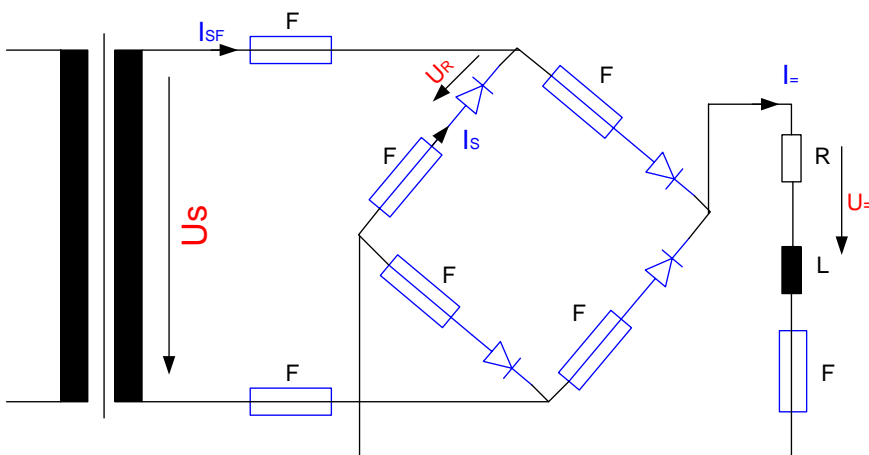


Selection of the proper semiconductor fuse for the protection of power electronics circuit can be a time-consuming process.

Ultra Quick select software makes it simple and save time and money.
Help is made by five different examples.

Example Nr. 1:

We have **ONE PHASE BRIDGE** with the next circuit:



$I_{SF}=100A$, continous load/12 stops per day

$U_{=} = 100V$

I^2t (diode)= $1.000A^2s$

Transformer power=50kVA

Transformer impedance=2%

COS ϕ =0,3

$T_{amb}=40$ deg. C

Fan=2m/s

Cable cross section=50mm²

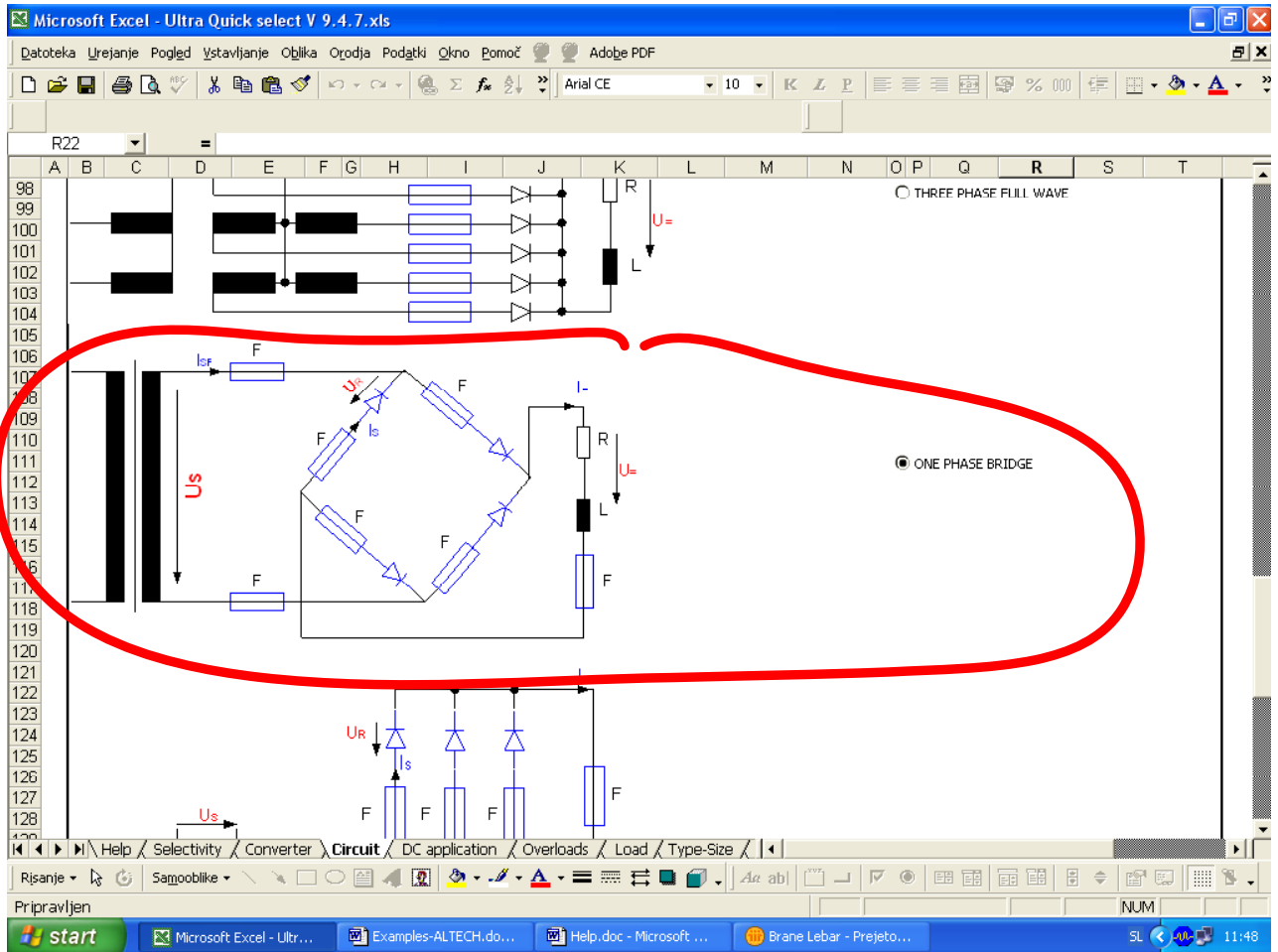
Frequency=50Hz

Characteristics: aR

Possibility of mountaing microswitch NVS5!

Size/type of fuse is not important!

-
- 1.Chose the right fuse in the circuit I_S ?
 - 2.For the same parameter when you use 2 fuses in paralel.



Microsoft Excel - Ultra Quick select V 9.4.7.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

N8 =

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ETI ULTRA QUICK

Manual/Circuit

Circuit:

input:

ISF: 100 A U=: 100 V

Tr: 50 kVA Z: 2 %

output:

Active IS: 71 A U_S: 111 V

ISF: 100 A U_R: 157 V

I=: 100 A U=: 100 V

Short-circuit current = 23 kA

input:

Active IS: 80 A U_R: 1.000 V

Break. cap. 50 kA U=: 400 V

Help Selectivity Converter Circuit DC application Overloads Load Type-Size

Risanje Samooblike

Prilavljjen NUM

start Microsoft Excel - Ultr... Examples-ALTECH.do... Help.doc - Microsoft ... Brane Lebar - Prejeto... SL 11:50

Microsoft Excel - Ultra Quick select V 9.4.7.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

