Energywith Group Solutions Catalog

Energywith Group

Energywith
AKS Building, 3 Kandaneribeicho, Chiyoda-ku, Tokyo, 1010022, Japan
https://www.energy-with.com/

ESSJ
6-1-1 Heiwajima, Ota-ku, Tokyo, 1430006, Japan
https://www.ess-j.com/

CSB
11F, No. 150, Section 4, Chengde Road, Shilin District, Taipei, 11167, Taiwan
https://csb-battery.com/

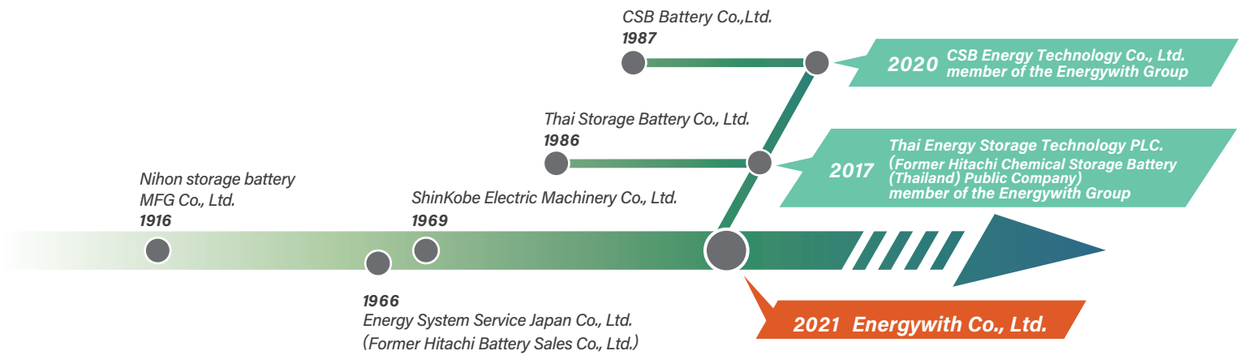
3K BATTERY
No. 387 Moo 4, Sukhumvit Rd., Phraek Sa Sub-district, Mueang Samut Prakan District,
Samut Prakan Province 10280, Thailand
https://www.3kbattery.com/en

TNC
No. 192, Moo 7, Gateway City Industrial Estate, Hua Samrong Sub-district,
Plaeng Yao District, Chachoengsao Province 24190, Thailand.

- The content of this brochure is current as of September 2025.
- Service specifications and other details may change without prior notice.
- Reports (examples) described in this brochure are based on our actual performance results and do not guarantee actual usage results.
- For detailed usage instructions for each product, please refer to the respective product catalogs.

