BATTERY FUSE

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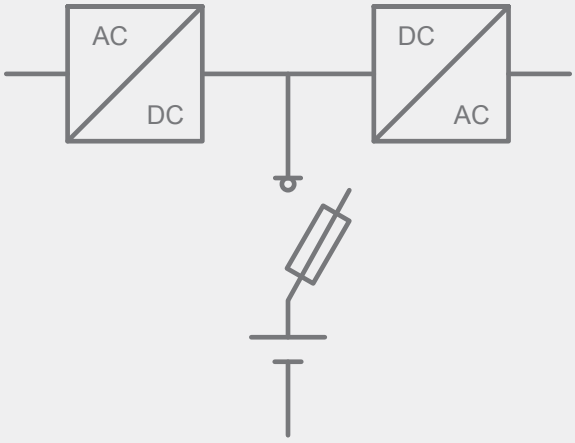
BECAUSE EVERY SECOND COUNTS

Application

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

Battery Protection Fuses

Battery storage fuse selection



Short circuit current

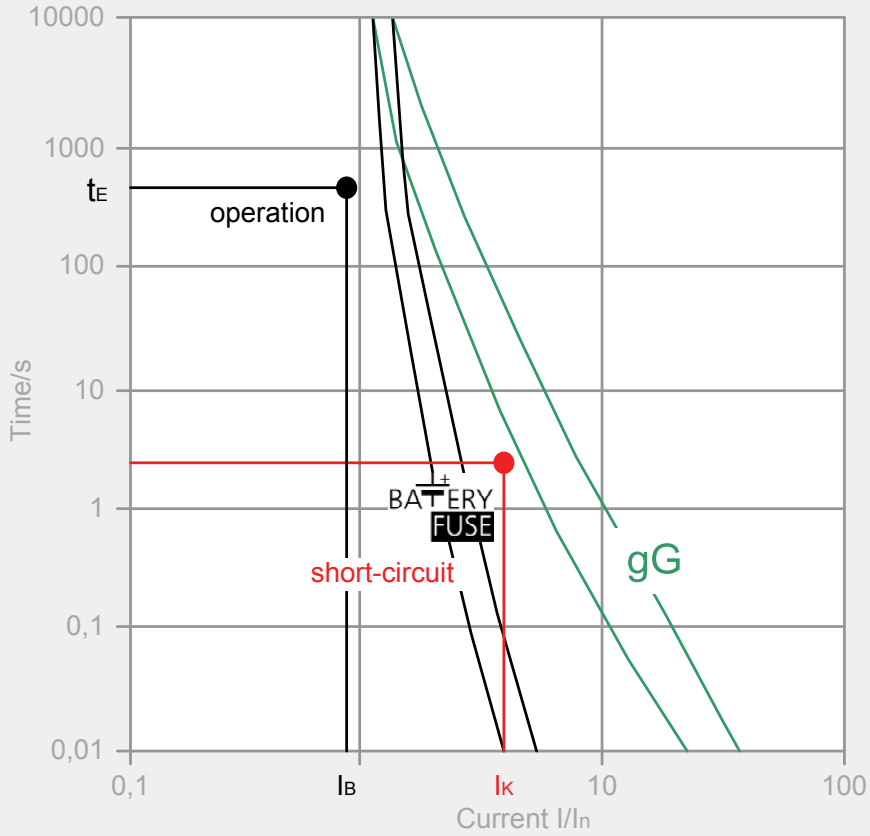
- Short circuit current depending on battery model, type and capacity, low compared to operating current
- Short circuit current has to be interrupted in <5 seconds

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

NH gBat fuse-link 1000V d.c.

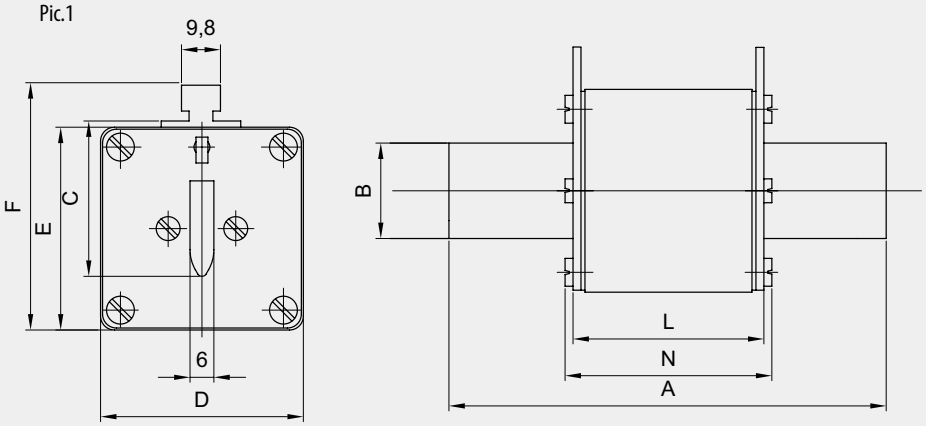
General characteristics	
Rated voltage	1000V d.c. (L/R=1ms)
Breaking capacity	30kA d.c.
Standard	IEC 60269-7
Application	Fuse-link for battery protection.

Patented technology by European Patent Office

NH gBat fuse-link 1000V d.c.

