THERMAL

BATTERIES

HZL

THERMAL

The Company

HBL Power Systems Limited is the undisputed leader in the field of specialised batteries and DC power systems in India. HBL's batteries and electronic products are the preferred choice in a host of critical applications in Railways, Defence, Telecommunications, Non-conventional energy and other core Industrial sectors.

HBL has established a significant presence in meeting the specialised power requirements of the Defence sector. HBL can design and supply Thermal batteries to customer specification requirements with electrical and mechanical activation systems.

Chemistry: Lithium - Iron Di-Sulphide

Applications

Thermal batteries are typically installed as permanent components of a system or device such as:

- Missiles
- Guided artillery
- Torpedoes
- Countermeasure devices
- Aircraft emergency systems
- Guided bombs
- Fuzes - safe and arming circuits
- Mines - underwater and land
- Space applications
- Telemetry and range safety

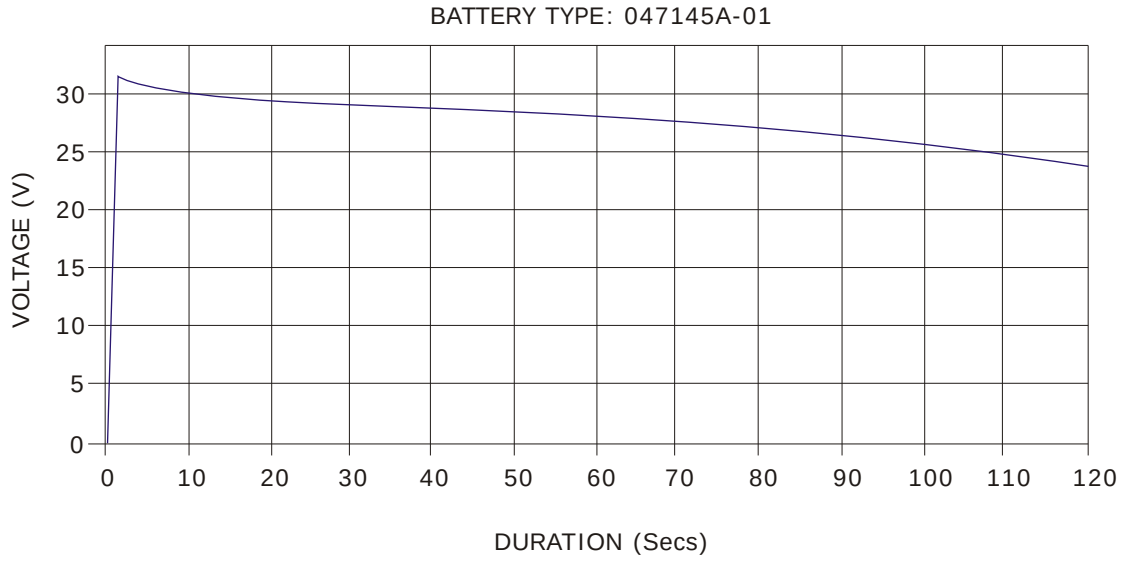
Typically, thermal batteries provide power for:

- Electronics
- Electro mechanical systems
- Heaters
- Pyrotechnic squibs
- Capacitor charging
- Motors

