

TBS



Transient and lightning protection systems

THINK CONNECTED.



Surge protection device for energy technology, arrester, type 1 (industry)

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Combination arrester/ MCD, 255 V for TN-S and TT networks



Combination arrester, surge arrester, type 1

- Protection level < 1.3 kV allows device protection
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Line following current quenching 25 kA I_{peak}, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings

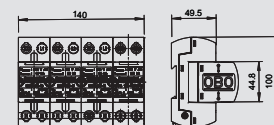
Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.



Combination arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3+1	255	3 + NPE	1	168,000	5096 87 9

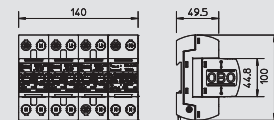
/pc.



Combination arrester, 3-pole + NPE with function display

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3+1-OS	255	3 + NPE	1	172,000	5096 83 6

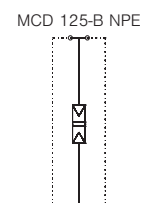
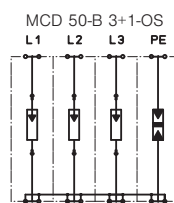
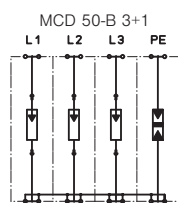
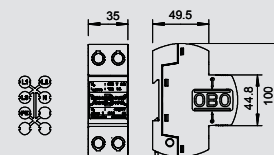
/pc.



Combination arrester, 1-pole NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 125-B NPE	255	NPE	1	46,500	5096 86 5

/pc.

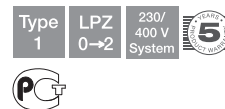


	Nominal voltage	U _N	V	230	230	230
	SPD to EN 61643-11			Type 1	Type 1	Type 1
	SPD to IEC 61643-11			class I	class I	class I
	Lightning protection zone LPZ			0→2	0→2	0→2
	Impulse discharge current (10/350)	I _{imp}	kA	50	50	125
	Total discharge current (10/350)	I _{Total}	kA	125	125	125
	Nominal discharge current (8/20)	I _n	kA	50	50	125
	Arrester surge current (8/20) [total]	I _{Total}	kA	125	125	125
	Voltage protection level	U _p	kV	1,3	1,3	<1,3
	Response time	t _A	ns	<100	<100	<100
	Follow current interrupt rating	I _{fi}	kA	25	25	0,1
	Maximum back-up fuse		A	500	500	
	Temperature range	θ	°C	-40 - +85	-40 - +85	-40 - +85
	Division unit TE (17.5 mm)			8	8	2
	Protection rating			IP20	IP20	IP20
	Connection cross-section, rigid		mm ²	10 - 50	10 - 50	10 - 50
	Connection cross-section, multi-wire		mm ²	10 - 35	10 - 35	10 - 35
	Connection cross-section, flexible		mm ²	10 - 25	10 - 25	10 - 25
Item No.				5096 87 9	5096 83 6	5096 86 5

Combination arrester MCD, 255 V for TN networks

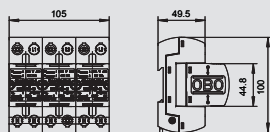
Combination arrester, surge arrester, type 1

- Protection level < 1.3 kV allows device protection
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Line following current quenching 25 kA I_{peak}, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings



Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.

Combination arrester, 3-pole

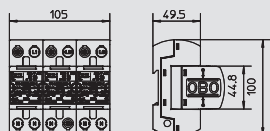


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3	255	3-pole	1	117,000	5096 87 7

/pc.



Combination arrester, 3-pole with function display

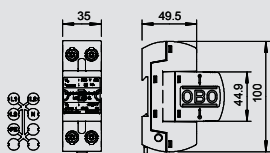


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3-OS	255	3-pole	1	118,000	5096 83 5

/pc.



Combination arrester, 1-pole

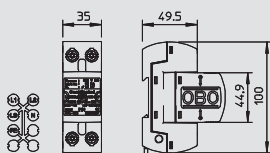


Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B	255	1-pole	1	34,400	5096 84 9

/pc.

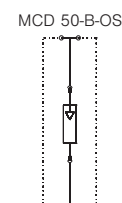
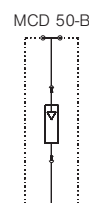
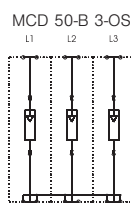
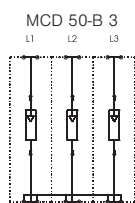


Combination arrester, 1-pole with function display



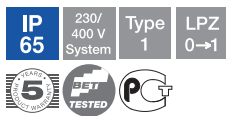
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B-OS	255	1-pole	1	34,800	5096 85 2

/pc.



	U _N	V	230	230	230	230
Nominal voltage			Type 1	Type 1	Type 1	Type 1
SPD to EN 61643-11			class I	class I	class I	class I
SPD to IEC 61643-11			0-2	0-2	0-2	0-2
Lightning protection zone LPZ			0-2	0-2	0-2	0-2
Impulse discharge current (10/350)	I _{imp}	kA	50	50	50	50
Total discharge current (10/350)	I _{Total}	kA	150	150	50	50
Nominal discharge current (8/20)	I _n	kA	50	50	50	50
Arrester surge current (8/20) [total]	I _{Total}	kA	150	150	50	50
Voltage protection level	U _p	kV	1,3	1,3	<1,3	1,3
Response time	t _A	ns	<100	<100	<100	<100
Follow current interrupt rating	I _{fi}	kA	25	25	25	25
Maximum back-up fuse		A	500	500	500	500
Temperature range	θ	°C	-40 - +85	-40 - +85	-40 - +85	-40 - +85
Division unit TE (17.5 mm)			6	6	2	2
Protection rating			IP20	IP20	IP20	IP20
Connection cross-section, rigid		mm²	10 - 50	10 - 50	10 - 50	10 - 50
Connection cross-section, multi-wire		mm²	10 - 35	10 - 35	10 - 35	10 - 35
Connection cross-section, flexible		mm²	10 - 25	10 - 25	10 - 25	10 - 25
Item No.			5096 87 7	5096 83 5	5096 84 9	5096 85 2

Combination arrester in VG housing for TN-S and TT network systems



- System solution in insulating housing (IP65), surge arrester, type 1
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
 - Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) in total
 - Line following current quenching 25 kA Ipeak, arrester backup fuse to 500 A gL/gG
 - Suitable for use in pre-meter area according to the VDEW directive
 - Encapsulated, non-extinguishing spark gap arrester, preterminated in insulated housing (IP65)

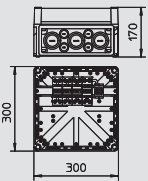
Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.