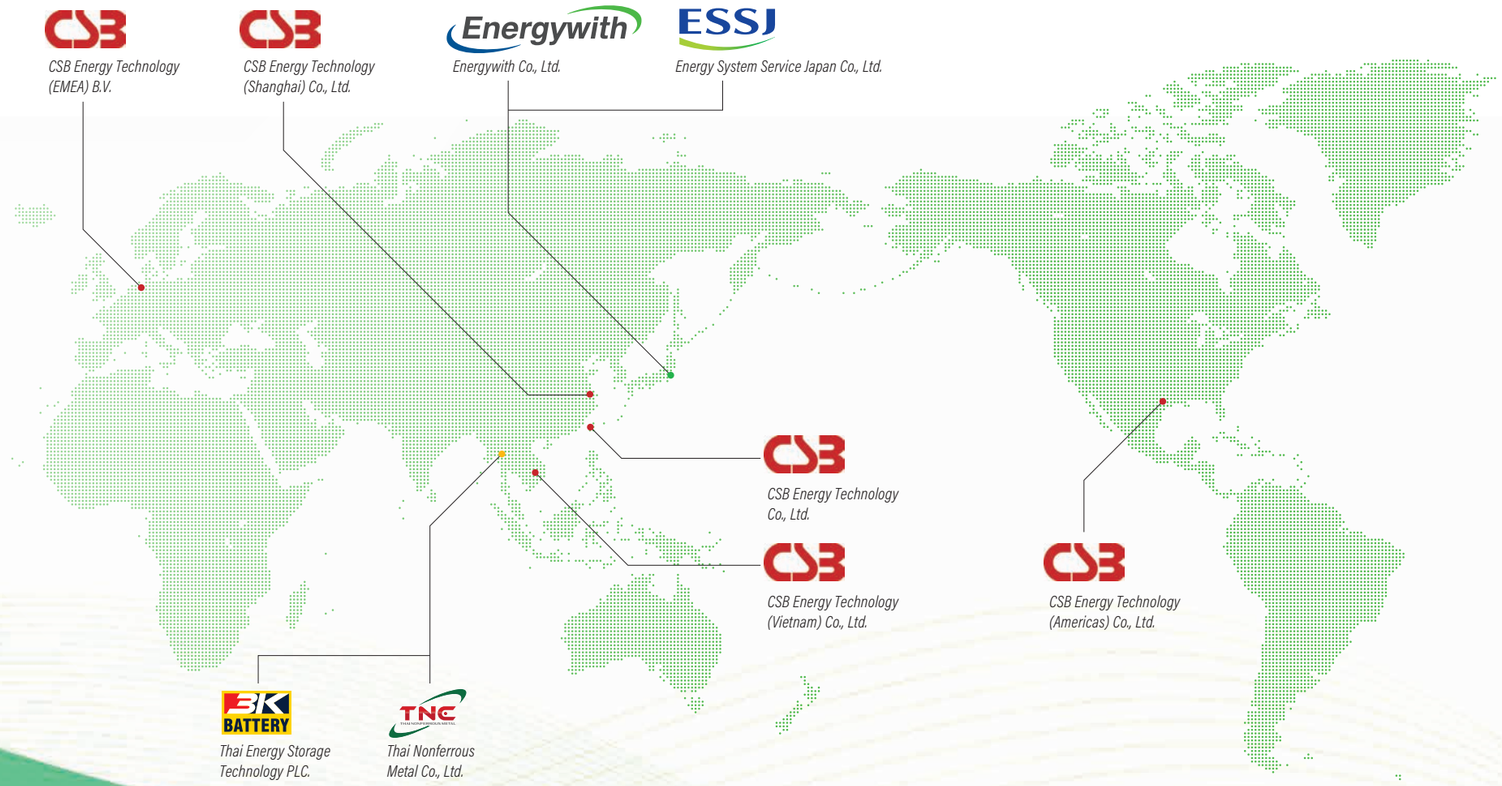
GC-EN02 Created: September 2025 (IT・OS)

Since the establishment of Nihon storage battery MFG Co., Ltd. in 1916, we have been manufacturing batteries for over 100 years. As each company joined as a member of the group, we marked a new chapter in 2021 as the Energywith Group and are now developing a global storage battery business.



Our Global Reach

Energywith group continues to expand globally, now with group companies having presence in Southeast Asia (TES), Europe (CSB), and North America (CSB).



Our Manufacturing Footprints

ISO9001 JQA-0897

EC97J1047 WC21J0012

Energywith Co., Ltd. (Japan, Saitama)
2200, Oka, Fukaya-shi, Saitama 369-0297, Japan

ISO9001 JQA-0893

EC97J1106 WC23J0003

Energywith Co., Ltd. (Japan, Nabari)
1300-15, Yabata, Nabari-shi, Mie 518-0493, Japan

Thai Energy Storage Technology PLC. (Thailand, Bangpoo)
No. 387 Moo 4, Sukhumvit Rd., Phraek Sa Sub-district, Mueang Samut Prakan District, Samut Prakan Province 10280, Thailand

Thai Energy Storage Technology PLC. (Thailand, Gateway)
No. 260, Moo 7, Gateway City Industrial Estate, Hua Samrong Sub-district, Plaeng Yao District, Chachoengsao Province 24190, Thailand.

Thai Nonferrous metal Co.,Ltd (Thailand)
No. 192, Moo 7, Gateway City Industrial Estate, Hua Samrong Sub-district, Plaeng Yao District, Chachoengsao Province 24190, Thailand.

CSB Energy Technology Co., Ltd. (Taiwan)
No.16, Gongye W. Rd., Erzhen Village, Guantian District, Tainan City, Taiwan 72048

CSB Energy Technology Co.,Ltd. (Vietnam)
4Street, Nhon Trach 3IP, Second phase, Long Tho Commune,Nhon Trach District, Dong Nai Province, Viet Nam

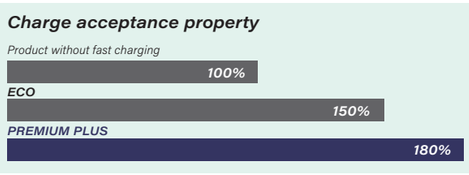
Our mission is to empower sustainable societies through stored energy, together.

