SCHIRTEC®

LIGHTNING PROTECTION SYSTEMS
SURGE PROTECTION DEVICES
EARTHING MATERIALS

2014-2015

Created For Your Safety

AUSTRIA ICMET IBET BLITZSCHUTZ & EMV TECHNOLOGIEZENTRUM TÜV ÖSTERREICH tgm Staatliche Versuchsanstalt

ANGLO-JAPANESE-AMERICAN REGISTRARS AJA ISO 14001 UKAS ENVIRONMENTAL MANAGEMENT Reg. No. 059-C

ANGLO-JAPANESE-AMERICAN REGISTRARS AJA ISO 9001:2008 UKAS QUALITY MANAGEMENT Reg. No. 059

EXTERNAL PROTECTION

SCHIRTEC E.S.E. LIGHTNING CONDUCTORS

SCHIRTEC E.S.E. Lightning Conductors protect large fields from one point by becoming active with the lightning risk by increasing the atmospheric electric field effect during thunderstorms.

The head of E.S.E. Lightning Conductors is divided into four main parts:

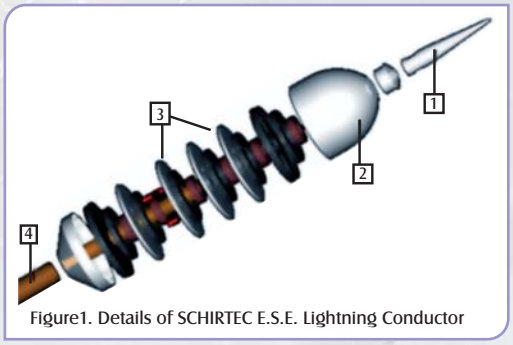


Figure1. Details of SCHIRTEC E.S.E. Lightning Conductor

1. Air Terminal
2. Ion Generator
3. Accelerator and Atmospheric Electrodes
4. Grounding Connection Terminal

The air terminal resists the biggest lightning strikes due to its high quality.
The Ion generator, induction coil and the protector have a high impedance. The generator is located inside of a special epoxy resin to be protected from the environmental conditions.

The accelerator and atmospheric electrodes are designed in a way that they can be charged with different potentials. The electrodes work as an additional ionization producing resource and as an accelerator.

The different protection capacities of the SCHIRTEC E.S.E. Lightning Conductors are regulated by the number of electrodes and the ion generator's impedance.

The products of SCHIRTEC are in accordance to the new NFC 17-102: 2011 and the UNE 21186: 2011 Standards. The high quality products are made of stainless steel and cause no risk for the environment, which is confirmed by TÜV Austria. The discharge capacity of lightning is confirmed by the laboratoryies BET Germany and CTI Vienna.

The most important factor of SCHIRTEC E.S.E. Lightning Conductors is the protection radius, which depends on the level calculation and the ΔT value, found in the product's test reports.

The level of protection is calculated according to appendix B of the NF C 17-102.
The protection radius is calculated; $\mathbf{Rp=(h(2D-h)+\Delta L(2D+\Delta L))^{0,5}}$ h≥5m.....Eq.1
h(m): True height of the Schirtec E.S.E. above the surface to be protected
D(m): Standardised striking distance D =20m (level I), 30m (level II), 45m (level III) or 60m (level IV)
ΔL (m): Triggering advance ΔT measured during efficiency tests acc. to appendix C of the NF C 17-102 standard which allows ΔT to be calculated using the formula **ΔL=V. ΔT** , $V=10^6$ m/s from NF C 17-102.

A sample calculation for SCHIRTEC-A:
If you calculate **Level-I** according to appendix B of the NF C 17-102
For D=20 m, ΔL=60 m, h=6m,
from $\mathbf{Rp=(h(2D-h)+\Delta L(2D+\Delta L))^{0,5}}$ **...Eq.1**
Protection radius is Rp= 79 m calculated.

If you calculate **Level-II** according to appendix B of the NF C 17-102
For D=30 m, ΔL=60 m, h=6m,
from Eq.1, Rp=87 m calculated.

If you calculate **Level-III** according to appendix B of the NF C 17-102
For D=45 m, ΔL=60 m, h=6m,
from Eq.1, Rp=97 m calculated.

If you calculate **Level-IV** according to appendix B of the NF C 17-102
For D=60 m, ΔL=60 m, h=6m
from Eq.1, Rp=107 m calculated

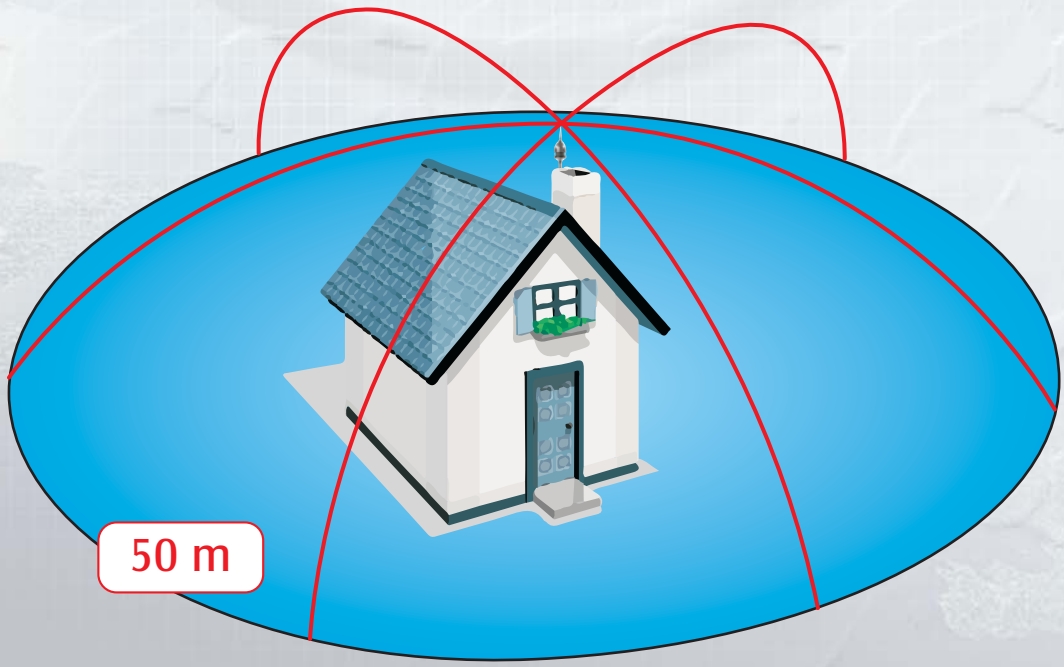
The Protection Radius For SCHIRTEC E.S.E. Lightning Conductors (According to NF C 17-102)

