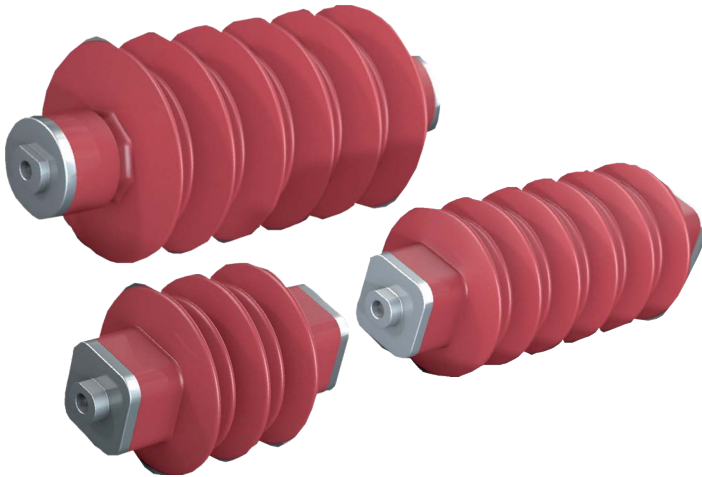


# RAYCHEM MEDIUM VOLTAGE SURGE ARRESTERS HDA SERIES

U<sub>c</sub> from 2 kV UP TO 41 kV



**CRIMPED STRUCTURAL CONSTRUCTION ENSURES LIGHT WEIGHT PRODUCT WITH HIGH MECHANICAL STRENGTH**

## APPLICATIONS

- Overvoltage protection of medium voltage distribution systems
- Transformer and cable protection from lightning and switching overvoltages

## RELEVANT STANDARDS AND TESTING

- Type tested in accordance to IEC 60099-4, Ed 3.0 (2014)

## KEY FEATURES

- Directly molded housing prevents moisture ingress
- Safe failure mode in the short circuit test (pre-fail method)
- Excellent cantilever and tensile performance
- Alternating sheds for best pollution flash over resistance
- Hydrophobic Ethyl Vinyl Acetate (EVA) housing for outdoor use
- Excellent operating performance & long service life
- High energy handling capability

TE Connectivity's TE Raychem pioneered the development of polymeric housed surge arresters in the early 1980's and since 1986 have proven global service experience operating in the worlds toughest environments. At the core of the HDA arrester design is our improved ZnO varistor disk which has superior thermal and electrical characteristics and stability.

TE's Raychem HDA Ethyl Vinyl Acetate (EVA) surge arresters have been designed and tested to meet international standards, IEC 60099-4 and to our customers toughest environmental conditions.

The high performance varistor, combined with the excellent product design results in greater energy handling and Temporary Overvoltage (TOV) performance. The crimped structural construction offers a light weight product with high mechanical strength.

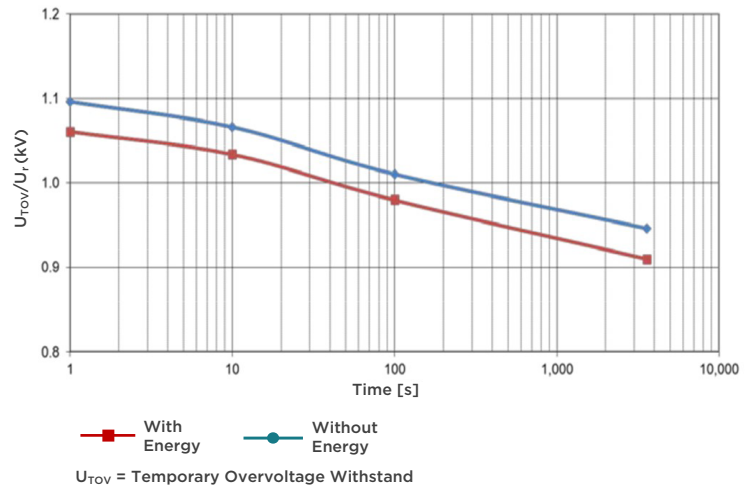
The manufacturing process ensures void free construction and optimum interface sealing. This is achieved by bonding the EVA housing directly to the ZnO discs and aluminium fittings using a TE's Raychem proprietary bonding solution.

Applications include protection of MV networks and equipment from lightning and switching surge related over-voltages in areas with relatively high iso-keranic levels. Suitable for both outdoor and indoor use to protect transformers and cable terminations.

**TABLE 1: TECHNICAL DATA**

MEDIUM VOLTAGE SURGE ARRESTER HDA SERIES	
TECHNICAL DATA	
Commercial Designation	HDA
HDA Series - Rated Voltage Range ( $U_r$ )	2 - 51.5 kV
Rated discharge current (8/20 $\mu$ s)	10 kA
Energy Classification According to IEC 60099-4 (Ed. 3.0)	DH
Creepage	380 - 1279 mm
Repetitive Charge Transfer Rating ( $Q_{rs}$ )	0.5 C
Thermal Charge Transfer Rating ( $Q_{th}$ )	1.1C
High current impulse (4/10 $\mu$ s)	100 kA
High Current Short Circuit: (pre-failing method)	40 kA
Service conditions - Ambient temperature	- 60°C to + 60°C
Bending movement - SSL / SLL	350 Nm
Tensile strength	2000 N
Torque strength	50 Nm

