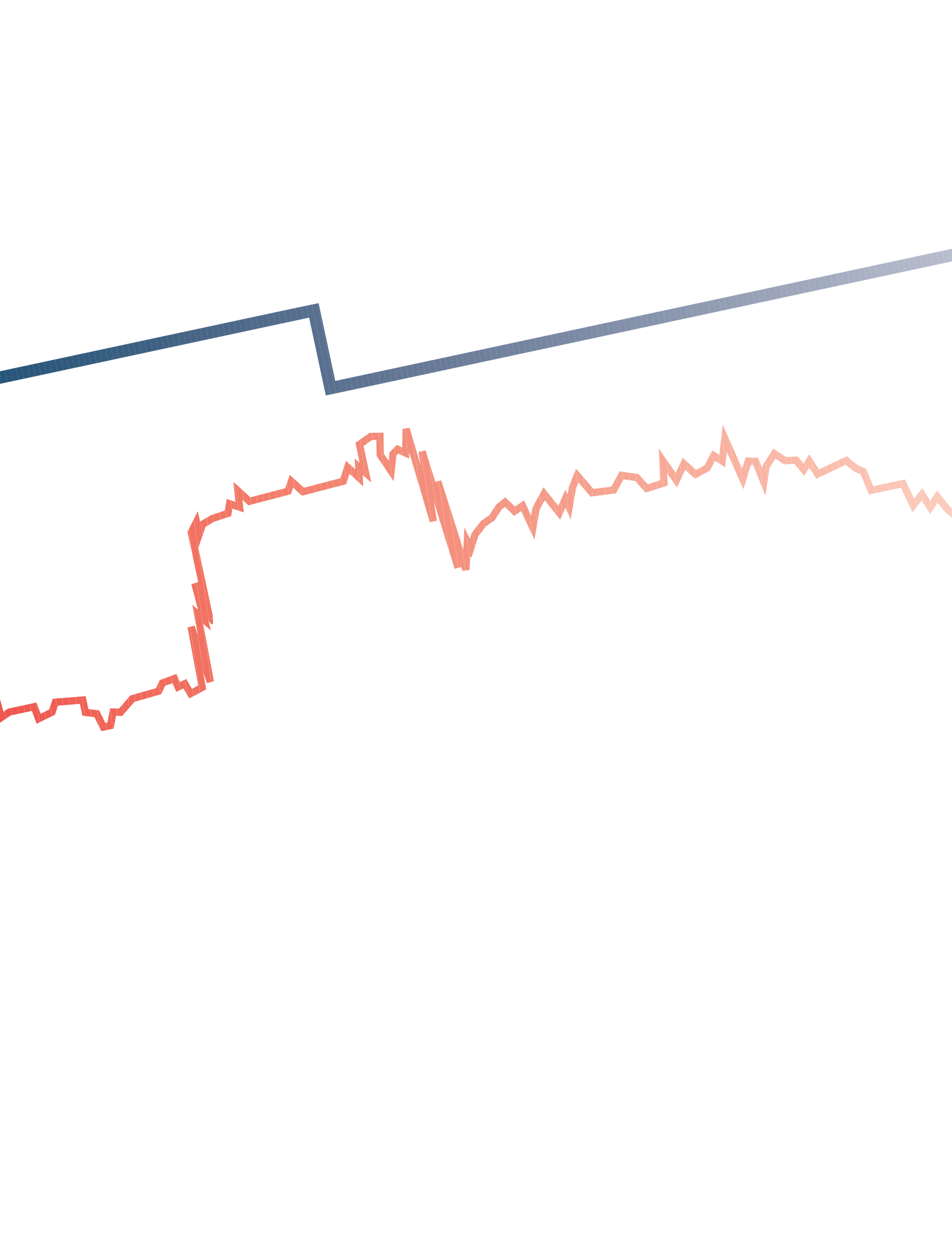




# Surge Arrester



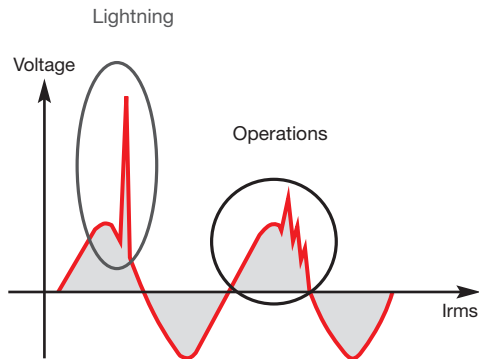




## Surge Arresters | Safe and Reliable Protection for Electrical Equipment

The Enerdoor surge arrester series has been specifically designed to protect electrical equipment. Surge arresters are installed at the front end of a system for the purpose of diverting harmful overvoltage transients caused by external (lightning) and/or internal (switching) events to ground safely. Also known as Surge Protection Device (SPD), or Transient Voltage Surge Suppressor (TVSS), Enerdoor surge arresters protect against electrical transients resulting from lightning strikes that find their way onto electrical conductors.

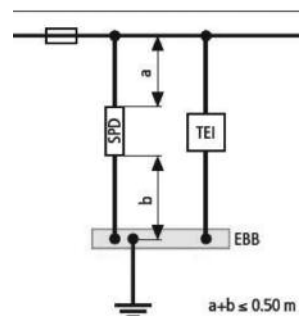
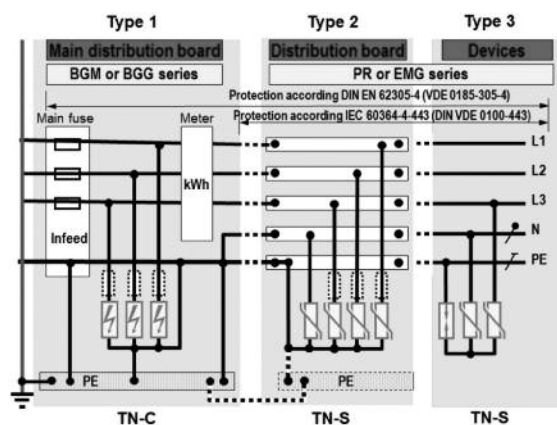
All models include remote contact, visual indicator, and comply with the UL 1449, IEC 61643-11, and VDE 0675 International Standards. DIN rail or screw mounting options are available with select models offering plug and play replaceable cards for quick and easy installation and replacement.



### Types of Surge Arresters

Surge arresters are divided by zone:

ZONE	CHARACTERISTICS	SURGES
LZP 0A	External zone exposed to direct lightning strikes	Full lightning current and unattenuated electric field
LZP 0B	External zone within lightning prevention system (LPS) and protected against direct strikes	Part of the lightning current and unattenuated electric field
LZP 1	Internal zone where surge is limited by current spreading, up-stream SPDs and screening	Low currents and attenuated electric fields
LZP 2	Internal zone where surge is less than LZP 1 due to current spreading, screening and up-stream SPDs	Minimum currents and very attenuated electric fields



Recommended max cable length for surge arrester in branch circuits

### Example of main supply

## ENERDOOR SURGE ARRESTERS

Mains Line	Description	Class 1+2	Class 1+2	Class 1+2	Class 2	Class 2+3	Class 2+3	Class 2+3	Class 2+3
 L1 L2 L3 N PE	3-phase, N-PE separated	BMG 12,5	BGG 25	BGG 50	PR	EMG 25	EMG 40	EMG 80	EMG 120
 L1 L2 L3 PEN	3-phase, N-PE connected	BMG 12,5	BGG 25	BGG 50	PR	EMG 25	EMG 40	EMG 80	EMG 120
 L1 L2 N PE	2-phase, N-PE separated	BMG 12,5	BGG 25	BGG 50	PR	EMG 25	EMG 40	EMG 80	EMG 120
 L1 L2 PEN	2-phase, N-PE connected	BMG 12,5	BGG 25	BGG 50	PR	EMG 25	EMG 40	EMG 80	EMG 120
 L1 N PE	1-phase, N-PE separated	BMG 12,5	BGG 25	BGG 50	PR	EMG 25	EMG 40	EMG 80	EMG 120
 L1 PEN	1-phase, N-PE connected	BMG 12,5	BGG 25	BGG 50	PR	EMG 25	EMG 40	EMG 80	EMG 120

