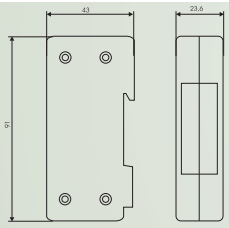
Hakelnet 4/250M 6 cat is designed to protect 5E/6 data and communications lines. All protected lines are equipped with Transient Voltage Suppressor Diode which eliminates common mode and differential mode surge effects during computer networks operation.

Hakelnet 4/250M 6cat consists of a plastic box and patch cords which are terminated with RJ45 connectors. Required length of patch cords (a, b) is to be specified by customer.

HAKELNET 4/250M 6cat

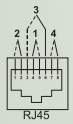


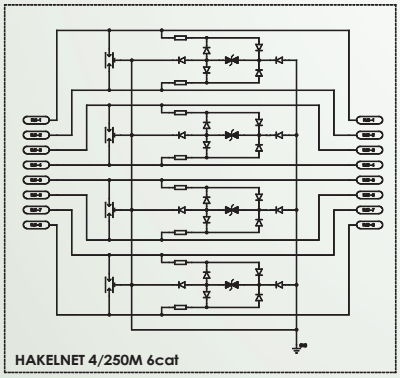
LPZ 0➔1 | +80°C ϑ -40°C | IP 20 | hakel®

Connection of RJ45 pins
acc.to EIA/TIA 568, type B

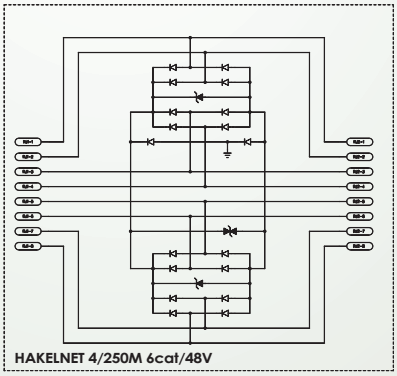
- 1 whiteorange
- 2 orange
- 3 whitegreen
- 4 blue
- 5 whiteblue
- 6 green
- 7 whitebrown
- 8 brown

1 - blue pair
2 - orange pair
3 - green pair
4 - brown pair





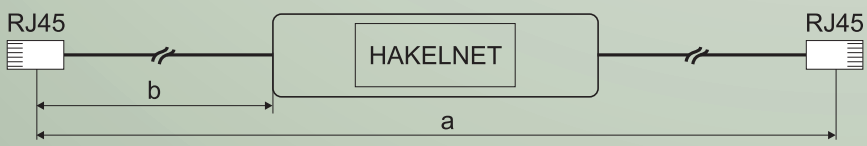
HAKELNET 4/250M 6cat



HAKELNET 4/250M 6cat/48V

Technical data		HAKELNET 4/250M 6cat	HAKELNET 4/250M 6cat/48V
Number of protected pairs		4	4
Nominal voltage	U_N	6 V	48 V
Max. continous operating voltage	U_C	7,2	56 V
Nominal current	I_L	200 mA	200 mA
Mode of protection		line-line, line-G(PE)	line-line, line-G(PE)
Frequency handling		250 MHz	250 MHz
C2 Nominal discharge current (8/20) line/line	I_n	20 A	150 A
C2 Nominal discharge current (8/20) line/G(PE)	I_n	20 A	2 kA
C2 Voltage potection level at I_n line/line	U_p	-	< 190 V
C2 Voltage potection level at I_n line/G(PE)	U_p	-	< 600 V
C3 Voltage potection level at I_n line/line at 1 kV/µs	U_p	< 15 V	< 145 V
C3 Voltage potection level at I_n line/G(PE) at 1 kV/µs	U_p	< 15 V	< 500 V
Insertion loss for 250 MHz		< 3 dB	< 2 dB
Parasitic capacitance line/line	c	max. 5 pF	max. 160 pF
Parasitic capacitance line-G(PE)	c	max. 5 pF	max. 260 pF
Operating temperature range	ϑ	- 20 ÷ + 60 °C	- 20 ÷ + 60 °C
Mounting on		DIN rail 35 mm	DIN rail 35 mm
Input/Otput, pinning		RJ45/RJ45, 1/2, 3/6, 4/5, 7/8	RJ45/RJ45, 1/2, 3/6, 4/5, 7/8
Length of patch cords		acc. to customer's specification, a+b < 3 m	acc. to customer's specification, a+b < 3 m
Grounding method		trough DIN rail 35 mm by special metal clip on the back side of box	
Housing material		POLYAMID PA6	POLYAMID PA6
Colour		grey	grey
Category tested acc. to		IEC 61643-21	IEC 61643-21
Approvals and certifications		Cat. 6, ISO/IEC 11801	Cat. 6, ISO/IEC 11801
Article number		45 034	45 037