Rp (m) / Np / h(m)	SCHIRTEC-AM (ΔT:15 µs)				SCHIRTEC-AS (ΔT:30 µs)				SCHIRTEC-DAS (ΔT:45 µs)				SCHIRTEC-A/DA (ΔT:60 µs)			
H	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
2	13	15	18	20	19	22	25	28	25	28	32	36	31	35	39	43
4	25	27	36	41	38	44	51	57	51	57	64	72	63	69	78	85
5	32	37	45	51	48	55	63	71	63	71	81	89	79	86	97	107
6	32	38	46	52	48	55	64	72	63	71	81	90	79	87	97	107
8	33	39	47	54	49	56	65	73	64	72	82	91	79	87	98	108
10	34	41	49	56	49	57	66	75	64	72	83	92	79	88	99	109
20	35	43	55	63	50	59	71	81	65	74	86	97	80	89	102	113
30	35	45	58	69	50	60	73	85	65	75	89	101	80	90	104	116

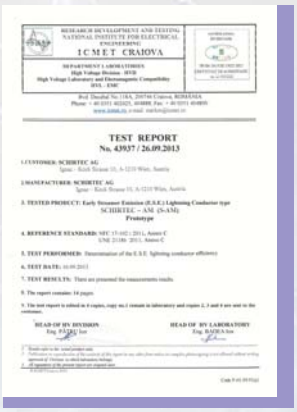
E.S.E. SCHIRTEC LIGHTNING CONDUCTORS

					
Model	**S-AM**	**S-AS**	**S-A**	**S-DAS***	**S-DA***
Protection Radius	15 µs	30 µs	60 µs	45 µs	63 µs
Tested Protection Radius ΔT (µs)	17 µs	32 µs	65 µs	47 µs	73 µs
Size (cm)	48x9	55x12	59x12	66x12	70x12
Weight (kg)	1,2	2,6	2,8	3,8	4,1
Material	Stainless steel				
Standards	NFC 17-102: 2011 and UNE 21186: 2011				

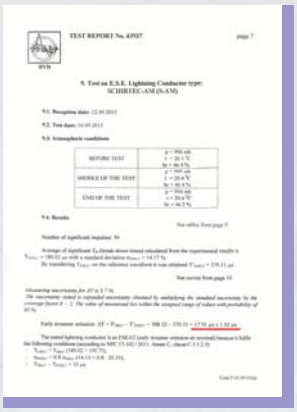
* PREMIUM Models with second ion generator for additional safety



SCHIRTEC E.S.E. LIGHTNING CONDUCTORS TESTED
NFC 17-102 2011 VERSION


RESEARCH DEVELOPMENT AND TESTING NATIONAL INSTITUTE FOR ELECTRICAL ENGINEERING
ICMET CRAIOVA

TEST REPORT
No. 43937 / 26.09.2013


TEST REPORT No. 43937

9. Test on E.S.E. Lightning Conductor type: SCHIRTEC-AM (S-AM)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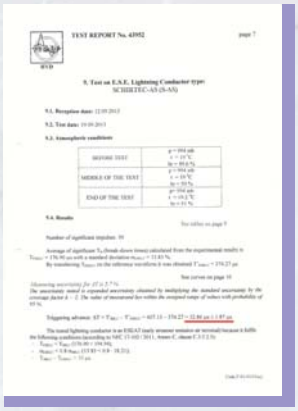
TEST REPORT
No. 43952 / 26.09.2013


TEST REPORT No. 43952

9. Test on E.S.E. Lightning Conductor type: SCHIRTEC-AS (S-AS)


RESEARCH DEVELOPMENT AND TESTING NATIONAL INSTITUTE FOR ELECTRICAL ENGINEERING
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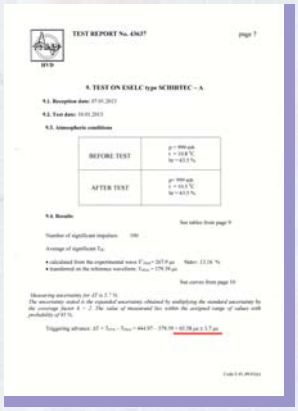
TEST REPORT
No. 43637 / 10.01.2013


TEST REPORT No. 43637

9. TEST ON ESELC type SCHIRTEC – A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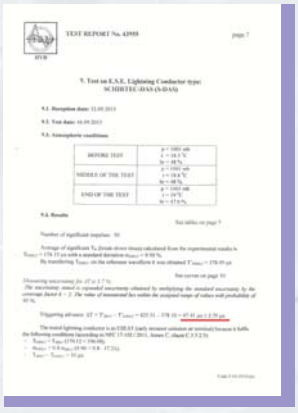
ICMET CRAIOVA

TEST REPORT
No. 43955 / 26.09.2013


TEST REPORT No. 43955

9. Test on E.S.E. Lightning Conductor type: SCHIRTEC-DAS (S-DAS)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ICMET CRAIOVA

TEST REPORT
No. 43634 / 09.01.2013


TEST REPORT No. 43634

9. TEST ON ESELC type SCHIRTEC – DA

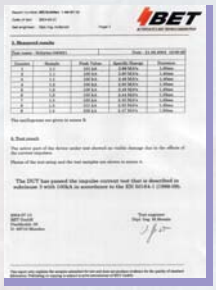
SCHIRTEC®

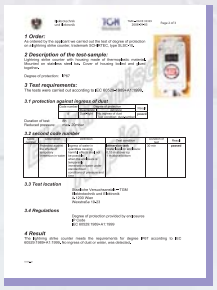
SCHIRTEC CERTIFICATES & TEST REPORTS





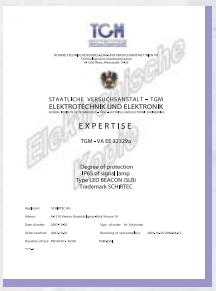













SOLAR TESTER SRC-1T

All SCHIRTEC E.S.E. Lightning Conductors can be tested any time by utilizing the respective tester. The Tester indicates OK (green LED) or FAULT (red LED). There are two different types of testers available.

