

IZOELEKTRO

A close-up photograph of a blue and silver industrial robotic arm in a factory setting. The arm is positioned over a tray containing many small, cylindrical components, likely surge arresters. The background is blurred, showing other industrial equipment and a red container. The image is framed by a diagonal split between a grey and a white background.

05/2022

NN prenapetostni odvodniki
LV surge arresters

Korak pred časom
Ahead of it's time

NNO in MOSIPO splošno

Proizvodi

Nizko napetostni kovinsko oksidni odvodniki prenapetosti so namenjeni za vgradnjo v nizko napetostne prosto zračne vode ali razdelilne omarice do 1 kV kot prva stopnja zaščite pred direktnim udarom strele. Varistorji nizko napetostnih odvodnikov tipa NNO in MOSIPO so oplašeni s silikonsko gumo, zaradi česar dosegajo izredno visoko stopnjo zaščite IP67.

Lastnosti

Odklopna naprava reagira:

- po določenem številu udarov, ko v normalnem obratovanju tok skozi odvodnik naraste nad 1 mA,
- v primeru atmosferske praznitve (tok večji od 65 kA).

Odklopna naprava po delovanju vidno loči povezavo med odvodnikom prenapetosti in ozemljitvijo.

Vgradnja

Mesto montaže odvodnikov prenapetosti tipa NNO in MOSIPO, določajo pravilniki in tehnični predpisi. Obvezno se vgradijo na:

- vse odcepe in zaključke nizkonapetostnih prostih vodov,
- medsebojni razdalji maksimalno do 1000m,
- razdalji < 500m, kjer so nevihte pogostejše,
- vseh prehodih prosto zračnih vodov na kable in obratno.

Splošni podatki

- Napetostni nivoji: **275, 280, 360, 440, 690 V**
- Ozemljitveni vodnik: **H07V-K 6 mm²**
- Temperaturno območje okolja: **T = -40 °C ... +85 °C**
- Stopnja zaščite: **IP 67**
- Odzivni čas: **tA < 25 ns**
- Plašč: **silikonska guma**
- Barva silikona: **NCS S 2502 - siva**
- IEC razred: **II**
- Testirani po standardu: **IEC 61643-1 in IEC 61643-11**

Prednosti pred konkurenco

NNO in MOSIPO odvodniki prenapetosti imajo:

- stopnjo zaščite IP 67,
- ohišje iz silikonske gume,
- integriran ozemljitveni vodnik,
- po delovanju odklopne naprave dobro vidno ločen ozemljitveni vodnik.

Na zahtevo kupca izdelamo odvodnike prenapetosti NNO in MOSIPO:

- brez ozemljitvenega vodnika,
- z različnimi preseki, poljubno dolžino, barvo in zaključkom ozemljitvenega vodnika,
- kot tovarniški komplet po izbiri kupca.

NNO and MOSIPO generally

Products

Low voltage metal oxide surge arresters with silicone coating are designed to be installed in low voltage power lines or in junction boxes up to 1 kV as the first level of protection against direct lightning strikes. Varistors of low voltage arresters type NNO and MOSIPO are coated with silicone rubber, so they have high ingress protection level IP 67.

Characteristics

The disconnecting device reacts:

- after a certain no. of strokes when in normal operation the current through the arrester increases over 1 mA,
- in case of atmospheric discharge (current bigger than 65 kA).

After the disconnecting device has been activated, the surge arrester and earthing conductor are visibly separated. necessary to replace the surge arrester.

Installation

The position for installing type NNO and MOSIPO surge arresters is decided by directives and technical regulations. They must be installed:

- on all branches and ends of LV overhead power lines,
- at a maximum mutual distance up to 1000m,
- at a distance <500m, where storms occur more often,
- in all passages from free conductors to cables and vice versa.

General data

- Voltage levels: **275, 280, 360, 440, 690 V**
- Earthing conductor: **H07V-K 6 mm²**
- Ambient temperature range: **T = -40 °C ... +85 °C**
- Ingress protection level: **IP 67**
- Response time: **tA < 25 ns**
- Coat: **silicone rubber**
- Silicone colour: **NCS S 2502 - grey**
- IEC class: **II**
- Tested according to standard: **IEC 61643-1 and IEC 61643-11**

