

# 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

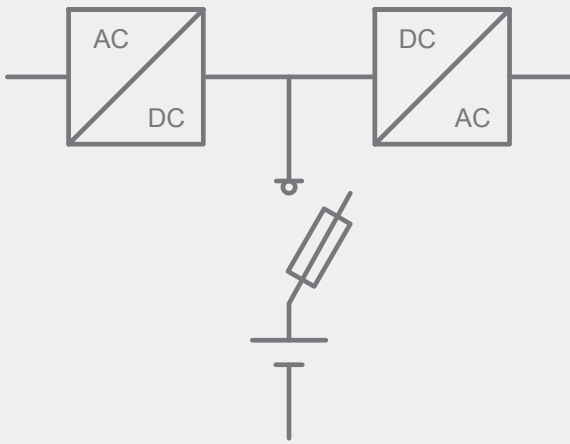
**BECAUSE EVERY SECOND COUNTS**

#### Application

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

# Battery Protection Fuses

## Battery storage fuse selection

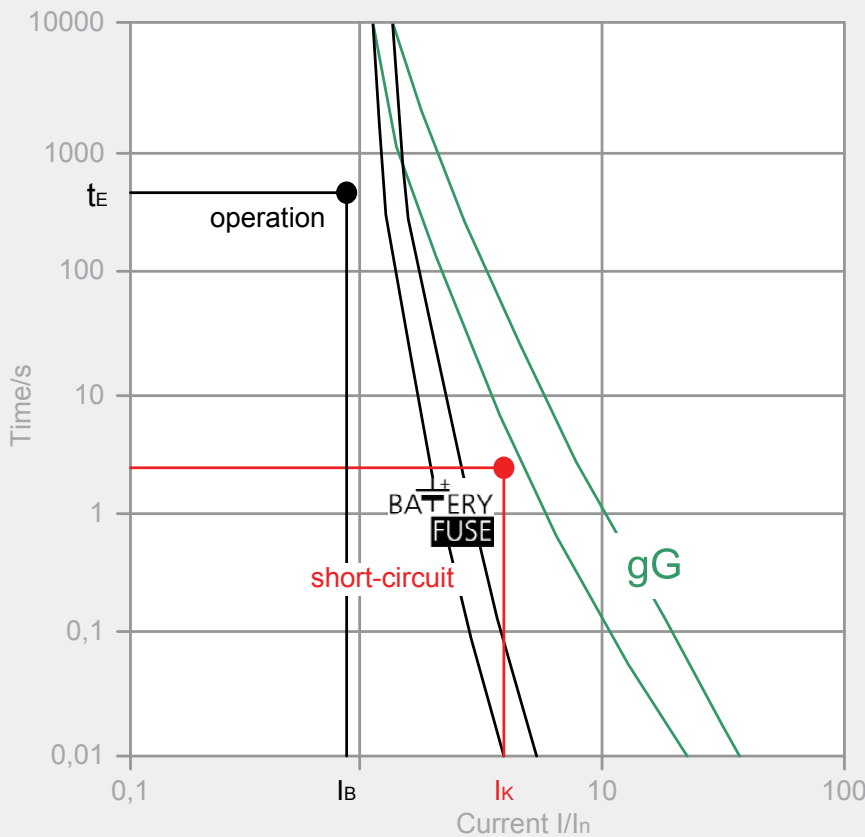


### Short circuit current

- 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 800V d.c.



General characteristics	
Rated voltage	800V d.c. (L/R=10ms)
Breaking capacity	30kA d.c.
Standard	IEC 60269-7
Application	Battery protection
Fuse base	NH1: 004122025 PK1DC NH2: 004122024 PK2DC NH3L: 004132023 PK3L 1500V

NH gBat fuse-link 800 V d.c.										
Size	$I_n$	Standard indicator	Striker indicator	Standard indicator S110mm	Power dissipation	Power dissipation $0,7 \times I_n$	Pre-arcing Joule integral L/R=10ms	Operating Joule integral L/R=10ms	Weight	Pack.
	[A]	pic. 1	pic. 2	pic. 3	[W]	[W]	[A <sup>2</sup> s]	[A <sup>2</sup> s]	[g]	[pds]
1	40	004723320	004723330	004723340	6	2,7	250	1.750	420	3/24
	50	004723321	004723331	004723341	7	3,1	449	3.143		
	63	004723322	004723332	004723342	9	4	700	4.900		
	80	004723323	004723333	004723343	12	5,4	1.200	8.400		
	100	004723324	004723334	004723344	15	6,7	1.650	11.550		
	125	004723325	004723335	004723345	20	9	2.200	15.400		
	160	004723326	004723336	004723346	26	11,7	4.300	30.100		
2	125	004724320	004724330	004724340	20	9	2.200	13.046	660	3/24
	160	004724321	004724331	004724341	26	11,7	4.300	25.499		
	200	004724322	004724332	004724342	32	14,4	8.500	50.405		
	224	004724323	004724333	004724343	37	16,6	10.000	59.300		
	250	004724324	004724334	004724344	43	19,3	15.000	88.950		
	315	004724325	004724335	004724345	57	26,6	20.000	118.600		
	350	004724326	004724336	004724346	67	30	28.000	166.040		
3L*	400	004724327	004724337	004724347	76	34,2	32.000	190.000	1970	1/10
	500	004110350	-	-	112	50	150.000	300.000		

