

Pluggable, universal two-pole lightning current/surge arrester for IT systems. German Patent.

Arrester module and base part have to be ordered separately.

BLITZDUCTOR® CT is a pluggable, universal two-pole lightning current/surge arrester in a modular terminal block system for max. requirements on the availability of measuring and control circuits, bus systems, alarm systems and telecommunication systems. The coordinated arresters of the Yellow/Line family can be used as

- lightning current arresters
- combined (i.e. lightning current/surge) arresters
- surge arresters

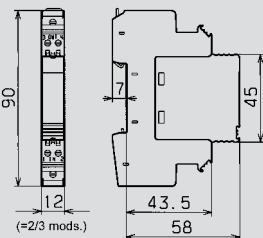
- Optimised discharge capacity for max. availability
- Max. safety due to extremely low protection levels
- Easy installation and maintenance
- For universal use because of base part and different arrester modules

They provide a permanently high impulse current discharge capacity (min. 10x test impulse) and protect the terminal equipment with extremely low protection levels that are supported by the low-impedance structure of the device. The protective circuit is integrated in the arrester module only and not in the base part. This allows to disconnect and remove all relevant components of the cable run for testing. Corresponding arrester test units can also be provided.

A wide range of accessories makes the use of BLITZDUCTOR® CT very comfortable. Components for easy marking, for earthing shields or reserved cables or for easy testing of the cables complete the arrester programme.



BLITZDUCTOR® CT mounted completely.  
 Two-part construction with universal base part and application-specific arrester module in space-saving design for DIN rail mounting.



Dimension drawing



Base part

Universal base part for all arrester modules. Optimises storage, allows prewirings and facilitates service. No signal interruption when exchanging the modules thanks to capacitive and inductive contacts in the base part.



3 performance categories

#### BCT MOD B 110:

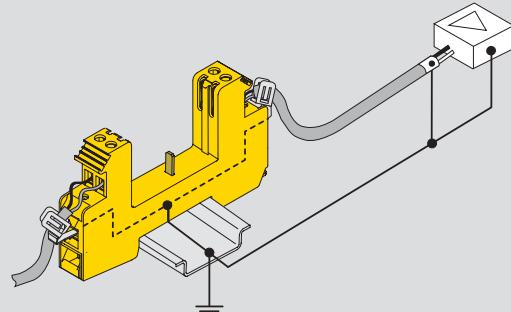
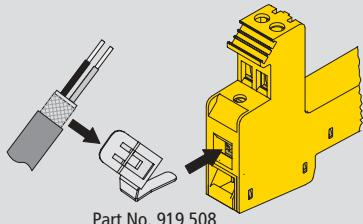
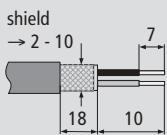
Lightning current arrester module for high partial lightning currents, mostly in combination with BCT MOD M... as protection for terminal systems

#### BCT MOD B ...:

Combined arrester module (i.e. lightning current/surge arrester module) for high partial lightning currents and surges with low limiting protection for terminal systems

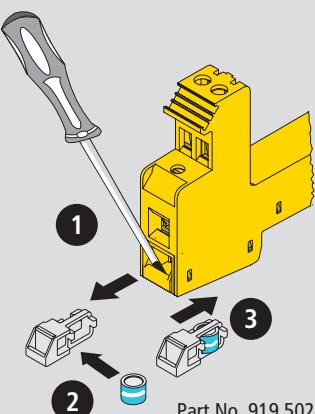
#### BCT MOD M ...:

Surge arrester module with low limiting protection for terminal systems



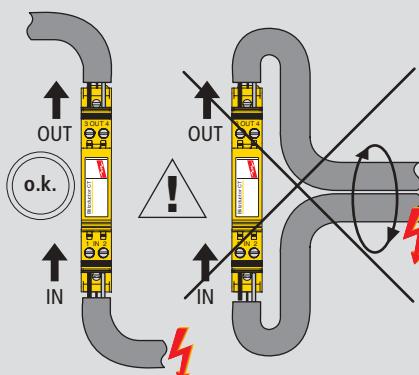
The shield terminals integrated in the base part are connected directly to the DIN rail. Especially for bus systems an EMC spring terminal should be used for an extensive connection of cable shields.

If both sides of the cable shield cannot be earthed directly for technical reasons, unilateral indirect shield earthing could be advantageous. Furnishing the insert of the base part with gas discharge tube GDT 90 prevents upcoming compensating currents. Transient impulse currents on the shield, however, are discharged via the indirect shield earthing.



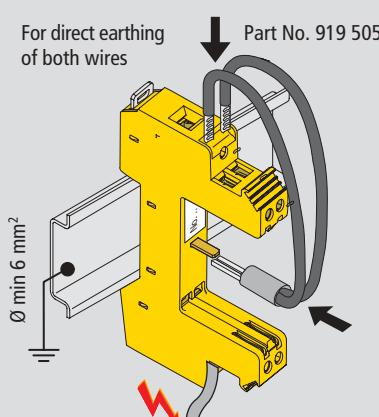
Part No. 919 502

Indirect shield earthing



The unprotected cables have always to be assigned the base part terminals 1 and 2 (IN). In order not to reduce the protective effect, protected and unprotected cables have to be laid separately.

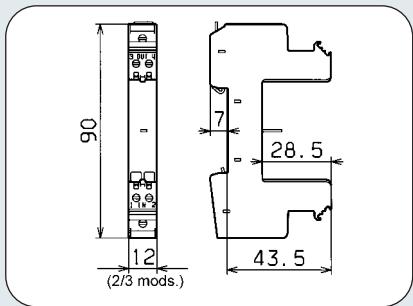
For direct earthing of both wires



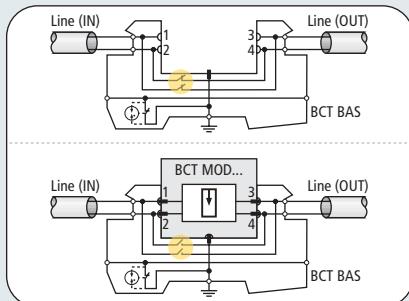
In case of a stranded cable, reserved wires should be contacted and earthed. If the reserved wires are connected with the base parts, earth terminal sets (Part No. 919 505) should be used. This reserves the space for a retrofitted arrester module and the cables can be easily integrated in the equipotential bonding.

Earth terminal set

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING



Dimension drawing BCT BAS



Basic circuit diagram with and without plugged-in module

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing



- Universal unit for all types of arrester modules
- Plug-in and removal without signal interruption
- Patent insert for indirect shield earthing

BCT BAS	
Max. continuous dc voltage $U_c$	350 V
Max. continuous ac voltage $U_c$	250 V
Nominal current $I_L$	10 A
Operating temperature range	-40°C...+80°C
Degree of protection	IP 20
Mounting on	35 mm DIN rail according to EN 60715
Connection input / output	screw/screw
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Tightening torque (terminals)	0.5 Nm / 0.8 Nm (shield)
Earthing via	35 mm DIN rail acc. to EN 60715
Enclosure material	polyamide PA 6.6
Colour	yellow
Approvals, Certifications	CSA
Ordering information	
Type	BCT BAS
Part No.	919 506
Packing unit	1 pc(s)

## Accessory Part for BLITZDUCTOR® CT Base Part

## Test/Disconnection Plug

Plugged in once, the module interrupts the run of the connected cables and leads them to 5 test sockets to the front side of the test/disconnection plug. This allows to carry out measurements in the installation without removing the lines from the base part

Type	BCT MOD PTS
Design	like arrester module
Accessories	2 measuring circuits, 1 m long (plug Ø1 mm, socket Ø4 mm)

Type	PU	Part No.
BCT MOD PTS	pc(s)	919 504



## Accessory Part for BLITZDUCTOR® CT Base Part

## Earth Terminal Set

The earth terminal set consists of a prewired flexible cable with a plug and two connector sleeves. Its function is direct earthing of cable wires not been used before but already connected with the base part

Type	EKS BCT	
Design	approx. 125 mm long	
Type	PU	Part No.
EKS BCT	pc(s)	919 505



## Gas Discharge Tube

Gas discharge tube with lightning current carrying capability for inserting into the base part and establishing an indirect shield earthing. The SPD can be retrofitted or exchanged any time and is mostly used at risks of leakage pickups

Type	GDT 90
D1 Lightning impulse current carrying capability (10/350)	5 kA
Design	h 8 x 6 mm

Type	PU	Part No.
GDT 90	pc(s)	919 502



## EMC Spring Terminal

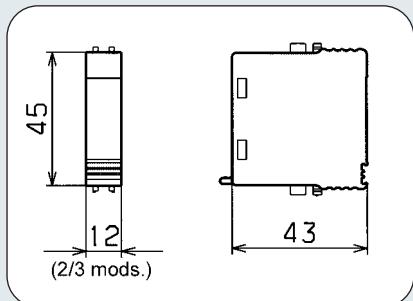
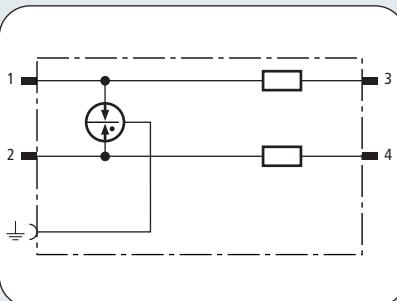
EMC spring terminal, tested with lightning currents, for screwing into the shield terminals in the base part. Provides a permanent shield contact especially for bus cables at min. installation work

Type	EFK BCT
D1 Lightning impulse current carrying capability (10/350)	5 kA
Clamping range	2 - 10 mm

Type	PU	Part No.
EFK BCT	pc(s)	919 508





- For nearly all kinds of applications
- Integrated decoupling elements to downstream arresters
- For use according to the lightning protection zones concept at boundaries 0A – 1 and higher

The integrated decoupling allows an energy-coordinated use to downstream surge arresters without considering the cable length.