Size	I_n [A]	Standard indicator pic. 1	S_{110} screw contact pic. 2	U_{110} screw contact pic. 3	G screw contact with centre trip indicator for microswitch MK pic. 4	Power dissipation [W]	Power dissipation $0,7xI_n$ [W]	Pre-arcing Joule integral [A^2s]	Operating Joule integral [A^2s]	Weight [g]	Pack. [pcs]
1	200	004110760	/	/	/	27	11	4.400	29.000	500	3/24
2	200	004110761	004110769	004110774	004110755	26	11	4.400	29.000	650	1/16 (G type 2/32)
	250	004110762	004110770	004110775	004110756	36	15	6.000	38.000		
3	160	004110763	/	/	/	38	15	5.000	10.000	1200	3/15 (G type 2/9)
	200	004110764	/	/	/	45	18	10.000	20.000		
	250	004110765	/	/	/	44	18	20.000	40.000		
	315	004110766	004110771	004110776	004110757	54	24	40.000	80.000		
	350	004110767	004110772	004110777	004110758	55	25	45.000	90.000		
	400	004110768	004110773	004110778	004110759	58	24	46.000	138.000		

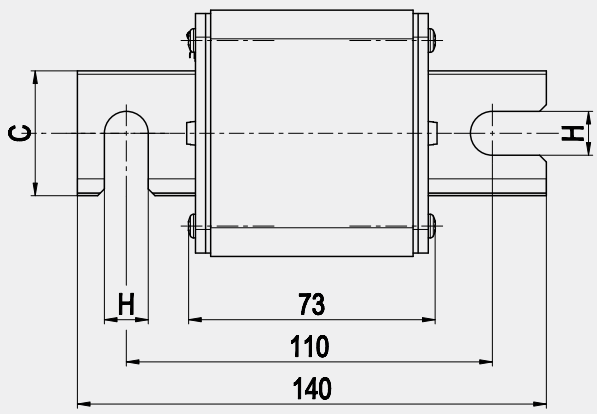
Pic.1

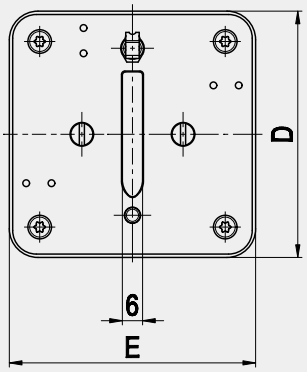


Standard indicator

Size	A	B	C	D	E	F	L	N
1	135	24	42	51	51	67	70	74
2	150	30	48	61	61	71	70	74
3	150	37	60	73	73	87	70	74

Pic.2

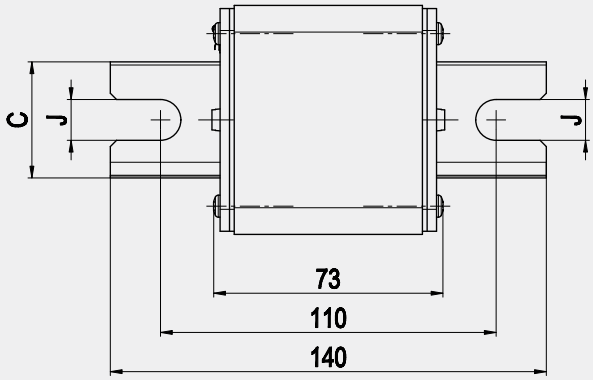


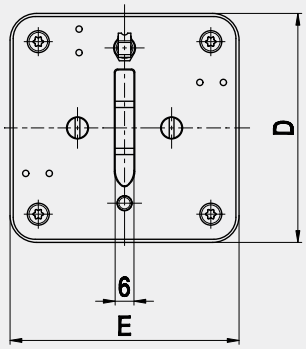


S_{110} screw contact

Size	C	E	D	H
2	30	60	60	11
3	37	73	73	11

Pic.3

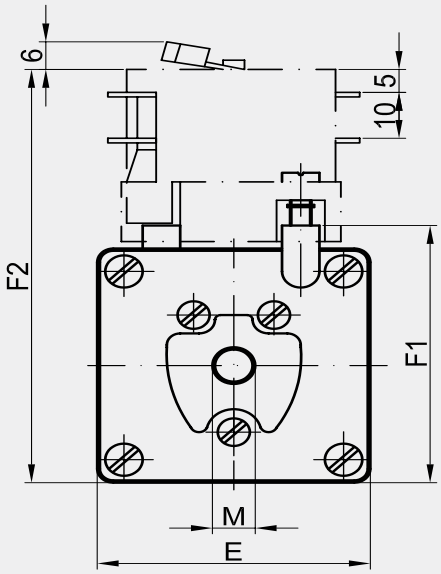


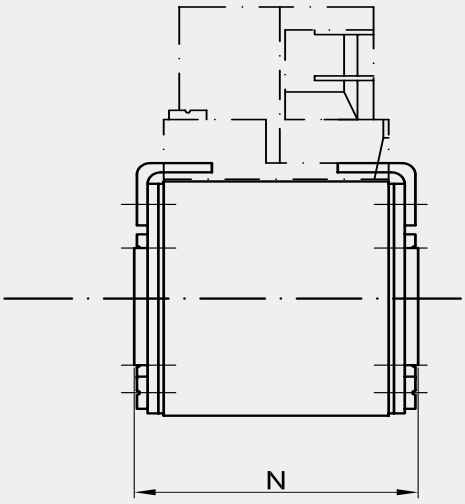


U_{110} screw contact

Size	C	J	E	D
2	30	13	60	60
3	37	13	73	73

Pic.4





G screw contact

Size	D	E	F1	F2	M	N
2	60	60	65	99	M10	75
3	75	75	80	114	M12	75