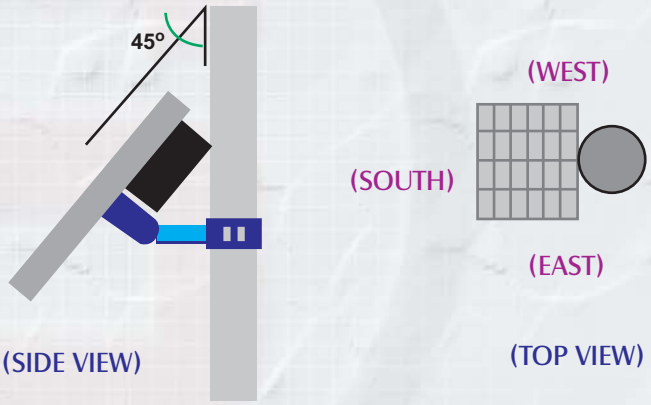
	Name	Description	Dimension (cm)
	SA-1T	Tester for E.S.E.	6x9,5x3x8

1. SRC-1T

The solar tester works remotely. The testing device stores energy to operate for 24 hours by an exposition of 5-7 hours of sun light daily.

2. Installation Manual

1. The Testing Device is installed at a 45 degree angle to the pole facing south.
2. The Testing Device is connected through a cable with the E.S.E. Lightning Conductor.
3. The Testing Device has to be switched ON.
4. A test has to be performed (See Chapter 3. How to perform a test?)



In order to perform a test of the functionality of any SCHIRTEC E.S.E. Lightning Conductor you have to:

1) Press the red TEST button for 2 - 3 seconds on the Remote Controller.

2) The RX/TX LED lights up in red.

3) After releasing the button the Testing Device, which is connected to the SCHIRTEC E.S.E. Lightning Conductor, performs the test.

4) After a few seconds the test result will be transmitted via radio frequency to the

Remote Controller:
When the green OK LED lights up and starts blinking; the E.S.E. Lightning Conductor is fully functional.
When the red FAULT LED lights up and starts blinking; the E.S.E. Lightning Conductor is not functional and has to be controlled immediately.

Please note that the Testing Device stores energy to operate for 24 hours taking into consideration that it is exposed to 5-7 hours of sun light daily.

Exothermic Welding SCHIRTEC

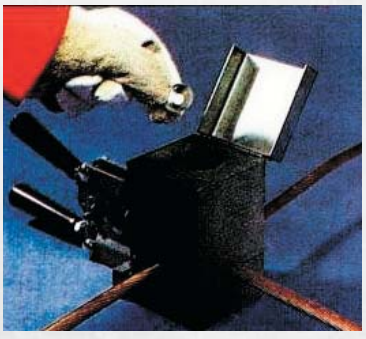
Exothermic welding is a process to join materials permanently with the conductors. Exothermic welding is usually used for welding copper conductors but it is suitable for a wide range of metals.

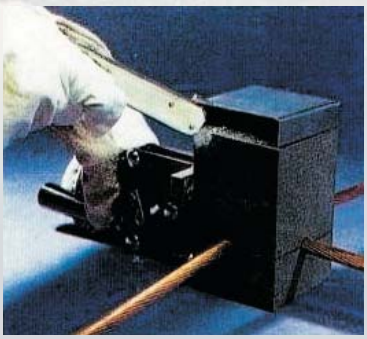
Product Packaging

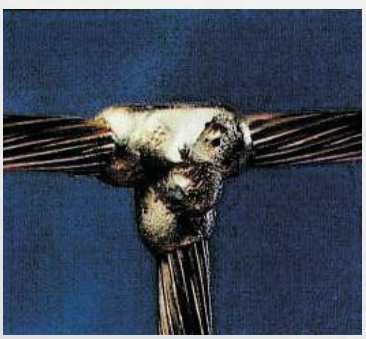
SCHIRTEC Exotermic Welding Powder is available in cartridges with the following content:

- 65 g
- 90 g
- 115 g
- 150 g
- 200 g
- 250 g

The lack of an external heat source and the benefit of joining materials permanently within seconds are one of the advantages of Exothermic Welding. The Exothermic Welding has an excellent corrosion resistance and does not suffer from increased electrical resistance over the lifetime of the installation.







SA-1T (SCHIRTEC LIGHTNING CONDUCTOR TESTER)

The SCHIRTEC Lightning Conductors can be checked by this Tester every time.The Tester will indicate OK or FAULT with the help of red or green LED.

Ref.No:	Description	Dimension (cm)
SA-1T	SCHIRTEC Tester	6x9,5x3,8

SLSC-10 (SCHIRTEC LIGHTNING STRIKE COUNTER)

Ref.No:	Description
SLSC-10	SCHIRTEC Lightning Strike Counter

Description
The Lightning Strikes will be detected and recorded by the SLSC-10. This device can also show the intact operation of the Lightning System.

Why Should We Use a Lightning Counter?
By using an inductive record, the counter is able accurately to count all lightning events for a later reference.

Operating Principle
SLSC-10 works with an inductive effect of the lightning strike current. The events are monitored by a mechanical counter display. The counter includes a high frequency transformer.