H4 =

1 B C D E F G H I J K L M N O P Q

2 **ETI ULTRA QUICK**

3 Continuous load
Up to 12 stops per day
 Cyclic load

4 I_1 : [] A ~ t_1 : [] min

6 I_2 : [] A ~ t_2 : [] min

8 I_3 : [] A ~ t_3 : [] min

10 I_4 : [] A ~ t_4 : [] min

12 I_5 : [] A ~ t_5 : [] min

14 I_6 : [] A ~ t_6 : [] min

16 I_7 : [] A ~ t_7 : [] min

Number of overloads N: 2000

I/t characteristics (catalogue page 46-77)

I_{melt} : [] A

$I_1 <$: [] 0

$I_2 <$: [] 0

$I_3 <$: [] 0

$I_4 <$: [] 0

$I_5 <$: [] 0

$I_6 <$: [] 0

$I_7 <$: [] 0

Help Selectivity Converter Circuit DC application Overloads Load Type-Size

Risanje Samooblike

Pripravljen NUM

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Q82 =

A B C D E F G H I J K L M N O P

1 **ETI ULTRA QUICK**

2 NONE

3 **Select size**

4 **D0 - 400V** **D - 500V** **600V (AQ)**

5 01 02 I II III IV V CH

6

7

8

9

10

11

12

13

14

Size
10x38
14x51
22x58

19 **BS88**

20 **240V** **690V** **240V** **690V** **690V** **240V** **690V** **240V**

21 8x38 8x64 17x41 17x63 17x70 D 38x59 38x63 38x68

22 8x38 8x64 17x41 17x63 17x70 D 38x59 38x63 38x68

23 8x38 8x64 17x41 17x63 17x70 D 38x59 38x63 38x68

Help Selectivity Converter Circuit DC application Overloads Load Type-Size

Risanje Samooblike

Pripravljen NUM

start Microsoft Excel - Ultr... Examples-ALTECH.do... Help.doc - Microsoft ... Brane Lebar - Prejeto... SL 11:52

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

O11

D E F G H I J K L M N O P Q R S

ETI ULTRA QUICK

Select characteristics

aR (1,6xIn...)
 gR (1,1xIn...)
 NONE

min
 s
 ms
 overcurrent:
 short circuit:
 Ip

Converter / Circuit / DC application / Overloads / Load / Type-Size / **Charact.** / Switch

Pripravljen
 start Microsoft Excel - Ultr... Examples-ALTECH.do... Help.doc - Microsoft ... Brane Lebar - Prejeto... 11:53

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

N7

C D E F G H I J K L M N O

ETI ULTRA QUICK

Select switch

NVS 5
 MK + AMK
 NONE

Microswitch NVS5
 Microswitch MK

Fig. 2
 Fig. 4

Converter / Circuit / DC application / Overloads / Load / Type-Size / Charact. / **Switch**

Pripravljen
 start Microsoft Excel - Ultr... Examples-ALTECH.do... Help.doc - Microsoft ... Brane Lebar - Prejeto...

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

D4 = 1000

A B C D E F G H I J K L M N

1

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7

11

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13

14

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ETI ULTRA QUICK

Semi (I_{2t}): 1.000 A²s

Max. peak inv. voltage (U_R): 3,0 kV

Fuse (I²t): <= 700 A²s

$$\int_0^T i^2 dt = \int_0^T (I_{TSM} \sin \omega t)^2 dt = \frac{I_{TSM}^2}{2} T$$

$$\int_0^T i^2 dt = \int_0^T (\sqrt{2} I_s \sin \omega t)^2 dt = I_s^2 T$$

i

I_{TSM}

t

Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Se

Risanje Samooblike

Pripravljen

start Microsoft Excel - Ultr... Examples-ALTECH.do... Help.doc - Microsoft ... Brane Lebar - Prejeto... 11:54

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

P14 =

A B C D E F G H I J K L M N O P

1

2

3

5

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11

13

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17

19

23

24

25

26

ETI ULTRA QUICK

Use 2 fuses in parallel

U_R: 157 V

U_s: 111 V

I_S: 71 A

cos φ: 0,30

T_{amb}: 40 °C

Forced cooling: 2 m/s

Cable cross-section: 50 mm²

f: 50 Hz

I_n >= 88 A ~

continuous load

A₁

T_{amb} (°C)

B₁

air speed (m/s)

C₁

100% equals 1,3A/mm²

C₂

f (Hz)

Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Se

Risanje Samooblike

Pripravljen

start Brane Lebar - Prejeto... Microsoft Excel - Ultr... Adobe Acrobat Profe... 8:22

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

ETI ULTRA QUICK

FUSES FOR PROTECTION OF SEMICONDUCTORS

Select your fuse-link

Show all

Filter

Circuit

Select

111 87 A

23 aR NVS5 700

V. ~ A²s

at U_n (cosφ=0,3)

$I_s = I_n$

at U_s (V) = 111

ETI code	ETI type	U_n (V)	I_n (A)	Series	Type	Size	I^2t (A ² s)	$I^2t_{(m.s)}$ (A ² s)	P_d (W)	B.c. (kA)	Char.	Switch	Page	I^2t (A ² s)	P_d
511	D04301114	S00UQ01/80/100A/1000V	1000	100	UQ01	Ssu	00	4.700	660	30	200	aR	NVS5	26	656
879	D04743214	M1UQ02/100A/690V	690	100	UQ02	M	1	2.500	450	27	200	aR	NVS5	new	419

Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Select fuse /

Risanje / Samooblike

Filtrični način

start Microsoft Excel - Ultr... Examples-ALTECH.do... Help.doc - Microsoft ... Brane Lebar - Prejeto... SL 11:56

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

D24 = '=Load!J25/(table!C32*table!F20*table!L26*table!L33*table!J33)

ETI ULTRA QUICK

Use 2 fuses in parallel

U_R : 157 V

U_s : 111 V

I_S : 71 A

cosφ: 0,30

T_{amb} : 40 °C

Forced cooling: 2 m/s

Cable cross-section: 50 mm²

f: 50 Hz

$I_n \geq$: 88 A ~

continuous load

T_{amb} (°C)

air speed (m/s)

100% equals 1,3A/mm²

f (Hz)

Priljubljen

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... SL 12:14

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

ETI ULTRA QUICK
FUSES FOR PROTECTION OF SEMICONDUCTORS

Select your fuse-link

Show all

Select

Circuit

\geq \geq \leq \leq

128 43 A A^2s 23 aR NVS5 175 A^2s

$V_{..}$ \sim A^2s $kA\sim$ aR $NVS5$

Filter

ETI code	ETI type	U_n (V)	I_n (A)	Series	Type	Size	I^2t (A^2s)	I^2t (I_{tm1}) (A^2s)	P_d (W)	B.c. (kA)	Char.	Switch	Page	I^2t (A^2s)	P_d
264	004362211	MOUQ1/50A/1000V	1000	50	UQ1	M	O	1.300	140	19,3	200	aR	NVS5	20	145
338	004371211	M00UQ01/50A/690V	690	50	UQ01	M	00	1.000	165	10	200	aR	NVS5	23	167
351	004371111	S00CUQ01/80/50A/690V	690	50	UQ01	S80	00C	1.000	165	10	200	aR	NVS5	24	167
508	004301111	S00UQ01/80/50A/1000V	1000	50	UQ01	S80	00	670	100	20	200	aR	NVS5	28	93
869	004741211	M00UQ02/50A/690V	690	50	UQ02	M	00	640	120	12	200	aR	NVS5	new	107