VG housing with MC 50-B/3+1

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
VG 4-B TNS+TT	255	3 + NPE	1	290,000	5089 20 0

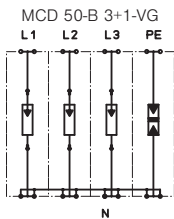
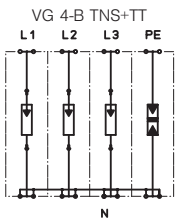
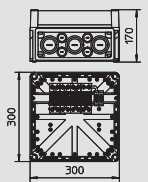
/pc.



VG housing with MCD 50-B/3+1

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MCD 50-B 3+1-VG	255	3 + NPE	1	290,000	5096 87 5

/pc.



Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 1	Type 1
SPD to IEC 61643-11			class I	class I
Lightning protection zone LPZ			0→1	0→2
Impulse discharge current (10/350)	I_{imp}	kA	50	50
Total discharge current (10/350)	I_{Total}	kA	125	125
Nominal discharge current (8/20)	I_n	kA	50	50
Arrester surge current (8/20) [total]	I_{Total}	kA	125	125
Voltage protection level	U_p	kV	<2,0	<1,3
Response time	t_A	ns	<100	<100
Follow current interrupt rating	I_{fi}	kA	25	25
Maximum back-up fuse		A	500	500
Temperature range	ϑ	°C	-40 - +85	-40 - +85
Division unit TE (17.5 mm)			8	8
Protection rating			IP54	IP54
Connection cross-section, rigid		mm ²	10 - 50	10 - 50
Connection cross-section, multi-wire		mm ²	10 - 35	10 - 35
Connection cross-section, flexible		mm ²	10 - 25	10 - 25
Item No.			5089 20 0	5096 87 5

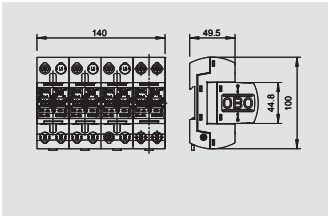
Lightning current arrester MC, 255 V for TN-S and TT networks

Surge arrester, type 1

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 150 kA (10/350) in total
- Line following current quenching 25 kA I_{peak}, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings

230/ 400 V System	Type 1	LPZ 0→1	
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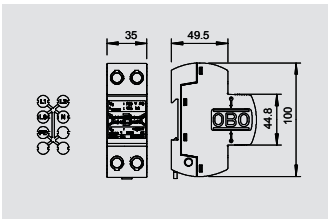
Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.



Lightning current arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MC 50-B 3+1	255	3 + NPE	1	168,000	5096 87 8

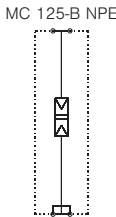
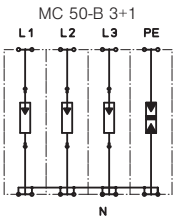
/pc.



Lightning current arrester, 1-pole NPE

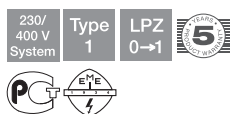
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MC 125-B NPE	255	NPE	1	52,000	5096 86 3

/pc.



Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 1	Type 1
SPD to IEC 61643-11			class I	class I
Lightning protection zone LPZ			0→1	0→1
Impulse discharge current (10/350)	I_{imp}	kA	50	50
Total discharge current (10/350)	I_{Total}	kA	125	125
Nominal discharge current (8/20)	I_n	kA	50	50
Arrester surge current (8/20) [total]	I_{Total}	kA	125	125
Voltage protection level	U_p	kV	< 2,0	< 2,5
Response time	t_A	ns	<100	< 100
Follow current interrupt rating	I_{fi}	kA	25	0,1
Maximum back-up fuse		A	500	
Temperature range	ϑ	°C	-40 - +85	-40 - +85
Division unit TE (17.5 mm)			8	2
Protection rating			IP20	IP20
Connection cross-section, rigid		mm ²	10 - 50	10 - 50
Connection cross-section, multi-wire		mm ²	10 - 35	10 - 35
Connection cross-section, flexible		mm ²	10 - 25	10 - 25
Item No.			5096 87 8	5096 86 3

Lightning current arrester MC, 255 V for TN networks



Surge arrester, type 1

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity to 50 kA (10/350) per pole and up to 125 kA (10/350) in total
- Line following current quenching 25 kA I_{peak}, arrester backup fuse to 500 A gL/gG
- Suitable for use in pre-meter area according to the VDEW directive
- Encapsulated, non-extinguishing spark gap arrester for use in distributor housings

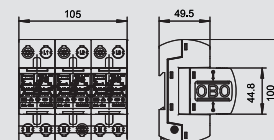
Application: Industrial systems and buildings with external lightning protection of the highest class I to IV.



Lightning current arrester, 3-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MC 50-B 3	255	3-pole	1	117,000	5096 87 6

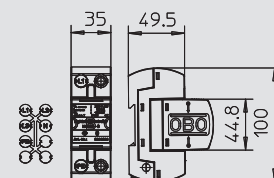
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Lightning current arrester, 1-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MC 50-B VDE	255	1-pole	1	34,400	5096 84 7