Applications and Descriptions

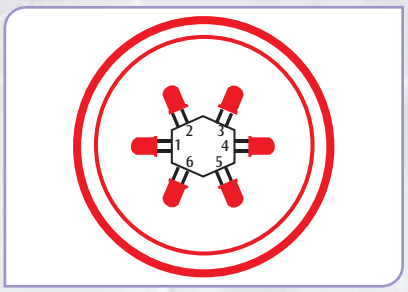
- Currents detected from 2 to 100 kA
- Nonresetable
- Mechanical Counter with 6 digits
- Easy mountable
- Testable with 9V Battery
- Does not require any external power supply
- Produced according to IP 67 (certified by TGM Laboratory)
- Serial Counter
- Dimensions: 11,3x7x4,8 cm

VARIOUS LIGHTNING PROTECTION ACCESSORIES & EARTHING MATERIALS

SLB (SCHIRTEC LED BEACON)

Properties,

- Special designed red glass cover.
- Aluminium frame.
- Anti-static protection covered circuit.
- Produced according to IP 65 (certified by TGM Laboratory)



The SCHIRTEC LED BEACON is covered by a red coloured glass and especially manufactured to show a maximum light distribution.

The SCHIRTEC LED BEACON's frame is manufactured by an injection aluminium technology. Upon it, a special kit is mounted in order to facilitate the montage.

For the security purpose, the red glass cover is connected with a slim steel wire (minimum 30 cm) to the aluminium frame firmly.

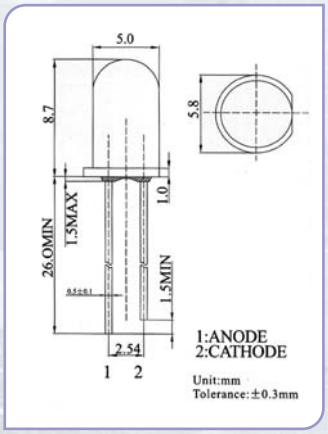
There is a microprocessor in the electronic circuit of this device which enables us to program the flashing periods.

As remarked in the above figure, there are 6 sets of LED placed in the device hexagonally. Each set consists of 8 pieces of LED totalled to 48 (6X8) pieces of LED. With the help of them, an efficient light distribution is possible for 360 degrees.

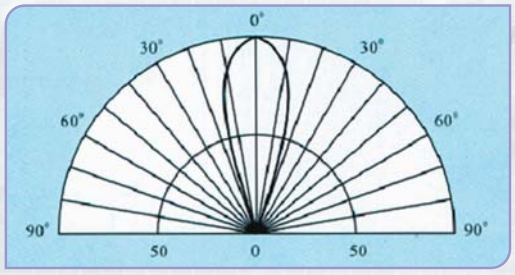
The inside micro controller checks all the LEDs permanently and tries to find out any failure. If any failure is located, the error LED should be lighted and the failure contact outputs will be activated.

Characteristic of LED ;

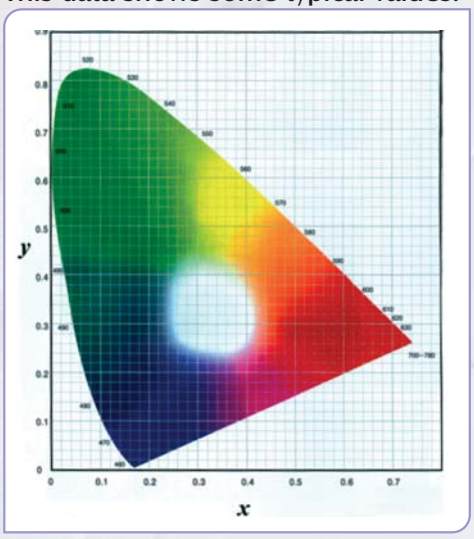
This data shows some typical values.



Directive Characteristics (Ta=25°C)



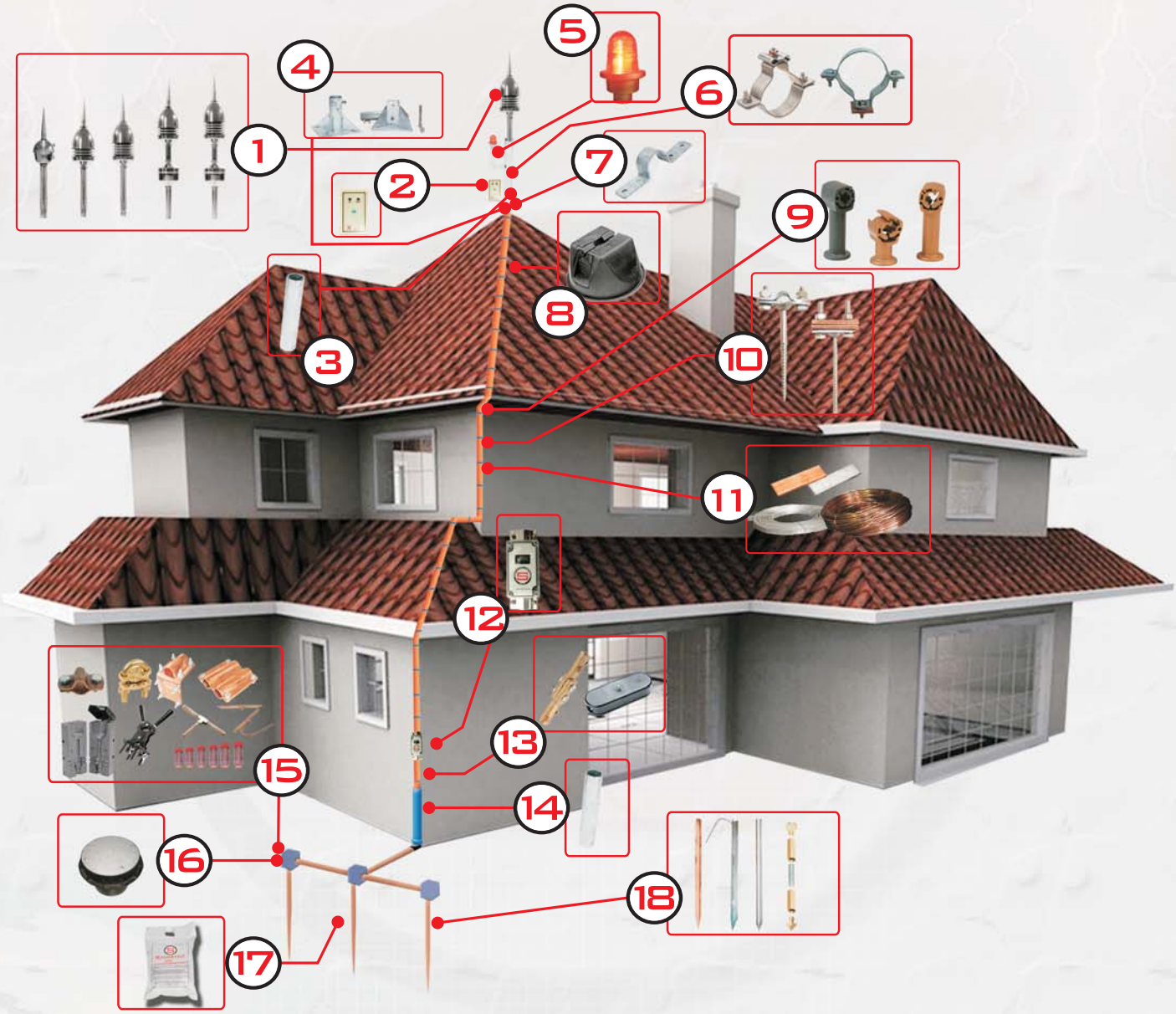
Relative Luminous Intensity
(The view of 30 degrees)