Lightning current arrester module for nearly all kinds of applications. Generally in connection with downstream BCT MOD M ... surge arresters.

#### BCT MOD B 110

Nominal voltage $U_N$	110 V
Max. continuous dc voltage $U_c$	170 V
Max. continuous ac voltage $U_c$	130 V
Nominal current $I_L$	1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA
D1 Lightning impulse current (10/350) per line $I_{imp}$	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	20 kA
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 700$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 600$ V
Coordination characteristics KK	XX/X
Series impedance per line	0.4 Ohm
Bandwidth line-line $f_G$	140 MHz
Bandwidth Ad-PG $f_G$	130 MHz
Capacitance line-line C	$\leq 6$ pF
Capacitance line-PG C	$\leq 8$ pF
Response time line-line $t_a$	$\leq 100$ ns
Response time line-PG $t_a$	$\leq 100$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

#### Ordering information

Type	BCT MOD B 110
Part No.	919 510
Packing unit	1 pc(s)



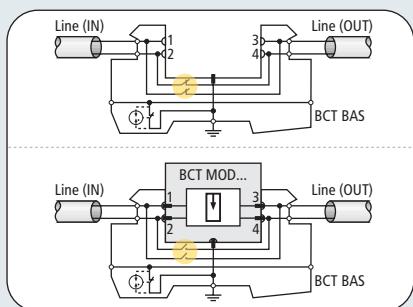
#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6

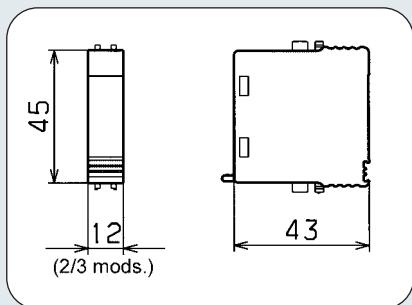
Type	PU	Part No.
BCT BAS	1	919 506



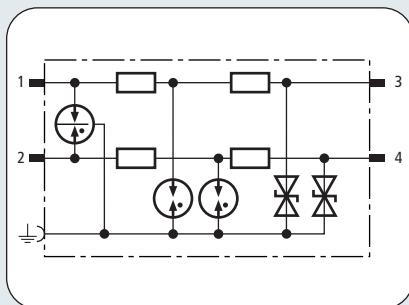
Basic circuit diagram with and without plugged-in module

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING

## BCT MOD BE 5 – BE 60



Dimension drawing BCT MOD BE 5 – BE 60



2 upstream protective stages of the gas discharge tube minimise the decoupling impedance to the diodes



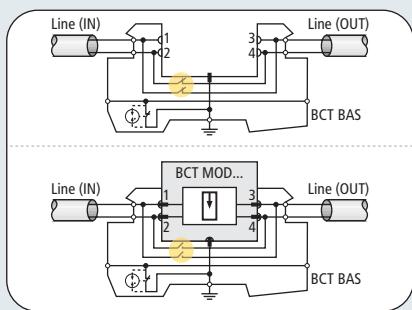
Combined lightning current and surge arrester module for protection of 2 single wires with common reference potential as well as unbalanced interfaces.

- Optimal protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $0_A$  – 2 and higher

BCT MOD ...	BE 5	BE 12	BE 15	BE 24	BE 30	BE 48	BE 60
Nominal voltage $U_N$	5 V	12 V	15 V	24 V	30 V	48 V	60 V
Max. continuous dc voltage $U_c$	6.0 V	14.5 V	17.8 V	26.8 V	34.8 V	55.1 V	65 V
Max. continuous ac voltage $U_c$	4.2 V	10.2 V	12.5 V	18.9 V	24.5 V	38.9 V	50 V
Nominal current $I_L$	1 A	1 A	1 A	1 A	1 A	1 A	1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
D1 Lightning imp. current (10/350) per line $I_{imp}$	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
C2 Nom. discharge current (8/20) per line $I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Voltage prot. level line-line at $I_{imp}$ D1 $U_p$	$\leq 30$ V	$\leq 60$ V	$\leq 70$ V	$\leq 90$ V	$\leq 110$ V	$\leq 150$ V	$\leq 200$ V
Voltage prot. level line-PG at $I_{imp}$ D1 $U_p$	$\leq 17$ V	$\leq 30$ V	$\leq 35$ V	$\leq 45$ V	$\leq 55$ V	$\leq 75$ V	$\leq 100$ V
Voltage prot. level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 16$ V	$\leq 36$ V	$\leq 50$ V	$\leq 70$ V	$\leq 95$ V	$\leq 150$ V	$\leq 180$ V
Voltage prot. level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 8$ V	$\leq 19$ V	$\leq 25$ V	$\leq 35$ V	$\leq 50$ V	$\leq 75$ V	$\leq 90$ V
Coordination characteristics KK	XX/1	XX/1	XX/1	XX/1	XX/1	XX/1	XX/1
Series impedance per line	1.4 Ohm	1.9 Ohm	2.2 Ohm				
Bandwidth Ad-PG $f_g$	1.6 MHz	2.9 MHz	3.8 MHz	5.4 MHz	7.7 MHz	8.7 MHz	10.9 MHz
Capacitance line-line C	$\leq 3$ nF	$\leq 1$ nF	$\leq 0.9$ nF	$\leq 0.7$ nF	$\leq 0.6$ nF	$\leq 0.3$ nF	$\leq 0.3$ nF
Capacitance line-PG C	$\leq 5$ nF	$\leq 2$ nF	$\leq 1.8$ nF	$\leq 1.3$ nF	$\leq 1.1$ nF	$\leq 0.6$ nF	$\leq 0.6$ nF
Response time line-line $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21						
Approvals, Certifications	CSA	CSA	CSA	CSA	CSA	CSA	CSA

## Ordering information

Type	BCT MOD BE 5	BCT MOD BE 12	BCT MOD BE 15	BCT MOD BE 24	BCT MOD BE 30	BCT MOD BE 48	BCT MOD BE 60
Part No.	919 620	919 621	919 622	919 623	919 624	919 625	919 626
Packing unit	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)



Basic circuit diagram with and without plugged-in module

## BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6
Type	PU pc(s)
BCT BAS	1
Part No.	
	919 506

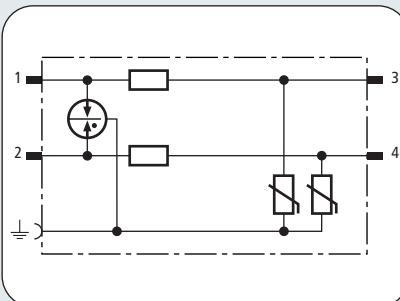


# BLITZDUCTOR® CT

## BCT MOD BE 110

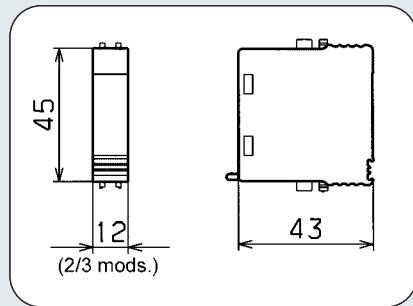
# INFORMATION TECHNOLOGY SYSTEMS

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING



- Optimal protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $O_A - 2$  and higher

Using powerful varistors minimises the decoupling impedance to the gas discharge tube.



Dimension drawing BCT MOD BE 110

Combined lightning current and surge arrester module for protecting 2 single wires with common reference potential as well as unbalanced interfaces.

