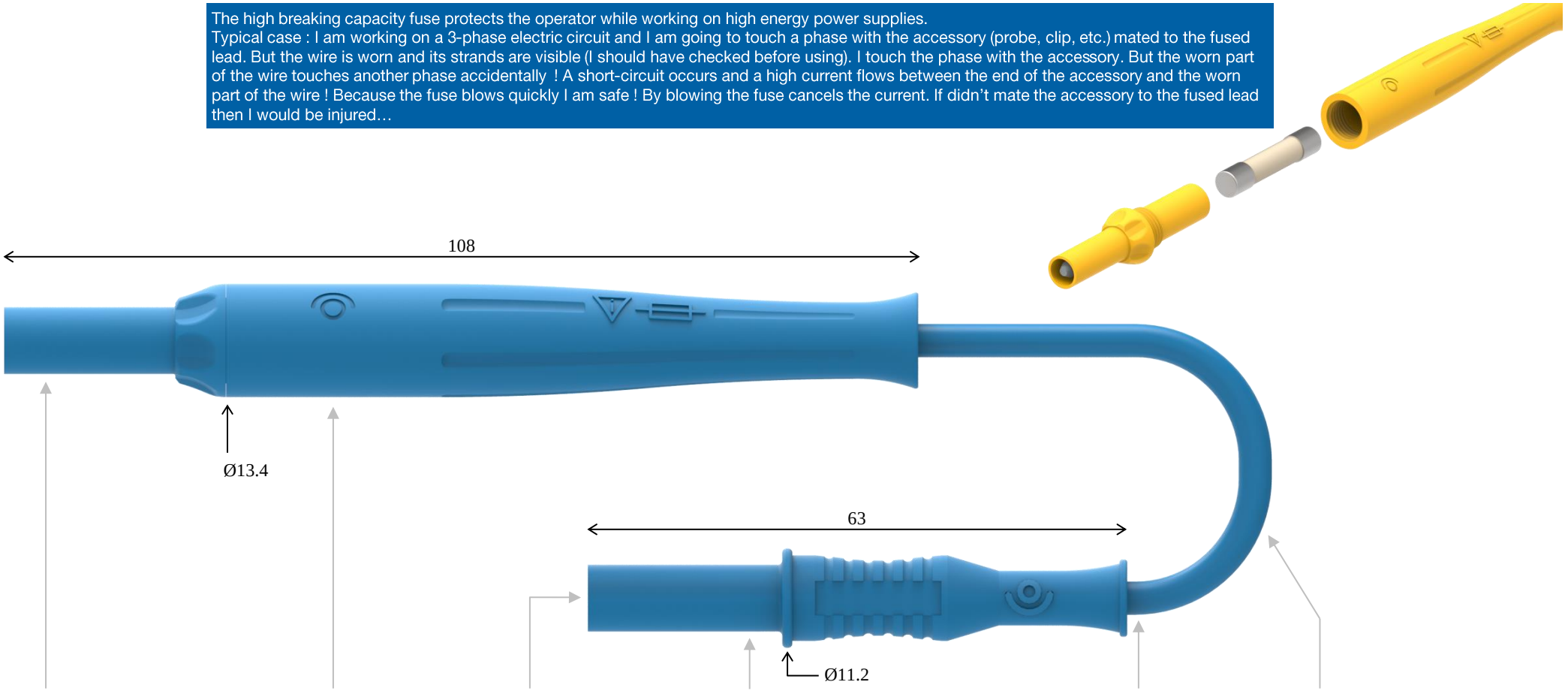
# 12310-IEC



Designation : Fused Straight 4 mm Banana (male) Plug to Straight 4 mm Banana (male) Plug Lead.

Applications : operations on electrical network and installations.

The high breaking capacity fuse protects the operator while working on high energy power supplies.
Typical case : I am working on a 3-phase electric circuit and I am going to touch a phase with the accessory (probe, clip, etc.) mated to the fused lead. But the wire is worn and its strands are visible (I should have checked before using). I touch the phase with the accessory. But the worn part of the wire touches another phase accidentally ! A short-circuit occurs and a high current flows between the end of the accessory and the worn part of the wire ! Because the fuse blows quickly I am safe ! By blowing the fuse cancels the current. If didn't mate the accessory to the fused lead then I would be injured…




The design and the material of the lantern contact springs meet the need of low resistance and reliability.

