Energy Division

Raychem Metal-Oxide Low Voltage Arresters

enia
energy networks & industrial applications

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Tyco Electronics
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Raychem Metal-Oxide Low Voltage Arresters

Transition: insulated overhead lines to cables

Overhead line

Raychem low voltage surge arresters provide protection for low-voltage overhead lines, consumer in-house supplies, distribution transformers and other systems. The gapless metal-oxide varistor incorporated in the surge arrester reliably imposes low-value limits on surges caused by atmospheric overvoltages and switching transients, thus protecting the insulation of the consumer-side networks and equipment. The varistor has a very short response time (typically <100 ns) and can safely handle high-current impulses up to 100 kA, 4/10 µs. The arrester's nominal discharge current is 10 kA. The metal-oxide varistor is enclosed in a sturdy, weatherproof polymer housing. Numerous tests have confirmed the durability of the housing, even when exposed to extreme temperature fluctuations and contamination. The LVA surge arresters are in compliance with requirements Class II as defined by IEC 61643-1.

They are designed for applications in which protection against direct contact is not necessary. Special insulated adapter modules are available for use in insulated overhead-line systems and the low-voltage bushings of distribution transformers.

The integral disconnector disconnects the arrester from the network if an overload occurs, caused, for example, by a lightning strike in the vicinity or an impermissible voltage excursion in the system. If this happens the rating plate on the underside of the arrester dislocates and remains dangling from a holding wire. The ground connection itself remains securely in position.

Service entry through overhead system

Distribution transformers

This arrangement ensures that when the arrester disconnects, the ground connection line cannot penetrate dangerous parts of the overhead system. The rating plate is large and is reflective on the reverse, so the defective arrester is easily spotted. All terminals are made of high-grade steel and connect to aluminum or copper without corrosion problems.

Operation including disconnector and indicator

Normal operating condition

Fault – arrester disconnected from system

Product Features:

Suitable for indoor and outdoor use

Integrated disconnector and 1 m line lead

Housing and lead is flame retardant and UV resistant

Easy to identify failure indicator

Easy to install (no tools required)

Large selection of standard accessories

CE certified

Tested according IEC 61643-1 + Amd.1 and EN 61643-11

Technical Data

Residual voltage (kV)

Type	Continuous voltage U_c (V)	Lightning current impulse 8/20 µs 1 kA	2 kA	5 kA	10 kA	20 kA	
LVA-280 B	280	0.73	0.77	0.85	1.0	1.1	no lead (Acc. S)
	280	0.76	0.82	0.96	1.2	1.58	with 15 cm lead
LVA-440 B	440	1.26	1.32	1.44	1.6	1.79	no lead (Acc. S)
	440	1.29	1.38	1.55	1.8	2.21	with 15 cm lead

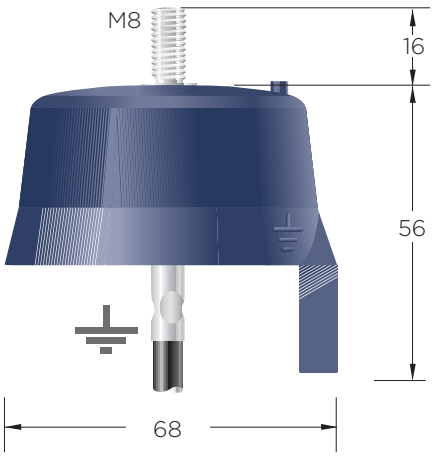
Metal-oxide surge arresters (SPD)

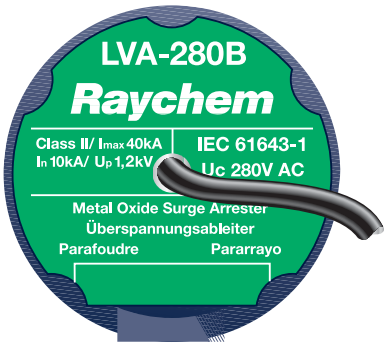
Class II (IEC 61643-1)	
Nominal discharge current I_n	10 kA
Maximum discharge current I_{max}	40 kA
High current impulse 4/10 µs	100 kA*
Energy absorption capability	4.1 J/V · U_c
Rated frequency	48 - 62 Hz a.c.
Ambient temperature	-40 ... +70 °C
Max. altitude	2000 m

* Test as per IEC 60099-4

Ordering Information

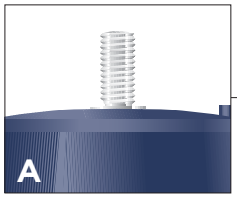
Dimensions

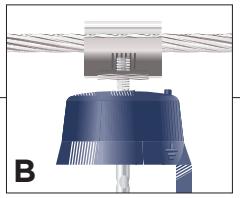


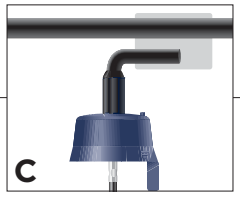


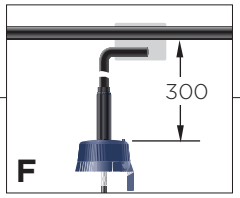
Accessories for LVA arresters

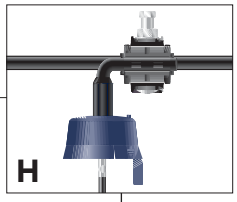
Line connection



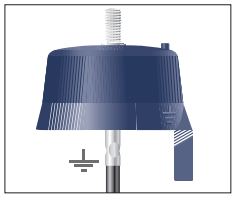








Surge arrester continuous/rated voltage (V)

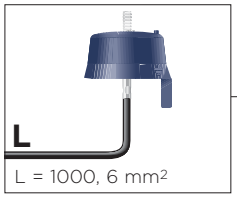


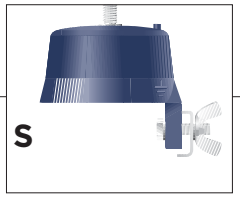
280

440

LVA- [ ] **B-** [ ] [ ]

Ground lead





Ordering example: LVA-280B-BL
Surge arrester for continuous/rated voltage 280V for connection to bare conductor and with insulated stranded earth wire (6 mm²)

Dimensions in mm

Contact us for further information at: **surgearrester@tycoelectronics.com**

Other products available from Tyco Electronics Energy Division

Asset protection	Insulation enhancement systems for substations and overhead. Designed to prevent unplanned outages due to accidental bridging and to help upgrade insulation levels at critical points in systems. Contact us at: assetprotection@tycoelectronics.com	
Low-voltage surge arresters	LV arresters are used to provide protection for LV overhead lines, consumer in-house supplies, distribution transformers and other appliances. Contact us at: surgearresters@tycoelectronics.com	
Medium-voltage surge arresters	Metal oxide varistor, distribution arresters for indoor and outdoor applications for protection of overhead lines, DC locomotives and switchgear applications. Contact us at: surgearresters@tycoelectronics.com	
High-voltage surge arresters	Porcelain and polymeric series parallel and single column constructed arresters for protection of transmission systems up to 550 kV. Contact us at: hvsurgearrester@tycoelectronics.com	
Polymeric insulators	Insulators and insulating components/housings providing reliable solutions for power utilities and railway customers with installations in high pollution environments and applications up to 400 kV. Contact us at: insulators@tycoelectronics.com	
Porcelain insulators	Insulators for applications up to system voltages of 132 kV. This range of insulators offers a cost-effective solution for low and medium polluted environments. Contact us at: insulators@tycoelectronics.com	

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