CE PG M.102



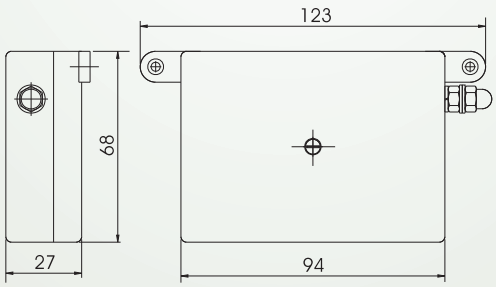
COMPUTER NETWORK PROTECTION FOR 5TH CATEGORY

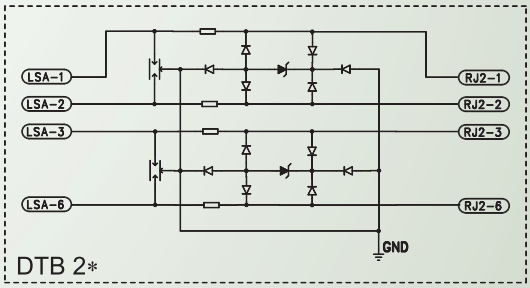
DTB 2/100M 5cat, DTB 4/100M 5cat, HAKELNET 1.2 RJ/RJ

These surge protection devices intended for computer networks are specially designed for securing a faultless data transfer within computer networks category 5. They protect input electronic circuits of network cards against damage caused by surge effects in the Lightning Protection Zones Concept at the boundaries of LPZ $0_{A(B)}$ -1 and higher according to EN 62305. It is recommended to use these protection devices at the input of protected equipment.

Models:
DTB*/100M 5cat is suitable for mounting on a wall. DTB 2/100M 5cat protects two pairs and DTB 4/100M 5cat protects four pairs of conductors.

Hakelnet 1.2RJ/RJ protects one line with two protected pairs. It is supplyed in a plastic housing enabling bolt fastening on a wall. Alternatively, it can be attached to the protected appliance with a double-sided tape. Connectors RJ45 are at the input and output side of the device.

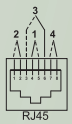




Connection of RJ45 pins
acc.to EIA/TIA 568, type B

- 1 whiteorange
- 2 orange
- 3 whitegreen
- 4 blue
- 5 whiteblue
- 6 green
- 7 whitebrown
- 8 brown