at U_n ($\cos\phi=0,95$) $I_s=I_n$ at $\cos\phi=0,95$ at U_s (V) = 111

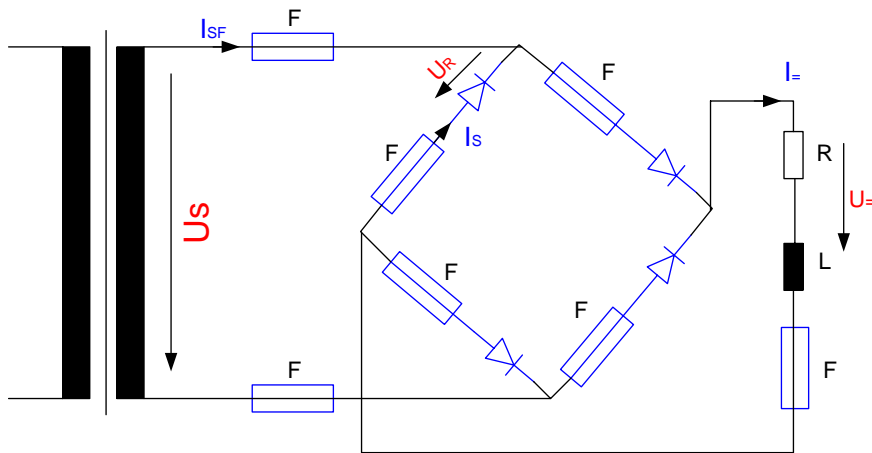
Overloads / Load / Type-Size / Charact. / Switch / I^2t / In / Select fuse /

Risanje / Samooblike / Filtrirni način

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... 12:15

Example Nr. 2:

We have **ONE PHASE BRIDGE** with the next circuit:



$I_S=150\text{A}$, continous load/12 stops per day

$U_-=250\text{V DC}$

I^2t (diode)= $100.000\text{A}^2\text{s}$

Transformer power= 100kVA

Transformer impedance= 2%

$L/R=40\text{ms}$

$R=0,01\ \text{Ohm}$

$\text{COS } \phi_i=0,5$

$T_{\text{amb}}=60\ \text{deg. C}$

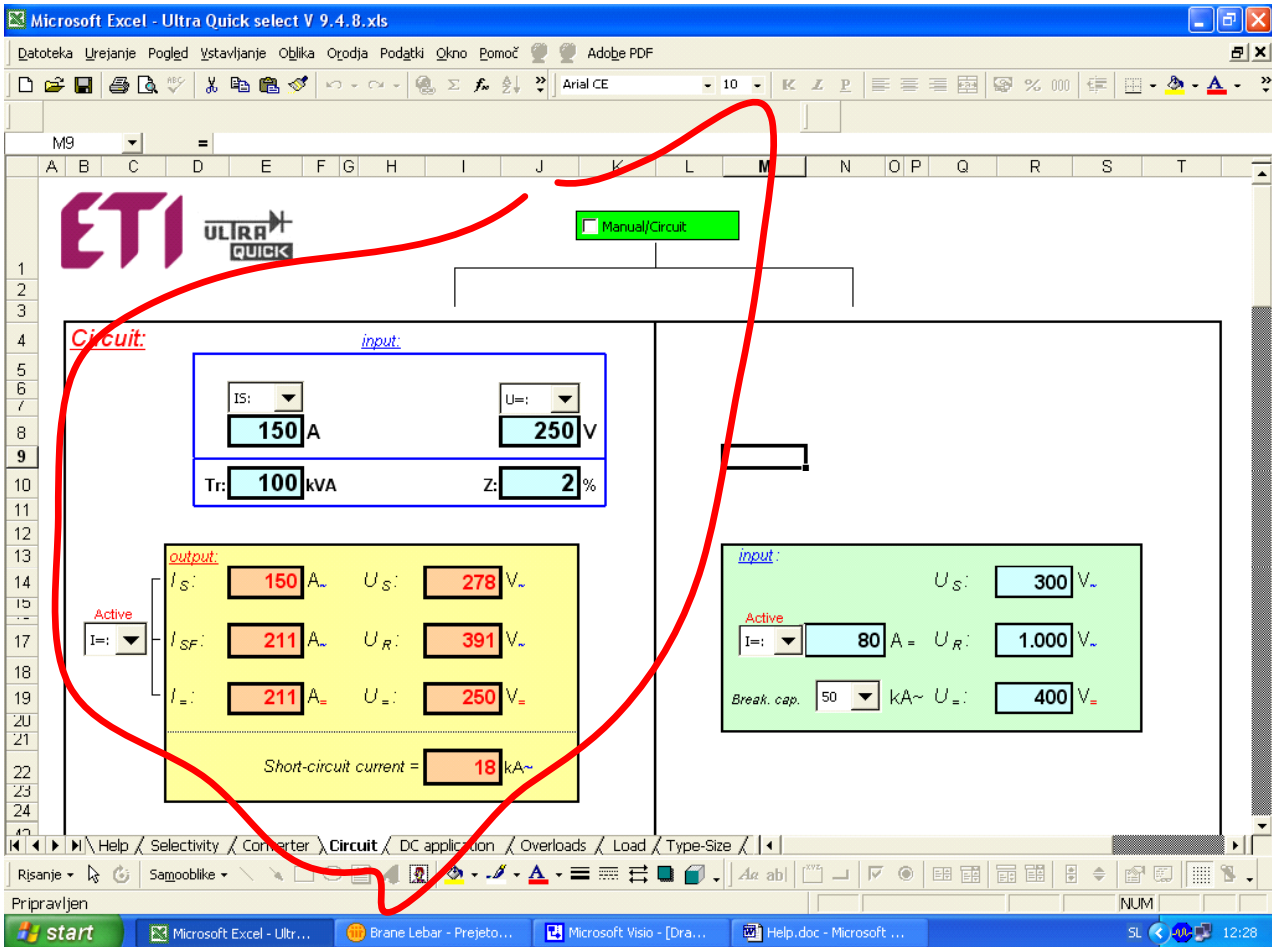
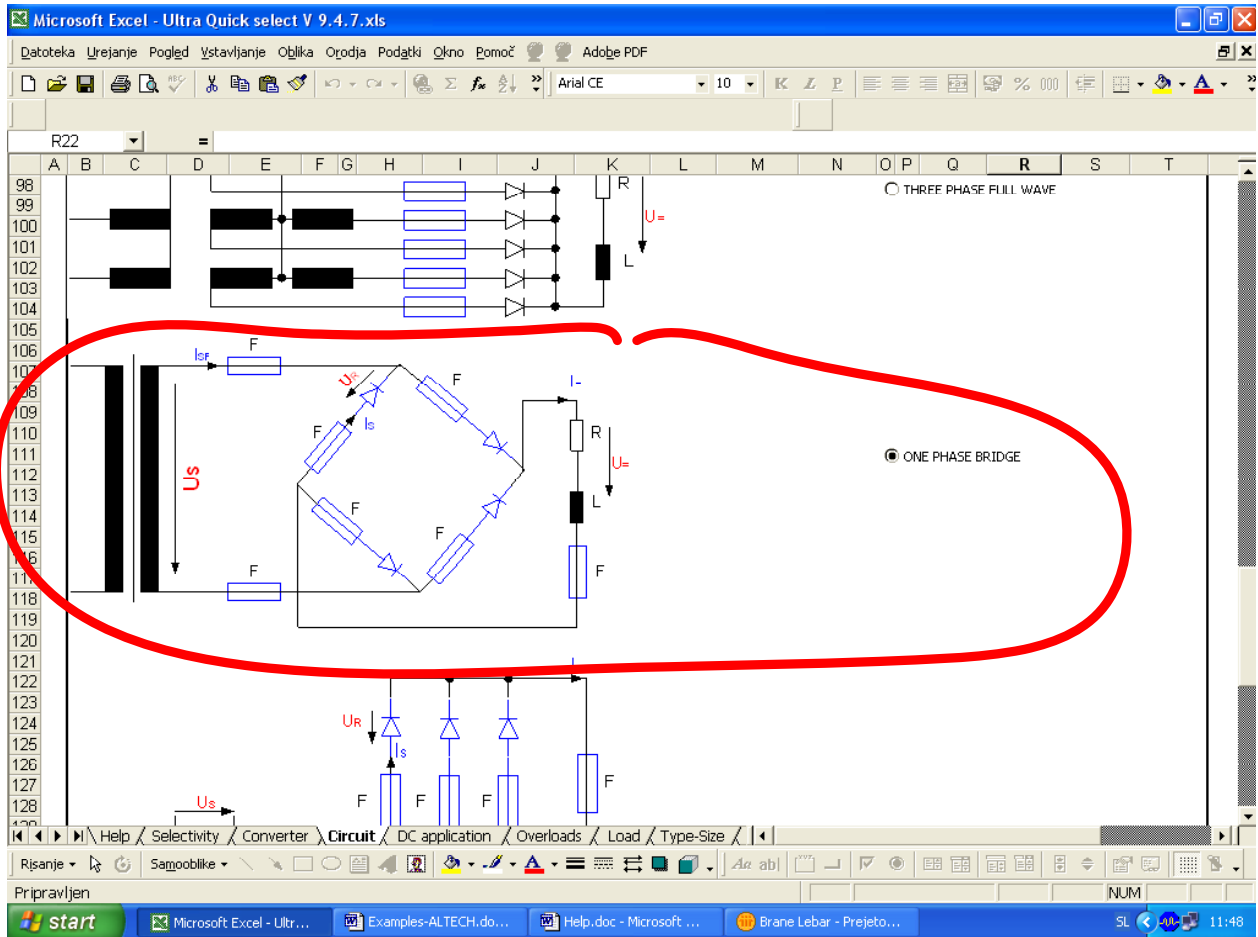
Fan= 0m/s