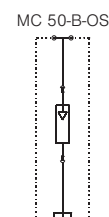
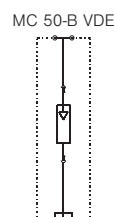
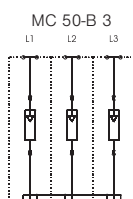
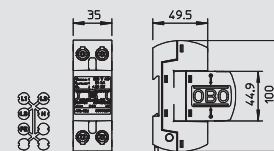
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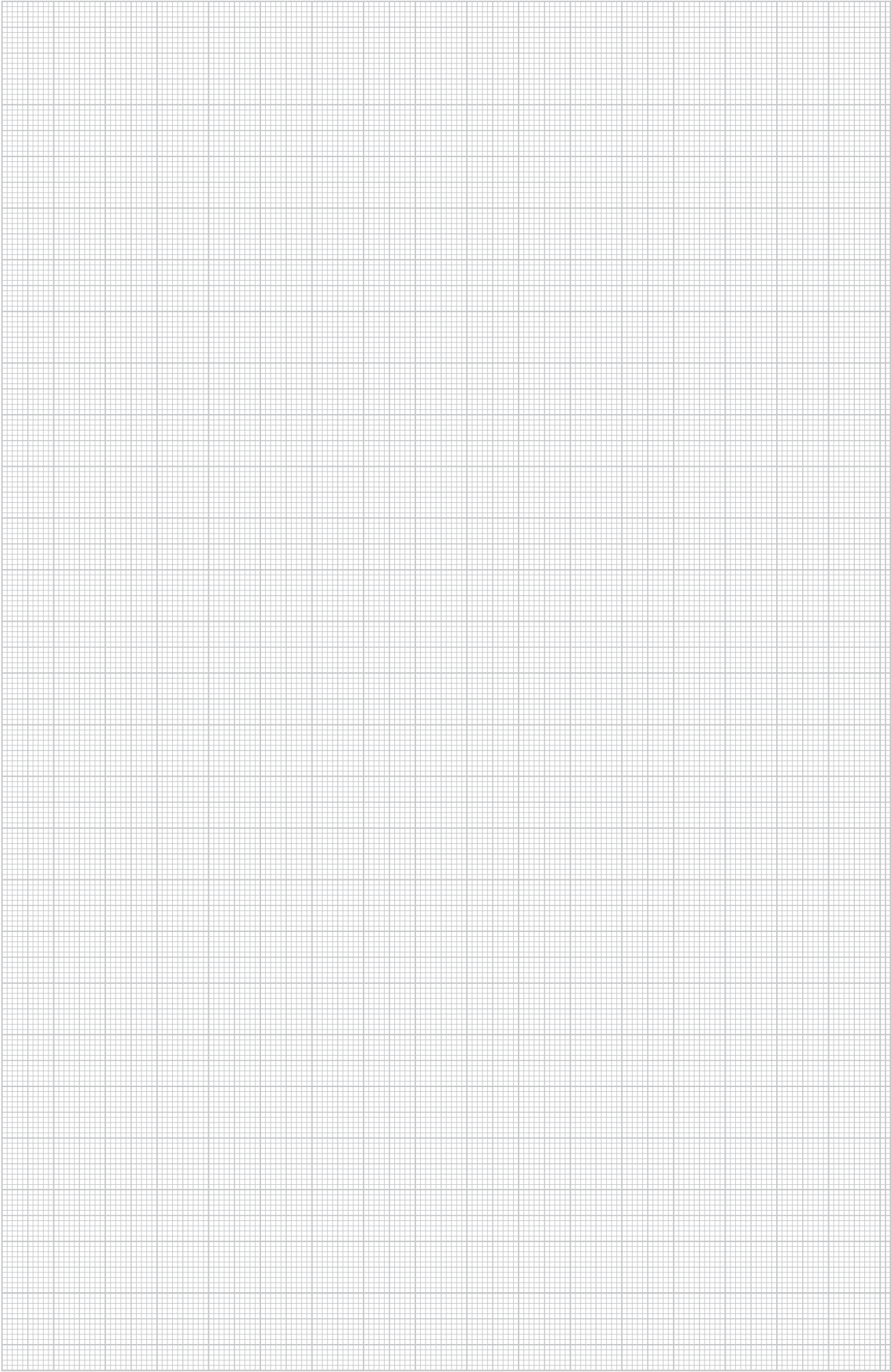
Lightning current arrester, 1-pole with function display

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MC 50-B OS	255	1-pole	1	34,800	5096 85 1

/pc.



	U _N	V	230	230	230
Nominal voltage			Type 1	Type 1	Type 1
SPD to EN 61643-11			class I	class I	class I
SPD to IEC 61643-11			0→1	0→1	0→1
Lightning protection zone LPZ			50	50	50
Impulse discharge current (10/350)	I _{imp}	kA	150	50	50
Total discharge current (10/350)	I _{Total}	kA	50	50	50
Nominal discharge current (8/20)	I _n	kA	150	50	50
Arrester surge current (8/20) [total]	I _{Total}	kA	< 2,0	< 2,0	< 2,0
Voltage protection level	U _p	kV	<100	<100	<100
Response time	t _A	ns	25	25	25
Follow current interrupt rating	I _{fi}	kA	500	500	500
Maximum back-up fuse		A	-40 - +85	-40 - +85	-40 - +85
Temperature range	θ	°C	6	2	2
Division unit TE (17.5 mm)			IP20	IP20	IP20
Protection rating			10 - 50	10 - 50	10 - 50
Connection cross-section, rigid		mm ²	10 - 35	10 - 35	10 - 35
Connection cross-section, multi-wire		mm ²	10 - 25	10 - 25	10 - 25
Connection cross-section, flexible		mm ²			
Item No.			5096 87 6	5096 84 7	5096 85 1





Surge protection energy technology, arrestor, type 1+2 (office and housing)

	Combination arrester	V50, 280 V	14
	Combination arrester	V25, 280 V	16

Surge protection energy technology: the plus of the V50+B+C family

- + Connectable lightning current and surge arrestor
- + High arresting capacity up to 50 kA (10/350)
- + Combination arrestor for buildings with lightning protection
- + Visual status display
- + Available with optional remote signalling
- + Vibration-proof through Shock Guard
- + Simple standard hat rail mounting
- + Labelled connections
- + Usable in systems with lightning protection class 3



Function and areas of use

The combination lightning and surge arrestors V50 meet the type 1 requirement class according to IEC 61643-11. These devices protect low voltage consumer systems from overvoltages of all

types, and are available in single-pole to four-pole versions. The voltage-limiting high-performance zinc oxide varistor provides several benefits. An extremely short response time, a low protection level and high current leakage capability with long service life. In addition,

the devices do not produce any line follow current. If circumstances are uncertain and there is a risk of fire from overloads, the cut-off unit disconnects the arrestor safely from the mains.

Combination arrestor V50, 280 V for TN and TT network systems



- Combination arrestor, lightning current and surge arrestor, type 1+2
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
 - Lightning current arresting capacity 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
 - Arrestor, plug-in, with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrestor for use in distributor housings

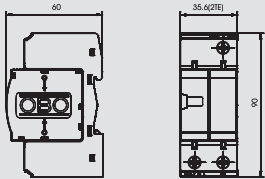
Application: Residential building with external lightning protection of Class III and IV.



Lightning current and surge arrestor, 1-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 1+NPE	280	1 + NPE	1	31,300	5093 65 3

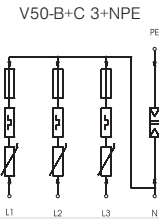
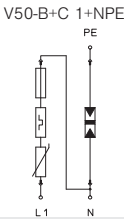
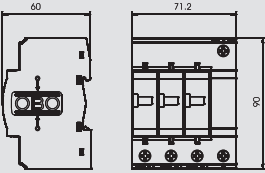
/pc.



Lightning current and surge arrestor, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3+NPE	280	3+NPE	1	55,000	5093 65 4

/pc.