1 - blue pair
2 - orange pair
3 - green pair
4 - brown pair



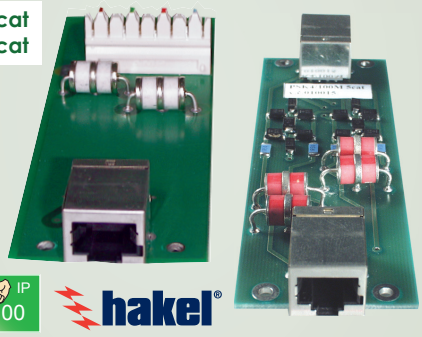
Technical data		DTB 2/100M 5cat	DTB 4/100M 5cat	HAKELNET 1,2 RJ/RJ
Number of protected pairs		2	4	2
Input/Output		RJ45/RJ45	RJ45/RJ45	RJ45/RJ45
Nominal voltage	U_N	6 V	6 V	6 V
Max. continous operating voltage	U_C	7,2 V	7,2 V	7,2 V
Nominal current	I_N	300 mA	300 mA	300 mA
C2 Max. discharge current (8/20)	I_{max}	2 kA	2 kA	-
C2 Nominal discharge current (8/20)	I_n	1 kA	1 kA	20 A
Voltage protection level at I_n (8/20)	U_P	10 V	10 V	25 V
Voltage protection level at 1kV/µs	U_P	< 10 V	< 10 V	< 10 V
Data rate		max. 100 Mbit/s	max. 100 Mbit/s	max. 100 Mbit/s
Max. attenuation		< 0,4 dB (at 100 MHz)	< 0,4 dB (at 100 MHz)	< 0,4 dB (at 100 MHz)
Near-end crosstalk		> 40 dB (at 100 MHz)	> 40 dB (at 100 MHz)	> 40 dB (at 100 MHz)
Return loss		< 14 dB (at 100 MHz)	< 14 dB (at 100 MHz)	< 14 dB (at 100 MHz)
Series impedance per line		1,5 Ω	1,5 Ω	1,5 Ω
Characteristic impedance		100 Ω	100 Ω	100 Ω
Response time	t_A	< 25 ns	< 25 ns	< 25 ns
Parasitic capacitance	C	<42 pF	<42 pF	<47 pF
Operating temperature range	ϑ	-40°C ÷ + 80°C	-40°C ÷ + 80°C	-40°C ÷ + 80°C
Category tested acc. to IEC 61643:21-2000		A2, B2, C2, C3, D1	A2, B2, C2, C3, D1	A2, B2, C2, C3, D1
Article number		45 107	45 109	45 020

CE PCT
M.I02

These surge protection devices intended for computer networks are specially designed for securing a faultless data transfer within computer networks category 5. They protect input electronic circuits of network cards against damage caused by surge effects in the Lightning Protection Zones Concept at the boundaries of LPZ $0_{A(B)}$ - 1 and higher according to EN 62305. It is recommended to use these protection devices at the input of protected equipment.

Models:
PSK*/100M 5cat is a printed circuit board intended for mounting into PSK 10 which is appropriate for installation into 19" rackmounts.
PSK 2/100M 5cat designed for protection of two pairs has LSA-PLUS connector at the input side and RJ45 connector at the output side.
PSK 4/100M 5cat designed for protection of four pairs has RJ45 connector at the input and output sides.

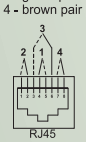
PSK 2/100M 5 cat
PSK 4/100M 5 cat

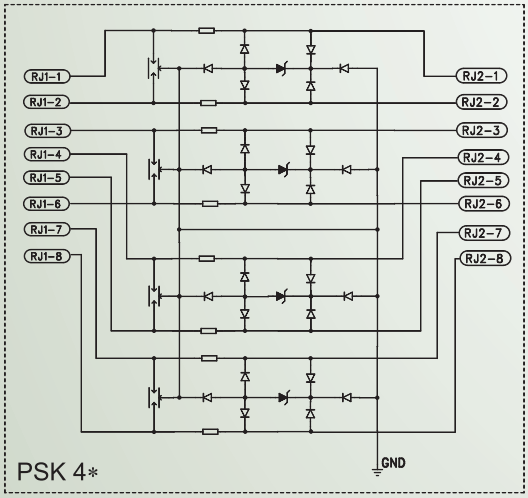


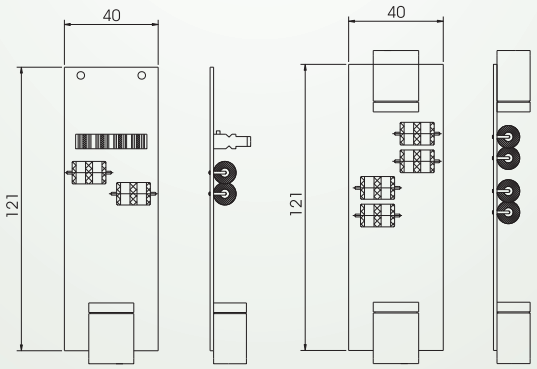
Connection of RJ45 pins
acc.to EIA/TIA 568, type B

