BATTERY FUSE

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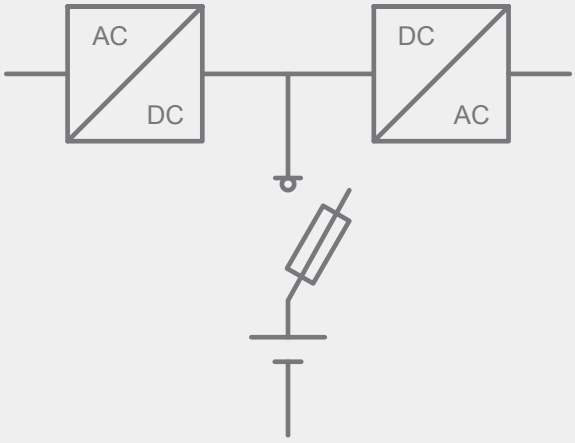
BECAUSE EVERY SECOND COUNTS

Application

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

Battery Protection Fuses

Battery storage fuse selection



Short circuit current

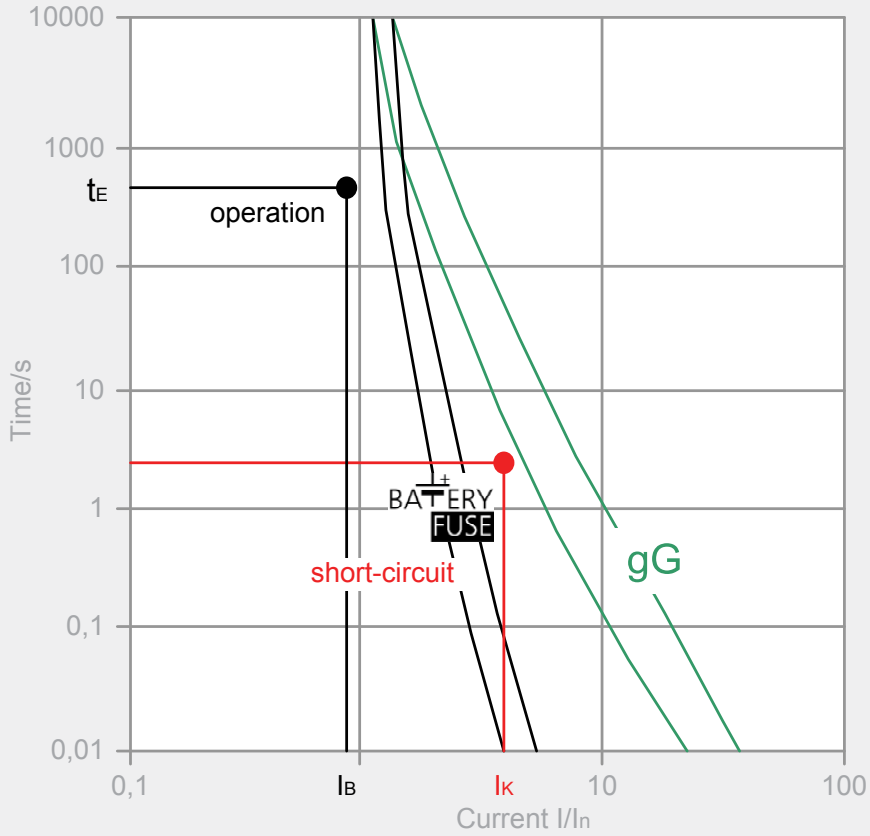
- Short circuit current depending on battery model, type and capacity, low compared to operating current
- Short circuit current has to be interrupted in <5 seconds

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 curent 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

CH 10x38 gBat Fuse-link 550V d.c.

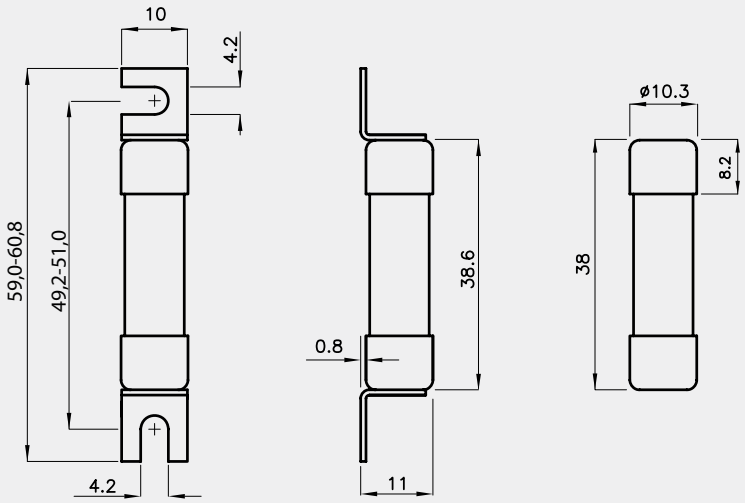
General characteristics	
Rated voltage	550V d.c. (L/R=10ms)
Breaking capacity	30kA d.c.
Standard	IEC 60269-7
Application	Battery protection
Fuse base	EFH 10 DC

CH gBat fuse-link

Size	I_n [A]	Code No. "standard contacts" 550V DC 30kA	Code No. "type SU contacts" 550V DC 30kA	Pre-arcing Joule integral L/R=10ms [A^2s]	Operating Joule integral L/R=10ms [A^2s]	Power dissipation [0,7 x I_n] P_d [W]	Power dissipation [1x I_n] P_d [W]	Weight [g]	Pack. [pcs]
10x38	2	002626002	002626102	1,1	1,8	0,47	1,12	10/12	10/500 SU: 10/380
	4	002626004	002626104	3,0	7,8	0,52	1,25		
	6	002626006	002626106	14,1	27,3	0,73	1,75		
	8	002626008	002626108	25,1	53,4	0,8	1,9		
	10	002626010	002626110	8,0	18,8	0,97	2,4		
	12	002626012	002626112	18,5	41,5	0,8	1,9		
	16	002626016	002626116	42	88	1,1	2,6		
	20	002626020	002626120	86	166	1,3	3,2		
	25	002626025	002626125	140	270	1,65	4,1		

Note:
CH Battery fuse-links are used in combination with fuse disconnector EFH 10 DC

Dimensions for CH 10x38 Battery fuses



I/t characteristics for CH 10x38 Battery fuses