### BCT MOD BE 110

Nominal voltage $U_N$	110 V
Max. continuous dc voltage $U_c$	170 V
Max. continuous ac voltage $U_c$	130 V
Nominal current $I_L$	1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA
D1 Lightning impulse current (10/350) per line $I_{imp}$	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	20 kA
Voltage protection level line-line at $I_{imp}$ D1 $U_p$	$\leq 600$ V
Voltage protection level line-PG at $I_{imp}$ D1 $U_p$	$\leq 300$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 520$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 260$ V
Coordination characteristics KK	XX/2
Series impedance per line	0.4 Ohm
Bandwidth Ad-PG $f_G$	24.0 MHz
Capacitance line-line C	$\leq 0.2$ nF
Capacitance line-PG C	$\leq 0.4$ nF
Response time line-line $t_a$	$\leq 25$ ns
Response time line-PG $t_a$	$\leq 25$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

### Ordering information

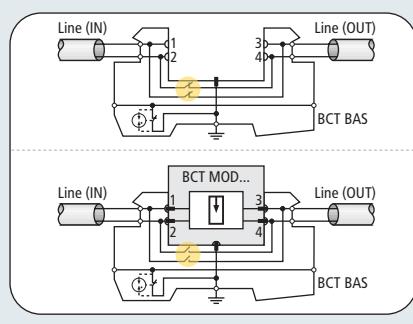
Type	BCT MOD BE 110
Part No.	919 627
Packing unit	1 pc(s)

### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing



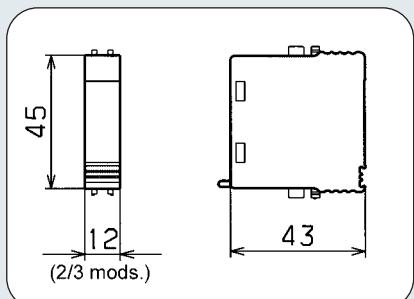
Type	BCT BAS	
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)	
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>	
Enclosure material	polyamide PA 6.6	
Type	PU pc(s)	Part No.
BCT BAS	1	919 506



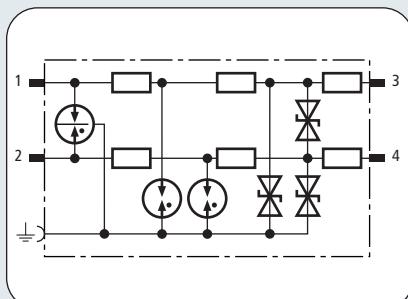
Basic circuit diagram with and without plugged-in module

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING

## BCT MOD BE C 5 – BE C 30



Dimension drawing BCT MOD BE C 5 – BE C 30



The resistors at the output of the circuit protect optocoupler and protective diodes within the terminal device against overloads.



Combined lightning current and surge arrester module for protection of balanced interfaces with protective diode circuit at the input, current loops (TTY) and optocoupler inputs.

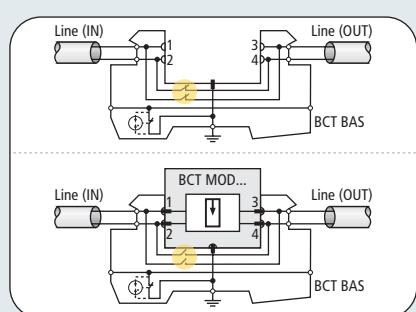
- Optimal protection levels
- Additional decoupling to the terminal equipment
- For use according to the lightning protection zones concept at boundaries  $O_A$  – 2 and higher

	BCT MOD BE C 5	BCT MOD BE C 12	BCT MOD BE C 24	BCT MOD BE C 30
Nominal voltage $U_N$	5 V	12 V	24 V	30 V
Max. continuous dc voltage $U_c$	6.0 V	14.5 V	26.8 V	34.8 V
Max. continuous ac voltage $U_c$	4.2 V	10.2 V	18.9 V	24.5 V
Nominal current $I_L$	0.1 A	0.1 A	0.1 A	0.1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA	5 kA	5 kA	5 kA
D1 Lightning impulse current (10/350) per line $I_{imp}$	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA	20 kA	20 kA	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	20 kA	20 kA	20 kA	20 kA
Voltage protection level line-line at $I_{imp}$ D1 $U_p$	$\leq 10$ V	$\leq 20$ V	$\leq 40$ V	$\leq 50$ V
Voltage protection level line-PG at $I_{imp}$ D1 $U_p$	$\leq 18$ V	$\leq 25$ V	$\leq 45$ V	$\leq 55$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 8$ V	$\leq 19$ V	$\leq 35$ V	$\leq 50$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 8$ V	$\leq 19$ V	$\leq 35$ V	$\leq 50$ V
Coordination characteristics KK	XX/1	XX/1	XX/1	XX/1
Series impedance per line	7.0 Ohm	13.9 Ohm	24.2 Ohm	29.2 Ohm
Bandwidth line-line $f_G$	0.4 MHz *)	0.85 MHz *)	0.85 MHz *)	1.0 MHz *)
Capacitance line-line C	$\leq 8$ nF	$\leq 3$ nF	$\leq 2$ nF	$\leq 1.5$ nF
Capacitance line-PG C	$\leq 8$ nF	$\leq 3$ nF	$\leq 2$ nF	$\leq 1.5$ nF
Response time line-line $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21			
Approvals, Certifications	CSA	CSA	CSA	CSA

## Ordering information

Type	BCT MOD BE C 5	BCT MOD BE C 12	BCT MOD BE C 24	BCT MOD BE C 30
Part No.	919 660	919 661	919 662	919 663
Packing unit	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)

\*) measured in a 100  $\Omega$  system



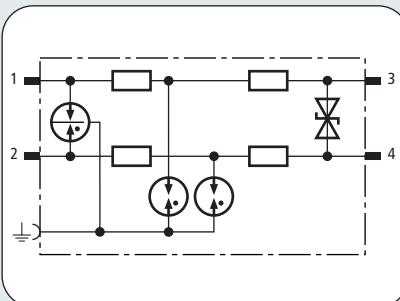
Basic circuit diagram with and without plugged-in module

## BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6
Type	PU pc(s)
BCT BAS	1
Part No.	
	919 506

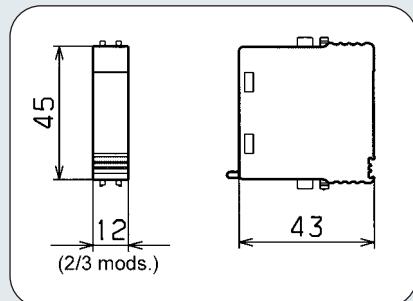




- Optimal protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $O_A$  – 2 and higher

2 upstream protective stages of the gas discharge tube minimise the decoupling impedance to the diodes

Combined lightning current and surge arrester module for protection of balanced interfaces with electrical isolation.



Dimension drawing BCT MOD BD 5 – BD 60

BCT MOD ...	BD 5	BD 12	BD 15	BD 24	BD 30	BD 48	BD 60
Nominal voltage $U_N$	5 V	12 V	15 V	24 V	30 V	48 V	60 V
Max. continuous dc voltage $U_c$	6.0 V	14.5 V	17.8 V	26.8 V	34.8 V	55.1 V	65 V
Max. continuous ac voltage $U_c$	4.2 V	10.2 V	12.5 V	18.9 V	24.5 V	38.9 V	50 V
Nominal current $I_L$	1 A	1 A	1 A	1 A	1 A	1 A	1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA	5 kA
D1 Lightning imp. current (10/350) per line $I_{imp}$	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nom. discharge current (8/20) $I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
C2 Nom. discharge current (8/20) per line $I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Voltage prot. level line-line at $I_{imp}$ D1 $U_p$	≤ 10 V	≤ 20 V	≤ 25 V	≤ 40 V	≤ 50 V	≤ 80 V	≤ 100 V
Voltage prot. level line-PG at $I_{imp}$ D1 $U_p$	≤ 700 V	≤ 700 V	≤ 700 V	≤ 700 V	≤ 700 V	≤ 700 V	≤ 700 V
Voltage prot. level at 1 kV/μs C3 $U_p$	≤ 8 V	≤ 19 V	≤ 24 V	≤ 35 V	≤ 50 V	≤ 75 V	≤ 90 V
Voltage prot. level PG at 1 kV/μs C3 $U_p$ ≤ 600 V	≤ 600 V	≤ 600 V	≤ 600 V	≤ 600 V	≤ 600 V	≤ 600 V	≤ 600 V
Coordination characteristics KK	XX/1	XX/1	XX/1	XX/1	XX/1	XX/1	XX71
Series impedance per line	1.4 Ohm	1.9 Ohm	2.2 Ohm				
Bandwidth line-line $f_G$	1.0 MHz	3.1 MHz	3.8 MHz	5.3 MHz	5.8 MHz	8.6 MHz	10.0 MHz
Capacitance line-line C	≤ 5 nF	≤ 2 nF	≤ 1.8 nF	≤ 1.3 nF	≤ 0.9 nF	≤ 0.6 nF	≤ 0.6 nF
Capacitance line-PG C	≤ 7 pF	≤ 7 pF	≤ 7 pF	≤ 7 pF	≤ 7 pF	≤ 7 pF	≤ 7 pF
Response time line-line $t_a$	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns
Response time line-PG $t_a$	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns	≤ 100 ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21						
Approvals, Certifications	CSA	CSA	CSA	CSA	CSA	CSA	CSA

