

## MEDIUM VOLTAGE SURGE ARRESTER DA1 SERIES FROM 4 - 39 kV RATED VOLTAGE CLASS 1

### KEY FEATURES

- Directly molded housing prevents moisture ingress
- Safe failure mode in the short circuit test (pre-fail method)
- Maintenance free
- Superior TOV performance
- High energy handling capability
- Independently tested in accordance with IEC60099-4
- Superior protection margins
- Hydrophobic silicone housing for outdoor use
- Excellent cantilever and tensile performance
- Excellent mechanical, vibration and impact withstand capability

TE Connectivity's (TE) Bowthorpe EMP pioneered the development of polymeric composite housed surge arresters in the early 1980's and since then has a proven service experience across the globe, operating in the worlds toughest environments.

Bowthorpe EMP surge arresters provide active over voltage protection that contributes directly to protecting expensive assets and improved reliability of your system. Bowthorpe EMP DA class 1 silicone surge arresters have been designed and tested to meet our customers demands with reliability and offering improved operational performance.

The DA development was based on more than 40 years of experience in arrester design and manufacture within TE Energy. The DA series is independently tested and qualified as per IEC 60099-4 standards and all test reports are independently certified.

Features include proven moisture sealing technology, non-tracking insulating silicone materials, fully integrated, single piece and void-less design, reliable earth lead disconnect, safe mode of failure, and quality.

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

**Customers can count on consistent, high quality products, driven by TE's proven innovation and backed by our extraordinary customer support.**

## Medium Voltage Surge Arrester - DA1 Series



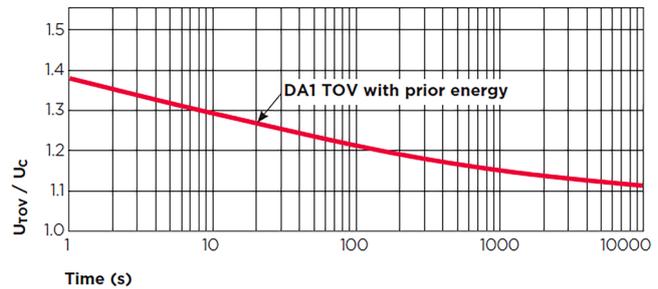
High quality design and manufacturing.  
ISO 9001 and 14001 compliant.

**TABLE 1: TECHNICAL DATA**

DA1 series	4 - 39 kV
Rated discharge current (8/20 $\mu$ s)	10 kA
Line discharge class 1 according to	IEC 60099-4
Operating duty impulse withstand current (4/10 $\mu$ s)	100 kA
Long duration current impulse (2000 $\mu$ s)	325 A
10 second TOV <sub>1</sub> (U <sub>TOV</sub> / U <sub>c</sub> )	1.29 * U <sub>c</sub>
High current short circuit: (pre-failing method) (Safe non-shattering failure mode)	21 kA
Energy	5.6 kJ/kV
Ambient temperature range	- 60°C to + 60°C

**TEMPORARY OVERVOLTAGE WITHSTAND CURVE**

TOV of DA1 with 100kA single shot high current prior energy



U<sub>TOV</sub> = temporary overvoltage withstand

**TABLE 2: PRODUCT SELECTION INFORMATION**

Description	U <sub>c</sub> kV	U <sub>R</sub> kV	Residual Voltage - kV (Using IEC Standard Impulses)				Housing size (see Table 3)	
			Lighting - [8/20 $\mu$ s]		Steep Lighting - [1/20 $\mu$ s]	Switching - [30/60 $\mu$ s]	Standard	Extended
			at 10 kA	at 20 kA	at 10 kA	at 500 A		
DA1-04	3,2	4	10,6	11,6	11,1	8,4	A	B
DA1-06	4,8	6	15,9	17,4	16,7	12,7	A	B
DA1-08	6,4	8	21,2	23,2	22,3	16,9	A	B
DA1-10	8	10	26,5	29,1	27,9	21,1	A	B or C
DA1-12	9,6	12	31,8	34,9	33,4	25,3	A	B, C or D
DA1-15	12	15	39,8	43,6	41,8	31,6	B	C or D
DA1-18	14,4	18	47,7	52,3	50,2	38	C	B, F or F
DA1-21	16,8	21	55,7	61	58,5	44,3	C	D or F
DA1-22	17,6	22	58,3	63,9	61,3	46,4	D	F or G
DA1-24	19,2	24	63,6	69,7	66,9	50,6	D	F or G
DA1-27	21,6	27	71,6	78,4	75,2	56,9	F	G or H
DA1-30	24	30	79,5	87,2	83,6	63,3	F	G or H
DA1-33	26,4	33	87,5	95,9	92	69,6	G	H
DA1-36	28,8	36	95,4	104,6	100,3	75,9	G	H
DA1-39	31,2	39	103,4	113,3	108,7	82,2	H	--

U<sub>c</sub> = Continuous operating voltage  
U<sub>R</sub> = Rated voltage

**TABLE 3: PRODUCT HOUSING PARAMETERS**

Housing Size	Sheds	Impulse Voltage [1.2/50 $\mu$ s] kV	Power Frequency (WET withstand) kV	Flashover Distance (mm)	Creepage Length (mm)	Height (body) (mm)	Weight (kg)
A	4	134	50	152	329	147	1,2
B	5	160	56	177	404	172	1,4
C	7	194	66	227	553	222	1,8
D	8	205	75	252	627	247	2
F	10	427	102	302	776	297	2,6
G	12	273	122	352	925	347	2,9
H	14	295	135	402	1074	397	3,4

### ORDERING INFORMATION

For accessory range and ordering information please refer to brochure EPP-1098 or e-mail us at [surgearresters@te.com](mailto:surgearresters@te.com).

Example of a complete part description: DA1-12B-FOFONO-S

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

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