Nominal voltage	U_N	V	230	230
SPD to EN 61643-11			Type 1+2	Type 1+2
SPD to IEC 61643-11			class I+II	class I+II
Lightning protection zone LPZ			0-2	0-2
Impulse discharge current (10/350)	I_{imp}	kA	12,5	12,5
Total discharge current (10/350)	I_{Total}	kA	25	50
Nominal discharge current (8/20)	I_n	kA	30	30
Arrestor surge current (8/20) [total]	I_{Total}	kA	50	50
Maximum discharge current	I_{max}	kA	50	50
Voltage protection level	U_p	kV	< 1,3	< 1,3
Response time	t_A	ns	<25	<25
Maximum back-up fuse		A	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			2	4
Protection rating			IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25
Item No.			5093 65 3	5093 65 4

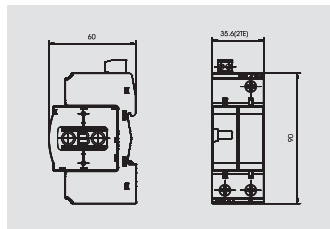
Combination arrester V50, 280 V for TN and TT network systems

Combination arrester, lightning current and surge arrester, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 12.5 kA (10/350) per pole and up to 50 kA (10/350) in total
- Arrester, plug-in, with dynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings



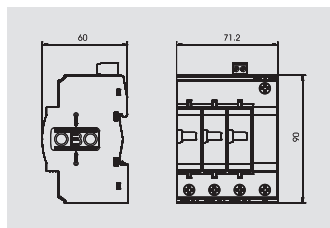
Application: Residential building with external lightning protection of Class III and IV.



Lightning current and surge arrester, 1-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 1+NPE+FS	280	1+NPE with FS	1	26,100	5093 66 1

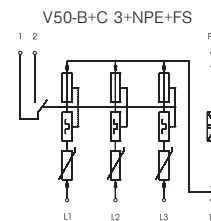
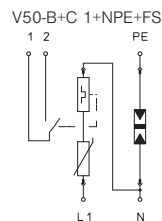
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Lightning current and surge arrester, 3-pole + NPE with remote signalling

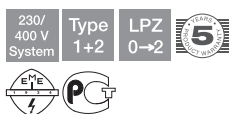
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V50-B+C 3+NPE+FS	280	3+NPE with FS	1	55,000	5093 66 2

/pc.



	U_N	V	230	230
Nominal voltage			Type 1+2	Type 1+2
SPD to EN 61643-11			class I+II	class I+II
SPD to IEC 61643-11			0→2	0→2
Lightning protection zone LPZ			12,5	12,5
Impulse discharge current (10/350)	I_{imp}	kA	25	50
Total discharge current (10/350)	I_{Total}	kA	30	30
Nominal discharge current (8/20)	I_n	kA	50	50
Arrester surge current (8/20) [total]	I_{Total}	kA	50	50
Maximum discharge current	I_{max}	kA	50	50
Voltage protection level	U_p	kV	< 1,3	< 1,3
Response time	t_A	ns	<25	<25
Maximum back-up fuse		A	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			2	4
Protection rating			IP20	IP20
Connection cross-section, rigid		mm²	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm²	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm²	2,5 - 25	2,5 - 25
Item No.			5093 66 1	5093 66 2

Combination arrester V25, 280 V for TN and TT network systems



- Combination arrester, lightning current and surge arrester, type 1+2
- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
 - Lightning current arresting capacity 7 kA (10/350) per pole and up to 25 kA (10/350) in total
 - Arrester, plug-in, with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings

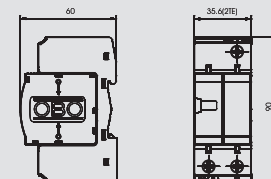
Application: Building with outdoor line infeed or lightning risk.



Combination arrester, 1-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 1+NPE	280	1-pole complete with NPE	1	28,000	5094 45 7

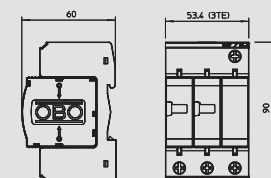
/pc.



Combination arrester, 2-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 2+NPE	280	2-pole complete with NPE	1	37,000	5094 46 0

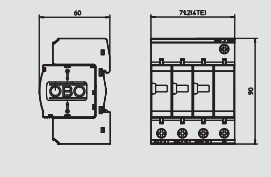
/pc.



Combination arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 3+NPE	280	3-pole complete with NPE	1	51,000	5094 46 3

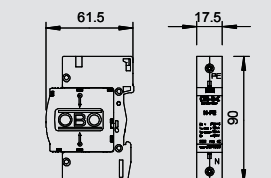
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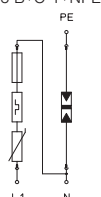
Combination arrester, 1-pole NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
C 25-B+C 1	255	NPE	1	12,500	5095 60 6

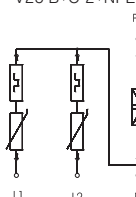
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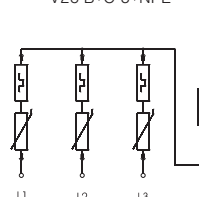
V25-B+C 1+NPE



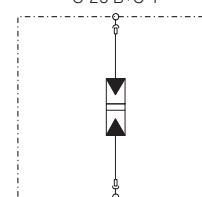
V25-B+C 2+NPE



V25-B+C 3+NPE



C 25-B+C 1



	U _N	V	230	230	230	230
Nominal voltage			Type 1+2	Type 1+2	Type 1+2	Type 1+2
SPD to EN 61643-11			class I+II	class I+II	class I+II	class I+II
SPD to IEC 61643-11			0-2	0-2	0-2	0-2
Lightning protection zone LPZ						
Impulse discharge current (10/350)	I _{imp}	kA	7	7	7	30
Total discharge current (10/350)	I _{Total}	kA	14	21	25	50
Nominal discharge current (8/20)	I _n	kA	30	30	30	50
Arrester surge current (8/20) [total]	I _{Total}	kA	60	90	120	100
Maximum discharge current	I _{max}	kA	50	50	50	50
Voltage protection level	U _p	kV	< 0,9	< 0,9	< 0,9	< 1,2
Response time	t _A	ns	< 25	< 25	< 25	< 100
Maximum back-up fuse		A	160	160	160	160
Temperature range	θ	°C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			2	3	4	1
Protection rating			IP20	IP20	IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25	2,5 - 25	2,5 - 25
Lightning impulse current (10/350) (N-PE)	I _{imp}	kA				25
Follow current interrupt rating	I _{fi}	kA				0,1
Item No.			5094 45 7	5094 46 0	5094 46 3	5095 60 6

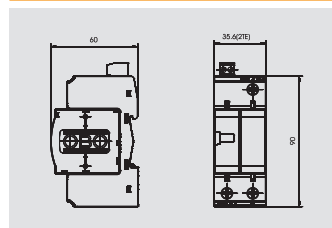
Combination arrester V25, 280 V for TN and TT network systems, with remote signalling

Combination arrester, lightning current and surge arrester, type 1+2

- For lightning protection equipotential bonding to VDE 0185-305 (IEC 62305)
- Lightning current arresting capacity 7 kA (10/350) per pole and up to 25 kA (10/350) in total
- Arrester, plug-in, with dynamic cut-off unit and visual function display
- Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings



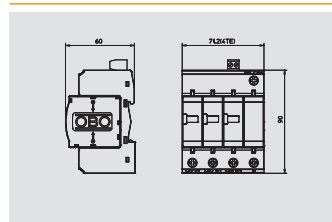
Application: Building with outdoor line infeed or lightning risk.



