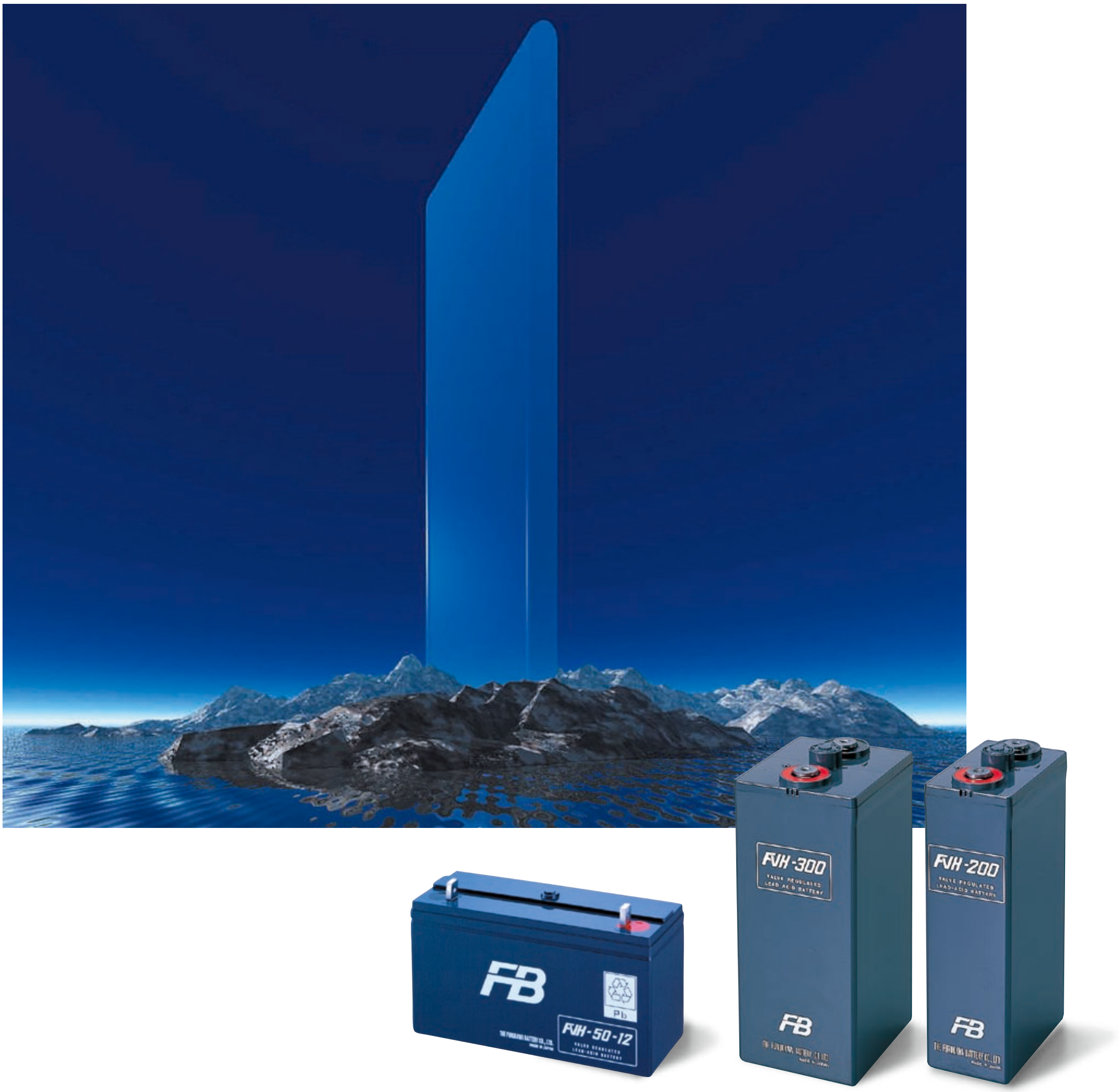
Energy and Communication

Valve-Regulated Type Stationary Lead-Acid Battery for High-Rate Discharge Use

FVH Series



THE FURUKAWA BATTERY CO., LTD.

FVH
SERIES

Valve-Regulated Type Lead Acid Battery, The Optimum Match for Large Capacity UPS

The IT revolution, with its focus on computers, continues to surge forward at breakneck speed.
One critical foundation for this progress is found in UPS (uninterruptible power system), units deftly engineered for stable supplies of alternating current.
A key feature of these UPS, meanwhile, is the use of storage batteries.
With UPS storage batteries, uncompromising levels of safety, reliability and economy are essential.
Moreover, with UPS backup time ranging from 5 to 10 minutes, these batteries must also excel in high-rate discharge characteristics (high current, short-time discharge).
To the FVH series of storage batteries are brought powerful improvements in high-rate discharge characteristics, in an optimum match for UPS.
Use of FVH series storage batteries is a potent promise of smaller size, lighter weight and more compact installation space.