### Class I

AM SERIES ..... 5

### Class I+II

BM (G) 12.5 SERIES ..... 7

BG (G) 25 SERIES ..... 9

BG (G) 50 SERIES ..... 11

### Class II

FINPR SERIES ..... 13

FINPRS SERIES ..... 21

### Class II+III

EMG (G) 20 SERIES ..... 15

EMG (G) 40 SERIES ..... 17

EMG (G) 60 SERIES ..... 19

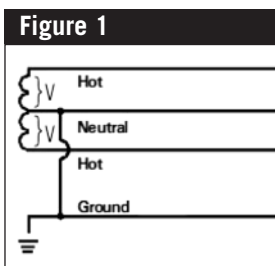
The Enerdoor surge arrester AM series provides advanced surge protection. This device is designed for maximum discharge of 300 kA. As a standard this series is offered in a metal enclosure and includes a visual indicator and optional remote alarm.

**GENERAL CHARACTERISTICS**

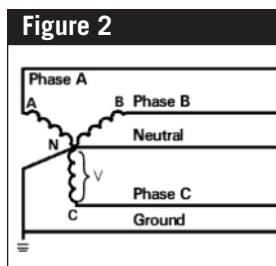

SCCR	200 kA
Lightening counter current	>200 kA
Fail pre-test	Press 2 sec reset button
Protection	L-N, N-PE, L-PE
Power status indication	Normal = Power LED ON
Working status indication	Normal = Blue LED ON Fail = Red LED ON
Power connecting cable	8 AWG (L1=yellow, L2=green, L3=red N=blue, PE=black)
Signal cable	16 AWG (C=red, NC=blue, NO=brown)
Working enviroments	Temperature (-40°C + 70°C, Humidity relative up to 95% (25°C), altitude <2000 meter)
Dimensions WxDxH (in mm)	256 x 205 x 104
Net weight	5.4 Kg

AM	System Voltage (50/60Hz)	Protection Mode				Voltage Protection Rated (VPR@6KV/3KA)				Surge Capability KA		Max Continuous Voltage
		L-N	L-PE	N-PE	L-L	L-N	L-PE	N-PE	L-L	PHASE	MODE	
AM120SP100-5	120/240 split (fig.1)	✓	✓	✓	-	800	800	800	1200	100	50	180
AM120SP200-5	120/240 split (fig.1)	✓	✓	✓	-	800	800	800	1200	200	100	180
AM120SP300-5	120/240 split (fig.1)	✓	✓	✓	-	800	800	800	1200	300	150	180
AM127Y100-7	220Y127 WYE (fig.2)	✓	✓	✓	-	800	800	800	1200	100	50	180
AM127Y200-7	220Y127 WYE (fig.2)	✓	✓	✓	-	800	800	800	1200	200	100	180
AM127Y300-7	220Y127 WYE (fig.2)	✓	✓	✓	-	800	800	800	1200	300	150	180
AM220Y100-7S	380Y220 WYE (fig.2)	✓	✓	✓	-	1200	1200	1200	2000	100	50	320
AM220Y200-7S	380Y220 WYE (fig.2)	✓	✓	✓	-	1200	1200	1200	2000	200	100	320
AM220Y300-7S	380Y220 WYE (fig.2)	✓	✓	✓	-	1200	1200	1200	2000	300	150	320
AM277Y100-7	480Y277 WYE (fig.2)	✓	✓	✓	-	1200	1200	1200	2000	100	50	320
AM277Y200-7	480Y277 WYE (fig.2)	✓	✓	✓	-	1200	1200	1200	2000	200	100	320
AM277Y300-7	480Y277 WYE (fig.2)	✓	✓	✓	-	1200	1200	1200	2000	300	150	320
AM347Y100-7	600Y347 WYE (fig.2)	✓	✓	✓	-	1500	1500	1500	2500	100	50	420
AM347Y200-7	600Y347 WYE (fig.2)	✓	✓	✓	-	1500	1500	1500	2500	200	100	420
AM347Y300-7	600Y347 WYE (fig.2)	✓	✓	✓	-	1500	1500	1500	2500	300	150	420
AM120H100-7	120/240 H LEG (fig.3)	✓	✓	✓	-	1000	1000	800	1500	100	50	180/275

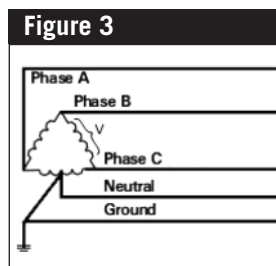
AM	System Voltage (50/60Hz)	Protection Mode				Voltage Protection Rated (VPR@6KV/3KA)				Surge Capability KA		Max Continuous Voltage
		L-N	L-PE	N-PE	L-L	L-N	L-PE	N-PE	L-L	PHASE	MODE	
AM120H200-7	120/240 H LEG (fig.3)	✓	✓	✓	-	1000	1000	800	1500	100	50	180/275
AM120H300-7	120/240 H LEG (fig.3)	✓	✓	✓	-	1000	1000	800	1500	100	50	180/275
AM240D100-6S	240 Delta (fig.4)	-	✓	-	✓	-	1200	-	1400	100	50	320
AM240D200-6S	240 Delta (fig.4)	-	✓	-	✓	-	1200	-	1400	200	100	320
AM240D300-6S	240 Delta (fig.4)	-	✓	-	✓	-	1200	-	1400	300	150	320
AM480D100-6S	480 Delta (fig.4)	-	✓	-	✓	-	1900	-	2200	100	50	550
AM480D200-6S	480 Delta (fig.4)	-	✓	-	✓	-	1900	-	2200	200	100	550
AM480D300-6S	480 Delta (fig.4)	-	✓	-	✓	-	1900	-	2200	300	150	550
AM600D100-6S	600 Delta (fig.4)	-	✓	-	✓	-	2400	-	2800	100	50	690
AM600D200-6S	600 Delta (fig.4)	-	✓	-	✓	-	2400	-	2800	200	100	690
AM600D300-6S	600 Delta (fig.4)	-	✓	-	✓	-	2400	-	2900	300	150	690
AM127S100-3	127 Single (fig. 5)	✓	✓	✓	-	800	800	800	-	100	50	180
AM127S200-3	127 Single (fig. 5)	✓	✓	✓	-	800	800	800	-	200	100	180
AM127S300-3	127 Single (fig. 5)	✓	✓	✓	-	800	800	800	-	300	150	180
AM240S1003S	240 Single (fig. 5)	✓	✓	✓	-	1200	1200	1200	-	100	50	320
AM240S200-3S	240 Single (fig. 5)	✓	✓	✓	-	1200	1200	1200	-	200	100	320
AM240S300-3S	240 Single (fig. 5)	✓	✓	✓	-	1200	1200	120	-	300	150	320