#### Ordering information

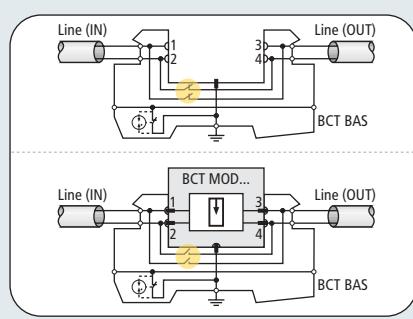
Type	BCT MOD BD 5	BCT MOD BD 12	BCT MOD BD 15	BCT MOD BD 24	BCT MOD BD 30	BCT MOD BD 48	BCT MOD BD 60
Part No.	919 640	919 641	919 642	919 643	919 644	919 645	919 646
Packing unit	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)

#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing



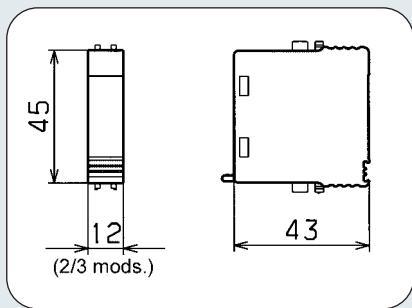
Type	BCT BAS	PU pc(s)	Part No.
		1	919 506



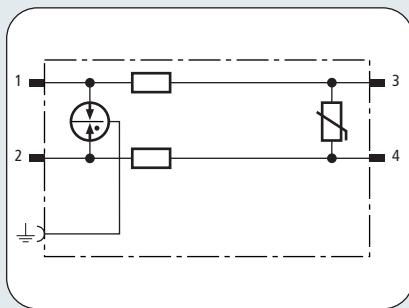
Basic circuit diagram with and without plugged-in module

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING

## BCT MOD BD 110 / BD 250



Dimension drawing BCT MOD BD 110/BD 250



Using the powerful varistor minimises the decoupling impedance to the gas discharge tube.



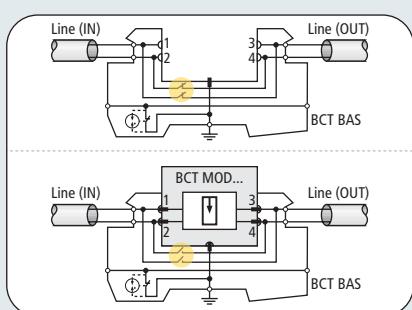
Combined lightning current and surge arrester module for protection of balanced interfaces with electrical isolation, telecommunication.

- Optimal protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $O_A - 2$  and higher

	BCT MOD BD 110	BCT MOD BD 250
Nominal voltage $U_N$	110 V	250 V
Max. continuous dc voltage $U_c$	170 V	280 V
Max. continuous ac voltage $U_c$	130 V	190 V
Nominal current $I_L$	1 A	1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA	5 kA
D1 Lightning impulse current (10/350) per line $I_{imp}$	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	20 kA	20 kA
Voltage protection level line-line at $I_{imp}$ D1 $U_p$	$\leq 300$ V	$\leq 590$ V
Voltage protection level line-PG at $I_{imp}$ D1 $U_p$	$\leq 700$ V	—
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 260$ V	$\leq 490$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 600$ V	$\leq 700$ V
Coordination characteristics KK	XX/2	XX/2
Series impedance per line	0.4 Ohm	0.4 Ohm
Bandwidth line-line $f_G$	9.0 MHz	15.0 MHz
Capacitance line-line C	$\leq 0.6$ nF	$\leq 0.4$ nF
Capacitance line-PG C	$\leq 10$ pF	$\leq 10$ pF
Response time line-line $t_a$	$\leq 25$ ns	$\leq 25$ ns
Response time line-PG $t_a$	$\leq 100$ ns	$\leq 100$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA	CSA

## Ordering information

Type	BCT MOD BD 110	BCT MOD BD 250
Part No.	919 647	919 649
Packing unit	1 pc(s)	1 pc(s)



Basic circuit diagram with and without plugged-in module

## BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS	
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)	
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>	
Enclosure material	polyamide PA 6.6	
Type	PU pc(s)	Part No.
BCT BAS	1	919 506

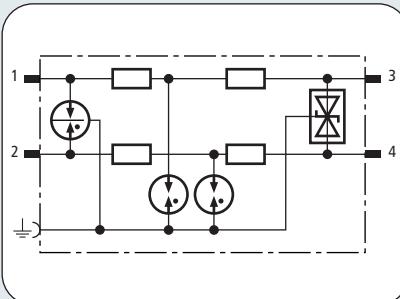


# BLITZDUCTOR® CT

## BCT MOD BD HF

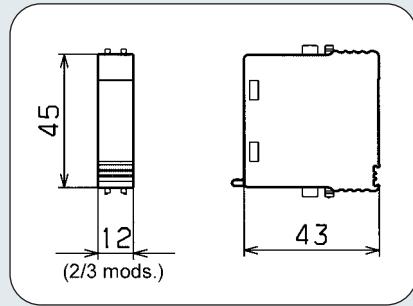
# INFORMATION TECHNOLOGY SYSTEMS

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING



- Optimal protection
- Minimal self-capacitance
- For use according to the lightning protection zones concept at boundaries  $O_A - 2$  and higher

Combining several diodes to one matrix minimizes the capacity of the protective circuit.



Dimension drawing BCT MOD BD HF

Combined lightning current and surge arrester module for protection of high-frequency bus systems or video transmissions.

### BCT MOD BD HF 5

Nominal voltage $U_N$	5 V
Max. continuous dc voltage $U_c$	6.0 V
Max. continuous ac voltage $U_c$	4.2 V
Nominal current $I_L$	0.1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA
D1 Lightning impulse current (10/350) per line $I_{imp}$	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	20 kA
Voltage protection level line-line at $I_{imp}$ D1 $U_p$	$\leq 11$ V
Voltage protection level line-PG at $I_{imp}$ D1 $U_p$	$\leq 20$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 10$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 10$ V
Coordination characteristics KK	XX/1
Series impedance per line	1.4 Ohm
Bandwidth line-line $f_G$	100 MHz
Capacitance line-line C	$\leq 20$ pF
Capacitance line-PG C	$\leq 40$ pF
Response time line-line $t_a$	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 1$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

### Ordering information

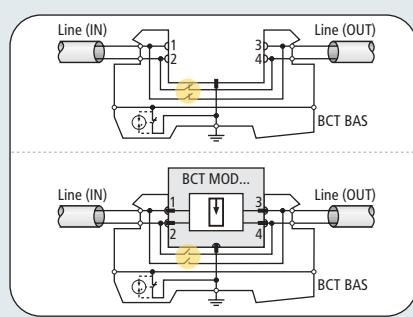
Type	BCT MOD BD HF 5
Part No.	919 670
Packing unit	1 pc(s)

### BCT BAS

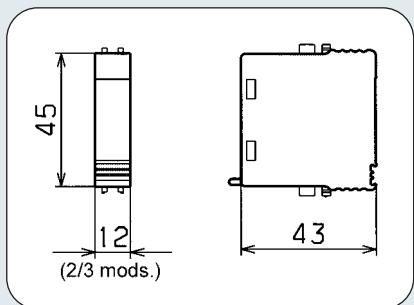
Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing



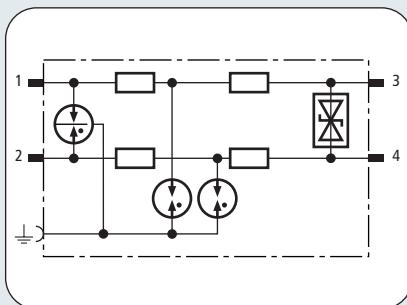
Type	BCT BAS	PU pc(s)	Part No.
BCT BAS		1	919 506



Basic circuit diagram with and without plugged-in module



Dimension drawing BCT MOD BD HFD



Combining several diodes to one matrix minimises the capacity of the protective circuit.



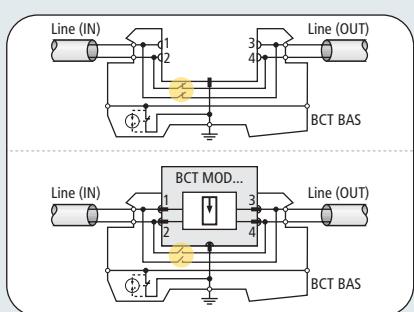
Combined lightning current and surge arrester module for protection of electrically isolated high-frequency bus systems or telecommunication transmissions.