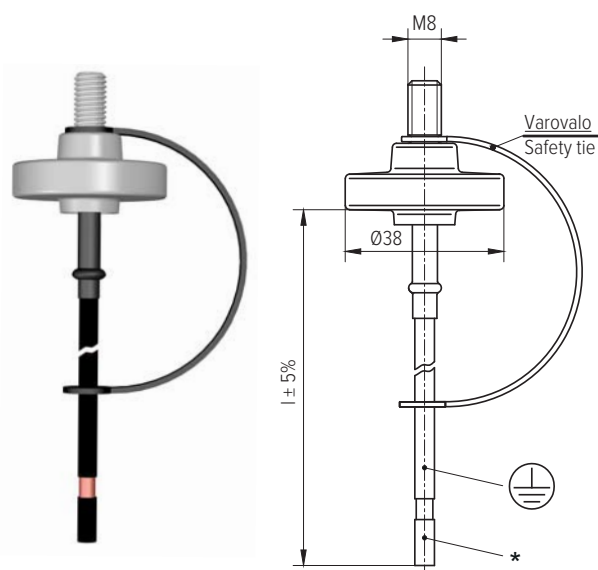
Competitive advantages

NNO and MOSIPO surge arresters have:

- ingress protection level IP 67,
- housing made of silicone rubber,
- integrated earthing conductor,
- well visible separated conductor after operation of the disconnecting device,

At the customer's request we produce surge arresters NNO and MOSIPO:

- without earthing conductor,
- with any earthing conductor diameter, length, colour and end fitting,
- as a factory set by customer's choice.



*Zaključki ozemljitvenega vodnika
*End fittings of earthing conductor

Splošni podatki / General data

- Napetostni nivoji / Voltage levels: **280, 440, *690 V**
- Ozemljitveni vodnik / Earthing conductor: **H07V-K 6 mm²**
- Temperaturno območje okolja / Ambient temperature range: **T = -40 °C ... +85 °C**
- Stopnja zaščite / Ingress protection level: **IP 67**
- Plašč / Coat: **silikonska guma / silicone rubber**
- Barva silikona / Silicone colour: **NCS S 2502 - siva/grey**
- IEC razred / IEC class: **II**
- Testirani po standardu / Tested according to standard: **IEC 61643-11-2011**

Naziv/Name	I _n [kA]	U _c (AC/DC) [V]	U _p [kV]	W [J]
NNO 5/280	5	280/350	1,00	2450
NNO 5/440	5	440/585	1,50	3200
NNO 10/280	10	280/350	1,20	2450
NNO 10/440	10	440/585	1,80	3200

*690 V opcija/option

konfigurator
configurator

NNO
NNO

varovalo
safety tie

*Zaključki ozemljitvenega vodnika H07V-K 6 mm²
* End fittings of earthing conductor H07V-K 6 mm²

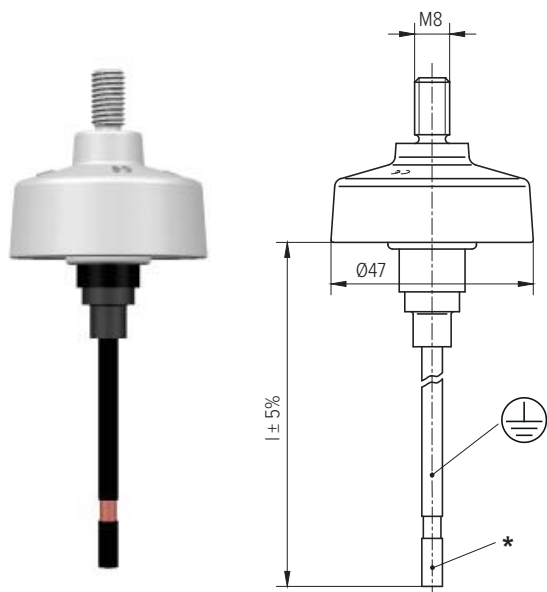
kabeljski čevljev 6/8
cable lug 6/8

samo vodnik
only conductor

votlica
terminal tube

Na zahtevo kupca izdelamo integriran ozemljitveni vodnik do dolžine 1 m, z izbrano barvo in zahtevanim zaključkom.

At the customer's request we produce an integrated earthing conductor up to a length of 1 m, with any colour and end fitting.



*Zaključki ozemljitvenega vodnika
*End fittings of earthing conductor

Splošni podatki / General data

- Napetostni nivoji / Voltage levels: 275, 440, 690 V
- Ozemljitveni vodnik / Earthing conductor: H07V-K 6 mm²
- Temperaturno območje okolja / Ambient temperature range: T = -40 °C ... +85 °C
- Stopnja zaščite / Ingress protection level: IP 67
- Plašč / Coat: slikonska guma/silicone rubber
- Barva silikona / Silicone colour: NCS S 2502 - siva/grey
- IEC razred / IEC class: II
- Testirani po standardu / Tested according to standard: IEC 61643-1-1998, IEC 61643-11-2011