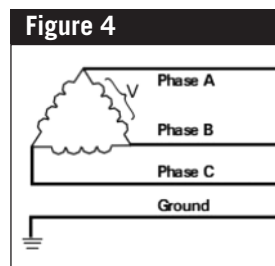
**SPLIT**  
2 Hots, 1 Neu, 1 Grnd



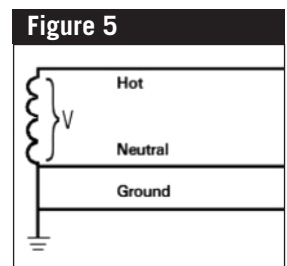
**WYE**  
3 Hots, 1 Neu, 1 Grnd



**HI-LEG DELTA (B High)**  
3 Hots, (B HIGH),  
1 Neu, 1 Grnd



**DELTA & HRG WYE**  
3 Hots, 1 Grnd



**SINGLE POLE**  
1 Hot, 1 Neu, 1 Grnd

The Enerdoor surge arrester BM (G) 12.5 series provides advanced surge protection. This device is designed for maximum discharge of L-N 65 kA and N-PE 100 kA, meets the UL 1449 3rd edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

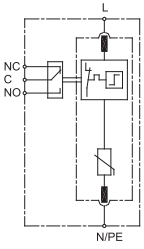
**GENERAL CHARACTERISTICS**


Class category IEC/VDE	I + II / B+C
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time L-N (N-PE)	≤25 ns (<100ns)
Backup fuse (only required if not in the main)	250 Amps gL/gG
Flow current	L-N No N-PE If 100 Arms @ 255 Vac
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

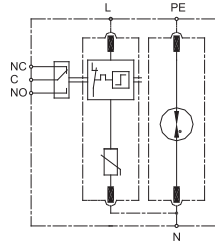
BM (G) 12.5	Nominal Voltage Vac L-L (L-N)	Max Continuous Operation Voltage NPE - Vac	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)			Case
			L-N	N-PE	L-N	N-PE	LN@In	L-N@VPR	NPE (1.2/50)	
BM.150 1P12.5	150	-	12.5	-	65	-	<0.7	<0.6	-	1
BM.275 1P12.5	275	-	12.5	-	65	-	<1.0	<0.8	-	1
BM.320 1P12.5	320	-	12.5	-	65	-	<1.4	<1.2	-	1
BM.385 1P12.5	385	-	12.5	-	80	-	<1.6	<1.4	-	1
BM.420 1P12.5	420	-	12.5	-	80	-	<1.8	<1.5	-	1
BMG.150 2P12.5 N25	208 (150)	150	12.5	25	65	100	<0.7	<0.6	<0.8	2
BMG.150 2P12.5 N50	208 (150)	150	12.5	50	65	100	<0.7	<0.6	<0.8	2
BMG.275 2P12.5 N25	320 (275)	150	12.5	25	65	100	<1.0	<0.8	<1.5	2
BMG.275 2P12.5 N50	320 (275)	150	12.5	50	65	100	<1.0	<0.8	<1.5	2
BMG.320 2P12.5 N25	400 (320)	255	12.5	25	65	100	<1.4	<1.2	<1.5	2
BMG.320 2P12.5 N50	400 (320)	255	12.5	50	65	100	<1.4	<1.2	<1.5	2
BMG.385 2P12.5 N25	480 (385)	255	12.5	25	80	100	<1.6	<1.4	<1.5	2
BMG.385 2P12.5 N50	480 (385)	255	12.5	50	80	100	<1.6	<1.4	<1.5	2
BMG.420 2P12.5 N25	600 (420)	255	12.5	25	80	100	<1.8	<1.5	<1.5	2
BMG.420 2P12.5 N50	600 (420)	255	12.5	50	80	100	<1.8	<1.5	<1.5	2
BMG.150 3P12.5 N25	208 (150)	150	12.5	25	65	100	<0.7	<0.6	<0.8	3
BMG.150 3P12.5 N50	208 (150)	150	12.5	50	65	100	<0.7	<0.6	<0.8	3
BMG.275 3P12.5 N25	320 (275)	150	12.5	25	65	100	<1.0	<0.8	<1.5	3
BMG.275 3P12.5 N50	320 (275)	150	12.5	50	65	100	<1.0	<0.8	<1.5	3
BMG.320 3P12.5 N25	400 (320)	255	12.5	25	65	100	<1.4	<1.2	<1.5	3
BMG.320 3P12.5 N50	400 (320)	255	12.5	50	65	100	<1.4	<1.2	<1.5	3
BMG.385 3P12.5 N25	480 (385)	255	12.5	25	80	100	<1.6	<1.4	<1.5	3
BMG.385 3P12.5 N50	480 (385)	255	12.5	50	80	100	<1.6	<1.4	<1.5	3
BMG.420 3P12.5 N25	600 (420)	255	12.5	25	80	100	<1.8	<1.5	<1.5	3
BMG.420 3P12.5 N50	600 (420)	255	12.5	50	80	100	<1.8	<1.5	<1.5	3

## ELECTRICAL DIAGRAM

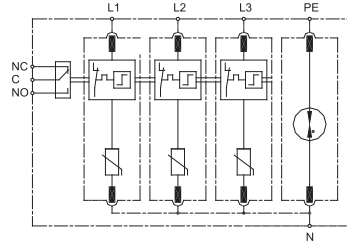
### SCHEMATIC 1



### SCHEMATIC 2

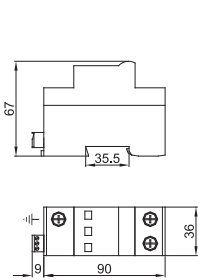


### SCHEMATIC 3

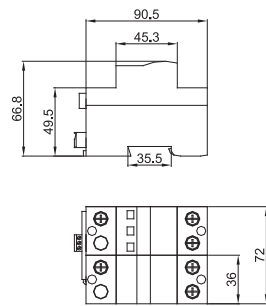


## MECHANICAL DIMENSIONS (mm)

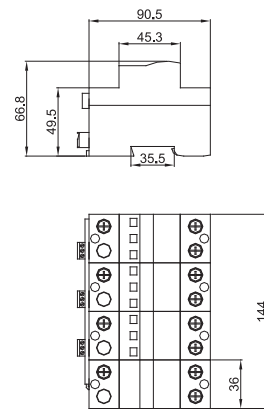
### CASE 1



### CASE 2



### CASE 3





The Enerdoor surge arrester BG (G) 25 series provides advanced surge protection. This device is designed for maximum discharge of L-N 100 kA and N-PE 200 kA, meets the UL 1449 3rd edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

**GENERAL CHARACTERISTICS**

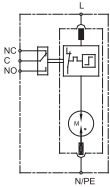

Class category IEC/VDE	I + II / B+C
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time L-N (N-PE)	≤25 ns (<100ns)
Backup fuse (only required if not in the main)	250 Amps gL/gG
Flow current	L-N If ≥10 kARms @ 255 Vac N-PE If 100 Arms @ 255 Vac
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

