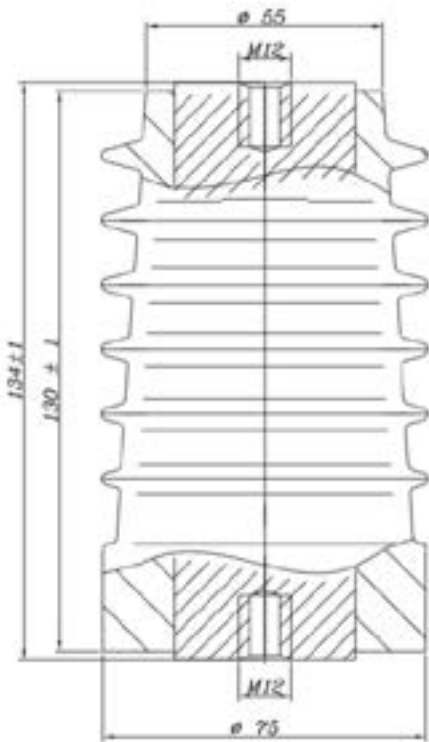


# Spark gapless surge arresters MCL-OPW



Medium voltage surge arresters are offered in two versions: for use indoor and outdoor use. Surge arresters are made of strictly connected varistors, separated from the cover by a special resin dilatation.

Products fulfill standards BS EN 60099-4:2009.



### Basic features:

- outdoor and indoor use
- high resistance to dirt
- excellent hydrophobic properties in outdoor performance
- maintenance-free
- low weight and small dimensions
- mounting system and the power supply is unified with post insulators

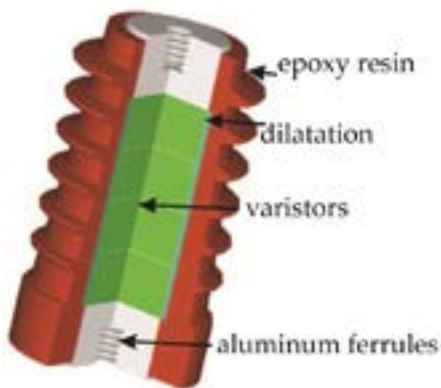
### Types:

- indoor:..... housing made of epoxy resin, red color
- outdoor: ..... housing made of hydrophobic epoxy composites
- clamps, bolts and nuts:..... made of chrome-nickel steel
- maximum connection terminal line: 70 mm<sup>2</sup>

### Operating conditions:

- ambient temp.: ..... - 40°C do +40°C
- apply to the height: ..... up to 1000 m npm
- frequency networks: ..... 48 Hz up to 62 Hz

### MCL-OPW-04



## Technical data:

	MCL-OPW / 01	MCL-OPW / 02	MCL-OPW / 03	MCL-OPW / 04	MCL-OPW / 05	MCL-OPW / 06	MCL-OPW / 07	MCL-OPW / 08	MCL-OPW / 09	MCL-OPW / 10	MCL-OPW / 11
rated voltage Ur	3	6	9	12	15	18	21	24	27	30	33
maximum continuous operating voltage Uc	2,4	4,8	7,2	9,6	12	14,4	16,8	19,2	21,6	24	26,4
reduced voltage while connecting voltage wave 125A 30/60	6,2	12,4	18,6	24,8	31	37,2	43,4	49,6	55,8	62	68
reduced voltage while connecting voltage wave 250 A 30/60	6,3	12,7	19	25,4	31,7	38,1	44,4	50,8	57,1	63,4	69,8
reduced voltage while connecting voltage wave 50 A 30/60	6,3	12,7	19	25,4	31,7	38,1	44,4	50,8	57,1	63,4	69,8
reduced voltage while connecting voltage wave 125 A 30/60	6,9	13,8	20,7	27,6	34,4	41,3	48,2	55,1	62	68,9	75,8
reduced voltage while impulse discharged current 5 kA 8/20	7,5	15	22,5	30	37,5	45,1	52,6	60,1	67,6	75,1	82,6
reduced voltage while rated discharged current 10 kA 8/20	8,2	16,4	24,5	32,7	40,9	49,1	57,3	65,5	73,6	81,8	90
reduced voltage while impulse current 20 kA 8/20	9,3	18,6	27,9	37,2	46,5	55,8	65,1	74,4	83,7	93	102,3
reduced voltage while steep voltage wave 10 kA 1/3	9,4	18,8	28,2	37,6	47,1	56,5	65,9	75,3	84,7	94,1	103,5

## Specifications:

- rated voltage Ur: 3 kV - 33 kV
- rated discharged current: 10 kA
- limiting discharged current: 100 kA
- rectangular impulse current withstand: (2000  $\mu$ s) 250 A
- line discharge class: 1
- energy absorption capability: 2,8 kJ/kVUc 3,22 kJ/kVUr

**According to the standard PN-EN 60099-4 rated voltages of the surge arresters are as follows:**

range Ur [kVrms]	rated voltage spike [kV rms]
< 3	negotiable
3<Ur<30	1
30Ur< 54	3
54<Ur< 96	6
96<Ur< 288	12
288<Ur<396	18
396<Ur<756	24

Note: Other values may be used under condition that they are divisible by 6.

Calculated according to the above recommendations a number of rated voltages is as follows:

3; 6; 9; 12; 15; 18; 21; 24; 27; 30; 33; 36; 39; 42; 45; 48; 51; 54; 60; 66; 72; 78; 84; 90; 96; 108; 120; 132; 144; 156; 168; 180; 192; 204; 216; 228; 240; 252; 264; 276; 288 [kVrms].

This series in range up to 96 kV can be realized using a varistor MOVD42H21 (a single varistor voltage 3 kV rms). For medium voltage surge arresters the voltage for continuous operating shall be determined in proportion to the value of rated voltage and to the applied varistors represent 80% of the rated voltage.