Combination arrester, 1-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 1+NPE+FS	280	1+NPE with FS	1	27,500	5094 44 4

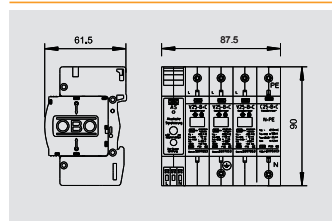
/pc.



Combination arrester, 3-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 3+NPE-FS	280	3+NPE with FS	1	52,500	5094 51 0

/pc.



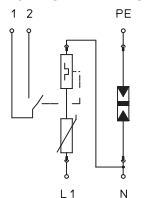
Combination arrester, 3-pole + NPE, with acoustic signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V25-B+C 3+NPE+AS	280	3 + NPE	1	70,000	5097 43 2

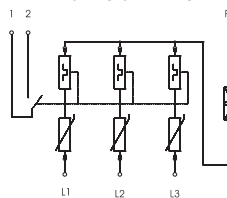
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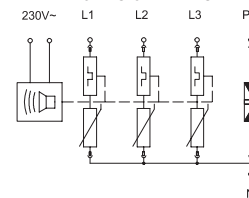
V25-B+C 1+NPE+FS



V25-B+C 3+NPE-FS



V25-B+C 3+NPE+AS



Nominal voltage	U_N	V	230	230	230
SPD to EN 61643-11			Type 1+2	Type 1+2	Type 1+2
SPD to IEC 61643-11			class I+II	class I+II	class I+II
Lightning protection zone LPZ			0-2	0-2	0-2
Impulse discharge current (10/350)	I_{imp}	kA	7	7	7
Total discharge current (10/350)	I_{Total}	kA	14	25	25
Nominal discharge current (8/20)	I_n	kA	30	30	30
Arrester surge current (8/20) [total]	I_{Total}	kA	60	120	120
Maximum discharge current	I_{max}	kA	50	150	50
Voltage protection level	U_p	kV	< 0,9	< 0,9	< 0,9
Response time	t_A	ns	< 25	< 25	< 25
Maximum back-up fuse		A	160	160	160
Temperature range	ϑ	°C	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			2	3	5
Protection rating			IP20	IP20	IP20
Connection cross-section, rigid		mm²	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm²	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm²	2,5 - 25	2,5 - 25	2,5 - 25
Item No.			5094 44 4	5094 51 0	5097 43 2



Surge protection energy technology, arrester, Type 2

	V20, 280 V for TN and TT networks	22
	V20, 280 V for TN networks	24
	V20, 385 V for TN and TT networks	25
	V20, for 400 V/690 V networks	26
	V20, leak current-free version	27

Surge protection energy technology: the plus of the V20-C family

- + Connectable surge arrestor
- + High arresting capacity
- + Visual status display
- + Available with optional remote signalling
- + Optional leak current-free version
- + Vibration-proof through Shock Guard
- + Simple standard hat rail mounting
- + Labelled connections



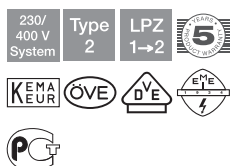
Function and areas of use

The surge arrestors V20 meet the type 2 requirement class according to IEC 61643-11. These devices protect low voltage consumer systems from overvoltages of all types, and are available in

single-pole to four-pole versions. The voltage-limiting high-performance zinc oxide varistor provides several benefits. An extremely short response time, a low protection level and high current leakage capability with long service life. In

addition, the devices do not produce any line follow current. If circumstances are uncertain and there is a risk of fire from overloads, the cut-off unit disconnects the arrestor safely from the mains.

Surge arrester V20, 280 V for TN and TT networks



Surge arrester, type 2, 280 V

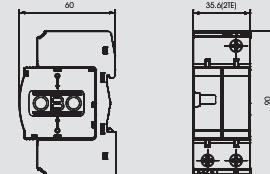
- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.



Surge arrester, 1-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE-280	280	1+1 pole complete, 280 V	1	22,300	5094 65 0

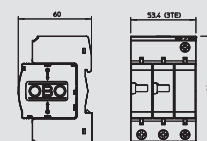
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Surge arrester, 2-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2+NPE-280	280	2+1-pole complete, 280 V TT+IT	1	32,300	5094 65 3

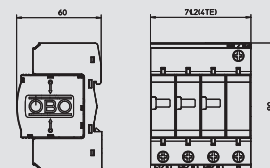
/pc.



Surge arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE-280	280	3+1-pin complete, 280 V TT+IT	1	41,700	5094 65 6

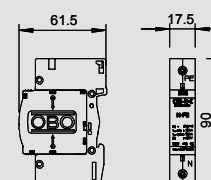
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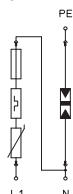
Surge arrester, 1-pole NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
C 25-B+C 1	255	NPE	1	12,500	5095 60 6

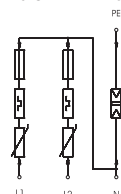
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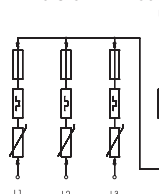
V20-C 1+NPE-280



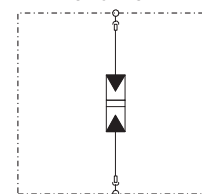
V20-C 2+NPE-280



V20-C 3+NPE-280



C 25-B+C 1

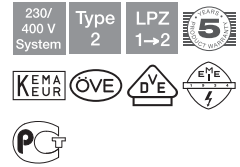


	Nominal voltage	U_N	V	230	230	230	230
	SPD to EN 61643-11			Type 2	Type 2	Type 2	Type 1+2
	SPD to IEC 61643-11			class II	class II	class II	class I+II
	Lightning protection zone LPZ			1-2	1-2	1-2	0-2
	Nominal discharge current (8/20)	I_n	kA	20	20	20	30
	Arrester surge current (8/20) [total]	I_{Total}	kA	40	60	120	
	Maximum discharge current	I_{max}	kA	40	40	40	50
	Voltage protection level	U_p	kV	< 1,3	< 1,3	< 1,3	< 1,2
	Response time	t_A	ns	< 25	< 25	< 25	< 100
	Maximum back-up fuse		A	125	125	125	
	Temperature range	θ	°C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
	Division unit TE (17.5 mm)			2	3	4	1
	Protection rating			IP20	IP20	IP20	IP20
	Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
	Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
	Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25	2,5 - 25	2,5 - 25
	Lightning impulse current (10/350) (N-PE)	I_{imp}	kA				25
	Follow current interrupt rating	I_{fi}	kA				0,1
Item No.				5094 65 0	5094 65 3	5094 65 6	5095 60 6

Surge arrester V20, 280 V for TN and TT networks

Surge arrester, type 2, 280 V

- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.