- Optimal protection
- Minimal self-capacitance
- For use according to the lightning protection zones concept at boundaries  $O_A - 2$  and higher

	BCT MOD BD HFD 5	BCT MOD BD HFD 24
Nominal voltage $U_N$	5 V	24 V
Max. continuous dc voltage $U_c$	6.0 V	26.8 V
Max. continuous ac voltage $U_c$	4.2 V	18.9 V
Nominal current $I_L$	0.1 A	0.1 A
D1 Total impulse current (10/350) $I_{imp}$	5 kA	5 kA
D1 Lightning impulse current (10/350) per line $I_{imp}$	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20) $I_n$	20 kA	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	20 kA	20 kA
Voltage protection level line-line at $I_{imp}$ D1 $U_p$	$\leq 15$ V	$\leq 60$ V
Voltage protection level line-PG at $I_{imp}$ D1 $U_p$	$\leq 700$ V	$\leq 700$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 10$ V	$\leq 40$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 600$ V	$\leq 600$ V
Coordination characteristics KK	XX/1	XX/1
Series impedance per line	1.4 Ohm	1.4 Ohm
Bandwidth line-line $f_G$	100 MHz	100 MHz
Capacitance line-line C	$\leq 20$ pF	$\leq 30$ pF
Capacitance line-PG C	$\leq 7$ pF	$\leq 15$ pF
Response time line-line $t_a$	$\leq 1$ ns	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 100$ ns	$\leq 100$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21	IEC 61643-21
Approvals, Certifications	CSA	—

## Ordering information

Type	BCT MOD BD HFD 5	BCT MOD BD HFD 24
Part No.	919 671	919 675
Packing unit	1 pc(s)	1 pc(s)



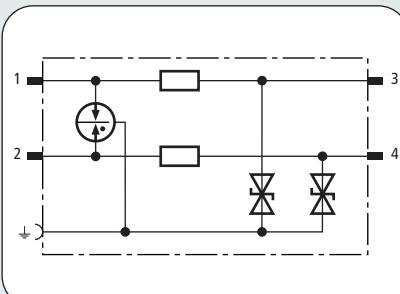
Basic circuit diagram with and without plugged-in module

## BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

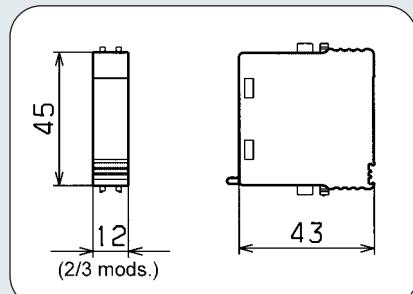
Type	BCT BAS	
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)	
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>	
Enclosure material	polyamide PA 6.6	
Type	PU pc(s)	Part No.
BCT BAS	1	919 506





- Powerful standard protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $O_B$  – 2 and higher

Energy-coordinated gas discharge tubes and diodes connected to earth.



Dimension drawing BCT MOD ME 5 – ME 60

Surge arrester module for protection of 2 single wires with common reference potential as well as unbalanced interfaces.

BCT MOD ...	ME 5	ME 12	ME 15	ME 24	ME 30	ME 48	ME 60
Nominal voltage $U_N$	5 V	12 V	15 V	24 V	30 V	48 V	60 V
Max. continuous dc voltage $U_c$	6.0 V	14.5 V	17.8 V	26.8 V	34.8 V	55.1 V	65 V
Max. continuous ac voltage $U_c$	4.2 V	10.2 V	12.5 V	18.9 V	24.5 V	38.9 V	50 V
Nominal current $I_L$	1 A	1 A	1 A	1 A	1 A	1 A	1 A
C2 Total nom. discharge current (8/20) $I_n$	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 Nom. discharge current (8/20) per line $I_n$	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Voltage prot. level line-line at $I_n$ C2 $U_p$	≤ 50 V	≤ 70 V	≤ 85 V	≤ 100 V	≤ 130 V	≤ 200 V	≤ 240 V
Voltage prot. level line-PG at $I_n$ C2 $U_p$	≤ 45 V	≤ 60 V	≤ 70 V	≤ 80 V	≤ 80 V	≤ 120 V	≤ 150 V
Voltage prot. level at 1 kV/μs C3 $U_p$	≤ 16 V	≤ 38 V	≤ 50 V	≤ 70 V	≤ 95 V	≤ 150 V	≤ 180 V
Voltage prot. level line-PG at 1 kV/μs C3 $U_p$	≤ 8 V	≤ 19 V	≤ 25 V	≤ 35 V	≤ 50 V	≤ 75 V	≤ 90 V
Coordination characteristics KK	x/1	X/1	X/1	X/1	X/1	X/1	X/1
Series impedance per line	1 Ohm	1.5 Ohm	1.8 Ohm				
Bandwidth Ad-PG $f_G$	1.6 MHz	2.9 MHz	4.1 MHz	5.6 MHz	7.0 MHz	9.3 MHz	10.0 MHz
Capacitance line-line C	≤ 3 nF	≤ 1 nF	≤ 0.9 nF	≤ 0.7 nF	≤ 0.6 nF	≤ 0.3 nF	≤ 0.3 nF
Capacitance line-PG C	≤ 5 nF	≤ 2 nF	≤ 1.8 nF	≤ 1.3 nF	≤ 1.1 nF	≤ 0.6 nF	≤ 0.6 nF
Response time line-line $t_a$	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns
Response time line-PG $t_a$	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns	≤ 1 ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21						
Approvals, Certifications	CSA	CSA	CSA	CSA	CSA	CSA	CSA

#### Ordering information

Type	BCT MOD ME 5	BCT MOD ME 12	BCT MOD ME 15	BCT MOD ME 24	BCT MOD ME 30	BCT MOD ME 48	BCT MOD ME 60
Part No.	919 520	919 521	919 522	919 523	919 524	919 525	919 526
Packing unit	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)



#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

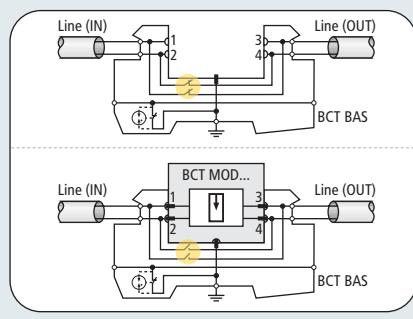
Type BCT BAS

Cross-sectional area, solid 0.08 - 4 mm<sup>2</sup> (shield)

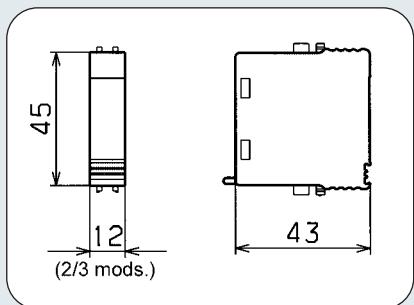
Cross-sectional area, flexible 0.08 - 2.5 mm<sup>2</sup>

Enclosure material polyamide PA 6.6

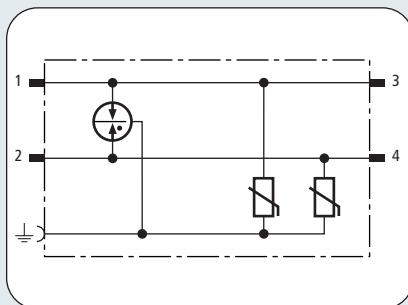
Type	PU pc(s)	Part No.
BCT BAS	1	919 506



Basic circuit diagram with and without plugged-in module



Dimension drawing BCT MOD ME 110



Using powerful varistors no longer requires the decoupling to the gas discharge tube.



Surge arrester module for protection of 2 single wires with common reference potential as well as unbalanced interfaces.

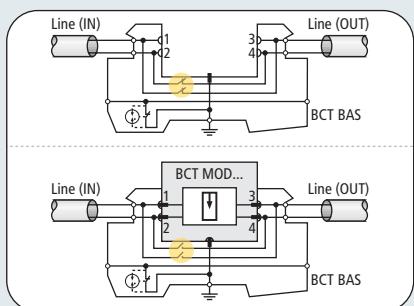
- Powerful standard protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $O_B - 2$  and higher

#### BCT MOD ME 110

Nominal voltage $U_N$	110 V
Max. continuous dc voltage $U_c$	170 V
Max. continuous ac voltage $U_c$	130 V
Nominal current $I_n$	1 A
C2 Total nominal discharge current (8/20) $I_n$	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	10 kA
Voltage protection level line-line at $I_n$ , C2 $U_p$	$\leq 730$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 400$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 520$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 260$ V
Coordination characteristics KK	X/2
Bandwidth Ad-PG $f_G$	24.0 MHz
Capacitance line-line C	$\leq 0.2$ nF
Capacitance line-PG C	$\leq 0.4$ nF
Response time line-line $t_a$	$\leq 25$ ns
Response time line-PG $t_a$	$\leq 25$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

#### Ordering information

Type	BCT MOD ME 110
Part No.	919 527
Packing unit	1 pc(s)



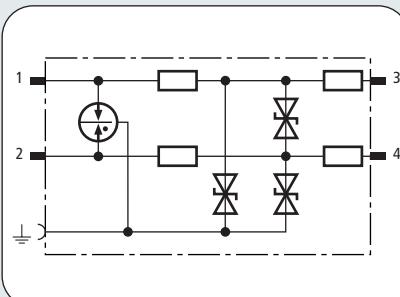
Basic circuit diagram with and without plugged-in module

#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6
Type	Part No.
BCT BAS	1 919 506

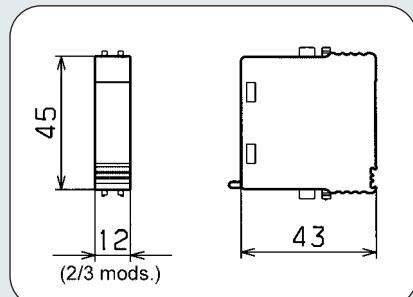




- Optimal protection levels
- Additional decoupling to the terminal equipment
- For use according to the lightning protection zones concept at boundaries  $O_B$  – 2 and higher

The resistors at the output of the circuit protect optocoupler and protective diodes within the terminal equipment against overloads.