Cable cross section= 150mm^2

Frequency= 50Hz

Type-size= M1 ???

1.Choose the right fuse in the DC circuit $I_=?$



Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

D12 = 0,01

Type of equipment	Typical L/R, ms
Battery supply/ capacitor bank	<10
Bridge circuit	<25
DC motor armature	20-60
DC traction systems	40-100
DC motor field*	1000

ETI ULTRA QUICK

input:
 L/R: 40 ms
 R: 0,010 Ω

output:
 U = : 250 V

output:
 U = <= : 300 V

output:
 Short circuit current = : 25 kA

NV-1000V,1200V BS-240V (CH,AQS)22-690V
 NV-500V,690V BS(..700A)-690V AQ510-690V
 D-500V BS(..300A)-690V CH10-600V
 D0-400V (CH,AQS)14-690V








Priljubljen

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Q82

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
25	↑		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
26	28		38	47	54.8		64.3	74.6	28.2		41.8	56	48		63.5	77
27	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
28	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
29	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
30	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
31	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
32	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
33	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
34	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
35	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
36	6.4		8.4		8.7		8.7		9.7		12.7		17.7		19.1	
37	NV-NH - 500V/690V/1000V/1200V															
38																
39																
40																
41		<input type="radio"/> 00c	<input type="radio"/> 00	<input type="radio"/> 0	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4a								
42		<input type="radio"/> 00c	<input type="radio"/> 00	<input type="radio"/> 0	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4a								
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Help / Selectivity / Converter / Circuit / DC application / Overloads / Load / Type-Size

Risanje Samoblike


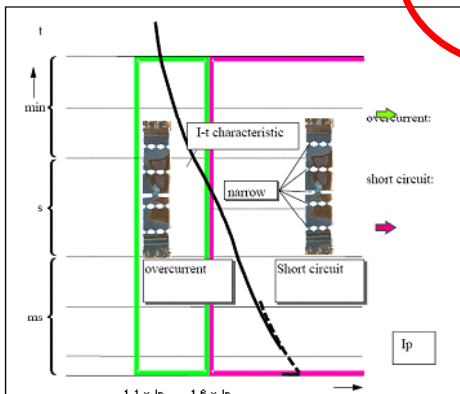
Prilavljen NUM

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

O11

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																
2	<h2>Select characteristics</h2>															
3	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
4																
5	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
6	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
7	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
8	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
9	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
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11	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
12	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
13	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
14	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
15	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
16	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
17	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
18	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
19	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
20	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
21	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
22	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
23	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															
24	<input type="radio"/> aR (1,6xIn...) <input type="radio"/> gR (1,1xIn...) <input checked="" type="radio"/> NONE															

Converter / Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch

Risanje Samoblike

Prilavljen NUM

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Arial CE 10

N7 =

C D E F G H I J K L M N O P Q R

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ETI ULTRA QUICK

Select switch

NWS 5 MK + AMK NONE

Microswitch NWS5 Microswitch MK

Pic. 2 Pic. 4

Converter / Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch

Risanje Samooblike

Pripravljen

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... SL 12:33

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Arial CE 20

D4 = 100000

A B C D E F G H I J K L M N

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ETI ULTRA QUICK

Semi (I²t): 100.000 A²s

Max. peak inv. voltage (U_R): 3,0 kV

Fuse (I²t): ≤ 70.000 A²s

$\int_0^T i^2 dt = \int_0^T (I_{TSM} \sin \omega t)^2 dt = \frac{I_{TSM}^2}{2} T$

$\int_0^T i^2 dt = \int_0^T (\sqrt{2} I_s \sin \omega t)^2 dt = I_s^2 T$

I_{TSM}

T

Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Select fuse

Risanje Samooblike


Pripravljen

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... SL 12:40

Microsoft Excel - Ultra Quick select V 9.4.8.xls

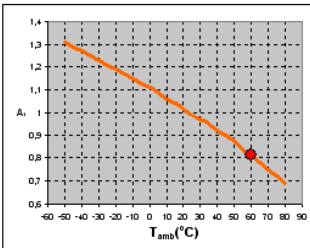
Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