BG (G) 25	Nominal Voltage Vac L-L (L-N)	Max Continuous Operation Voltage NPE - Vac	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)		Electrical Diagram	Case
			L-N	N-PE	L-N	N-PE	LN@In	NPE (1.2/50)		
BG.150 1P25	150	-	25	-	100	-	<1.2	-	1	1
BG.275 1P25	275	-	25	-	100	-	<1.5	-	1	1
BG.320 1P25	320	-	25	-	100	-	<1.6	-	1	1
BG.385 1P25	385	-	25	-	100	-	<1.8	-	1	1
BG.420 1P25	420	-	25	-	100	-	<2.0	-	1	1
BG.150 2P25	150	-	25	-	100	-	<1.2	-	2	2
BG.275 2P25	275	-	25	-	100	-	<1.5	-	2	2
BG.320 2P25	320	-	25	-	100	-	<1.6	-	2	2
BG.385 2P25	385	-	25	-	100	-	<1.8	-	2	2
BG.420 2P25	420	-	25	-	100	-	<2.0	-	2	2
BG.150 3P25	150	-	25	-	100	-	<1.2	-	3	3
BG.275 3P25	275	-	25	-	100	-	<1.5	-	3	3
BG.320 3P25	320	-	25	-	100	-	<1.6	-	3	3
BG.385 3P25	385	-	25	-	100	-	<1.8	-	3	3
BG.420 3P25	420	-	25	-	100	-	<2.0	-	3	3
BG.150 4P25	150	-	25	-	100	-	<1.2	-	4	4
BG.275 4P25	275	-	25	-	100	-	<1.5	-	4	4
BG.320 4P25	320	-	25	-	100	-	<1.6	-	4	4
BG.385 4P25	385	-	25	-	100	-	<1.8	-	4	4
BG.420 4P25	420	-	25	-	100	-	<2.0	-	4	4
BGG.150 2P25 N50	208 (150)	150	25	50	100	150	<1.2	<0.8	5	2
BGG.150 2P25 N100	208 (150)	150	25	100	100	200	<1.2	<0.8	5	2
BGG.275 2P25 N50	320 (275)	255	25	50	100	150	<1.5	<1.5	5	2
BGG.275 2P25 N100	320 (275)	255	25	100	100	200	<1.5	<1.5	5	2

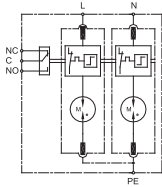
BG (G) 25	Nominal Voltage Vac L-L (L-N)	Max Continuous Operation Voltage NPE - Vac	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)		Electrical Diagram	Case
			L-N	N-PE	L-N	N-PE	LN@In	NPE (1.2/50)		
BGG.320 2P25 N50	400 (320)	255	25	50	100	150	<1.6	<1.5	5	2
BGG.320 2P25 N100	400 (320)	255	25	100	100	200	<1.6	<1.5	5	2
BGG.385 2P25 N50	480 (385)	255	25	50	100	150	<1.8	<1.5	5	2
BGG.385 2P25 N100	480 (385)	255	25	100	100	200	<1.8	<1.5	5	2
BGG.420 2P25 N50	600 (420)	255	25	50	100	150	<2.0	<1.5	5	2
BGG.420 2P25 N100	600 (420)	255	25	100	100	200	<2.0	<1.5	5	2
BGG.150 3P25 N50	208 (150)	255	25	50	100	150	<1.2	<0.8	6	4
BGG.150 3P25 N100	208 (150)	255	25	100	100	200	<1.2	<0.8	6	4
BGG.275 3P25 N50	320 (275)	255	25	50	100	150	<1.5	<1.5	6	4
BGG.275 3P25 N100	320 (275)	255	25	100	100	200	<1.5	<1.5	6	4
BGG.320 3P25 N50	400 (320)	255	25	50	100	150	<1.6	<1.5	6	4
BGG.320 3P25 N100	400 (320)	255	25	100	100	200	<1.6	<1.5	6	4
BGG.385 3P25 N50	480 (385)	255	25	50	100	150	<1.8	<1.5	6	4
BGG.385 3P25 N100	480 (385)	255	25	100	100	200	<1.8	<1.5	6	4
BGG.420 3P25 N50	600 (420)	255	25	50	100	150	<2.0	<1.5	6	4
BGG.420 3P25 N100	600 (420)	255	25	100	100	200	<2.0	<1.5	6	4

## ELECTRICAL DIAGRAM

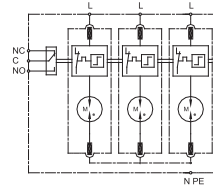
**SCHEMATIC 1**



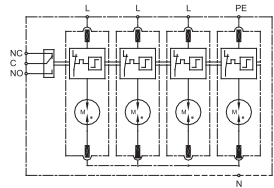
**SCHEMATIC 2**



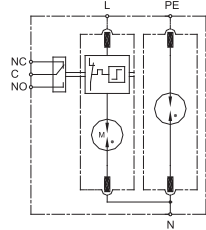
**SCHEMATIC 3**



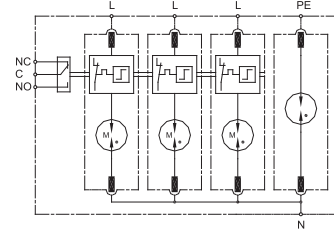
**SCHEMATIC 4**



**SCHEMATIC 5**

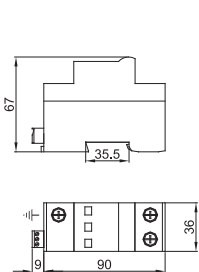


**SCHEMATIC 6**

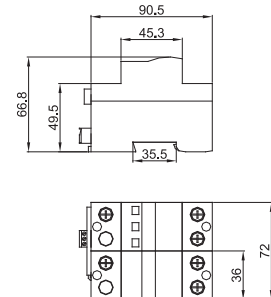


## MECHANICAL DIMENSIONS (mm)

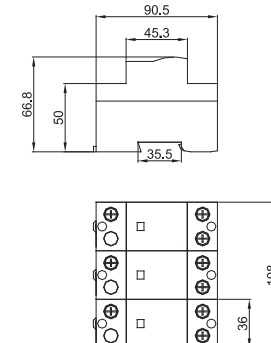
**CASE 1**



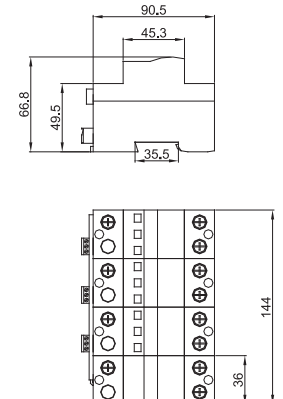
**CASE 2**



**CASE 3**



**CASE 4**



The Enerdoor surge arrester BG (G) 50 series provides advanced surge protection. This device is designed for maximum discharge of L-N 100 kA and N-PE 200 kA, meets the UL 1449 3rd edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

**GENERAL CHARACTERISTICS**

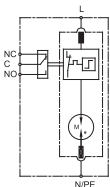

Class category IEC/VDE	I + II / B+C
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time L-N (N-PE)	≤100 ns
Backup fuse (only required if not in the main)	500 Amps gL/gG
Flow current	L-N If ≥10 kARms @ 255 Vac N-PE If 100 Arms @ 255 Vac
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

BG (G) 50	Nominal Voltage Vac L-L (L-N)	Max Continuous Operation Voltage NPE - Vac	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)		Electrical Diagram	Case
			L-N	N-PE	L-N	N-PE	LN@In	NPE (1.2/50)		
BG.150-1P50	150	-	50	-	150	-	<1.2	-	1	1
BG.275-1P50	275	-	50	-	150	-	<1.5	-	1	1
BG.320-1P50	320	-	25	-	150	-	<1.6	-	1	1
BG.385-1P50	385	-	50	-	150	-	<1.8	-	1	1
BG.420-1P50	420	-	50	-	150	-	<2.0	-	1	1
BG.150-2P50	150	-	50	-	150	-	<1.2	-	2	2
BG.275-2P50	275	-	50	-	150	-	<1.5	-	2	2
BG.320-2P50	320	-	50	-	150	-	<1.6	-	2	2
BG.385-2P50	385	-	50	-	150	-	<1.8	-	2	2
BG.420-2P50	420	-	50	-	150	-	<2.0	-	2	2
BG.150-3P50	150	-	50	-	150	-	<1.2	-	3	3
BG.275-3P50	275	-	50	-	150	-	<1.5	-	3	3
BG.320-3P50	320	-	50	-	150	-	<1.6	-	3	3
BG.385-3P50	385	-	50	-	150	-	<1.8	-	3	3
BG.420-3P50	420	-	50	-	150	-	<2.0	-	3	3
BG.150-4P50	150	-	50	-	150	-	<1.2	-	4	4
BG.275-4P50	275	-	50	-	150	-	<1.5	-	4	4
BG.320-4P50	320	-	50	-	150	-	<1.6	-	4	4
BG.385-4P50	385	-	50	-	150	-	<1.8	-	4	4
BG.420-4P50	420	-	50	-	150	-	<2.0	-	4	4
BGG.150-2P50-N50	208 (150)	150	50	50	150	150	<1.2	<0.8	5	2
BGG.150-2P50-N100	208 (150)	150	50	100	150	200	<1.2	<0.8	5	2
BGG.275-2P50-N50	320 (275)	255	50	50	150	150	<1.5	<1.5	5	2
BGG.275-2P50-N100	320 (275)	255	50	100	150	200	<1.5	<1.5	5	2