SCHIRTEC LED BEACON			
	SLB-24	SLB-48	SLB-220
Power Supply	24 V AC/ V DC	36-72 V AC/ V DC	220 V AC
Power Consumption	max. 3 W		
Luminescence **(typical)**	32 cd		
Luminescence **(maximum)**	46 cd		
Height & Diameter	206&135 mm		
Operating Temperature (°C)	- 40 to +85°C		
Weight	1,5 kg		

SCHIRTEC®

E.S.E. LIGHTNING CONDUCTORS & PRODUCTS



1. E.S.E. Lightning Conductors
2. E.S.E. Lightning Conductors Tester
3. Galvanized Mast
4. Mast Base
5. SCHIRTEC LED Beacon
6. Mast Clamp
7. Mast Clip
8. Plastic Holders for Isolated Floor/Roofs
9. Plastic Holders for Isolated Walls
10. Wall Holders
11. Down Conductors
12. Lightning Strike Counter
13. Test Clamps
14. Protection Pipe
15. Earthing Rod Clamps and Exothermic Welding
16. Plastic, Concrete Inspection Pits
17. SCHIRTEC Earthing Enhancement Material
18. Earthing Rods

INTERNAL PROTECTION
SURGE PROTECTION DEVICES

POWER SUPPLY SYSTEMS LIGHTNING ARRESTER CLASS I

S45 = Encapsulated power spark gap I_{imp}= 60kA (L/N) , U_N=230V/50Hz, I_{max} = 100 kA, U_p≤2,5 kV
S50-50 = Encapsulated power spark gap I_{imp}= 50kA(L/N), U_N=230V/50Hz, I_{max} = 110 kA, U_p≤1,3 kV
S55 = Encapsulated power spark gap I_{imp}= 60kA (L/N) , U_N=230V/50Hz, I_{max} = 100 kA, U_p≤4 kV
S50-3 = Encapsulated power spark gap I_{imp}= 50kA (L/N) , U_N=230V/50Hz, I_{max} = 110 kA, U_p≤1,3 kV
S100 = Encapsulated power spark gap I_{imp}= 120kA (N/PE),U_c=255V/50Hz,I_{max} = 160kA,U_p ≤2 kV
SB 120 = Lightning arrester class I. 85kA (8/20), U_N= 120V, I_{max} = 100 kA,U_p≤950V
SB 230 = Lightning arrester class I. 85kA (8/20), U_N= 230V, I_{max} = 100 kA, U_p≤1000V
SB 400 = Lightning arrester class I. 85kA (8/20) ,U_N= 400V ,I_{max} = 100 kA, U_p≤1600 V
SB 500 = Lightning arrester class I. 85kA (8/20) ,U_N= 500V ,I_{max} = 100 kA, U_p≤2100 V
SB 120S = Lightning arrester class I. 85kA (8/20) + dist.sig.,U_N = 120V, I_{max} = 100 kA,U_p≤950V
SB 230S = Lightning arrester class I. 85kA (8/20)+ dist.sig., U_N = 230V, I_{max} = 100 kA, U_p≤1000V
SB 400S = Lightning arrester class I. 85kA (8/20)+ dist.sig., U_N = 400V , I_{max} = 100 kA, U_p≤1600 V
SB 500S = Lightning arrester class I. 85kA (8/20)+ dist.sig., U_N = 500V , I_{max} = 100 kA, U_p≤2100 V
SBT 120 = Lightning arrester class I. 80kA (8/20) , U_N = 120 V, I_{max} = 80kA, U_p≤ 1kV
SBT 230 = Lightning arrester class I. 80kA (8/20) , U_N = 230 V , I_{max} = 80 kA , U_p≤2kV
SBT 400 = Lightning arrester class I. 80kA (8/20) , U_N = 400 V , I_{max} = 80kA , U_p≤2kV
SBT 120S = Lightning arrester class I. 80kA (8/20)+dist.sig.U_N =120V, I_{max} = 80kA, U_p≤ 1kV
SBT 230S = Lightning arrester class I. 80kA (8/20)+dist.sig.U_N =230V , I_{max} = 80 kA , U_p≤2kV
SBT 400S = Lightning arrester class I. 80kA (8/20)+dist.sig. U_N =400V , I_{max} = 80kA , U_p≤2kV
SBN-80 = Encapsulated Gas Discharge Tube 80kA, U_c = 255V/50 Hz, I_{max} = 120 kA, U_p≤1,3 kV
SBN-100 = Encapsulated Gas Discharge Tube 100kA, U_c = 255V/50Hz, I_{max} = 150kA, U_p≤1,5 kV
SZ110 = Encapsulated power spark gap I_{imp} = 110 kA (L/N) U_N = 230 V AC, U_p ≤ 2,5 kV
SZ110/500 = Encapsulated power spark gap I_{imp} = 110 kA (L/N) U_N = 400 V AC, U_p ≤ 2,5 kV
SJK110 = Encapsulated power spark gap I_{imp} = 110 kA (N/PE) U_C = 255 V AC, I_{max} = 150 kA U_p ≤ 2 kV□