P24

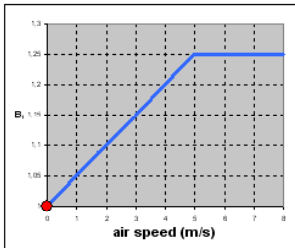


Use 2 fuses in parallel

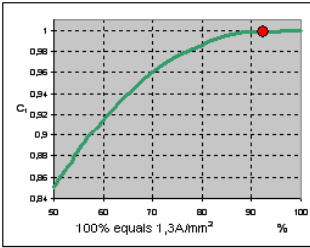
U_R : 391 V
 U_s : 278 V
 I : 214 A
 $\cos\phi$: 0,50
 T_{amb} : 60 °C
 Forced cooling: 0 m/s
 Cable cross-section: 150 mm²
 f : 50 Hz



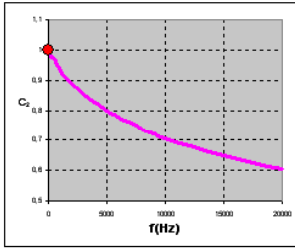
T_{amb} (°C)



air speed (m/s)



100% equals 1,3A/mm²



f (Hz)

continuous load

$I_n \geq$: 324 A =

Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Se

Risanje Samooblike


Pripravljen NUM

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... SL 12:36


Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11



Select your fuse-link



Circuit

$I_n \geq$ 324 A M 1 70.000 $I_s = I_n$

V. = A²s kA~ A²s

Filter	ETI code	ETI type	U_n (V)	I_n (A)	Series	Type	Size	I^2t (A ² s)	$I^2t_{(In)}$ (A ² s)	P_d (W)	B.c. (kA)	Char.	Switch	Page	I^2t (A ² s)	P_d
	885	004743222	M1UQ02/350A/690V	690	350	UQ02	M	1	54.000	11.000	69	200	aR	NVS5	new	18.144
	1280															
	1281															
	1282															
	1283															
	1284															
	1285															
	1286															
	1287															
	1288															
	1289															
	1290															
	1291															

Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Select fuse /

Risanje Samooblike

Filtrirni način NUM

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... SL 12:39

Example Nr. 3:

Choose the right fuse manually by using **Filter** button.

$U_n=690V$

$I_n=100A$

Type=G

Size=1

$I^2t < 3000A^2s$

ETI ULTRA QUICK

Select your fuse-link

Show all

Select

Filter

Circuit

\geq \geq \leq \geq \leq

V. = 324 A M 1 70.000 A²s kA- A²s

at U_n (cos $\phi=0,95$) at U_s (V) = 278

ETI code	ETI type	U_n (V)	I_n (A)	Seri	Typ	Sizi	I^2t (A ²)	I^2t (Im) (A ²)	P_d (V)	B.c. (k)	Chi	Swit	Pa	I^2t (A ²)	P_d (V)
12	004341204	M00CUQ1/10A/690V	690	10	U01	M	00C	80	8	5,5	200	aR	NV55	14	27
13	004341205	M00CUQ1/16A/690V	690	16	U01	M	00C	140	13	6	200	aR	NV55	14	47
14	004341206	M00CUQ1/20A/690V	690	20	U01	M	00C	230	22	7	200	aR	NV55	14	77
15	004341207	M00CUQ1/25A/690V	690	25	U01	M	00C	400	38	8	200	aR	NV55	14	134
16	004341208	M00CUQ1/32A/690V	690	32	U01	M	00C	650	61	9	200	aR	NV55	14	218
17	004341209	M00CUQ1/35A/690V	690	35	U01	M	00C	835	78	10	200	aR	NV55	14	281
18	004341210	M00CUQ1/40A/690V	690	40	U01	M	00C	1.030	96	11	200	aR	NV55	14	346
19	004341211	M00CUQ1/50A/690V	690	50	U01	M	00C	1.820	170	12	200	aR	NV55	14	612
20	004341212	M00CUQ1/63A/690V	690	63	U01	M	00C	2.680	250	14,2	200	aR	NV55	14	900
21	004341213	M00CUQ1/80A/690V	690	80	U01	M	00C	5.550	520	20,2	200	aR	NV55	14	1.865
22	004341214	M00CUQ1/100A/690V	690	100	U01	M	00C	8.350	780	23,4	200	aR	NV55	14	2.806
23	004341215	M00CUQ1/125A/690V	690	125	U01	M	00C	11.800	1.100	28	200	aR	NV55	14	3.965
24	004341216	M00CUQ1/160A/690V	690	160	U01	M	00C	19.200	1.900	35	200	aR	NV55	14	6.195

Risanje | Samoblike | Overloads | Load | Type-Size | Charact. | Switch | I²t | In | Select fuse |

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

Select your fuse-link

Show all

Circuit

Select

V... = 324 A M 1 70.000 A²s kA~ A²s

Filter

ETI code	ETI type	U _n (V)	I _n (A)	Seri	Typ	Size	I ² t (A ² s)	I ² t (ms)(A ² s)	P _d (V)	B.c.(k)	Chi	Switc	Pa _d	I ² t (A ² s)	P _d (V)
12	004341204	M00CUQ1/10A/690V	10	U01	M	00C	80	8	5,5	200	aR	NV55	14	27	
13	004341205	M00CUQ1/16A/690V	16	U01	M	00C	140	13	6	200	aR	NV55	14	47	
14	004341206	M00CUQ1/20A/690V	20	U01	M	00C	230	22	7	200	aR	NV55	14	77	
15	004341207	M00CUQ1/25A/690V	25	U01	M	00C	400	38	8	200	aR	NV55	14	134	
16	004341208	M00CUQ1/32A/690V	32	U01	M	00C	650	61	9	200	aR	NV55	14	218	
17	004341209	M00CUQ1/35A/690V	35	U01	M	00C	835	78	10	200	aR	NV55	14	281	
18	004341210	M00CUQ1/40A/690V	40	U01	M	00C	1.030	96	11	200	aR	NV55	14	346	
19	004341211	M00CUQ1/50A/690V	50	U01	M	00C	1.820	170	12	200	aR	NV55	14	612	
20	004341212	M00CUQ1/63A/690V	63	U01	M	00C	2.680	250	14,2	200	aR	NV55	14	900	
21	004341213	M00CUQ1/80A/690V	80	U01	M	00C	5.660	520	20,2	200	aR	NV55	14	1.865	
22	004341214	M00CUQ1/100A/690V	100	U01	M	00C	8.350	780	23,4	200	aR	NV55	14	2.806	
23	004341215	M00CUQ1/125A/690V	125	U01	M	00C	11.800	1.100	28	200	aR	NV55	14	3.965	
24	004341216	M00CUQ1/160A/690V	160	U01	M	00C	19.300	1.800	35	200	aR	NV55	14	6.485	

Risanje | Samooblike | Ar abi | NUM

start | Microsoft Excel - Ultr... | Brane Lebar - Prejet... | Microsoft Visio - [Dra... | Help.doc - Microsoft ... | Examples-ALTECH.d... | SL | 12:46

