

# BATTERY FUSE



**ETI BATTERY FUSE**  
 Obreza 5  
 SI-1411 izlake  
 NH3L   
**630A** gBat  
 1500V d.c. 100kA  
 L/R=3ms IEC 60269-7  
 004110779  
 RoHS ENEC CE   
 Made in Slovenia W3/2022

$\frac{L}{+}$   
 BATTERY  
 FUSE

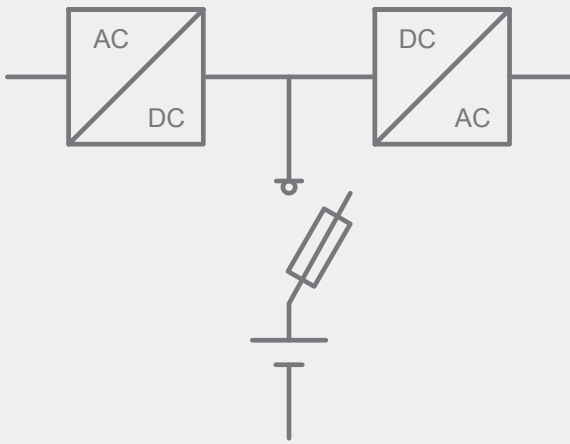
**BECAUSE EVERY SECOND COUNTS**

**Application**

- in battery storage systems
- in UPS systems
- in e-mobility

# Battery Protection Fuses

## Battery storage fuse selection

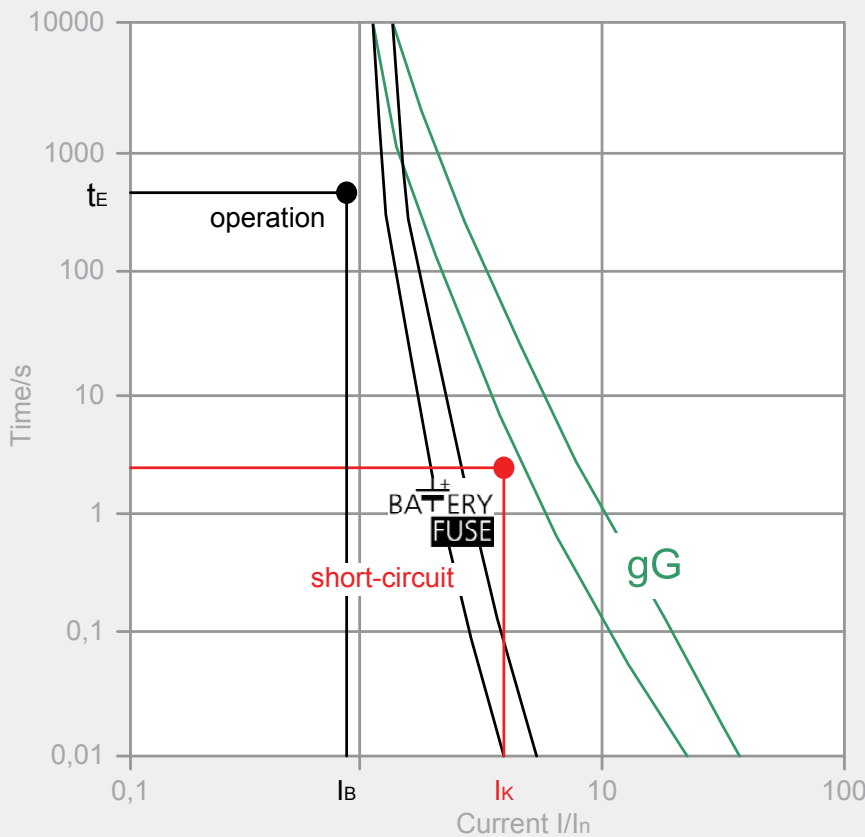


### Short circuit current

- Short circuit current depending on battery model, type and capacity, low compared to operating current
- Short circuit current has to be interrupted in <5 seconds
- Required steep characteristics: protection with Battery fuse-link required!