Electro-PJP's marking. (French design and manufacturing.)

Insulating gray tips on the 4 mm banana male connections to prevent accidental contact.

The 4 mm banana male connections comply with the 4 mm banana sockets of most of the worldwide manufacturers.

European Union marking. CE. Voltage marking. Fuse marking.

The wire attachments comply with heavy duty.

Double jacket wire to offer a wire wear indicator. PVC wire for low cost or silicone wire for more flexibility at low temperatures and better feel. Cross section areas 0.75 mm², 1.00 mm², 1.50 mm², and 2.50 mm² for currents 12 A, 20 A, 25 A, and 36 A respectively. Usual lengths 100 cm and 200 cm (visible length of the wire, not the overall length of the lead).

Dimensions in millimeters.

Electro-PJP
France
www.electro-pjp.com

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Thanks to EN / IEC 61010-031:2015 standard, the safety of a fused product depends on the specifications of its fuse. For example :
- if the rated voltage of the fuse is 400 V~ then the maximum voltage of a 1000 V~ fuse holding product is 400 V~ only ;
- if the rated breaking capacity of the fuse is 30 kA then the maximum CAT of a CAT IV fuse holding product is CAT II only (because the CAT III and CAT IV circuits have short-circuit currents higher than 30 kA).

| Fuse specifications. | Safety. | | |
|---|---|---|---|
| | CAT II | CAT III | CAT IV |
| 1000 V~ rated voltage.<br>0,5 A~ rated current.<br>50 kA rated breaking capacity. | 1000 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>0,5 A~ (fused). (50 kA breaking capacity.) | | Forbidden. |
| 1000 V~ rated voltage.<br>1 A~ rated current.<br>50 kA rated breaking capacity. | 1000 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>1 A~ (fused). (30 kA breaking capacity.) | Forbidden. | Forbidden. |
| 1000 V~ rated voltage.<br>2 A~ rated current.<br>50 kA rated breaking capacity. | 1000 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>2 A~ (fused). (30 kA breaking capacity.) | Forbidden. | Forbidden. |
| 600 V~ rated voltage.<br>7 A~ rated current.<br>50 kA rated breaking capacity. | 600 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>7 A~ (fused). (50 kA breaking capacity.) | | Forbidden. |
| 600 V~ rated voltage.<br>10 A~ rated current.<br>50 kA rated breaking capacity. | 600 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>10 A~ (fused). (50 kA breaking capacity.) | | Forbidden. |
| 500 V~ rated voltage.<br>2 A~ rated current.<br>50 kA rated breaking capacity. | 500 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>2 A~ (fused). (50 kA breaking capacity.) | | Forbidden. |
| 400 V~ rated voltage.<br>6,3 A~ rated current.<br>120 kA rated breaking capacity. | 400 V~.<br>Reinforced insulation. Pollution degree 1 or 2 or 3.<br>6,3 A~ (fused). (120 kA breaking capacity.) | | |

 

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| | |
|---|---|
| Electrical safety | According to EN / IEC 61010-031:2015 : up to 1000 V~ CAT II / 1000 V~ CAT III / 1000 V~ CAT IV depending on the fuse, reinforced insulation.<br>According to EN / IEC 60529 : IP2X (touchproof).<br>These specifications come from the creepage distances, clearances, accessible parts, and solid insulation of the lead. And the considered specifications of the environment are :<br>• pollution degree, 1 or 2 or 3 ;<br>• relative humidity, 80 % maximum for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at +40 °C ;<br>• temperature range, 0 °C to +40 °C ;<br>• indoor use ; and<br>• altitude, 2000 m maximum. |
| Operating temperature range | 0 °C mini., +60 °C maxi.. |
| Protection against the spread of fire | Reinforced insulation. |
| Conformity | • European Directive “Low Voltage Directive” 2014/35/UE.<br>• International / European standard EN / IEC 61010-031:2015.<br>• European Directive “RoHS” 2011/65/EU. European Directive 2015/863/EU.<br>• European regulation n°1907 / 2006 “REACH”.<br>• European regulation 2017 / 821 “Conflict minerals”.<br>• International / European standard EN / IEC 60529. |
| Environment | •“RoHS” compliant, Pb ≤ 4 %, Hg ≤ 0.1 %, Cr VI ≤ 0.1 %, Cd ≤ 0.01 %, PBB ≤ 0.1 %, PBDE ≤ 0.1 %, DEHP ≤ 0.1 %, BBP ≤ 0.1 %, DBP ≤ 0.1 %, and DIBP ≤ 0.1 %.<br>• “REACH” compliant, no substances from the candidate list of SVHC for authorization at mass concentrations greater than 0.1 %. |
| Materials | Conductors : nickel-coated brass, steel, and copper. Wire jackets : PVC or silicone. Insulators, fuse, and lantern contact spring, please contact us. |
| Colors | Black / Red / Yellow / Green / Blue / White / Brown |
| Lengths | 100 cm, 200 cm (usual lengths). |
| Origin | Designed and manufactured in France. |
| Reliability benchmark | Year of 1st placing on the market 2013. |
| Packaging | Bag of 10 units of the same color (default packaging). |