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

Select your fuse-link

Show all

Circuit

Select

V... = 324 A M 1 70.000 A²s kA~ A²s

Filter

ETI code	ETI type	U _n (V)	I _n (A)	Seri	Typ	Size	I ² t (A ² s)	I ² t (ms)(A ² s)	P _d (V)	B.c.(k)	Chi	Switc	Pa _d	I ² t (A ² s)	P _d (V)
22	004341214	M00CUQ1/100A/690V	63	U01	M	00C	8.350	780	23,4	200	aR	NV55	14	2.806	
30	004343214	M1UQ1/100A/690V	45	U01	M	1	8.350	780	19,3	200	aR	NV55	15	2.806	
54	004341114	S00CUQ1/80/100A/690V	56	U01	S80	00C	8.350	780	23,4	200	aR	NV55	16	2.806	
69	004343114	S1UQ1/80/100A/690V	63	U01	S80	1	8.350	780	19,3	200	aR	NV55	17	2.806	
83	004343714	S1MUQ1/80/100A/690V	71	U01	S80	1	8.350	780	19,3	200	aR	MK	17	2.806	
136	004353114	S1UQ1/110/100A/690V	80	U01	S110	1	8.350	780	19,3	200	aR	NV55	18	2.806	
160	004353714	S1MUQ1/110/100A/690V	90	U01	S110	1	8.350	780	19,3	200	aR	MK	18	2.806	
202	004343514	G1UQ1/100A/690V	100	U01	G	1	8.350	780	19,3	200	aR	-	19	2.806	
216	004343614	G1MUQ1/100A/690V	125	U01	G	1	8.350	780	19,3	200	aR	MK	19	2.806	
341	004371214	M00UQ01/100A/690V	140	U001	M	00	4.600	800	20	200	aR	NV55	23	1.546	
354	004371114	S00CUQ01/80/100A/690V	160	U001	S80	00C	4.600	800	20	200	aR	NV55	24	1.546	
363	004383114	S1UQ01/80/100A/690V	180	U001	S80	1	4.600	660	20	200	aR	NV55	25	1.546	
375	004383714	S1MUQ01/80/100A/690V	224	U001	S80	1	4.600	660	20	200	aR	MK	25	1.546	

Risanje | Samooblike | Ar abi | NUM

start | Microsoft Excel - Ultr... | Brane Lebar - Prejet... | Microsoft Visio - [Dra... | Help.doc - Microsoft ... | Examples-ALTECH.d... | SL | 12:46

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

ETI ULTRA QUICK

Select your fuse-link

Show all

Circuit

Select

Filter

324 A M 1 70.000

V. = A's

at U_n ($\cos\phi=0,75$)

ETI code	ETI type	U_n (V)	I_n (A)	Seri	Typ	Size	I^2t (A ² s)	I^2t (ms)(A ²)	P_d (W)	B.c.(k)	Chi	Switzi	Paq	I^2t (A ² s)	P_d (W)
22	004341214	690	100	M00CUQ1/100A/690V		00C	8.350	780	23,4	200	aR	NVS5	14	2.806	
30	004343214	690	100	M1UQ1/100A/690V		00C	8.350	780	19,3	200	aR	NVS5	15	2.806	
54	004341114	690	100	S00CUQ1/80/100A/690V		00C	8.350	780	23,4	200	aR	NVS5	16	2.806	
69	004343114	690	100	S1UQ1/80/100A/690V		00C	8.350	780	19,3	200	aR	NVS5	17	2.806	
83	004343714	690	100	S1MUQ1/80/100A/690V		00C	8.350	780	19,3	200	aR	MK	17	2.806	
136	004353114	690	100	S1UQ1/110/100A/690V		00C	8.350	780	19,3	200	aR	NVS5	18	2.806	
150	004353714	690	100	S1MUQ1/110/100A/690V		00C	8.350	780	19,3	200	aR	MK	18	2.806	
202	004343514	690	100	G1UQ1/100A/690V		00C	8.350	780	19,3	200	aR	-	19	2.806	
216	004343614	690	100	G1MUQ1/100A/690V		00C	8.350	780	19,3	200	aR	MK	19	2.806	
341	004371214	690	100	M00UQ01/100A/690V		00C	4.600	660	20	200	aR	NVS5	23	1.546	
354	004371114	690	100	S00CUQ01/80/100A/690V		00C	4.600	660	20	200	aR	NVS5	24	1.546	
363	004383114	690	100	S1UQ01/80/100A/690V		00C	4.600	660	20	200	aR	NVS5	25	1.546	
375	004383714	690	100	S1MUQ01/80/100A/690V		00C	4.600	660	20	200	aR	MK	25	1.546	

at U_n ($\cos\phi=0,75$)

at U_s (V) = 278

at $\cos\phi = 0,50$

Filter

Risavanje Samopoblike

start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... SL 12:47

Microsoft Visio - [Drawing1:Page-1]

File Edit View Insert Format Tools Shape Window Help Adobe PDF

Type a question for help

Normal Arial 12pt B I U

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

ETI ULTRA QUICK

Select your fuse-link

Show all

Circuit

Select

Filter

324 A M 1 70.000

V. = A's

at U_n ($\cos\phi=0,75$)

ETI code	ETI type	U_n (V)	I_n (A)	Seri	Typ	Size	I^2t (A ² s)	I^2t (ms)(A ²)	P_d (W)	B.c.(k)	Chi	Switzi	Paq	I^2t (A ² s)	P_d (W)
04343514	G1UQ1/100A/690V	690	100	U01	(Vse)	1	8.350	780	19,3	200	aR	-	19	2.806	
04343614	G1MUQ1/100A/690V	690	100	U01	(Zgornjih 10 ...)	1	8.350	780	19,3	200	aR	MK	19	2.806	
04373514	G1UQ01/100A/690V	690	100	U00	(Lasten ...)	1	4.600	660	20	200	aR	-	27	1.546	
04373614	G1MUQ01/100A/690V	690	100	U001	G	1	4.600	660	20	200	aR	MK	27	1.546	
04723514	G1UQ2/100A/690V	690	100	U00	G	1	10.000	1.650	12,7	200	gR	-	40	3.360	
04743614	G1MUQ02/100A/690V	690	100	U002	G	1	2.480	450	23	200	aR	MK	new	83	

at U_n ($\cos\phi=0,75$)

at U_s (V) = 278

Filter

Page-1

X = 78 mm Y = 188 mm

start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... SL 12:48

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

ETI ULTRA QUICK

FUSES FOR PROTECTION OF SEMICONDUCTORS

Lasten samodejni filter

Pokaži vrstice, kjer:
I2t (A2s)

Je manjše kot:

In Ali

? nadomesti kateri koli znak
* nadomesti kateri koli niz znakov

V redu Prekliči

Show all

Filter

ETI code	ETI type	$U_n (V)$	$I_n (A)$	Seri	Typ	Size	$I^2t (A^2s)$	$I^2t_{(in)} (A^2s)$	$P_d (W)$	B.c.(k)	Chi	Switc	Pa	$I^2t (A^2s)$	P_d
202	004343514	G1UQ1/100A/690V	690	100	UQ1	G	1	8.350	780	19,3	200	aR	-	19	2.806
216	004343614	G1MUQ1/100A/690V	690	100	UQ1	G	1	8.350	780	19,3	200	aR	MK	19	2.806
460	004373514	G1UQ01/100A/690V	690	100	UQ01	G	1	4.600	660	20	200	aR	-	27	1.546
472	004373614	G1MUQ01/100A/690V	690	100	UQ01	G	1	4.600	660	20	200	aR	MK	27	1.546
802	004723514	G1UQ2/100A/690V	690	100	UQ2	G	1	10.000	1.650	12,7	200	gR	-	40	3.360
939	004743614	G1MUQ02/100A/690V	690	100	UQ02	G	1	2.480	450	23	200	aR	MK	new	833