Surge arrester, 1-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE+FS	280	1-pole with NPE; with FS, 280V	1	22,500	5094 76 0

/pc.



Surge arrester, 2-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2+NPE+FS	280	2-pole with NPE; with FS, 280 V	1	32,500	5094 76 2

/pc.



Surge arrester, 3-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE+FS	280	3-pole with NPE; with FS, 280 V	1	43,300	5094 76 5

/pc.



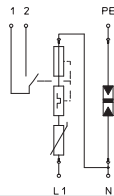
Surge arrester, 3-pole + NPE with acoustic signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE+AS	280	3 + NPE	1	57,000	5096 39 7

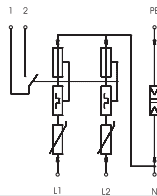
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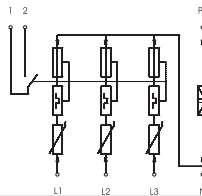
V20-C 1+NPE+FS



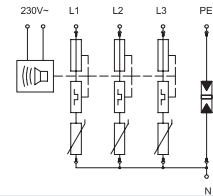
V20-C 2+NPE+FS



V20-C 3+NPE+FS

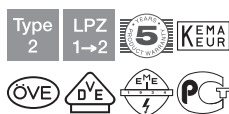


V20-C 3+NPE+AS



Nominal voltage	U_N	V	230	230	230	230
SPD to EN 61643-11			Type 2	Type 2	Type 2	Type 2
SPD to IEC 61643-11			class II	class II	class II	class II
Lightning protection zone LPZ			1→2	1→2	1→2	1→2
Nominal discharge current (8/20)	I_n	kA	20	20	20	20
Arrester surge current (8/20) [total]	I_{Total}	kA	40	60	80	80
Maximum discharge current	I_{max}	kA	40	40	40	40
Voltage protection level	U_p	kV	< 1,3	< 1,3	< 1,3	< 1,3
Response time	t_A	ns	< 25	< 25	< 25	< 25
Maximum back-up fuse		A	125	125	125	125
Temperature range	θ	°C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			2	3	4	5
Protection rating			IP20	IP20	IP20	IP20
Connection cross-section, rigid		mm²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm²	2,5 - 25	2,5 - 25	2,5 - 25	2,5 - 25
Item No.			5094 76 0	5094 76 2	5094 76 5	5096 39 7

Surge arrester V20, 280 V for TN networks



Surge arrester, type 2, 280 V

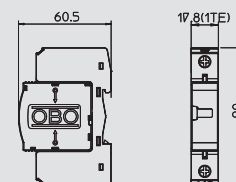
- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.



Surge arrester, 1-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1-280	280	1-pole complete, 280 V	1	12,000	5094 61 8

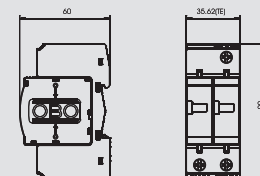
/pc.



Surge arrester, 2-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 2-280	280	2-pole complete, 280 V	1	22,700	5094 62 1

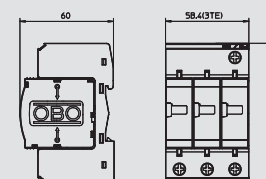
/pc.



Surge arrester, 3-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3-280	280	3-pole complete, 280 V TN-C	1	33,500	5094 62 4

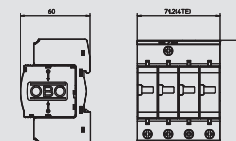
/pc.



Surge arrester, 4-pole

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 4-280	280	4-pole complete, 280 V TNS	1	43,000	5094 62 7

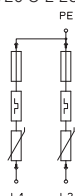
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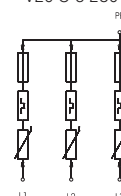
V20-C 1-280



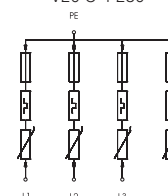
V20-C 2-280



V20-C 3-280



V20-C 4-280

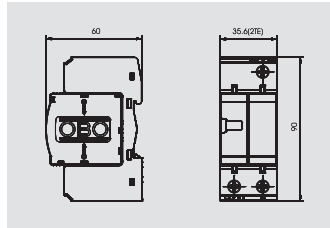


	U_N	V	230	230	230	230
Nominal voltage			Type 2	Type 2	Type 2	Type 2
SPD to EN 61643-11			class II	class II	class II	class II
SPD to IEC 61643-11			1-2	1-2	1-2	1-2
Lightning protection zone LPZ						
Nominal discharge current (8/20)	I_n	kA	20	20	20	20
Arrester surge current (8/20) [total]	I_{Ttotal}	kA	20	40	60	80
Maximum discharge current	I_{max}	kA	40	40	40	40
Voltage protection level	U_p	kV	< 1,3	< 1,3	< 1,3	< 1,3
Response time	t_A	ns	< 25	< 25	< 25	< 25
Maximum back-up fuse		A	125	125	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			1	2	3	4
Protection rating			IP20	IP20	IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 25	2,5 - 25	2,5 - 25	2,5 - 25
Item No.			5094 61 8	5094 62 1	5094 62 4	5094 62 7

Surge arrester V20, 385 V for TN and TT networks

Surge arrester, type 2, 385 V

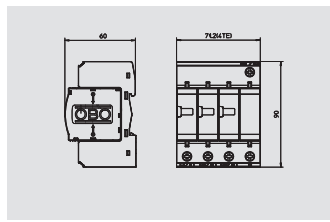
- VDE-tested
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 40 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing zinc oxide varistor arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Equipotential bonding (LPZ 1 to 2) and device protection in main and subdistributors.