- 1 whiteorange
- 2 orange
- 3 whitegreen
- 4 blue
- 5 whiteblue
- 6 green
- 7 whitebrown
- 8 brown

1 - blue pair
2 - orange pair
3 - green pair
4 - brown pair



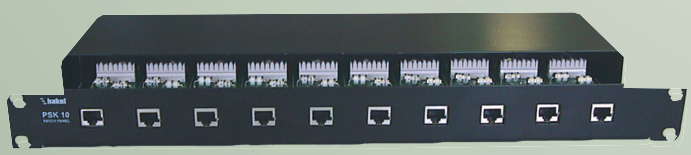


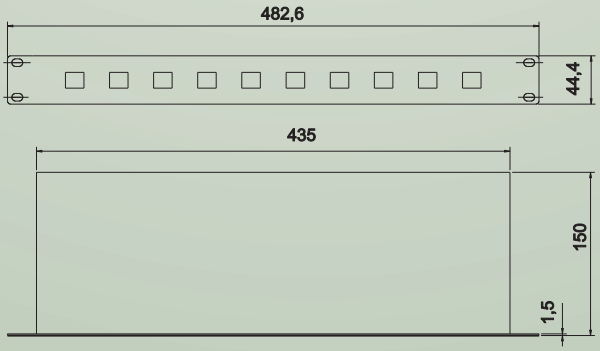


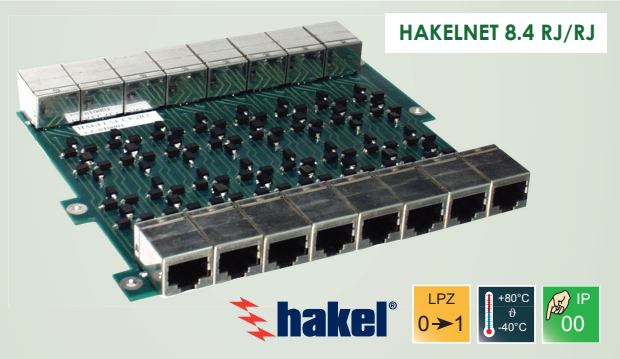
Technical data		PSK 2/100M 5cat	PSK 4/100M 5cat
Number of protected pairs		2	4
Input/Output		LSA-PLUS/RJ45	RJ45/RJ45
Nominal voltage	U_N	6 V	6 V
Max. continous operating voltage	U_C	7,2 V	7,2 V
Nominal current	I_N	300 mA	300 mA
C2 Max. discharge current (8/20)	I_{max}	10 kA	2 kA
C2 Nominal discharge current (8/20)	I_n	1 kA	1 kA
Voltage protection level at I_n (8/20)	U_P	10 V	10 V
Voltage protection level at 1kV/µs	U_P	< 10 V	< 10 V
Response time	t_A	< 25 ns	< 25 ns
Parasitic capacitance	C	< 42 pF	< 42 pF
Operating temperature range	ϑ	-40°C ÷ + 80°C	-40°C ÷ + 80°C
Category tested acc. to IEC 61643:21-2000		A2, B2, C2, C3, D1	A2, B2, C2, C3, D1
Article number		45 011	45 012

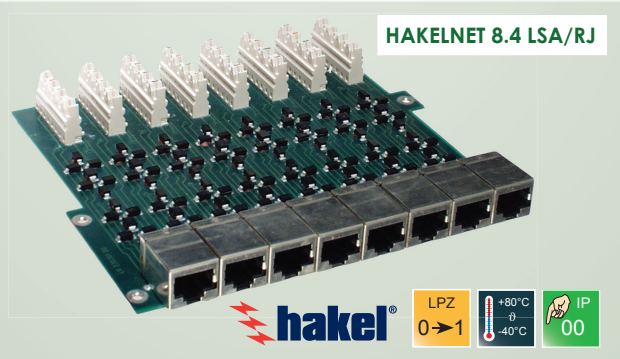
M.102

PSK 10 is a metal panel suitable for fitting in 19" rackmounts. It is possible to mount up to 10 pieces of PSK*/100M 5cat into this panel.