Surge arrester module for protection of balanced interfaces with fine protective circuit at the input, current loops (TTY) or optocoupler inputs.



Dimension drawing BCT MOD ME C 5 – ME C 30

	BCT MOD ME C 5	BCT MOD ME C 12	BCT MOD ME C 24	BCT MOD ME C 30
Nominal voltage $U_N$	5 V	12 V	24 V	30 V
Max. continuous dc voltage $U_c$	6.0 V	14.5 V	26.8 V	34.8 V
Max. continuous ac voltage $U_c$	4.2 V	10.2 V	18.9 V	24.5 V
Nominal current $I_L$	0.1 A	0.1 A	0.1 A	0.1 A
C2 Total nominal discharge current (8/20) $I_n$	10 kA	10 kA	10 kA	10 kA
C2 Nominal discharge current (8/20) per line $I_n$	10 kA	10 kA	10 kA	10 kA
Voltage protection level line-line at $I_n$ C2 $U_p$	$\leq 17$ V	$\leq 40$ V	$\leq 65$ V	$\leq 85$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 43$ V	$\leq 50$ V	$\leq 75$ V	$\leq 80$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 8$ V	$\leq 19$ V	$\leq 36$ V	$\leq 50$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 8$ V	$\leq 19$ V	$\leq 36$ V	$\leq 50$ V
Coordination characteristics KK	X/1	X/1	X/1	X/1
Series impedance per line	6.6 Ohm	13.5 Ohm	23.8 Ohm	28.8 Ohm
Bandwidth line-line $f_G$	0.4 MHz *)	0.85 MHz *)	0.85 MHz *)	1.0 MHz *)
Capacitance line-line C	$\leq 8$ nF	$\leq 3$ nF	$\leq 2$ nF	$\leq 2$ nF
Capacitance line-PG C	$\leq 8$ nF	$\leq 3$ nF	$\leq 2$ nF	$\leq 2$ nF
Response time line-line $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21			
Approvals, Certifications	CSA	CSA	CSA	CSA

#### Ordering information

Type	BCT MOD ME C 5	BCT MOD ME C 12	BCT MOD ME C 24	BCT MOD ME C 30
Part No.	919 560	919 561	919 562	919 563
Packing unit	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)



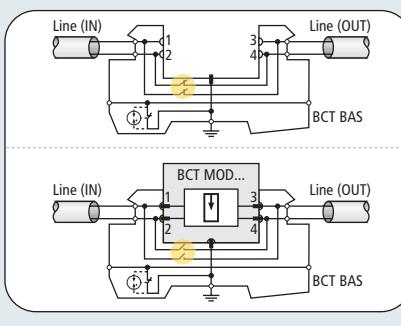
#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6

Type	PU	Part No.
BCT BAS	1	919 506

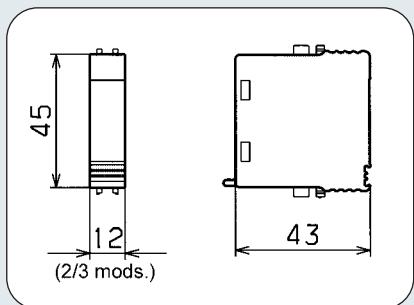


\*) measured in a 100  $\Omega$  system

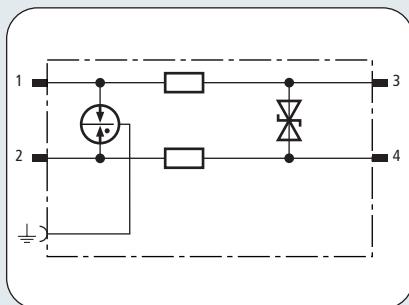
Basic circuit diagram with and without plugged-in module

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING

## BCT MOD MD 5 – MD 60



Dimension drawing BCT MOD MD 5 – MD 60



Protective circuit, free of leakage currents to earth, energy-coordinated.



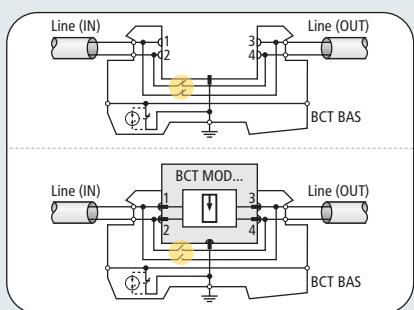
Surge arrester module for protection of balanced interfaces with electrical isolation.

- Powerful standard protection
- Minimal series impedance
- For use according to the lightning protection zones concept at boundaries  $O_B$  – 2 and higher

BCT MOD ...	MD 5	MD 12	MD 15	MD 24	MD 30	MD 48	MD 60
Nominal voltage $U_N$	5 V	12 V	15 V	24 V	48 V	48 V	60 V
Max. continuous dc voltage $U_c$	6.0 V	14.5 V	17.8 V	26.8 V	34.8 V	55.1 V	65.0 V
Max. continuous ac voltage $U_c$	4.2 V	10.2 V	12.5 V	18.9 V	24.5 V	38.9 V	50.0 V
Nominal current $I_L$	1 A	1 A	1 A	1 A	1 A	1 A	1 A
C2 Total nom. discharge current (8/20) $I_n$	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
C2 Nom. discharge current (8/20) per line $I_n$	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Voltage prot. level line-line at $I_n$ C2 $U_p$	$\leq 15$ V	$\leq 27$ V	$\leq 32$ V	$\leq 45$ V	$\leq 60$ V	$\leq 85$ V	$\leq 110$ V
Voltage prot. level line-PG at $I_n$ C2 $U_p$	$\leq 700$ V	$\leq 700$ V	$\leq 700$ V	$\leq 700$ V	$\leq 700$ V	$\leq 700$ V	$\leq 700$ V
Voltage prot. level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 8$ V	$\leq 19$ V	$\leq 24$ V	$\leq 35$ V	$\leq 50$ V	$\leq 75$ V	$\leq 90$ V
Voltage prot. level-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 600$ V	$\leq 600$ V	$\leq 600$ V	$\leq 600$ V	$\leq 600$ V	$\leq 600$ V	$\leq 600$ V
Coordination characteristics KK	X/1	X/1	X/1	X/1	X/1	X/1	X/1
Series impedance per line	1.0 Ohm	1.5 Ohm	1.8 Ohm				
Bandwidth line-line $f_G$	1.0 MHz	3.0 MHz	4.0 MHz	5.3 MHz	6.0 MHz	9.0 MHz	11.0 MHz
Capacitance line-line C	$\leq 5$ nF	$\leq 2$ nF	$\leq 1.8$ nF	$\leq 1.3$ nF	$\leq 0.9$ nF	$\leq 0.6$ nF	$\leq 0.6$ nF
Capacitance line-PG C	$\leq 6$ pF	$\leq 6$ pF	$\leq 6$ pF	$\leq 6$ pF	$\leq 6$ pF	$\leq 6$ pF	$\leq 6$ pF
Response time line-line $t_a$	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 100$ ns	$\leq 100$ ns	$\leq 100$ ns	$\leq 100$ ns	$\leq 100$ ns	$\leq 100$ ns	$\leq 100$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Pluggable into	base part	base part	base part	base part	base part	base part	base part
Earthing via	base part	base part	base part	base part	base part	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21						
Approvals, Certifications	CSA	CSA	CSA	CSA	CSA	CSA	CSA

## Ordering information

Type	BCT MOD MD 5	BCT MOD MD 12	BCT MOD MD 15	BCT MOD MD 24	BCT MOD MD 30	BCT MOD MD 48	BCT MOD MD 60
Part No.	919 540	919 541	919 542	919 543	919 544	919 545	919 546
Packing unit	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)	1 pc(s)



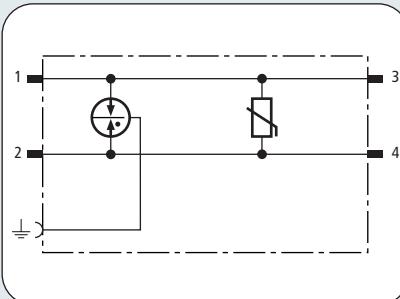
Basic circuit diagram with and without plugged-in module

## BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

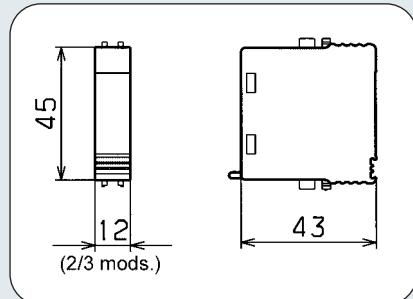
Type	BCT BAS	
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)	
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>	
Enclosure material	polyamide PA 6.6	
Type	PU pc(s)	Part No.
BCT BAS	1	919 506





- Powerful standard protection
- No series impedance
- For use according to the lightning protection zones concept at boundaries at  $O_B - 2$  and higher

Using a powerful varistor no longer requires the decoupling to the gas discharge tube.