SBM7-75 = Lightning arrester class I I_{imp} = 7 kA (10/350) U_c= 75 V AC I_{max}=50 kA U_p < 350 V
SBM7-75S = Lightning arrester class I I_{imp} = 7 kA (10/350) dist. sig. U_c= 75 V AC I_{max}=50 kA U_p < 350 V
SBM7-150 = Lightning arrester class I I_{imp} = 7 kA (10/350) U_c= 150 V AC Imax=50 kA Up < 950 V
SBM7-150S = Lightning arrester class I I_{imp} = 7 kA (10/350) dist. sig. U_c= 150 V AC I_{max}=50 kA U_p < 950 V
SBM7-275 = Lightning arrester class I I_{imp} = 7 kA (10/350) U_c= 275 V AC I_{max}=50 kA U_p < 1,2 kV
SBM7-275S = Lightning arrester class I I_{imp} = 7 kA (10/350) dist. sig. U_c= 275 V AC I_{max}=50 kA U_p<1,2 kV
SBM7-320 = Lightning arrester class I I_{imp} = 7 kA (10/350) U_c= 320 V AC I_{max}=50 kA U_p < 1,3 kV
SBM7-320S = Lightning arrester class I I_{imp} = 7 kA (10/350) dist. sig. U_c= 320 V AC I_{max}=50 kA U_p<1,3 kV

SBM7-385 = Lightning arrester class I I_{imp} = 7 kA (10/350) U_c= 385 V AC I_{max}=50 kA U_p < 1,5 kV
SBM7-385S = Lightning arrester class I I_{imp} = 7 kA (10/350) dist. sig. U_c= 385 V AC I_{max}=50 kA Up<1,5 kV
SBM7-440 = Lightning arrester class I I_{imp} = 7 kA (10/350) U_c= 440 V AC I_{max}=50 kA Up < 1,7 kV
SBM7-440S = Lightning arrester class I I_{imp} = 7 kA (10/350) dist. sig. U_c= 440 V AC I_{max}=50 kA Up<1,7 kV
SBM12,5-275 = Lightning arrester class I I_{imp} = 12,5 kA (10/350) U_c= 275 V AC I_{max}=100 kA Up < 1,2 kV
SBM12,5-275S = Lightning arrester class I I_{imp} = 12,5 kA (10/350) dist. sig. U_c= 275 V AC I_{max}=100 kA Up<1,2 kV
SBM12,5-320 = Lightning arrester class I I_{imp} = 12,5 kA (10/350) U_c= 320 V AC I_{max}=100 kA Up<1,3 kV
SBM12,5-320S = Lightning arrester class I I_{imp} = 12,5 kA (10/350) dist. sig. U_c= 320 V AC I_{max}=100 kA Up<1,3 kV
SBM12,5-385 = Lightning arrester class I I_{imp} = 12,5 kA (10/350) U_c= 385 V AC I_{max}=100 kA Up < 1,5 kV
SBM12,5-385S = Lightning arrester class I I_{imp} = 12,5 kA (10/350) dist. sig. U_c= 385 V AC I_{max}=100 kA Up<1,5 kV
SBM12,5-440 = Lightning arrester class I I_{imp} = 12,5 kA (10/350) U_c= 440 V AC I_{max}=100 kA Up < 1,6 kV
SBM12,5-440S = Lightning arrester class I I_{imp} = 12,5 kA (10/350) dist. sig. U_c= 440 V AC I_{max}=100 kA Up<1,6 kV
SBN25 = Encapsulated Gas Discharge Tube 25 kA U_c= 255 V AC I_{max} = 50 kA Up < 1,3 kV
SBN25P = Encapsulated Gas Discharge Tube 25 kA U_c= 255 V AC I_{max} = 50 kA Up < 1,3 kV

POWER SUPPLY SYSTEMS LIGHTNING ARRESTER CLASS I+II


SSPC*


SSPC25/1+1


SSPC25/3+0


SSPC12,5/3+1

SSPC12,5 = 1 Pole Lightning arrester for TNC 12,5 kA (10/350)
SSPC12,5S = 1 Pole Lightning arrester for TNC 12,5 kA (10/350) + dist.sig.
SSPC12,5/1+1 = 1 Pole Lightning arrester for TNS or TT
Total Lightning Current 25 kA(10/350)
SSPC12,5S/1+1S = 1 Pole Lightning arrester for TNS or TT
Total Lightning Current 25 kA(10/350) + dist.sig.
SSPC12,5/3+0 = 3 Poles Lightning arrester for TNC 12,5 kA (10/350)
Total Lightning Current = 37,5 kA (10/350)
SSPC12,5S/3+0 = 3 Poles Lightning arrester for TNC 12,5 kA (10/350) + dist.sig.
Total Lightning Current = 37,5 kA (10/350)
SSPC12,5/3+1 = 3 Poles Lightning arrester for TNS or TT
Total Lightning Current 50 kA(10/350)
SSPC12,5S/3+1 = 3 Poles Lightning arrester for TNS or TT
Total Lightning Current 50 kA(10/350) + dist.sig.
SSPC25 = 1 Pole Lightning arrester for TNC 25 kA (10/350)
SSPC25S = 1 Pole Lightning arrester for TNC 25 kA (10/350) + dist.sig.
SSPC25/1+1 = 1 Pole Lightning arrester for TNS or TT
Total Lightning Current 50 kA(10/350)
SSPC25S/1+1S = 1 Pole Lightning arrester for TNS or TT
Total Lightning Current 50 kA(10/350) + dist.sig.
SSPC25/3+0 = 3 Poles Lightning arrester for TNC 12,5 kA (10/350)
Total Lightning Current = 75 kA (10/350)
SSPC25S/3+0 = 3 Poles Lightning arrester for TNC 12,5 kA (10/350) + dist.sig.
Total Lightning Current = 75 kA (10/350)
SSPC25/3+1 = 3 Poles Lightning arrester for TNS or TT
Total Lightning Current 100 kA(10/350)
SSPC25S/3+1 = 3 Poles Lightning arrester for TNS or TT
Total Lightning Current 100 kA(10/350) + dist.sig.