**Temporary Overvoltage (TOV) Withstand Curve**



**TABLE 2: PRODUCT SELECTION INFORMATION**

Description	HDA-xxMA-B3	Continuous Operating Voltage - kV	Rated Voltage - kV	Residual Voltage (8/20 $\mu$ s) - kV		Steep Current Front Time (1/20 $\mu$ s) - kV	Switching Current (30/60 $\mu$ s) - kV		Housing size (see Table 3)	
		$U_c$	$U_r$	10kA	20kA	10kA	125A	250A	Standard	Extended
HDA-MA-B3	2.0	2.0	3.0	10.5	11.9	11.9	8.0	8.3	1	2
	3.0	3.0	4.0	10.5	11.9	11.9	8.0	8.3	1	2
	4.0	4.0	5.5	14.5	16.4	16.5	11.1	11.4	1	2
	5.0	5.0	6.5	17.1	19.4	19.4	13.1	13.5	1	2
	6.0	6.0	8.0	21.0	23.8	23.9	16.1	16.5	1	2
	8.0	8.0	10.0	26.2	29.7	29.8	20.1	20.6	1	2
	9.6	9.6	12.0	31.4	35.6	35.7	24.1	24.7	1	2
	10.4	10.4	13.0	34.2	38.7	38.9	26.2	26.9	1	2
	11.0	11.0	14.0	36.7	41.6	41.7	28.1	28.9	1	2
	12.0	12.0	15.0	39.5	44.7	44.9	30.3	31.1	1	2
	12.8	12.8	16.0	41.9	47.4	47.7	32.1	33.0	2	2
	15.0	15.0	19.0	49.9	56.5	56.7	38.2	39.3	2	-
	17.0	17.0	21.5	56.4	63.9	64.1	43.2	44.4	2	-
	18.0	18.0	22.5	59.0	66.8	67.1	45.2	46.5	2	-
	19.0	19.0	24.0	62.8	71.1	71.4	48.1	49.5	2	-
	19.5	19.5	24.5	64.2	72.7	73.0	49.2	50.6	2	-
	20.0	20.0	25.0	65.6	74.3	74.6	50.3	51.7	2	-
	21.0	21.0	26.5	69.7	78.9	79.3	53.4	54.9	2	-
22.0	22.0	27.5	72.5	82.1	82.5	55.5	57.1	2	-	
24.0	24.0	30.0	78.5	88.9	89.3	60.1	61.8	2	-	

**TABLE 2: PRODUCT SELECTION INFORMATION**

Description	HDA-xxM-B3	Continuous Operating Voltage - kV	Rated Voltage - kV	Residual Voltage (8/20µs) - kV		Steep Current Front Time (1/20µs) - kV	Switching Current (30/60µs) - kV		Housing size (see Table 3)	
		U <sub>c</sub>	U <sub>r</sub>	10kA	20kA	10kA	125A	250A	Standard	Extended
HDA-M-B3	25.0	25.0	31.5	82.7	93.6	94.1	63.3	65.1	3	4 or 5
	27.0	27.0	34.0	89.0	100.8	101.2	68.2	70.1	3	4 or 5
	29.0	29.0	36.5	95.6	108.2	108.7	73.2	75.3	3	4 or 5
	30.0	30.0	37.5	98.4	111.4	111.9	75.4	77.5	3	4 or 5
	31.0	31.0	39.0	102.6	116.2	116.7	78.6	80.8	3	4 or 5
	32.0	32.0	40.0	104.7	118.5	119.1	80.2	82.4	3	4 or 5
	33.0	33.0	41.5	108.7	123.1	123.6	83.3	85.6	3	4 or 5
	34.0	34.0	42.5	111.3	126.0	126.6	85.3	87.6	3	4 or 5
	35.0	35.0	44.0	115.5	130.8	131.4	88.5	90.9	4	5
	36.0	36.0	45.0	118.3	133.9	134.5	90.6	93.2	4	5
	39.0	39.0	49.0	128.4	145.4	146.0	98.4	101.1	4	5
	40.0	40.0	50.0	131.2	148.5	149.2	100.5	103.3	5	-
	41.0	41.0	51.5	135.4	153.3	154.0	103.7	106.6	5	-

U<sub>c</sub> = continuous operating voltage; U<sub>r</sub> = Rated voltage

**TABLE 3: PRODUCT HOUSING PARAMETERS**

Housing Size	Sheds	Impulse Voltage [8/20 µs] - kV	Power Frequency 50 Hz (wet) - kV	Flashover Distance (mm)	Creepage Length (mm)	Body Height (mm)	Shed Outer Diameter (mm)
1	5	106	47	176	380	183	123
2	12	190	93	310	830	316	123
3	11	204	98	339	970	343	137
4	13	228	110	378	1125	383	137
5	15	250	122	418	1279	423	137

**For accessory range and ordering information please refer to brochure EPP-2131 or e-mail us at [surgearresters@te.com](mailto:surgearresters@te.com). Example of a complete part description: HDA-12MA-B3-NFF\***

\* NFF accessories: M12 studs with fasteners for standard cable lug connection

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