at $U_n (cos\phi=0,75)$ $I_s = I_n$

at $cos\phi = 0,5$
at $U_s (V) = 278$

Risanje Samoblike

Filtrirni način

start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... SL 12:51

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

ETI ULTRA QUICK

FUSES FOR PROTECTION OF SEMICONDUCTORS

Select your fuse-link

Show all

Select

Circuit

\geq \geq \leq

$V_n = 324 A$ $M 1 35.000$ A^2s $ka\sim$ A^2s

$V_n =$ $=$ A^2s $ka\sim$ A^2s

Filter

ETI code	ETI type	$U_n (V)$	$I_n (A)$	Seri	Typ	Size	$I^2t (A^2s)$	$I^2t_{(in)} (A^2s)$	$P_d (W)$	B.c.(k)	Chi	Switc	Pa	$I^2t (A^2s)$	P_d
939	004743614	G1MUQ02/100A/690V	690	100	UQ02	G	1	2.480	450	23	200	aR	MK	new	833

at $U_n (cos\phi=0,75)$ $I_s = I_n$

at $cos\phi = 0,5$
at $U_s (V) = 278$

Risanje Samoblike

Filtrirni način

start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... SL 12:52

Example Nr. 4:

We have the next data:

$I_s=200\text{A}$, continous load/ a few stops per year

$U_s=800\text{V}$

I^2t (thyristors)= $200.000\text{A}^2\text{s}$

Breaking capacity >50kA

COS fi=0,8

$T_{\text{amb}}=80$ deg. C

Fan=5m/s

Cable cross section= 100mm^2

Frequency=15kHz

type: S110, size 1 with possibility of mountaing MK!

1.Choose the right fuse?

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

N17 = 200

ETI ULTRA QUICK

Manual/Circuit

input:

IS: 150 A U=: 250 V

Tr: 100 kVA Z: 2%

output:

Active IS: 150 A U_s: 278 V

I_{SF}: 211 A U_R: 391 V

I₌: 211 A U₌: 250 V

Short-circuit current = 18 kA

Manual:

input:

U_s: 800 V

Active IS: 200 A U_R: V

Break. cap. 200 kA U₌: V

Start

Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... 12:58

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

H4 =

1 B C D E F G H I J K L M N O P Q

2 **ETI ULTRA QUICK**

3 Continuous load
A few stops per year
 Cyclic load

Number of overloads N: 1000

I/t characteristics (catalogue page 46-77)

I_1	A	t_1	min	I_{melt}	A	$I_1 <$	0
I_2	A	t_2	min	I_{melt}	A	$I_2 <$	0
I_3	A	t_3	min	I_{melt}	A	$I_3 <$	0
I_4	A	t_4	min	I_{melt}	A	$I_4 <$	0
I_5	A	t_5	min	I_{melt}	A	$I_5 <$	0
I_6	A	t_6	min	I_{melt}	A	$I_6 <$	0
I_7	A	t_7	min	I_{melt}	A	$I_7 <$	0

Start

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Q82 =

60	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
61	S ₉₇															
62																
63	97mm															
64	○ 0															
65																
66																
67																
68																
69																
70	S ₁₁₀															
71																
72	110mm															
73	● 1 ○ 2 ○ 3															
74																
75																
76																
77																
78	S ₁₅₀															
79																
80	150mm															
81																
82																
83																
84																
85																
86																
87	S ₁₇₀															
88																
89	170mm															

Start

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

O11 =

D E F G H I J K L M N O P Q R S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

ETI ULTRA QUICK

Select characteristics

aR (1,6xIn...)
 gR (1,1xIn...)
 NONE

Converter / Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch

Risanje Samooblike

Pripravljen NUM

start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... SL 13:01

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

N7 =

C D E F G H I J K L M N O P Q R

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

ETI ULTRA QUICK

Select switch

NWS 5
 MK + AMK
 NONE

Converter / Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch

Risanje Samooblike

Pripravljen NUM

start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... SL 13:02

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

D4 = 200000

ETI ULTRA QUICK

Semi (I2t): 200.000 A²s

Max. peak inv. voltage (U_R): 3,0 kV

Fuse (I²t): <= 140.000 A²s

$$\int_0^T i^2 dt = \int_0^T (I_{TSM} \sin \omega t)^2 dt = \frac{I_{TSM}^2}{2} T$$

$$\int_0^T i^2 dt = \int_0^T (\sqrt{2} I_s \sin \omega t)^2 dt = I_s^2 T$$

Start Microsoft Excel - Ultr... Brane Lebar - Prejet... Microsoft Visio - [Dra... Help.doc - Microsoft ... Examples-ALTECH.d... 13:03

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

D24 = '=Load!J25/(table!C32*table!F20*table!I26*table!L33*table!J33)

ETI ULTRA QUICK

Use 2 fuses in parallel

U_R: 0 V

U_s: 800 V

I_S: 200 A

cos φ: 0,80

T_{amb}: 80 °C

Forced cooling: 5 m/s

Cable cross-section: 100 mm²

f: 15.000 Hz

I_n >= : 399 A ~

100% equals 1,3A/mm²

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

ETI ULTRA QUICK

FUSES FOR PROTECTION OF SEMICONDUCTORS

Select your fuse-link

Show all

Manual **Select**

800 399 A S110 1 200 MK 140.000

V_n ~ I_n A²s kA~ A²s

at U_n (cosφ=0,15) I_s=I_n at cosφ=0,8 at U_c (V)=800

Filter

ETI code	ETI type	U _n (V)	I _n (A)	Series	Type	Size	I ² t (A ² s)	I ² t (int)(A ² s)	P _d (W)	B.c.(kA)	Char.	Switch	Page	I ² t (A ² s)	P _d (W)
539	004303723	S1MUQ01/110/400A/1000V	1000	400	UQ01	S110	1	200.000	32.000	70	200	aR	MK	29	127.500
1280															
1281															
1282															
1283															
1284															
1285															
1286															
1287															
1288															
1289															
1290															
1291															

Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Select fuse /

Risanje / Samooblike

Filtrirni način

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Example Nr. 5:

We have the next data:

Cyclic load (AC):

$I_1:$	10	A~	$t_1:$	0,10	min
$I_2:$	50	A~	$t_2:$	10,00	min
$I_3:$	20	A~	$t_3:$	12,00	min
$I_4:$	15	A~	$t_4:$	5,00	min
$I_5:$	36	A~	$t_5:$	3,00	min
$I_6:$	14	A~	$t_6:$	2,00	min
$I_7:$	1	A~	$t_7:$	5,00	min
$I_8:$	5	A~	$t_8:$	45,00	min

$U_s = 800V$

I^2t (thyristors) = $2.500A^2s$

Breaking capacity > 50kA

COS $\phi = 0,8$

$T_{amb} = 80 \text{ deg. C}$

Fan = 5m/s

Cable cross section = $200mm^2$

Frequency = 5kHz

type: G, size 1 with possibility of mounting MK!