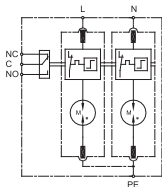
BG (G) 50	Nominal Voltage Vac L-L (L-N)	Max Continuous Operation Voltage NPE - Vac	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)		Electrical Diagram	Case
			L-N	N-PE	L-N	N-PE	LN@In	NPE (1.2/50)		
BGG.320-2P50-N50	400 (320)	255	50	50	150	150	<1.6	<1.5	5	2
BGG.320-2P50-N100	400 (320)	255	50	100	150	200	<1.6	<1.5	5	2
BGG.385-2P50-N50	480 (385)	255	50	50	150	150	<1.8	<1.5	5	2
BGG.385-2P50-N100	480 (385)	255	50	100	150	200	<1.8	<1.5	5	2
BGG.420-2P50-N50	600 (420)	255	50	50	150	150	<2.0	<1.5	5	2
BGG.420-2P50-N100	600 (420)	255	50	100	150	200	<2.0	<1.5	5	2
BGG.150-3P50-N50	208 (150)	255	50	50	150	150	<1.2	<0.8	6	4
BGG.150-3P50-N100	208 (150)	255	50	100	150	200	<1.2	<0.8	6	4
BGG.275-3P50-N50	320 (275)	255	50	50	150	150	<1.5	<1.5	6	4
BGG.275-3P50-N100	320 (275)	255	50	100	150	200	<1.5	<1.5	6	4
BGG.320-3P50-N50	400 (320)	255	50	50	150	150	<1.6	<1.5	6	4
BGG.320-3P50-N100	400 (320)	255	50	100	150	200	<1.6	<1.5	6	4
BGG.385-3P50-N50	480 (385)	255	50	50	150	150	<1.8	<1.5	6	4
BGG.385-3P50-N100	480 (385)	255	50	100	150	200	<1.8	<1.5	6	4
BGG.420-3P50-N50	600 (420)	255	50	50	150	150	<2.0	<1.5	6	4
BGG.420-3P50-N100	600 (420)	255	50	100	150	200	<2.0	<1.5	6	4

### ELECTRICAL DIAGRAM

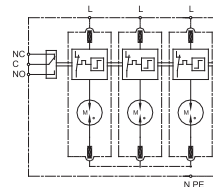
**SCHEMATIC 1**



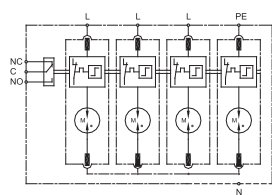
**SCHEMATIC 2**



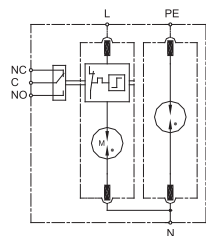
**SCHEMATIC 3**



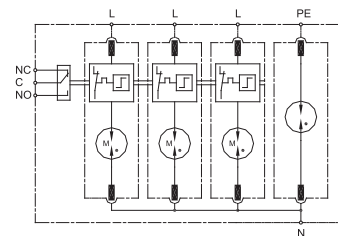
**SCHEMATIC 4**



**SCHEMATIC 5**

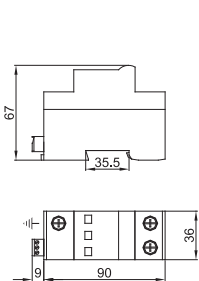


**SCHEMATIC 6**

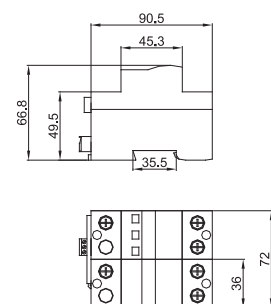


### MECHANICAL DIMENSIONS (mm)

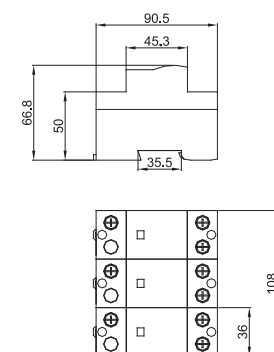
**CASE 1**



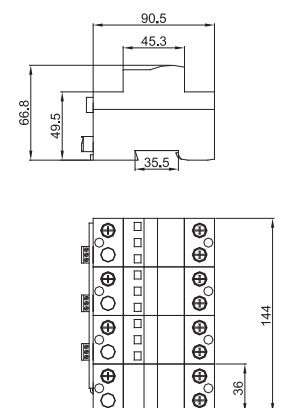
**CASE 2**



**CASE 3**



**CASE 4**





The Enerdoor surge arrester FINPR series provides advanced surge protection. This device is designed for maximum discharge of 50 kA, meets the UL 1449 3<sup>rd</sup> edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

**GENERAL CHARACTERISTICS**

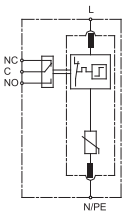

Class category IEC/VDE	II / C
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time	≤25 ns
Backup fuse (only required if not in the main)	125 Amps gL/gG
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

FINPR	Nominal Voltage AC	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)					SCCR (kA)	Electrical Diagram	Mechanical Case
		L-N	N-PE	L-N	N-P	@In	@VPR	L-N@MLV	N-PE@MLV	L-N@1.2/50			
PR.150	150	20	20	50	50	<0.8	<0.6	<1.7	-	-	200	1	1
PR.275	275	20	20	50	50	<1.4	<0.9	<2.1	-	-	200	1	1
PR.320	320	20	20	50	50	<1.5	<1.0	<2.2	-	-	200	1	1
PR.420	420	20	20	50	50	<2	<1.5	<2.4	-	-	200	1	1
PR.550	550	20	20	50	50	<2.5	<1.8	<2.5	-	-	200	1	1
PR.690	690	20	20	50	50	<3	<2.8	<3.2	-	-	200	1	1
PR.150-2P	150	20	20	50	50	<0.8	<0.6	<1.7	-	-	200	2	2
PR.275-2P	275	20	20	50	50	<1.4	<0.9	<2.1	-	-	200	2	2
PR.320-2P	320	20	20	50	50	<1.5	<1.0	<2.2	-	-	200	2	2
PR.420-2P	420	20	20	50	50	<2	<1.5	<2.4	-	-	200	2	2
PR.550-2P	550	20	20	50	50	<2.5	<1.8	<2.5	-	-	200	2	2
PR.690-2P	690	20	20	50	50	<3	<2.8	<3.2	-	-	200	2	2
PR.150-3P	150	20	20	50	50	<0.8	<0.6	<1.7	-	-	200	3	3
PR.275-3P	275	20	20	50	50	<1.4	<0.9	<2.1	-	-	200	3	3
PR.320-3P	320	20	20	50	50	<1.5	<1.0	<2.2	-	-	200	3	3
PR.420-3P	420	20	20	50	50	<2	<1.5	<2.4	-	-	200	3	3
PR.550-3P	550	20	20	50	50	<2.5	<1.8	<2.5	-	-	200	3	3
PR.690-3P	690	20	20	50	50	<3	<2.8	<3.2	-	-	200	3	3
PR.150-4P	150	20	20	50	50	<0.8	<0.6	<1.7	-	-	200	4	4
PR.275-4P	275	20	20	50	50	<1.4	<0.9	<2.1	-	-	200	4	4
PR.320-4P	320	20	20	50	50	<1.5	<1.0	<2.2	-	-	200	4	4
PR.420-4P	420	20	20	50	50	<2	<1.5	<2.4	-	-	200	4	4
PR.550-4P	550	20	20	50	50	<2.5	<1.8	<2.5	-	-	200	4	4
PR.690-4P	690	20	20	50	50	<3	<2.8	<3.2	-	-	200	4	4