Dimension drawing BCT MOD MD 110/MD 250

Surge arrester module for protection of balanced interfaces with electrical isolation, telecommunication.

	BCT MOD MD 110	BCT MOD MD 250
Nominal voltage $U_N$	110 V	250 V
Max. continuous dc voltage $U_c$	170 V	280 V
Max. continuous ac voltage $U_c$	130 V	190 V
Nominal current $I_L$	1 A	1 A
C2 Total nominal discharge current (8/20) $I_n$	20 kA	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	10 kA	10 kA
Voltage protection level line-line at $I_n$ C2 $U_p$	$\leq 360$ V	$\leq 630$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 700$ V	—
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 260$ V	$\leq 490$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 600$ V	$\leq 700$ V
Coordination characteristics KK	X/2	X/2
Bandwidth line-line $f_G$	11.0 MHz	15.0 MHz
Capacitance line-line C	$\leq 0.7$ nF	$\leq 0.4$ nF
Capacitance line-PG C	$\leq 6$ pF	$\leq 10$ pF
Response time line-line $t_a$	$\leq 25$ ns	$\leq 25$ ns
Response time line-PG $t_a$	$\leq 100$ ns	$\leq 100$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA	CSA
Ordering information		
Type	BCT MOD MD 110	BCT MOD MD 250
Part No.	919 547	919 549
Packing unit	1 pc(s)	1 pc(s)

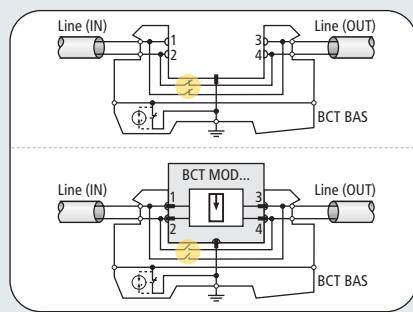


#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6

Type	PU	Part No.
BCT BAS	1	919 506



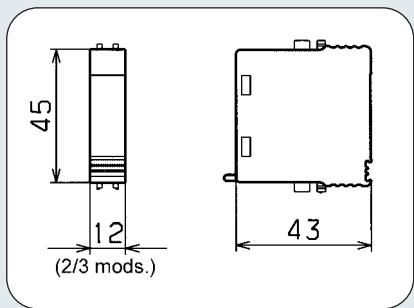
Basic circuit diagram with and without plugged-in module

# INFORMATION TECHNOLOGY SYSTEMS

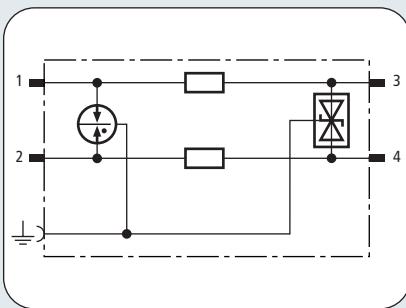
## PLUGGABLE SPDs FOR DIN RAIL MOUNTING

**BLITZDUCTOR® CT**

**BCT MOD MD HF**



Dimension drawing BCT MOD MD HF



Combining several diodes to one matrix minimises the capacity of the protective circuit.



Surge arrester module for protection of high-frequency bus systems or video transmissions.

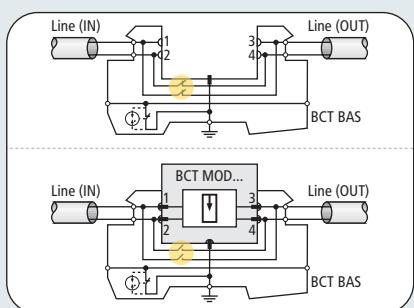
- Minimal self-capacitance
- Best transmission performance
- For use according to the lightning protection zones concept at boundaries  $O_B - 2$  and higher

### BCT MOD MD HF 5

Nominal voltage $U_N$	5 V
Max. continuous dc voltage $U_c$	6.0 V
Max. continuous ac voltage $U_c$	4.2 V
Nominal current $I_n$	0.1 A
C2 Total nominal discharge current (8/20) $I_n$	10 kA
C2 Nominal discharge current (8/20) per line $I_n$	10 kA
Voltage protection level line-line at $I_n$ , C2 $U_p$	$\leq 50$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 70$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 10$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 10$ V
Coordination characteristics KK	X/1
Series impedance per line	1.0 Ohm
Bandwidth line-line $f_G$	100 MHz
Capacitance line-line C	$\leq 20$ pF
Capacitance line-PG C	$\leq 40$ pF
Response time line-line $t_a$	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 1$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

### Ordering information

Type	BCT MOD MD HF 5
Part No.	919 570
Packing unit	1 pc(s)



Basic circuit diagram with and without plugged-in module

### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6
Type	BCT BAS
PU	pc(s)
Part No.	919 506
	1

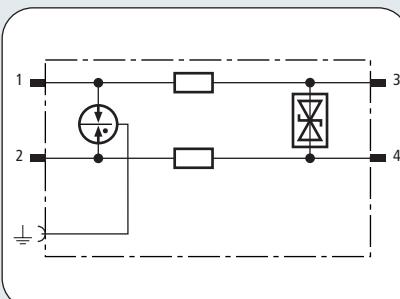


# BLITZDUCTOR® CT

## BCT MOD MD HFD

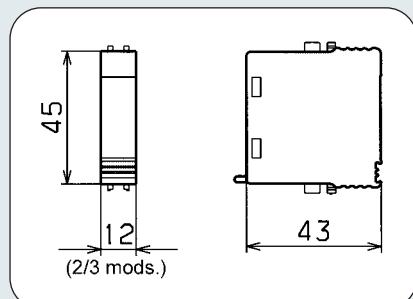
# INFORMATION TECHNOLOGY SYSTEMS

## PLUGGABLE SPDs FOR DIN RAIL MOUNTING



- Minimal self-capacitance
- Best transmission performance
- For use according to the lightning protection zones concept at boundaries  $O_B$  – 2 and higher

Combining several diodes to one matrix minimizes the capacity of the protective circuit.



Dimension drawing BCT MOD MD HFD

Surge arrester module for protection of electrically isolated high-frequency bus systems or telecommunication transmissions.

### BCT MOD MD HFD 5

### BCT MOD MD HFD 24

Nominal voltage $U_N$	5 V	24 V
Max. continuous dc voltage $U_c$	6.0 V	26.8 V
Max. continuous ac voltage $U_c$	4.2 V	18.9 V
Nominal current $I_L$	0.1 A	0.1 A
C2 Total nominal discharge current (8/20) $I_n$	10 kA	10 kA
C2 Nominal discharge current (8/20) per line $I_n$	10 kA	10 kA
Voltage protection level line-line at $I_n$ C2 $U_p$	$\leq 50$ V	$\leq 60$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 700$ V	$\leq 700$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 10$ V	$\leq 40$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 600$ V	$\leq 600$ V
Coordination characteristics KK	X/1	X/1
Series impedance per line	1.0 Ohm	1.0 Ohm
Bandwidth line-line $f_G$	100 MHz	100 MHz
Capacitance line-line C	$\leq 20$ pF	25 pF
Capacitance line-PG C	$\leq 6$ pF	15 pF
Response time line-line $t_a$	$\leq 1$ ns	$\leq 1$ ns
Response time line-PG $t_a$	$\leq 100$ ns	$\leq 100$ ns
Operating temperature range	-40°C...+80°C	-40°C...+80°C
Degree of protection (plugged)	IP 20	IP 20
Pluggable into	base part	base part
Earthing via	base part	base part
Enclosure material	polyamide PA 6.6	polyamide PA 6.6
Colour	yellow	yellow
Test standards	VDE 0845-2, IEC 61643-21	IEC 61643-21
Approvals, Certifications	CSA	—

### Ordering information

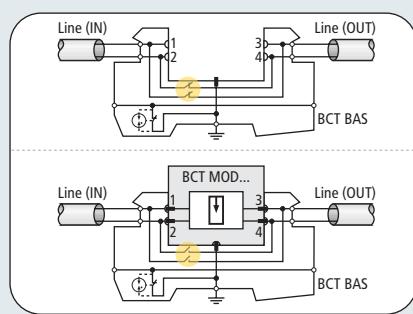
Type	BCT MOD MD HFD 5	BCT MOD MD HFD 24
Part No.	919 571	919 575
Packing unit	1 pc(s)	1 pc(s)



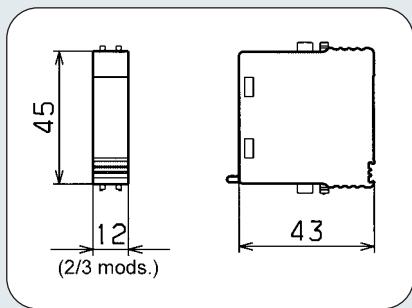
### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

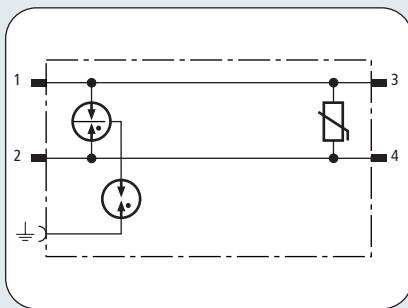
Type	BCT BAS	
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)	
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>	
Enclosure material	polyamide PA 6.6	
Type	PU pc(s)	Part No.
BCT BAS	1	919 506



Basic circuit diagram with and without plugged-in module



Dimension drawing BCT MOD MD TC N



A series connection of gas discharge tubes increases the insulation resistance to earth.