Features

• Excellent High-Rate Discharge Characteristics

New solutions such as increased superficial areas of plates, improved current collecting effect by changing grid form design, and reduced electric resistance of separators lead to considerably improve the high-rate discharge characteristics.

• Space Saving

Due to improvement of high-rate discharge characteristics, it brought no necessary to provide larger capacity cell which has bigger dimensions and require wider space for installation.

• Easy Installation

As the terminal structure adopts the nut-insert-to-pole method, the number of tightening processes is reduced.

• Long Life

Use of higher reliability corrosion proof materials for positive grid realized 7-9 years of expected life in high-rate discharge operation.

Applications

Large capacity UPS (uninterruptible power system)

Cell Specifications

Type	Nominal voltage	Capacity (Ah)			Dimensions (mm)				Weight (kg)
		10-min. rate (Rated)	1-hour rate	10-hour. rate (Reference)	Max. Height	Height	Length	Width	
FVH-50-12	12	28.3	42.5	50	220	190	363	128	23
FVH-200	2	113	170	200	347.5	322.5	106	170	18
FVH-300	2	170	255	300	347.5	322.5	150	170	25

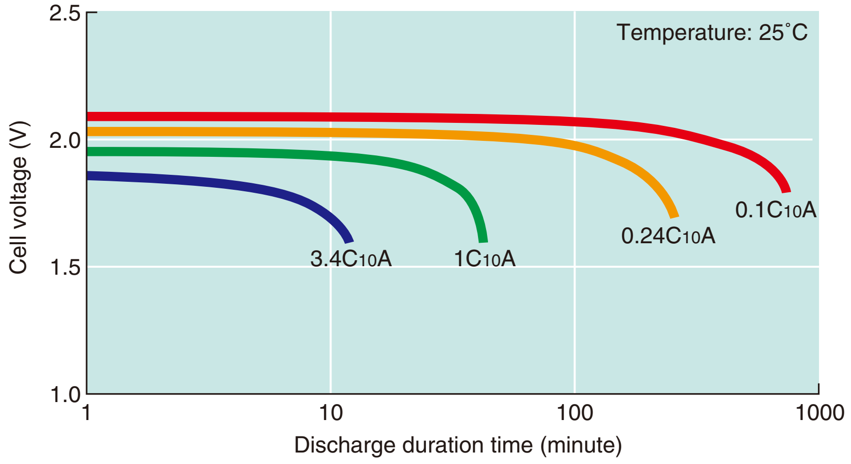
Cell Features

Model / Item	FVH-50-12	FVH-200	FVH-300
Current at 5-min. discharge (A)	190	760	1140
Current at 10-min. discharge (A)	170	680	1020
Discharge time at $3.4C_{10}A$	10 minutes		
Terminal	Lead allpy (in form of L)	Brass Nut	
Connection method	Bolt and nut	Bolt	
Float Charging voltage (V/cell)	2.23		

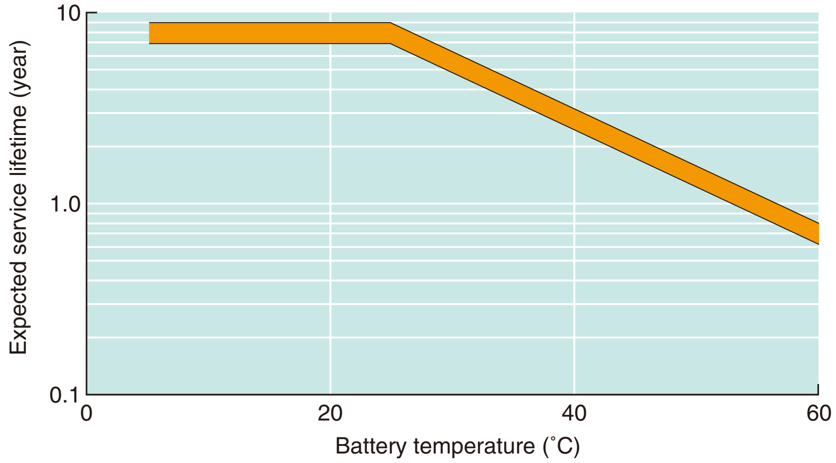
Note: at 25˚C and at a final voltage 1.6 V/cell.