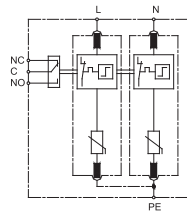
FINPR	Nominal Voltage Vac L-L (L-N)	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)					SCCR (kA)	Electrical Diagram	Mechanical Case
		L-N	N-PE	L-N	N-P	@In	@VPR	L-N@MLV	N-PE@MLV	L-N@1.2/50			
PR.150-PN	208 (150)	20	20	50	50	<0.8	<0.6	<1.7	<1.2	<1.5	200	5	2
PR.275-PN	320 (275)	20	20	50	50	<1.4	<0.9	<2.1	<1.7	<1.5	200	5	2
PR.320-PN	400 (320)	20	20	50	50	<1.5	<1.0	<2.2	<1.7	<1.5	200	5	2
PR.385-PN	480 (385)	20	20	50	50	<2	<1.5	<2.4	<1.7	<1.5	200	5	2
PR.420-PN	600 (420)	20	20	50	50	<2.5	<1.8	<2.5	<1.7	<1.5	200	5	2
PR.150-3PN	208 (150)	20	20	50	50	<0.8	<0.6	<1.7	<1.2	<1.5	200	6	4
PR.275-3PN	320 (275)	20	20	50	50	<1.4	<0.9	<2.1	<1.7	<1.5	200	6	4
PR.320-3PN	400 (320)	20	20	50	50	<1.5	<1.0	<2.2	<1.7	<1.5	200	6	4
PR.385-3PN	480 (385)	20	20	50	50	<2	<1.5	<2.4	<1.7	<1.5	200	6	4
PR.420-3PN	600 (420)	20	20	50	50	<2.5	<1.8	<2.5	<1.7	<1.5	200	6	4

### ELECTRICAL DIAGRAM

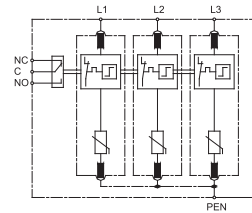
**SCHEMATIC 1**



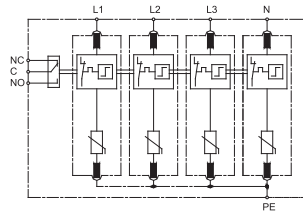
**SCHEMATIC 2**



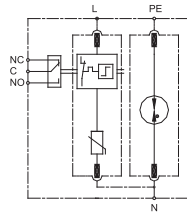
**SCHEMATIC 3**



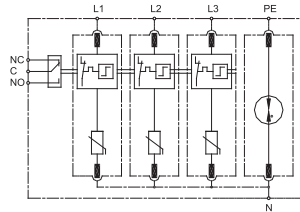
**SCHEMATIC 4**



**SCHEMATIC 5**

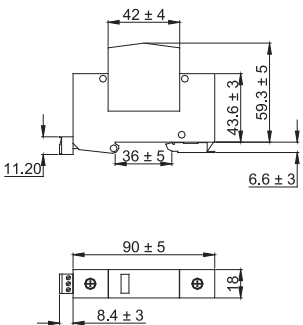


**SCHEMATIC 6**

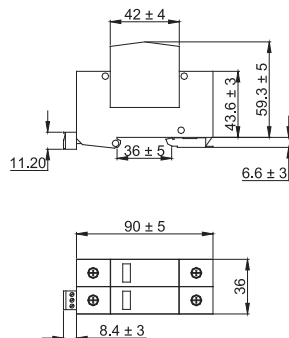


### MECHANICAL DIMENSIONS (mm)

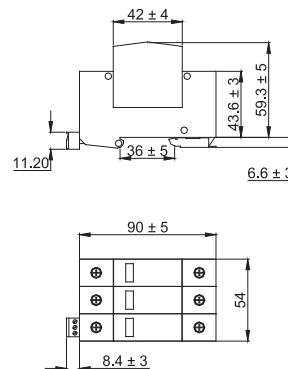
**CASE 1**



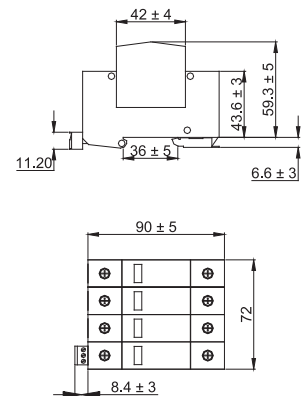
**CASE 2**



**CASE 3**



**CASE 4**



The Enerdoor surge arrester EMG (G) 20 series provides advanced surge protection. This device is designed for maximum discharge of 40 kA, meets the UL 1449 3<sup>rd</sup> edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

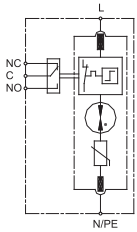
**GENERAL CHARACTERISTICS**


Class category IEC/VDE	II+III / C+D
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time	≤100 ns
Backup fuse (only required if not in the main)	125 Amps gL/gG
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

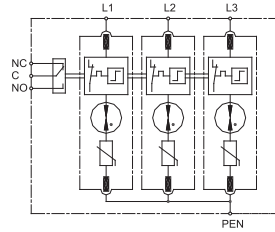
EMG (G) 20	Nominal Voltage Vac L-L (L-N)	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)			Case
		L-N	N-PE	L-N	N-PE	@In	@VPR	N-PE (1.2/50)	
EMG.150-1P20	150	20	-	40	-	<0.6	<0.5	-	1
EMG.275-1P20	275	20	-	40	-	<1.2	<0.8	-	1
EMG.320-1P20	320	20	-	40	-	<1.3	<0.9	-	1
EMG.420-1P20	420	20	-	40	-	<1.6	<1.1	-	1
EMG.150-3P20	150	20	-	40	-	<0.6	<0.5	-	2
EMG.275-3P20	275	20	-	40	-	<1.2	<0.8	-	2
EMG.320-3P20	320	20	-	40	-	<1.3	<0.9	-	2
EMG.420-3P20	420	20	-	40	-	<1.6	<1.1	-	2
EMG.150-4P20	150	20	-	40	-	<0.6	<0.5	-	3
EMG.275-4P20	275	20	-	40	-	<1.2	<0.8	-	3
EMG.320-4P20	320	20	-	40	-	<1.3	<0.9	-	3
EMG.420-4P20	420	20	-	40	-	<1.6	<1.1	-	3
EMGG.150-3P20N20	208 (150)	20	20	40	40	<0.6	<0.5	<0.8	4
EMGG.275-3P20N20	320 (275)	20	20	40	40	<1.2	<0.8	<1.5	4
EMGG.320-3P20N20	400 (320)	20	20	40	40	<1.3	<0.9	<1.5	4
EMGG.420-3P20N20	600 (420)	20	20	40	40	<1.6	<1.1	<1.5	4