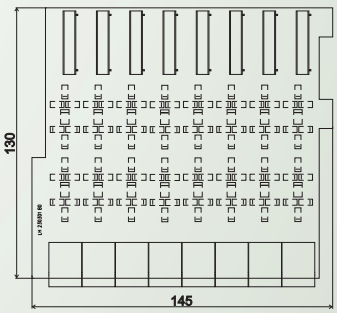


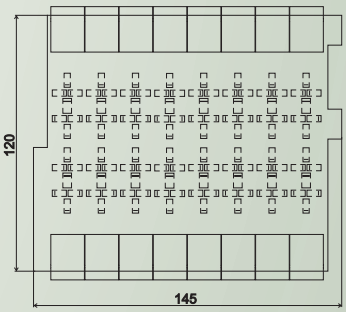




Hakelnet is a complex range of protection devices specially designed for faultless data transfers within computer networks category 5. They protect the input electronic circuits of network cards against a damage caused by surge effects in the Lightning Protection Zones Concept at the boundaries of LPZ $0_{A(B)}$ -1 and higher according to EN 62305. It is recommended to use these protection devices at the input of protected equipment.

Models:
HAKELNET 8.4 RJ/RJ designed for protection of eight lines with four protected pairs has RJ45 connectors at the input and output sides of the device.
HAKELNET 8.4 LSA/RJ designed for protection of eight lines with four protected pairs has LSA-PLUS connectors at the input side and RJ45 connectors at the output side of the device.

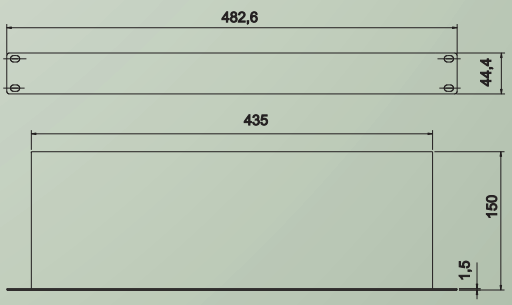




Technical data		HAKELNET 8.4 RJ/RJ	HAKELNET 8.4 LSA/RJ
Number of protected pairs		8	8
No. of protected pairs per line		4	4
Input/Output		RJ45/RJ45	LSA-PLUS/RJ45
Nominal voltage	U_N	6 V	6 V
Max. continous operating voltage	U_C	7,2 V	7,2 V
Nominal current	I_N	300 mA	300 mA
C2 Nominal discharge current (8/20)	I_n	20 A	20 A
Voltage protection level at I_n (8/20)	U_P	25 V	25 V
Voltage protection level at 1kV/µs	U_P	< 10 V	< 10 V
Data rate		max. 100 Mbit/s	max. 100 Mbit/s
Max. attenuation		< 0,4 dB (at 100 MHz)	< 0,4 dB (at 100 MHz)
Near-end crosstalk		> 40 dB (at 100 MHz)	> 40 dB (at 100 MHz)
Return loss		< 14 dB (at 100 MHz)	< 14 dB (at 100 MHz)
Series impedance per line		1,5 Ω	1,5 Ω
Characteristic impedance		100 Ω	100 Ω
Response time	t_A	< 25 ns	< 25 ns
Parasitic capacitance	C	< 47 pF	< 47 pF
Operating temperature range	ϑ	-40°C ÷ + 80°C	-40°C ÷ + 80°C
Category tested acc. to IEC 61643:21-2000		A2, B2, C2, C3, D1	A2, B2, C2, C3, D1
Article number		45 021	45 022

CE PG MJ102

PSK 24 is a metal panel suitable for fitting in 19" rackmounts. It is possible to mount up to 3 pieces of HAKELNET 8.4 RJ/RJ into this panel.



Connection of RJ45 pins
acc.to EIA/TIA 568, type B

- 1 whiteorange
- 2 orange
- 3 whitegreen
- 4 blue
- 5 whiteblue
- 6 green
- 7 whitebrown
- 8 brown

1 - blue pair
2 - orange pair
3 - green pair
4 - brown pair