### Operating current

- Operating current depends on battery storage specification
- Battery operation: voltage of DC link circuit decreases to the final discharge voltage
- Consider maximum current at final discharge voltage for fuse-link selection



*In accordance with IEC 60269-7*

### Short circuit point ( $I_K$ )

- Short circuit current depending on battery model and type
- Manufacturer datasheets to include short circuit current according to IEC896
- Operating point has to be in adequate distance below the curve
- Short-circuit point has to be above the range of tolerance of the curve

### Operating point ( $t_E/I_B$ )

- maximum operating current  $I_B$  has to be calculated from battery storage true power and final discharge voltage  $U_E: I_B = P_W/U_E$
- $t_E$  is the back-up time of battery storage system

When choosing fuse switch disconnector consider fuse-link power dissipation!

$$P_d(I_B) < P_y$$

Power dissipation of fuse-link at maximal operating current ( $I_B$ ):

$$P_d(I_B) = (I_B/I_n)^2 \times P_d(I_n)$$

- $I_B$  - maximal operating current
- $P_d(I_B)$  - power dissipation of fuse-link at maximal operating current
- $P_d(I_n)$  - power dissipation of fuse-link at nominal current
- $P_y$  - maximal permissible fuse-link power dissipation mounted in fuse switch disconnector



# NH gBat fuse-link 440V d.c.

General characteristics	
Rated voltage	440V d.c., L/R=10ms
Breaking capacity	30kA d.c.
Standard	IEC 60269-7
Application	Battery protection



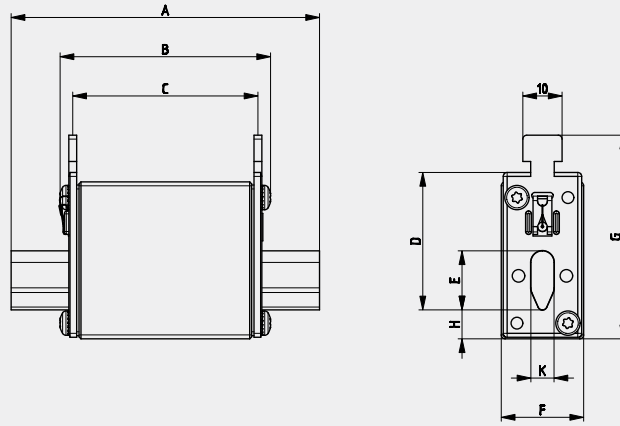
NH gBat fuse-link 440 V d.c.									
Size	$I_n$	Standard indicator	Power dissipation	Power dissipation $0,7 \times I_n$	Pre-arcing Joule integral L/R=10ms	Operating Joule integral L/R=10ms	For use with	Weight	Pack.
	[A]		[W]	[W]	[A <sup>2</sup> s]	[A <sup>2</sup> s]		[g]	[pcs]
00 pic. 1	32	004110209	6,6	3	920	1.656	PK00 004123001	173	3/90
	40	004110219	9,4	4,2	1.440	2.592			
	50	004110218	11,1	5	2.820	5.076			
	63	004110217	11,7	5,2	4.160	7.488			
	80	004110216	10,4	4,7	4.670	8.406			
	100	004110215	11,1	5	9.360	16.848			
1C pic. 2	20	004723103	6,3	2,8	360	648	PK1 004123100	233	3/45
	25	004723104	7,3	3,3	710	1.278			
	32	004723105	9	4	920	1.656			
	40	004723106	11,2	5	1.440	2.592			
	50	004723107	14,5	6,5	2.820	5.076			
	63	004723108	16,8	7,5	4.160	7.488			
	80	004723109	11,4	5,1	4.670	8.406			
	100	004723110	12	5,4	9.360	16.848			
	125	004723111	14,8	6,6	14.750	26.550			
	160	004723112	17,6	7,9	27.880	50.184			

Green protect - gBat

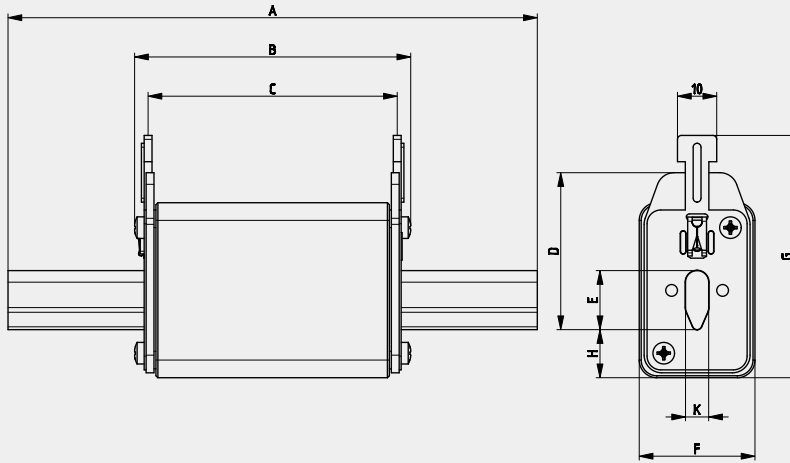


## Dimensions

Picture 1



Picture 2



	A	B	C	D	E	F	G	H	K
00	79	53	47	35	15	28	56	12	6
1C	135	68	65	40	15	28	61	12	6