Surge arrester, 1-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 1+NPE-385	385	1-pole with NPE; 385 V	1	23,300	5094 66 6

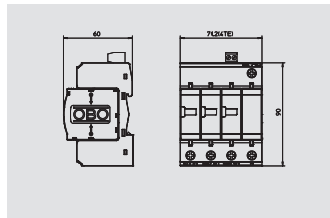
/pc.



Surge arrester, 3-pole + NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE-385	385	3-pole with NPE, in insulated housing (IP65); 385 V	1	42,600	5094 66 8

/pc.



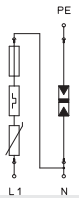
Surge arrester, 3-pole + NPE with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPEFS38	385	3-pole with NPE; FS, 385 V	1	45,200	5094 78 8

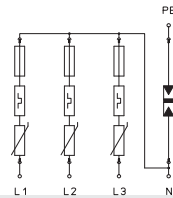
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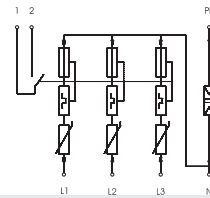
V20-C 1+NPE-385



V20-C 3+NPE-385



V20-C 3+NPEFS38



Nominal voltage	U_N	V	350
SPD to EN 61643-11			Type 2
SPD to IEC 61643-11			class II
Lightning protection zone LPZ			1-2
Nominal discharge current (8/20)	I_n	kA	20
Arrester surge current (8/20) [total]	I_{Total}	kA	40
Maximum discharge current	I_{max}	kA	40
Voltage protection level	U_p	kV	< 1,7
Response time	t_A	ns	< 25
Maximum back-up fuse		A	125
Temperature range	ϑ	°C	-40 - +80
Division unit TE (17.5 mm)			2
Protection rating			IP20
Connection cross-section, rigid		mm²	2,5 - 35
Connection cross-section, multi-wire		mm²	2,5 - 35
Connection cross-section, flexible		mm²	2,5 - 25
Item No.			5094 66 6

5094 66 8

5094 78 8

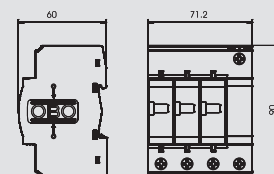
Surge arrester V20, for 400 V/690 V networks



Surge arrester, 3-pole with NPE

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C 3+NPE400	440	3 + NPE	1	47,000	5094 90 0

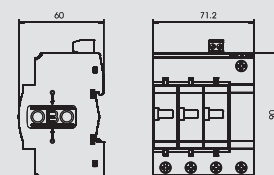
/pc.



Surge arrester, 3-pole with NPE and remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-C3+NPE400+FS	440	3 + NPE	1	47,400	5094 90 2

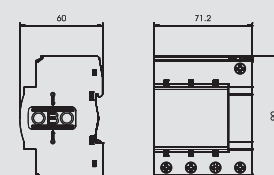
/pc.



Multibase MB25 base

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MB25-3+NPE	440	3 + NPE	1	27,000	5096 67 2

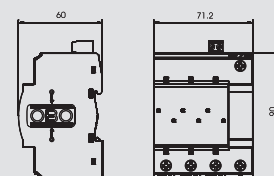
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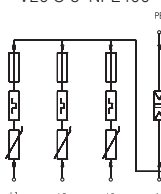
Multibase MB25 base with remote signalling

Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
MB25-3+NPE+FS	440	3 + NPE	1	29,000	5096 67 3

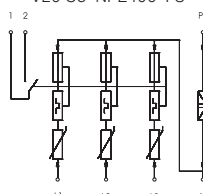
/pc.



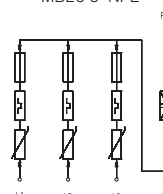
V20-C 3+NPE400



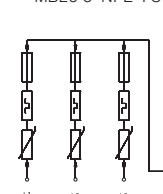
V20-C3+NPE400+FS



MB25-3+NPE



MB25-3+NPE+FS



	U_N	V	400	400	400	400
Nominal voltage			Type 2	Type 2	Type 1+2	Type 1+2
SPD to EN 61643-11			class II	class II	class I+II	class I+II
Lightning protection zone LPZ			1-2	1-2	0-2	0-2
Nominal discharge current (8/20)	I_n	kA	20	20	50	50
Arrestor surge current (8/20) [total]	I_{Total}	kA	50	50	50	50
Maximum discharge current	I_{max}	kA	40	40	50	50
Voltage protection level	U_p	kV	<2,0	<2,0	<2,0	<2,0
Response time	t_A	ns	<100	<100	100	100
Maximum back-up fuse		A	125	125	125	125
Temperature range	ϑ	°C	-40 - +80	-40 - +80	-40 - +80	-40 - +80
Division unit TE (17.5 mm)			4	4	4	4
Protection rating			IP20	IP20	IP20	IP20
Connection cross-section, rigid		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, multi-wire		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Connection cross-section, flexible		mm ²	2,5 - 35	2,5 - 35	2,5 - 35	2,5 - 35
Item No.			5094 90 0	5094 90 2	5096 67 2	5096 67 3

Surge arrester V20, leakage current-free version

- Surge arrester, type 2, VA version
- Leak current-free varistor spark gap arrester, use, for example, for permanent insulation monitoring
 - For surge voltage protection equipotential bonding to VDE 0100-443 (IEC 60364-4-44)
 - Arresting capacity to 25 kA (8/20) per pin
 - Arrester, connectable with dynamic cut-off unit and visual function display
 - Encapsulated, non-extinguishing varistor spark gap arrester for use in distributor housings
 - Base with multiple connection terminals
- Application: Pre-meter area and industrial systems with strong power variations.

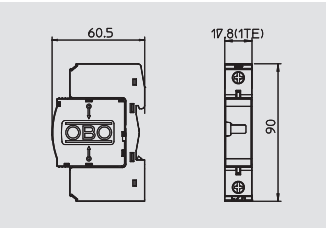
LPZ
1→2

Type
2

5

CLASS II

IEC 60364-4-44



Surge arrester, 1-pole, leakage current-free

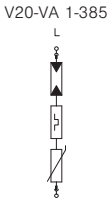
Type	Highest continuous voltage V	Version	Pack. pcs	Weight kg/100 pcs.	Item No.
V20-VA 1-385	385	1-pole	1	12,500	5099 47 5

/pc.