Naziv/Name	I _n [kA]	U _c (AC/DC) [V]	U _p [kV]	W [J]
MOSIPO 10/275	10	275/350	2,00	2450
MOSIPO 10/440	10	440/585	2,00	3200
MOSIPO 10/690	10	690/910	2,50	3960
MOSIPO 15/275	15	275/350	2,00	2450
MOSIPO 15/440	15	440/585	2,00	3200
MOSIPO 15/690	15	690/910	2,50	3960

konfigurator
configurator

MOSIPO
MOSIPO

varovalo
safety tie

*Zaključki ozemljitvenega vodnika H07V-K 6 mm²
*End fittings of earthing conductor H07V-K 6 mm²

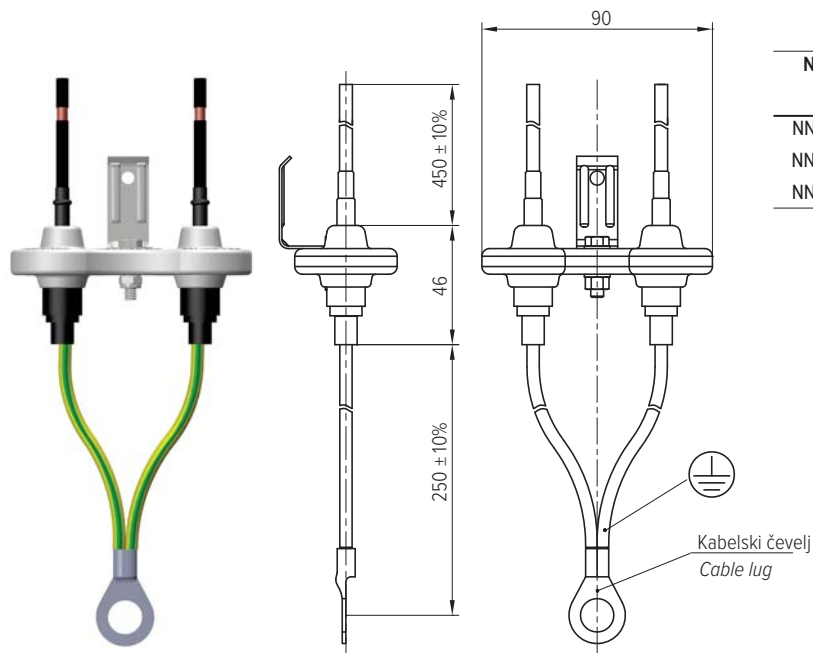
kabeljski čevljev 6/8
cable lug 6/8

samo vodnik
only conductor

votlica
terminal tube

Na zahtevo kupca izdelamo integriran ozemljitveni vodnik do dolžine 1 m, izbrano barvo in zahtevanim zaključkom.

At the customer's request we produce an integrated earthing conductor up to a length of 1 m, with any colour and end fitting.



Naziv/Name	I _n [kA]	U _c (AC/DC) [V]	U _p [kV]	W [J]
NNO 15/275 x 2	15	275/350	1,50	2450
NNO 15/360 x 2	15	360/465	1,80	2450
NNO 15/440 x 2	15	440/585	2,00	3200

Na zahtevo kupca izdelamo integriran ozemljitveni vodnik do dolžine 1 m, z izbrano barvo in zahtevanim zaključkom.

At the customer's request we produce an integrated earthing conductor up to a length of 1 m, with any colour and end fitting.



Za podrobnejše informacije o priključkih pošljite zahtevo.

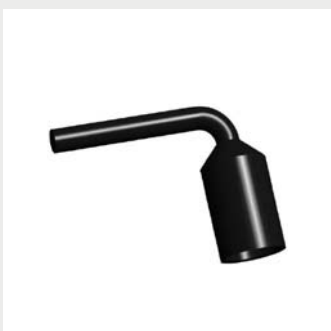
Please send a request for more detailed information.



priključek P1
connector P1



priključek P2
connector P2



priključek P3
connector P3



priključek P4
connector P4



priključek P5
connector P5



priključek P6
connector P6

TY1 so kovinsko oksidni odvodniki prenapetosti v modularnem ohišju. TY1-F so kompaktni kovinsko oksidni odvodniki prenapetosti z varovalko. Namenjeni so za vgradnjo v glavno razdelilno omarico kot prva stopnja zaščite pred direktnim udarom strele.

Odklopna naprava reagira:

- ko v normalnem obratovanju tok skozi odvodnik naraste nad 1 mA,
- v primeru atmosferske praznitve (tok večji od 100 kA).

Po delovanju odklopne naprave se vidno polje obarva rdeče. V tem primeru je potrebno pri TY1 zamenjati modul, pri TY1-F pa celoten odvodnik prenapetosti.