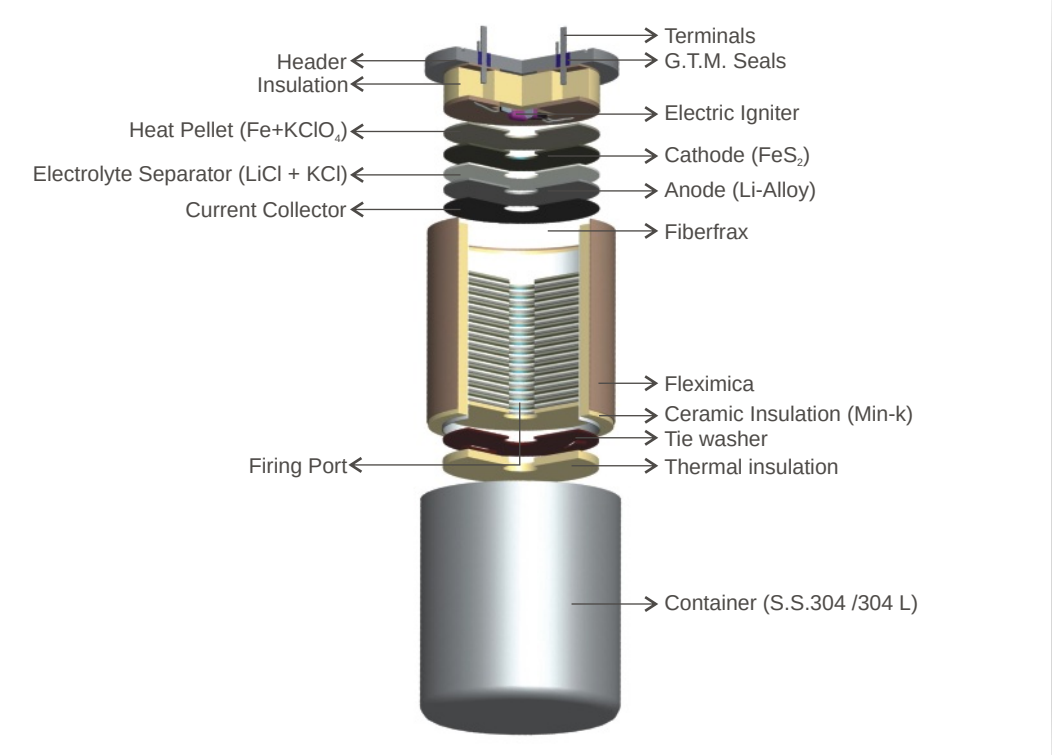
Thermal batteries are used in applications where the following requirements are critical:

- High specific power
- No self-discharge
- Absence of maintenance requirements
- Long storage life
- Rugged construction
- Fast activation

Discharge characteristics



Construction



Features

Operating temperature range	:	-54^{0}C to $+71^{0}$C
Service during storage	:	No maintenance required
Active life	:	Seconds to one hour
Voltage range	:	2 to 200 Volts
Current density	:	up to 1 amp/cm^2
Pulse capabilities	:	10 amps/cm^2
Self Discharge	:	Nil
Out Gassing	:	Nil
Battery sealing	:	Hermetically sealed in stainless steel container
Rugged construction	:	Operates reliably and meets stringent environmental conditions encountered by weapon systems
Reliability	:	99.95% at confidence level of 90%
Shelf life	:	> 20 years

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Technical Specifications

Battery CODE	Power	No of Sections	Operating Voltage	Life	Activation Time (Max)	Operating Temp.		Weight (max)	Primer Type
						Max	Min		
	Watts		Volts	Sec	m.sec	°C	°C	gm	
047070B-01	175	Two	15±2	40	600	55	-30	300	Electric Igniter
047070A-01	175	One	28±4	40	600	55	-30	300	Electric Igniter
047070A-02	175	One	28±4	60	600	55	-20	300	Electric Igniter
047145A-01	500	One	28±4	60	1400	55	-30	570	Electric Igniter
055055A-01	150	Two	19.5±3	40	500	55	-30	330	Electric Igniter
013035A-01	5	One	5V min	0.5	200	55	-30	30	Mechanical Percussion
034064A-01	56	One	28±4	40	500	55	-30	180	Electric Igniter
044135A-01	336	One	56±8	50	1400	55	-40	530	Electric Igniter
044135B-01	145	Two	19.5 to 25	120	1400	55	-40	530	Electric Igniter
055135A-01	364	One	28±4	120	1400	55	-40	670	Electric Igniter
047135A-01	280	One	28±4	120	1400	55	-40	530	Electric Igniter
043068B-01	180	Two	15±2	40	600	55	-30	300	Electric Igniter
063120B-01	160	Two	40±5	480	1000	Ambient		1000	Electric Igniter
*220220A-01	9750	One	150±50	60	2000	55	-20	12000	Electric Igniter
055155A-01	500	One	37.5±26	140	1400	55	-20	900	Electric Igniter
080140A-01	700	One	28±4	200	1400	55	-20	1800	Electric Igniter

-The above batteries are available with short lead times.

-Customised designs available on request.
(These batteries involve design and development.)

CODE: Alpha Numeric

Digits: First three: Diameter (mm) Second three: Height(mm) Last three: Type

Alpha: A=Single section B=Two sections C=Three sections etc

* Also available in L x B x H : 175mm x 175mm x 220mm

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