1. Choose the right fuse?

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Q24

ETI ULTRA QUICK

Manual/Circuit

input:

IS: A U=: V

Tr: kVA Z: %

Manual:

output:

IS: A U_S: V

ISF: A U_R: V

I_{sc}: A U_{sc}: V

Short-circuit current = kA

input:

IS: A U_S: V

Break. cap. kA U_{sc}: V

start

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Q2

ETI ULTRA QUICK

Continuous load

A few stops per year

Cyclic load

Number of overloads N:

characteristics (catalogue page 46-77)

Load:

I ₁ :	<input type="text" value="10"/> A	t ₁ :	<input type="text" value="0,10"/> min
I ₂ :	<input type="text" value="50"/> A	t ₂ :	<input type="text" value="10,00"/> min
I ₃ :	<input type="text" value="20"/> A	t ₃ :	<input type="text" value="12,00"/> min
I ₄ :	<input type="text" value="15"/> A	t ₄ :	<input type="text" value="5,00"/> min
I ₅ :	<input type="text" value="36"/> A	t ₅ :	<input type="text" value="3,00"/> min
I ₆ :	<input type="text" value="14"/> A	t ₆ :	<input type="text" value="2,00"/> min
I ₇ :	<input type="text" value="1"/> A	t ₇ :	<input type="text" value="5,00"/> min

Overload:

I _{melt} :	<input type="text"/> A	I ₁ <:	<input type="text"/>
I _{melt} :	<input type="text" value="100"/> A	I ₂ <:	<input type="text"/>
I _{melt} :	<input type="text"/> A	I ₃ <:	<input type="text"/>
I _{melt} :	<input type="text"/> A	I ₄ <:	<input type="text"/>
I _{melt} :	<input type="text"/> A	I ₅ <:	<input type="text"/>
I _{melt} :	<input type="text"/> A	I ₆ <:	<input type="text"/>
I _{melt} :	<input type="text"/> A	I ₇ <:	<input type="text"/>

start

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Q82 =

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
41				<input type="radio"/> 00C	<input type="radio"/> 00	<input type="radio"/> 0	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4a						
42																
43																
44																
45																
46		G														
47							<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3							
48																
49																
50																
51																
52																
53																
54		S80														
55				<input type="radio"/> 00C	<input type="radio"/> 00		<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3							
56																
57																
58																
59																
60																
61																
62		S97														
63						<input type="radio"/> 0										
64																
65																
66																
67																
68																
69																
70		S110														

Start | Microsoft Excel - Ultr... | Brane Lebar - Prejeto... | Microsoft Visio - [Dra... | Help.doc - Microsoft ... | 13:20

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

O11 =

ETI ULTRA QUICK

Select characteristics

aR (1,6xIn...)
 gR (1,1xIn...)
 NONE

min
 s
 ms

overcurrent:
 short circuit:
 narrow
 Short circuit
 Ip

1.1 x In 1.6 x In

Start | Microsoft Excel - Ultr... | Brane Lebar - Prejeto... | Microsoft Visio - [Dra... | Help.doc - Microsoft ... | 13:20

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

Arial CE 10

N7 =

C D E F G H I J K L M N O P Q R

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

ETI ULTRA+ QUICK

Select switch

NVS 5 MK + AMK NONE

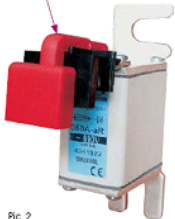

Microswitch NVS  

Fig. 2 Fig. 4

Converter / Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch

Risanje Samoblike

Pripravljen NUM

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... SL 13:20

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Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF


Arial CE 20

D4 = 2500

A B C D E F G H I J K L M N

1
2
3
4
5
6
7
11
12
13
14
22
23
24
25
26
27
28
29
30
31

ETI ULTRA+ QUICK

 Semi (I2t): 2.500 A²s

Max. peak inv. voltage (U_p): 3,0 kV

$Fuse (I^2 t): \leq 1.750 A^2s$

i
 I_{TSM}
 t

$\int_0^T i^2 dt = \int_0^T (I_{TSM} \sin \omega t)^2 dt = \frac{I_{TSM}^2}{2} T$

$\int_0^T i^2 dt = \int_0^T (\sqrt{2} I_p \sin \omega t)^2 dt = i_p^2 T$

Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Se

Risanje Samoblike

Pripravljen NUM

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Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

D24 = '=Load!J25/(table!C32*table!F20*table!I26*table!L33*table!J33)

Use 2 fuses in parallel

U_R : 0 V
 U_s : 800 V
 I_s : 30 A
 $\cos\phi$: 0,80
 T_{amb} : 80 °C
 Forced cooling: 5 m/s
 Cable cross-section: 200 mm²
 f : 5.000 Hz
cyclic load
 $I_n \geq$: 44 A ~

Graph 1: I_n vs T_{amb} (°C). The curve shows that as ambient temperature increases, the required fuse current I_n also increases.

Graph 2: I_n vs air speed (m/s). The curve shows that as air speed increases, the required fuse current I_n decreases.

Graph 3: I_n vs Cable cross-section (mm²). The curve shows that as cable cross-section increases, the required fuse current I_n increases.

Graph 4: I_n vs f (Hz). The curve shows that as frequency increases, the required fuse current I_n decreases.

Circuit / DC application / Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Se

start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... 13:22

Microsoft Excel - Ultra Quick select V 9.4.8.xls

Datoteka Urejanje Pogled Vstavljanje Oblika Orodja Podatki Okno Pomoč Adobe PDF

A11 =

Select your fuse-link

Show all

Manual Select

Filter

$U_n \geq$ 800 V
 $I_n \geq$ 43 A
 Series G
 Type 1
 Size 200
 Char. MK
 Page 1.750

ETI code	ETI type	U_n (V)	I_n (A)	Series	Type	Size	I^2t (A ² s)	$I^2t_{(1m)}$ (A ² s)	P_d (W)	B.c. (kA)	Char.	Switch	Page	I^2t (A ² s)	P_d
578	004303612	1000	63	U001	G	1	2.000	300	15,1	200	aR	MK	30	1.275	
1280															
1281															
1282															
1283															
1284															
1285															
1286															
1287															
1288															
1289															
1290															
1291															

Overloads / Load / Type-Size / Charact. / Switch / I2t / In / Select fuse /

Filtrirni način start Microsoft Excel - Ultr... Brane Lebar - Prejeto... Microsoft Visio - [Dra... Help.doc - Microsoft ... 13:22

Microsoft Excel - Ultra Quick select V 9.4.8.xls

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M6 = 100

Number of overloads N: 2000

I/t characteristics (catalogue page 46-77)

Load	Type	Duration (min)	I_{melt} (A)	$I_1 <$ (A)
A ~ t_1	Cyclic	0,10		0
A ~ t_2	Cyclic	10,00	100	55
A ~ t_3	Cyclic	12,00		0
A ~ t_4	Cyclic	5,00		0
A ~ t_5	Cyclic	3,00		0
A ~ t_6	Cyclic	2,00		0
A ~ t_7	Cyclic	5,00		0

Overload I_{melt} 100 A *Insert I_{melt}*

Start menu: start, Microsoft Excel - Ultr..., Brane Lebar - Prejeto..., Microsoft Visio - [Dra..., Help.doc - Microsoft ...

SL 13:23

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