## ELECTRICAL DIAGRAM

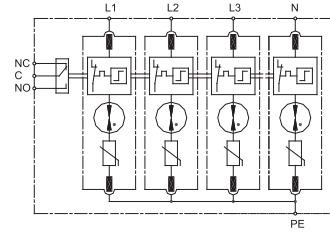
### SCHEMATIC 1



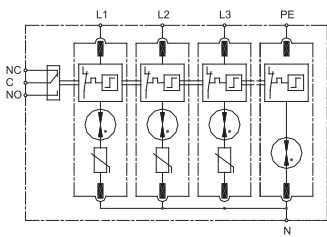
### SCHEMATIC 2



### SCHEMATIC 3

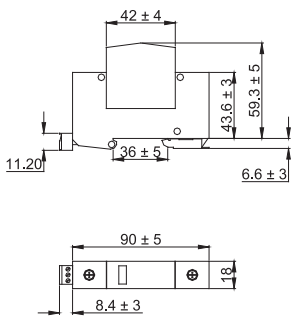


### SCHEMATIC 4

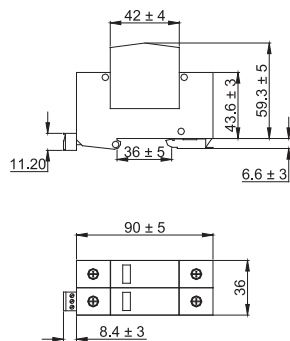


## MECHANICAL DIMENSIONS (mm)

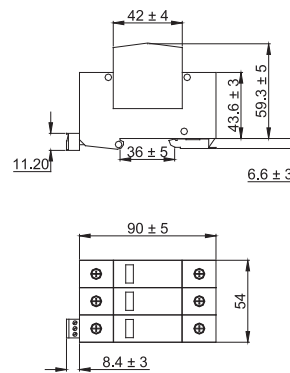
### CASE 1



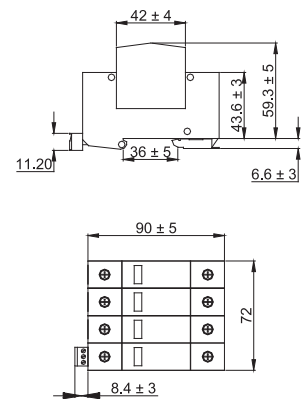
### CASE 2



### CASE 3



### CASE 4





The Enerdoor surge arrester EMG (G) 40 series provides advanced surge protection. This device is designed for maximum discharge of 80 kA, meets the UL 1449 3<sup>rd</sup> edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

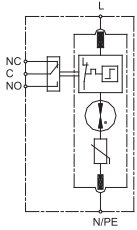
**GENERAL CHARACTERISTICS**


Class category IEC/VDE	II+III / C+D
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time	≤100 ns
Backup fuse (only required if not in the main)	200 Amps gL/gG
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

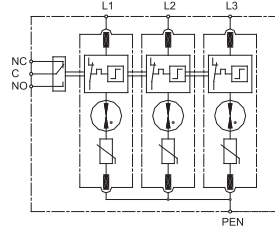
EMG (G) 40	Nominal Voltage Vac L-L (L-N)	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)			Case
		L-N	N-PE	L-N	N-PE	@In	@VPR	N-PE (1.2/50)	
EMG.150-1P40	150	40	-	80	-	<0.6	<0.5	-	1
EMG.275-1P40	275	40	-	80	-	<1.2	<0.8	-	1
EMG.320-1P40	320	40	-	80	-	<1.3	<0.9	-	1
EMG.420-1P40	420	40	-	80	-	<1.6	<1.1	-	1
EMG.150-3P40	150	40	-	80	-	<0.6	<0.5	-	2
EMG.275-3P40	275	40	-	80	-	<1.2	<0.8	-	2
EMG.320-3P40	320	40	-	80	-	<1.3	<0.9	-	2
EMG.420-3P40	420	40	-	80	-	<1.6	<1.1	-	2
EMG.150-4P40	150	40	-	80	-	<0.6	<0.5	-	3
EMG.275-4P40	275	40	-	80	-	<1.2	<0.8	-	3
EMG.320-4P40	320	40	-	80	-	<1.3	<0.9	-	3
EMG.420-4P40	420	40	-	80	-	<1.6	<1.1	-	3
EMGG.150-3P40N40	208 (150)	40	40	80	80	<0.6	<0.5	<0.8	4
EMGG.275-3P40N40	320 (275)	20	40	80	80	<1.2	<0.8	<1.5	4
EMGG.320-3P40N40	400 (320)	40	40	80	80	<1.3	<0.9	<1.5	4
EMGG.420-3P40N40	600 (420)	40	40	80	80	<1.6	<1.1	<1.5	4

## ELECTRICAL DIAGRAM

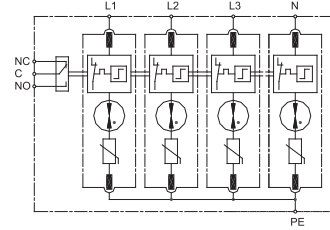
### SCHEMATIC 1



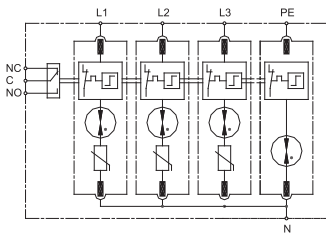
### SCHEMATIC 2



### SCHEMATIC 3

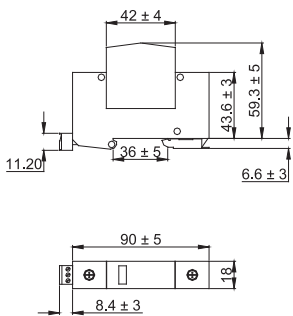


### SCHEMATIC 4

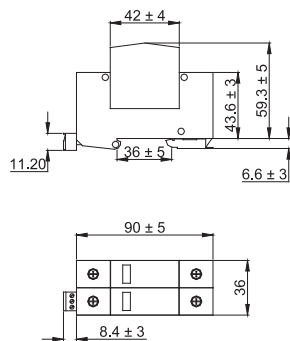


## MECHANICAL DIMENSIONS (mm)

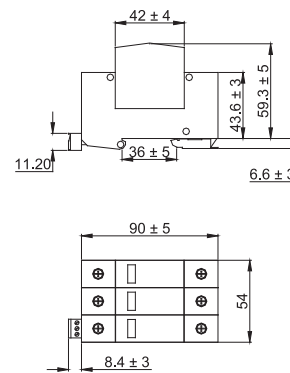
### CASE 1



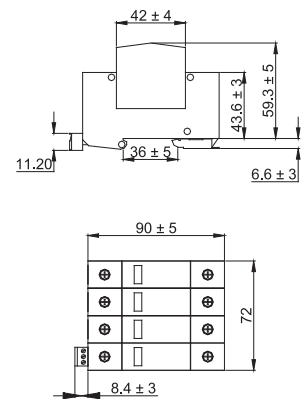
### CASE 2



### CASE 3



### CASE 4



The Enerdoor surge arrester EMG (G) 60 series provides advanced surge protection. This device is designed for maximum discharge of 120 kA, meets the UL 1449 3<sup>rd</sup> edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

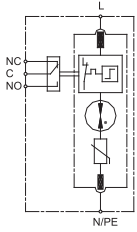
**GENERAL CHARACTERISTICS**


Class category IEC/VDE	II+III / C+D
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time	≤100 ns
Backup fuse (only required if not in the main)	315 Amps gL/gG
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