Vgradnja

Mesto montaže TY1 in TY1-F odvodnikov prenapetosti določajo pravilniki in tehnični predpisi. Obvezno se vgradijo v razdelilne omare.

Splošni podatki

- Odzivni čas: $t_A < 25 \text{ ns}$
- Glavna predvarovalka pri TY1: 100 AgL
- Temperaturno območje okolja: $T = -40 \text{ }^\circ\text{C}.. +80 \text{ }^\circ\text{C}$
- Stopnja zaščite: IP 20
- Material ohišja: termoplast V-0 (UL 94)
- Možnost daljinskega upravljanja
- Montaža na klobučno letev 35 mm²
- Presek priključnega vodnika:
 - enožilni 35 mm²
 - večžilni 25 mm²
- IEC razred: I, II
- Testirani po standardu: IEC 61643-11

TY1 are metal oxide surge arresters in modular housing. TY1-F are compact metal oxide surge arresters with integrated backup fuse. They are designed to be installed into the main junction box as the first level of protection against direct lightning strikes.

The disconnecting device reacts:

- when in a normal operation the current through the surge arrester increases over 1 mA,
- In case of an atmospheric discharge (current higher than 100 kA).

After the disconnecting device has been active the visual field shows red colour. In this case it is necessary to replace the TY1 module or in case of TY1-F a complete surge arrester.

Installation

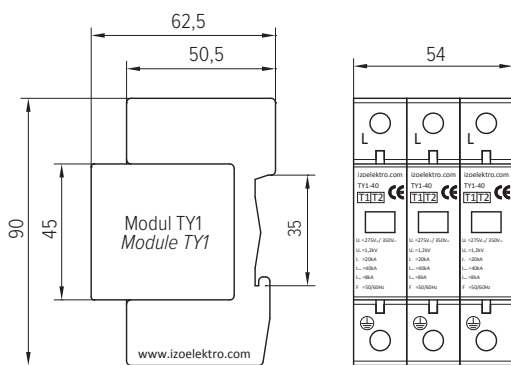
The position for installing TY1 and TY1-F surge arresters is determined by directives and technical regulations. They must be installed into junction boxes.

General data

- Response time: $t_A < 25 \text{ ns}$
- Main Backup fuse: 100 AgL
- Ambient temperature range: $T = -40 \text{ }^\circ\text{C}.. +80 \text{ }^\circ\text{C}$
- Ingress protection level: IP 20
- Housing material: thermoplastic V-0 (UL 94)
- Possibility of remote control
- Mounting on top hat rail 35 mm²
- Cross-section of connection conductor:
 - single-strand 35 mm²
 - multi-strand 25 mm²
- IEC class: I, II
- Tested according to standard: IEC 61643-11



1 polni/1 pole 2 polni/2 poles 3 polni/3 poles 4 polni/4 poles



Primer/example: TY1-3-275-40



Naziv Name	Modul TY1 Module TY1	U _c (V)	I _n (kA)	I _{imp} (kA)	I _{max} (kA)	U _p (kV)
TY1-1-275-40	M1-275-40	275	20	8	40	<1,2
TY1-1-320-40	M1-320-40	320	20	8	40	<1,5
TY1-1-385-40	M1-385-40	385	20	8	40	<1,8
TY1-1-440-40	M1-440-40	440	20	8	40	<1,8
TY1-1-275-60	M1-275-60	275	30	12,5	60	<1,5
TY1-1-320-60	M1-320-60	320	30	12,5	60	<1,8
TY1-1-385-60	M1-385-60	385	30	12,5	60	<2,0
TY1-1-440-60	M1-440-60	440	30	12,5	60	<2,0
TY1-1-275-80	M1-275-80	275	40	20	80	<2,0
TY1-1-320-80	M1-320-80	320	40	20	80	<2,2
TY1-1-385-80	M1-385-80	385	40	20	80	<2,4
TY1-1-440-80	M1-440-80	440	40	20	80	<2,5
TY1-1-275-100	M1-275-100	275	50	25	100	<2,4
TY1-1-320-100	M1-320-100	320	50	25	100	<2,8
TY1-1-385-100	M1-385-100	385	50	25	100	<3,0
TY1-1-440-100	M1-440-100	440	50	25	100	<3,2
TY1-1-320-140	M1-320-140	320	80	25	140	<3,0
TY1-1-385-140	M1-385-140	385	80	25	140	<3,3
TY1-1-440-140	M1-440-140	440	80	25	140	<3,5

- TY1 - Tip NN odvodnika/ Type of LV surge arrester
 3 - Število polov/ Number of poles
 275 - U_c (V) Trajna obratovalna napetost /Continuous operating voltage
 40 - I_{max} (kA) Maksimalni odvodni tok/Maximal discharge current



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