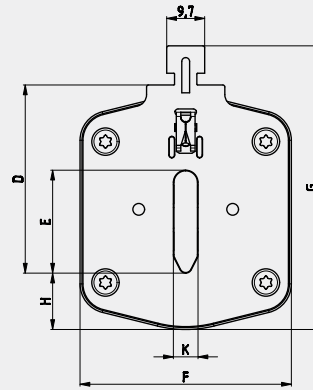
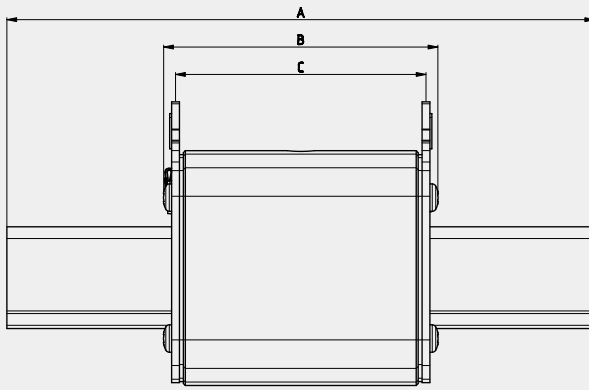
\*Pic 4

Green protect - gBat

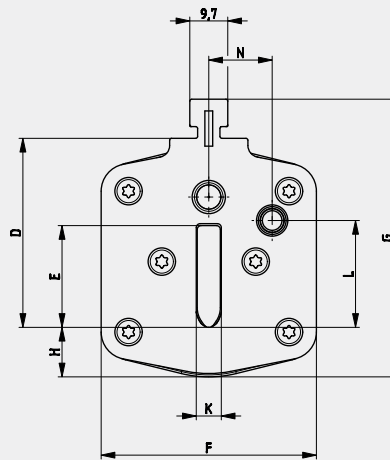
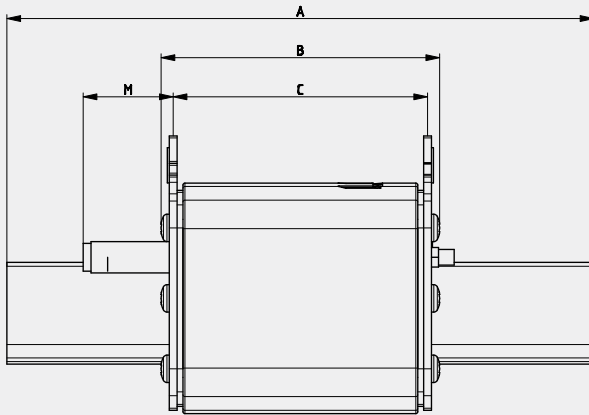


### Dimensions

pic. 1

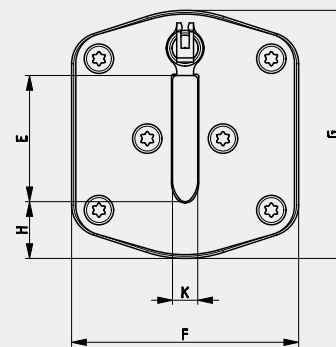
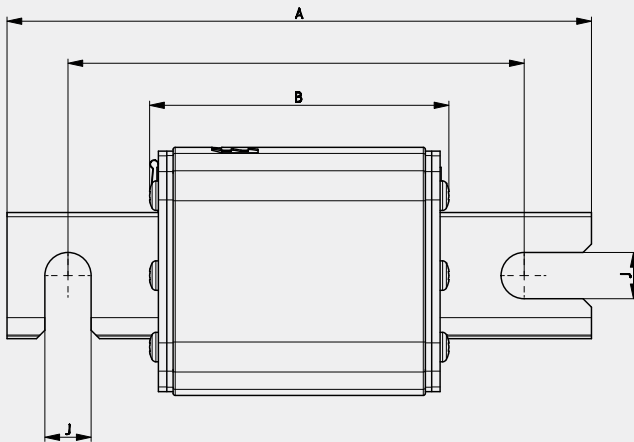


pic. 2



Size	A	B	C	D	E	F	G	H	K	L	M	M
1	135	73	65	40	24	46	62	12	6	20,5	27,5	13,7
2	150	73	65	48	30	54	71	13	6	27,3	27,5	16,2
3	150	73	65	60	37	64	84	14	6	35,6	27,5	17

pic. 3



Size	A	B	E	F	G	H	J	K
1	140	72	24	46	51	12	11	6
2	140	72	30	54	59	13	11	6
3	140	72	37	64	70	14	11	6