POWER SUPPLY SYSTEMS LIGHTNING ARRESTER CLASS II

SCF-230

SC-230

SSPU1-240S

SSPU3-240S

SCN-20

SCF - 120	= Surge arrester 20kA (8/20)	SC - 400	= Surge arrester 15kA (8/20)
SCF - 230	= Surge arrester 20kA (8/20)	SC- 120 S	= Surge arrester 15kA (8/20) + sig.
SCF - 280	= Surge arrester 20kA (8/20)	SC - 230 S	= Surge arrester 20kA (8/20) + sig.
SCF- 400	= Surge arrester 20kA (8/20)	SC - 280 S	= Surge arrester 20kA (8/20) + sig.
SCF - 120 S	= Surge arrester 20kA (8/20) + sig.	SC - 400 S	= Surge arrester 15kA (8/20) + sig.
SCF- 230 S	= Surge arrester 20kA (8/20) + sig.	SCN-20	= Encapsulated Gas Discharge Tube 20kA, U_c=255V/50 Hz,I_{max}=20 kA, U_p≤1,3 kV
SCF- 280 S	= Surge arrester 20kA (8/20) + sig.		
SCF- 400 S	= Surge arrester 20kA (8/20) + sig.	SSPU 1 - 120	= 1 pole, U_N 120V
SCT - 230	= Surge arrester 15kA (8/20)	SSPU 3 - 240 S	= 3 poles, U_N 3x400/230V + sig.
SCT - 280	= Surge arrester 15kA (8/20)	SSPU 1 - 240 S	= 1 pole, U_N 230V + sig.
SCT - 230 S	= Surge arrester 15kA (8/20) + sig.	SSPU 1 - 240	= 1 pole, U_N 230V
SCT - 280 S	= Surge arrester 15kA (8/20) + sig.	SSPU 3 - 240	= 3 poles, U_N 3x400/230V
SC - 120	= Surge arrester 15kA (8/20)	SSPU 3 - 120	= 3 poles, U_N 3x208/120V
SC - 230	= Surge arrester 20kA (8/20)	SSPU 3 - 400	= 3 poles, U_N 3x680/400V
SC - 280	= Surge arrester 20kA (8/20)	SPR 100	= Helping Connection Module

POWER SUPPLY SYSTEMS LIGHTNING ARRESTER CLASS III

SDL-32HFF

SDL-16HFF

SDL-25HFF

SDL-25HFFS

SD-16

SDI-16

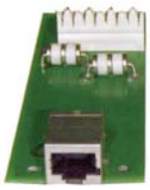
SDLTN	= One phase protection for 230V
SDL-25RFIS	= Surge arrester 8kA (8/20), 230V, 25A + sig.
SDL-8HFF	= Surge arrester 8kA (8/20), 230V, 8A
SDL-16HFF	= Surge arrester 8kA (8/20), 230V, 16A
SDL-16HFFS	= Surge arrester 8kA (8/20), 230V, 16A + sig.
SDL-25HFF	= Surge arrester 8kA (8/20), 230V, 25A
SDL-25HFFS	= Surge arrester 8kA (8/20), 230V, 25A + sig.
SDL-25RFIS	= Surge arrester 8kA (8/20), 230V, 25A + sig.
SDL-32HFF	= Surge arrester 8kA (8/20), 230V, 32A
SDL-32HFFS	= Surge arrester 8kA (8/20), 230V, 32A + sig.
SDL-50HFF	= Surge arrester 8kA (8/20), 230V, 50A
SDL-63HFF	= Surge arrester 8kA (8/20), 230V, 63A

SDL-80HFF	= Surge arrester 8kA (8/20), 230V, 80A
SDL-120HFF	= Surge arrester 8kA (8/20), 230V, 120A
SDL-150HFF	= Surge arrester 8kA (8/20), 230V, 150A
SDL-16/400HFF	= Surge arrester 8kA (8/20), 400V, 16A
SDL-16/400HFFS	= Surge arrester 8kA (8/20), 400V, 16A + sig.
SDL- 316HFFS	= Surge arrester 8kA (8/20), 3x400/230V, 16A +sig
SDL- 325HFFS	= Surge arrester 8kA (8/20), 3x400/230V, 25A +sig
SDL- 332HFFS	= Surge arrester 8kA (8/20), 3x400/230V, 32A +sig
SDL- 350HFFS	= Surge arrester 8kA (8/20), 3x400/230V, 50A +sig
SDL -363HFFS	= Surge arrester 8kA (8/20), 3x400/230V, 63A +sig
SDL- 380HFFS	= Surge arrester 8kA (8/20), 3x400/230V, 80A +sig
SDI- 16	= Protected socket, 8kA (8/20), 16A
SD- 4	= Protected socket with high freq. filter, 8kA (8/20), 6A
SD- 16	= Protected socket with high freq. filter, 8kA (8/20),16A
SD-FAXRJ12	= Combined protection of suply and telephone network

COMPUTER NETWORK PROTECTION

SD 2/100M - 5 cat
SD 4/100M - 5 cat

SD 4/100M - 5 cat



SD 2/100M - 5 cat

SD 2/100M - 5 cat	=	Module for PC systems for 5 cat
SD 1/100M - 5 cat	=	Module for PC systems for 5 cat
SD 4/100M - 5 cat	=	Module for PC systems for 5 cat
SCHIRTECNET 1. 2RJ/RJ	=	Module for PC systems for 5 cat
SPSK 10	=	Metal box
SPSK 2/100M - 5 cat	=	Module for 2 pairs
SPSK 4/100M - 5 cat	=	Module for 4 pairs
SPSK 24	=	Metal box

SCHIRTECNET 8. RJ/RJ	=	Module for 8 stations, input and output RJ 45
SCHIRTECNET 8.*XC/RJ	=	Module for 8 stations, input XC and output RJ 45
SCHIRTECTEL 8.1 RJ/RJ	=	Module for 8 stations, input and output RJ 45
SCHIRTECTEL 8.2 RJ/RJ	=	Module for 8 stations, input and output RJ 45
SCHIRTECTEL 8.1 LSA/RJ	=	Module for 8 stations, input LSA-plus and output RJ 45
SCHIRTECTEL 8.2 LSA/RJ	=	Module for 8 stations, input LSA-plus and output RJ 45