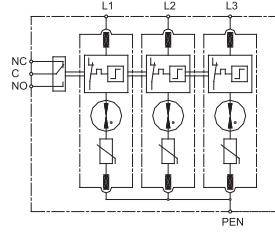
EMG (G) 60	Nominal Voltage Vac L-L (L-N)	Nominal Discharge (In, KA) 8/20		Max Discharge Current (Imax, KA)		Voltage Protection Rated (kV)			Case
		L-N	N-PE	L-N	N-PE	@In	@VPR	N-PE (1.2/50)	
EMG.150-1P60	150	60	-	120	-	<0.6	<0.5	-	1
EMG.275-1P60	275	60	-	120	-	<1.2	<0.8	-	1
EMG.320-1P60	320	60	-	120	-	<1.3	<0.9	-	1
EMG.420-1P60	420	60	-	120	-	<1.6	<1.1	-	1
EMG.150-3P60	150	60	-	120	-	<0.6	<0.5	-	2
EMG.275-3P60	275	60	-	120	-	<1.2	<0.8	-	2
EMG.320-3P60	320	60	-	120	-	<1.3	<0.9	-	2
EMG.420-3P60	420	60	-	120	-	<1.6	<1.1	-	2
EMG.150-4P60	150	60	-	120	-	<0.6	<0.5	-	3
EMG.275-4P60	275	60	-	120	-	<1.2	<0.8	-	3
EMG.320-4P60	320	60	-	120	-	<1.3	<0.9	-	3
EMG.420-4P60	420	60	-	120	-	<1.6	<1.1	-	3
EMGG.150-3P60N60	208 (150)	60	60	120	120	<0.6	<0.5	<0.8	4
EMGG.275-3P60N60	320 (275)	60	60	120	120	<1.2	<0.8	<1.5	4
EMGG.320-3P60N60	400 (320)	60	60	120	120	<1.3	<0.9	<1.5	4
EMGG.420-3P60N60	600 (420)	60	60	120	120	<1.6	<1.1	<1.5	4

## ELECTRICAL DIAGRAM

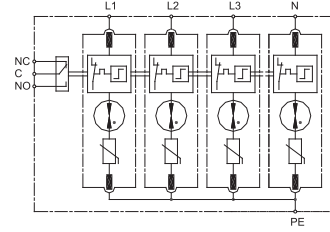
### SCHEMATIC 1



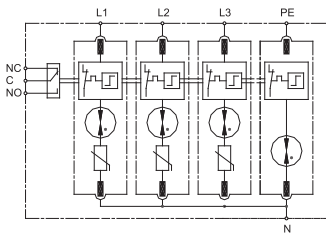
### SCHEMATIC 2



### SCHEMATIC 3

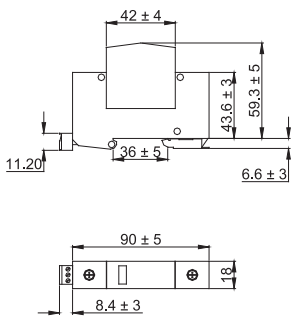


### SCHEMATIC 4

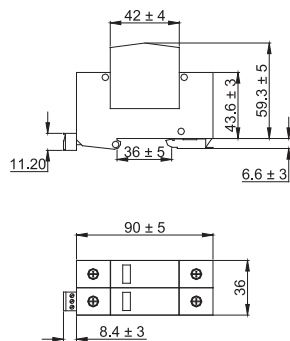


## MECHANICAL DIMENSIONS (mm)

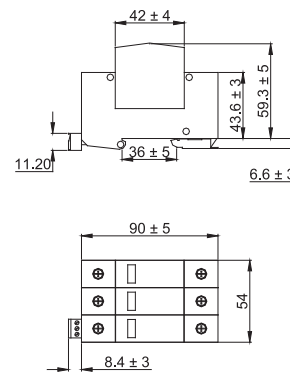
### CASE 1



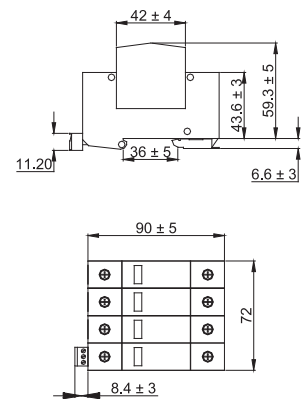
### CASE 2



### CASE 3



### CASE 4





The Enerdoor surge arrester FINPRS series provides advanced surge protection for common mode and common mode + differential mode DC surge. This device is designed for maximum discharge of 50 kA, meets the UL 1449 3<sup>rd</sup> edition and IEC61643-11:2011 Standards, and includes a visual and remote contact indicator.

### GENERAL CHARACTERISTICS

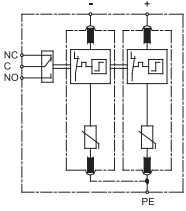


Class category IEC/VDE	II / C
Operating temperature range	-40°C + 80°C
Operating humidity range	0 ~ 90%
Response time	L-N ≤25 ns
Backup fuse (only required if not in the main)	125 Amps gR/gPV
Enclosure material	Thermoplastic, UL94 V-0
Mounting	35mm DIN rail according to the EN50022/DIN46277-3 Standard
Max size of connecting wire	Single-strand 35mm <sup>2</sup> (or # 2AWG) Multi-strand 25mm <sup>2</sup> (or # 4AWG)
Remote alarm contact type	Isolated form C
Switching capability Un/In	AC: 250V/0.5A DC: 250V/0.1A
Max size of connecting wire	Max 1.5mm <sup>2</sup> (or #16AWG)

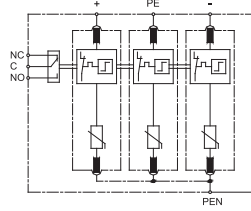
FINPRS	Nominal Voltage Vdc	Max Continuous Operating Vdc	Nominal Discharge (In, KA) 8/20		Voltage Protection Rated (kV)			Case	
			L-N	L-N	@In	@VPR	L-N@MLV	Electrical	Mechanical
.500-M-CS	500	550	20	50	<2.0	<1.5	<2.4	1	1
.600-M-CS	600	745	20	50	<2.5	<1.8	<2.8	1	1
.600-M-CDS	600	700	20	50	<2.8	<1.8	<4.2	2	2
.750-M-CDS	750	840	20	50	<3.0	<2.0	<4.4	2	2
.1000-M-CDS	1000	1120	20	50	<4.0	<3.0	<4.8	2	2
.1200-M-CDS	1200	1490	20	50	<5.0	<3.6	<5.6	2	2

## ELECTRICAL DIAGRAM

### SCHEMATIC 1

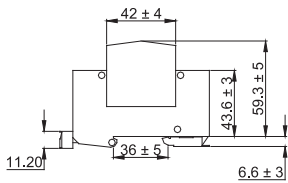


### SCHEMATIC 2

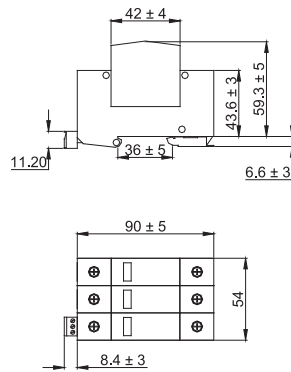


## MECHANICAL DIMENSIONS (mm)

### CASE 1



### CASE 2



## *Transformers and Line Reactors*



## *RFI Filters*



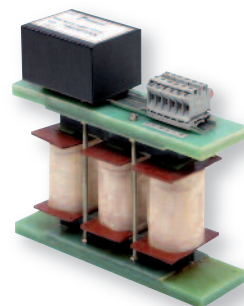
## *Voltage Stabilizers*



## *Passive and Active Harmonic Filters*



## *Motor Protection*





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