Surge arrester module for protection of telecommunication interfaces. Unit specified for use in Norway.

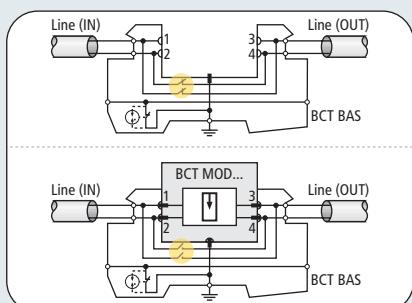
- Powerful standard protection
- High insulation resistance to earth
- For use according to the lightning protection zones concept at boundaries  $O_B - 2$  and higher

#### BCT MOD MD TC N

Max. continuous dc voltage $U_c$	280 V
Max. continuous ac voltage $U_c$	190 V
Nominal current $I_L$	1 A
C2 Total nominal discharge current (8/20) $I_n$	20 kA
C2 Nominal discharge current (8/20) per line $I_n$	10 kA
Voltage protection level line-line at $I_n$ C2 $U_p$	$\leq 750$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 950$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 490$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 800$ V
Coordination characteristics KK	X/2
Bandwidth line-line $f_G$	18 MHz
Capacitance line-line C	$\leq 400$ pF
Capacitance line-PG C	$\leq 20$ pF
Response time line-line $t_a$	$\leq 25$ ns
Response time line-PG $t_a$	$\leq 100$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

#### Ordering information

Type	BCT MOD MD TC N
Part No.	919 552
Packing unit	1 pc(s)



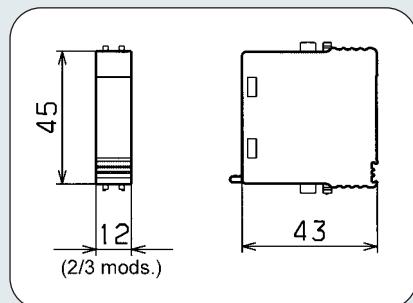
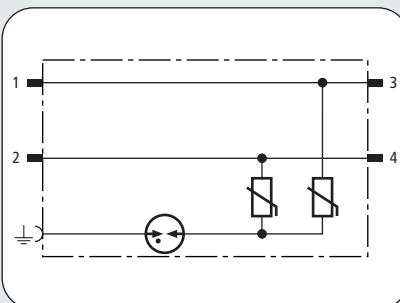
Basic circuit diagram with and without plugged-in module

#### BCT BAS

Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS		
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)		
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>		
Enclosure material	polyamide PA 6.6		
Type	PU pc(s)	Part No.	
BCT BAS	1	919 506	





- "Y" circuit avoids connection errors
- For signal circuits with high operating current
- For use according to the lightning protection zones concept at boundaries  $O_B - 1$  and higher

The electrical decoupling of the varistors via a gas discharge tube to earth ensures the isolation.

Dimension BCT MOD MY

Surge arrester module for protection of balanced interfaces with electrical isolation up to 6 A.

#### BCT MOD MY 250

Nominal voltage $U_N$	250 V
Max. continuous dc voltage $U_c$	350 V
Max. continuous ac voltage $U_c$	250 V
Nominal current $I_L$	6 A
C2 Total nominal discharge current (8/20) $I_n$	6 kA
C2 Nominal discharge current (8/20) per line $I_n$	3 kA
Voltage protection level line-line at $I_n$ C2 $U_p$	$\leq 1100$ V
Voltage protection level line-PG at $I_n$ C2 $U_p$	$\leq 1400$ V
Voltage protection level at 1 kV/ $\mu$ s C3 $U_p$	$\leq 650$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 $U_p$	$\leq 1200$ V
Coordination characteristics KK	X/3
Bandwidth line-line $f_G$	10 MHz
Capacitance line-line C	$\leq 600$ pF
Capacitance line-PG C	$\leq 10$ pF
Response time line-line $t_a$	$\leq 25$ ns
Response time line-PG $t_a$	$\leq 100$ ns
Operating temperature range	-40°C...+80°C
Degree of protection (plugged)	IP 20
Pluggable into	base part
Earthing via	base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	VDE 0845-2, IEC 61643-21
Approvals, Certifications	CSA

#### Ordering information

Type	BCT MOD MY 250
Part No.	919 589
Packing unit	1 pc(s)

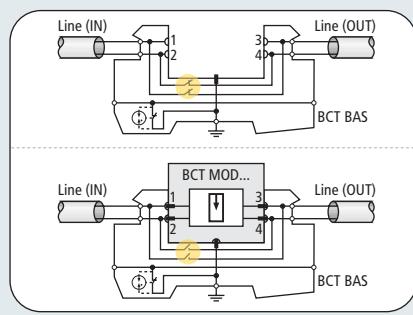


#### BCT BAS

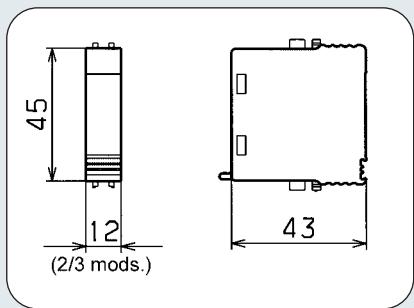
Base part for use as universal feed-through terminal for supporting the arrester module without signal interruption. The arrester module is safely earthed via the supporting foot of the DIN rail by means of a snap-on device. Allows direct or indirect shield earthing

Type	BCT BAS
Cross-sectional area, solid	0.08 - 4 mm <sup>2</sup> (shield)
Cross-sectional area, flexible	0.08 - 2.5 mm <sup>2</sup>
Enclosure material	polyamide PA 6.6

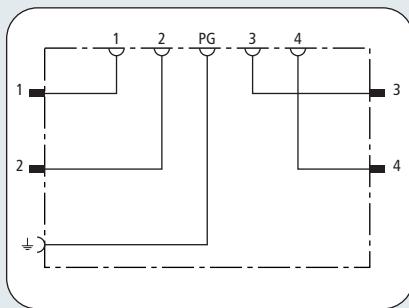
Type	PU pc(s)	Part No.
BCT BAS	1	919 506



Basic circuit diagram with and without plugged-in module



Dimension drawing BCT MOD PTS



Basic circuit diagram BCT MOD PTS



Plugged in once, the module interrupts the run of the connected cables and leads them to 5 test sockets to the front side of the test/disconnection plug. This allows to carry out measurements in the installation without removing the lines from the base part

- For plugging into the base part of BLITZDUCTOR® CT
- Makes maintenance and trouble shooting easier
- Measuring cables included

#### BCT MOD PTS

Design	like arrester module
Mounting on	BCT BAS
Accessories	2 measuring circuits, 1 m long (plug Ø1 mm, socket Ø4 mm)
<b>Ordering information</b>	
Type	BCT MOD PTS
Part No.	919 504
Packing unit	1 pc(s)

#### Gas Discharge Tube



Gas discharge tube with lightning current carrying capability for inserting into the base part and establishing an indirect shield earthing. The SPD can be retrofitted or exchanged any time and is mostly used at risks of leakage pickups

- Device with lightning current carrying capability
- Low sparkover voltage

#### GDT 90

D1 Lightning impulse current carrying capability (10/350)	5 kA
Design	h 8 x 6 mm
Mounting on	BCT BAS
<b>Ordering information</b>	
Type	GDT 90
Part No.	919 502
Packing unit	1 pc(s)



- Easy handling
- Quick exchange for retrofitting an arrester module

The earth terminal set consists of a prewired flexible cable with a plug and two connector sleeves. Its function is direct earthing of cable wires not been used before but already connected with the base part

**EKS BCT**

Design	approx. 125 mm long
Mounting on	BCT BAS
<b>Ordering information</b>	
Type	EKS BCT
Part No.	919 505
Packing unit	1 pc(s)

**EMC Spring Terminal**

- Min. space requirements
- Compensates the yield of the conductor
- Especially easy handling with bus cables

EMC spring terminal, tested with lightning currents, for screwing into the shield terminals in the base part. Provides a permanent shield contact especially for bus cables at min. installation work

**EFK BCT**

D1 Lightning impulse current carrying capability (10/350)	5 kA
Clamping range Rd	2 - 10 mm
Mounting on	BCT BAS
<b>Ordering information</b>	
Type	EFK BCT
Part No.	919 508
Packing unit	10 pc(s)