COAXIAL PROTECTION

SCO-1G
SCO-2G

SCO-1P
SCO-2P

SCO-10P

SCO-7/16

SCO - 1P	=	for BNC connector
SCO - 2P	=	for BNC connector
SCO - 9P	=	for F connector
SCO - 10P	=	TV connector
SCO - 3GN (F/F)	=	for N connector
SCO - 3GN (F/M)	=	for N connector
SCO - 4GN (F/F)	=	for N connector
SCO - 4GN (F/M)	=	for N connector
SCO-1G	=	for BNC connector
SCO-2G	=	for BNC connector
SCO-9G	=	for F connector
SCO-10G	=	TV connector
SCO-11G	=	for UHF connector
SCO-12G	=	for UHF connector
SCO-7/16	=	7/16 connector (F/F)

INSULATION LEVEL DROP DETECTOR

SIS-71

CE-500

SIS 71 = Ins. level drop detector AC IT system (10-210kW)
SIS 72 = Ins. level drop detector AC IT system (1-9kW)
CE 500 = Inductor 3x500V

EQUIPOTENTIAL BONDING (HIGH POWER GAS DISCHARGE TUBE)

SGDT-100-RW

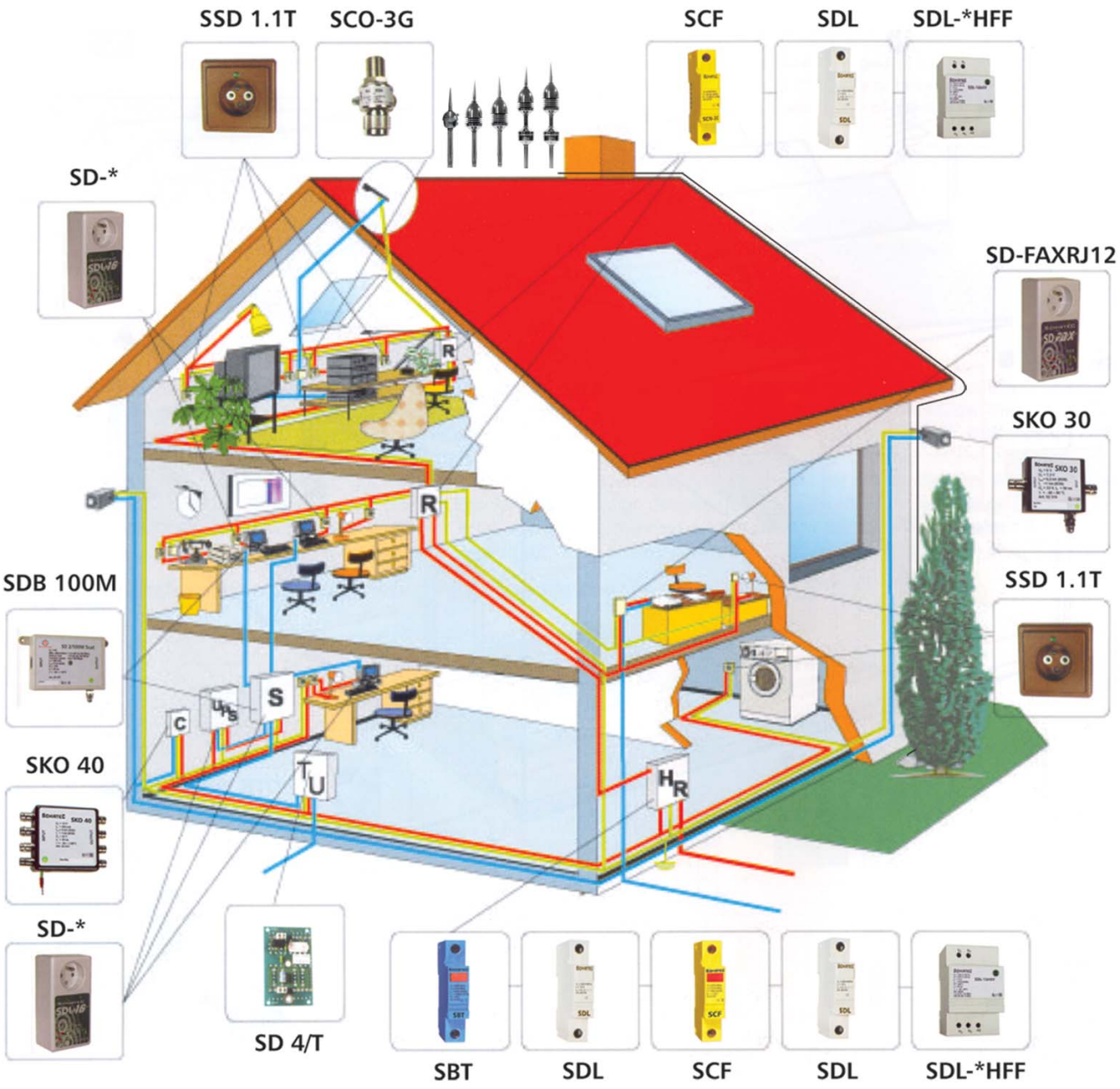
SGDT-100

SGDT-150-RW1
SGDT-150-RW2
(Isolating Spark Gap for Railway systems, I_{imp} = 150 kA)

SGDT-100	=	Isolating Spark Gap, I_{imp} = 100 kA
SGDT-100-Ex	=	Ex Isolating Spark Gap, I_{imp} = 100 kA
SGDT-100-RW	=	Ex Isolating Spark Gap, I_{imp} = 100 kA

SURGE PROTECTION SYSTEMS

Home and Office Application



HR - Main switchboard
R - Subdistribution switchboard
TU - Tel. central
C - Security central
S - Server computer

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SCHIRTEC AG

Ignaz-Köck Strasse 10,
1210 Wien/Austria
Ph: +43 1 2703347 11 Fax: +43 1 2703347 49

www.schirtec.at **e-mail: info@schirtec.at**