Configure your lead and contact us:

Electro-PJP 12310 Series :

- Wire jackets, silicone ? or PVC ?
- Color, black ? red ? yellow ? green ? blue ? brown ? or white ?
- Length, 100 cm ? or 200 cm ? (contact us for other lengths)

sales@electro-pjp.com
+33(0) 384 821 330
www.electro-pjp.com

ELECTRO-PJP
ZI «Charmes d’Amont»
13 rue de Madrid
39500 TAVAUX
FRANCE

## GLOSSARY :

ACCESSIBLE. Able to be touched with a standard test finger or test pin.

BASIC INSULATION. Insulation of HAZARDOUS LIVE parts which provides basic protection.

CAT II. Measurement or overvoltage category II. For measurement performed on / equipment connected to the building wiring.

CAT III. Measurement or overvoltage category III. For measurement performed on / equipment connected to part of a building wiring installation.

CAT IV. Measurement or overvoltage category IV. For measurement performed on / equipment connected to the origin of the electrical supply to a building.

CLEARANCE. Shortest distance in air between two conductive parts.

CREEPAGE DISTANCE. Shortest distance along the surface of a solid insulating material between two conductive parts.

CTI. Comparative Tracking Index of the insulating material in accordance with IEC 60112.

DOUBLE INSULATION. Insulation comprising both BASIC INSULATION and SUPPLEMENTARY INSULATION.

EN / IEC 60529. European / international standard regarding the degrees of protection provided by enclosures.

EN / IEC 61010-1. European / international standard regarding the safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements.

EN / IEC 61010-031. European / international standard regarding the safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test.

"LVD". European Directive 2014/35/EU on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits. (Usually called the Low Voltage Directive.)

MAINS. Low-voltage electricity supply system to which the equipment concerned is designed to be connected for the purpose of powering the equipment.

MAINS CIRCUIT. Circuit which is intended to be directly connected to the MAINS for the purpose of powering the equipment.

OVERVOLTAGE CATEGORY. Numeral defining a TRANSIENT OVERVOLTAGE condition.

POLLUTION. Addition of foreign matter, solid, liquid or gaseous (ionized gases), that may produce a reduction of dielectric strength or surface resistivity.

POLLUTION DEGREE. Numeral indicating the level of POLLUTION that may be present in the environment.

POLLUTION DEGREE 1. No POLLUTION or only dry, non-conductive POLLUTION occurs, which has no influence.

POLLUTION DEGREE 2. Only non-conductive POLLUTION occurs except that occasionally a temporary conductivity caused by condensation is expected.

REINFORCED INSULATION. Insulation which provides protection against electric shock not less than that provided by DOUBLE INSULATION.

"RoHS". European Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

SOLID INSULATION. Insulating materials.

SUPPLEMENTARY INSULATION. Independent insulation applied in addition to BASIC INSULATION in order to provide protection against electric shock in the event of a failure of BASIC INSULATION.

TRANSIENT OVERVOLTAGE. Short duration overvoltage of a few milliseconds or less, oscillatory or non-oscillatory, usually highly damped.

WORKING VOLTAGE. Highest r.m.s. value of the a.c. or d.c. voltage across any particular insulation which can occur when the equipment is supplied at rated voltage.

 

Dimensions in millimeters.