13_2_TBS_Marktspezifischer-Katalog_2013_UK / en / 26/02/2014 (LLExpert_01648) / 26/02/2014

Nominal voltage	U_N	V	350
SPD to EN 61643-11			Type 2
SPD to IEC 61643-11			class II
Lightning protection zone LPZ			1→2
Nominal discharge current (8/20)	I_n	kA	20
Arrester surge current (8/20) [total]	I_{Total}	kA	20
Maximum discharge current	I_{max}	kA	25
Voltage protection level	U_p	kV	< 1,8
Response time	t_A	ns	< 100
Maximum back-up fuse		A	125
Temperature range	ϑ	°C	-40 - +80
Division unit TE (17.5 mm)			1
Protection rating			IP20
Connection cross-section, rigid		mm²	2,5 - 35
Connection cross-section, multi-wire		mm²	2,5 - 35
Connection cross-section, flexible		mm²	2,5 - 25
Item No.			5099 47 5





Surge protection, protection and spark gaps

	Spark gap	Explosion-protected	30
		Connection lugs	30
		Closed	30
	Protective spark gap	-	31
	Spark gap/ surge voltage protection	To couple earthing systems	31

Protection and spark gaps



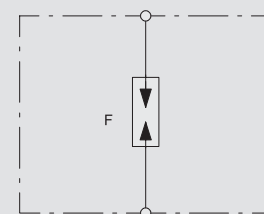
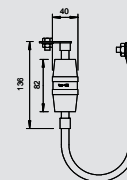
Explosion-proof, closed spark gap

Type	Connection cable length	Contact voltage	Impulse discharge current (10/350)	Nominal discharge current (8/20)	Protection level	Temperature range	Pack.	Weight	Item No.
	m	kV	kA	kA	kV	°C	pcs	kg/100 pcs.	
480 180	0.18	1	100	100	< 3,0	-20+50	1	48,000	5240 03 4
480 250	0.25	1	100	100	< 3,0	-20+50	1	50,000	5240 07 7
480 350	0.35	1	100	100	< 3,0	-20+50	1	53,000	5240 06 9

/pc.

- Ex-tested to ATEX directive 94/9/EG
- Designation: Ex II 2G EEx d IIC T6
- Incl. connector cable 25 mm² Cu, highly-flexible, with cable lug, screw (M 10), nut and lock washer
- Pulsed current 100 kA (10/350µs)
- BET tested

Application: Indirect by-passing of insulating flanges and insulating glands.



Connection strap for Parex spark gap

Type	Bore hole Ø	Version	Pack.	Weight	Item No.
	mm		pcs	kg/100 pcs.	
484 M12	13	For M10 bolt	2	8,100	5240 22 0
484 M16	17	For M16 bolt	2	7,700	5240 23 9
484 M20	21	For M20 bolt	2	7,300	5240 24 7
484 M24	25	For M24 bolt	2	6,800	5240 25 5

St Steel **F** Hot-dip galvanised

/pc.

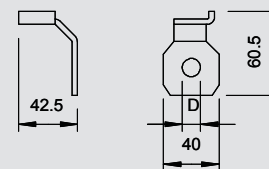
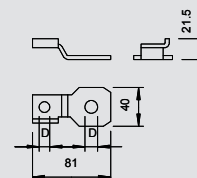
Attaching flange for installing OBO Parex spark gap 480 on insulating flanges.

Type	Bore hole Ø	Version	Pack.	Weight	Item No.
	mm		pcs	kg/100 pcs.	
485 M12	13	For M10 bolt	2	8,100	5240 32 8
485 M10	11	For M16 bolt	2	8,300	5240 30 1
485 M16	17	For M20 bolt	2	7,700	5240 33 6

St Steel **F** Hot-dip galvanised

/pc.

Attaching flange for installing OBO Parex spark gap 480 on insulating flanges.



Closed spark gap with lightning current carrying capability

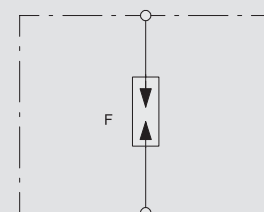
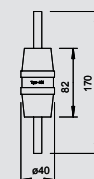
Type	Impulse discharge current (10/350)	Nominal discharge current (8/20)	Protection level	Contact voltage	Temperature range	Pack.	Weight	Item No.
	kA	kA	kV	kV	°C	pcs	kg/100 pcs.	
481	50	100	< 5	2.5	-20+50	1	26,500	5240 08 5

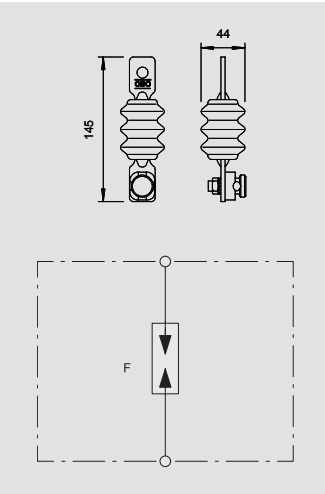
/pc.

Closed, lightning current carrying spark gap for separation of electrically conductive plant components.

- Connection bolts; Ø 10 mm; stainless steel.
- Pulsed current 50 kA (10/350)
- BET

Tested Application: Installation of electrical isolations for external lighting protection and earthing systems, e.g. two earthing systems on account of mutual influence or corrosion (corrosion current prevention).





Protective spark gap

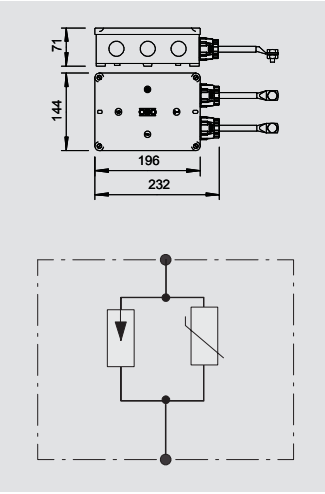


Type	Protection level	Contact voltage	Pack.	Weight	Item No.
	kV	kV	pcs	kg/100 pcs.	
482	< 10 kV	10	1	56,000	5240 05 0

/pc.

Closed spark gap for bridging a proximity point between roof standard of low-voltage system and components of outer lightning protection system

- Protection rating IP 54
- With pre-mounted type 5001 connector for attaching round conductors Rd 8 - 10



Spark gap / surge voltage protection for coupling earthing systems



Type	Dimension	Highest continuous voltage	Impulse discharge current (10/350)	Nominal discharge current (8/20)	Protection level	Protection type	Pack.	Weight	Item No.
	mm	V	kA	kA	kV		pcs	kg/100 pcs.	
FS-V20	196 x 144 x 71	280	100	100	< 1,5	IP 54	1	170,000	5099 80 3

/pc.

The FS-V 20 device is a discharge gap with parallel-connected surge voltage protector. It is used to couple different earthing systems. It is connected directly to the equipotential bonding rail concerned.

Application: Coupling earthing systems in data technology sector (functional and operational earthing)



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THINK CONNECTED.