Features

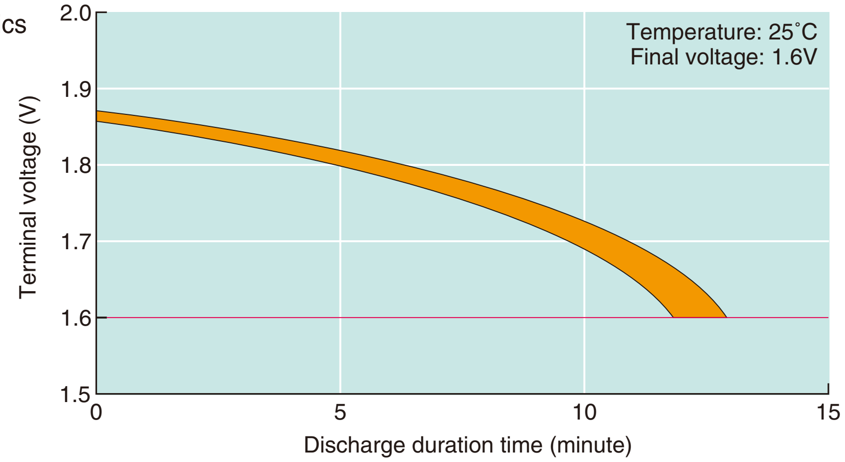
Discharge characteristics



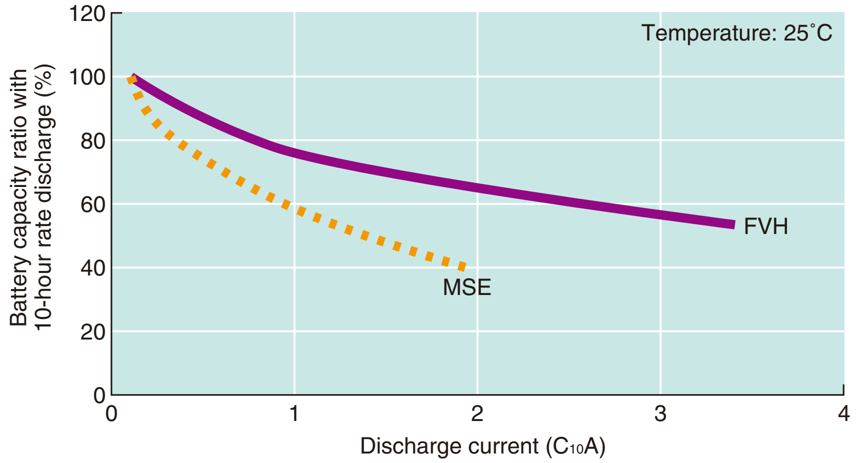
Relation between temperature and service lifetime



3.4C10(A) discharge characteristics



Relation between discharge current and capacity



Assembled Battery Dimensions

Example with 180 cells

UPS capacity (kVA)	FVH (Cell)	Approx. Installation size (mm)		
		Length	Width	Height
75	50×2P	1800	750	1950
100	50×2P	1800	750	1950
150	50×3P	2800	750	1950
200	200	2000	1000	1950
250	300	3600	1000	1950
300	300	2800	1000	1950
400	200×2P	4000	1000	1950
500	200+300	4800	1000	1950
600	200×2P+300	7000	1000	1950
750	300×3P	7600	1000	1950
1000	300×4P	10800	1000	1950

Compensating time for electric power failure is 10 minutes at 25℃

Capacity Conversion Factors

Discharge time (minute)	25˚C 1.6V	5˚C 1.6V
1	0.18	0.22
2	0.20	0.24
3	0.22	0.25
5	0.23	0.28
10	0.29	0.34
15	0.37	0.43
20	0.45	0.52
30	0.60	0.70
40	0.75	0.86
50	0.90	1.03
60	1.05	1.20

If you need more information other than this, please contact with us

MEMO

Safety Precautions

- Carefully read the operation manual before using the battery.

⚠Danger

- The room where the battery is installed must be ventilated so that the maximum hydrogen concentration is not more than 0.8%. Storage batteries generate hydrogen gas which may cause explosions.
- Do not install the battery near flames or in areas with poor ventilation where hydrogen concentration is 0.8% or higher. Otherwise, it may result in explosions and fire.

⚠Caution

- The temperature range for using the battery is -15˚C to 45˚C. Using the battery out of this temperature range may cause deterioration to, or damage the battery by freezing or overheating.
- Do not use the battery under direct sunlight. It may damage battery components.
- Do not allow water to contact the battery. It may damage the battery, cause fire, or corrode the battery terminals and connector plate.
- Do not use the battery near sources of heat. It may damage the battery or shorten its life.
- Do not use the battery in dusty areas. It may cause the battery to short-circuit.
- Charge the battery under the charging conditions specified by Furukawa Battery. Charging the battery under other conditions may prevent full charge; cause the battery to leak, become hot, or explode; or lower performance and shorten the life of the battery.
- Do not install the battery so that it leans downward 90˚ or more (i.e., beyond the horizontal) from the upright position with the terminals on top. It may cause leakage of the electrolyte.
- The discharge current of the battery must be within 1 minute or less at 3 C(A), and 5 seconds or less at 6 C(A). Any duration beyond this range may damage the battery.
- The battery should be checked regulaly, in accordance with local obligation or governmental regulations required locally. If it is found that battery parameters are out of the ranges specified in the operation manual, solve the problem according to the steps presented in the manual. The usage beyond range specified in the operation manual may damage or burn the battery.

ISO9001 Certifed
JQA-1118

ISO14001 Certifed
JQA-EM0380

For More Infomation, please contact.

THE FURUKAWA BATTERY CO., LTD.

Overseas Operations Dept.
2-4-1 Hoshikawa, Hodogaya-ku, Yokohama, Kanagawa Prefecture 240-0006 Japan
Phone: 045-336-5088
Fax: 045-333-2534