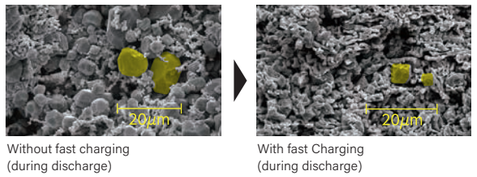
Automotive Batteries

Tuflong 3K BATTERY

Fast Charging Capability

- High charge acceptance.
- Fast charging capability means reaching maximum capacity quickly.
- Less vehicle alternator usage means improved fuel economy.





Without fast charging (during discharge)

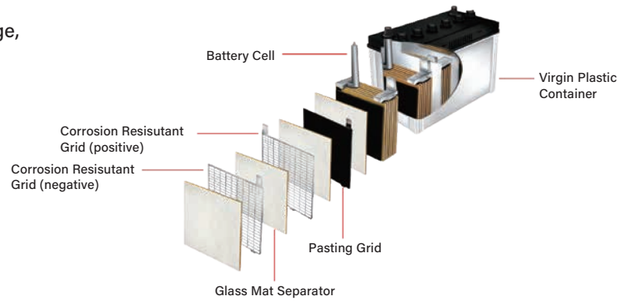
With fast Charging (during discharge)

Low Maintenance + Long Lifespan

With long lifespan combined with high power discharge, our automotive batteries are trusted across the world for full starting power for a wide range of vehicles.

Features and Benefits

- Full-frame and thicker grids for heavy duty usage.
- Glass mat separator-less risk of short circuit and high vibration resistance.
- Strong plastic container and lid.
- Approved at major OEMs worldwide.



Features

Made in Japan

Tuflong PREMIUM PLUS

Top performance, ultimate durability,ultra-fast charging.Unmatched.

Tuflong ECO

Short trips are worry-free! The ideal battery for charge control vehicles, combining rapid charging and high durability.

Tuflong STANDARD

A culmination of core technologies. The trusted and proven standard model.

Tuflong HG-IS PLUS

Our idling stop-compatible battery powerfully supports delivery operations with frequent ON/OFF cycles.operations with frequent ON/OFF cycles.

Tuflong HG

For all commercial vehicles. A trusted and proven long-seller.

Made in Thailand

SILVER X TREME

High performance a long battery life and perform well through out its life.

3-MAX / EFB battery

Endurance. Fast recharge. Power distribution regularly.

PREMIUM MF BATTERY

Endurance. Long lifespan. High power and economical.

HYBRID EVOLUTION

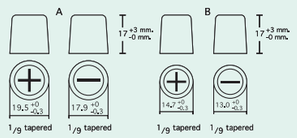
Active high power. Active power reserve. Active charger acceptance.

SPIDER

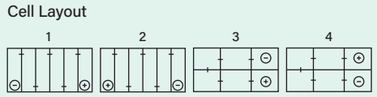
Lower risk of over heating. Greater durability and economy.

Technical information

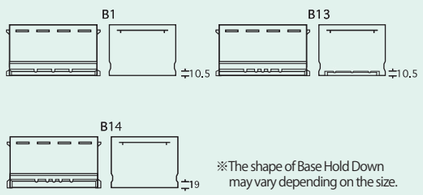
Terminals



Cell Layout



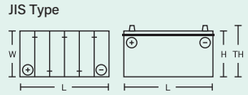
Base Hold Down



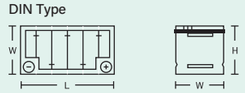
※The shape of Base Hold Down may vary depending on the size.

Measurement

JIS Type



DIN Type



JIS (Japan Industrial Standard) Type For use with Japanese-brand vehicles

Energywith Co., Ltd. — Items

Size	Series	Model	Ah※1	L (mm)	W (mm)	TH (mm)	EFB	Terminal	Layout	BHD※2	Grid Alloy(+/-)	Water-replenishable type
B19	PREMIUM PLUS	K-42/B19	27	187	127	227	O	B	1/2	-	Ca/Ca	O
B20	PREMIUM PLUS	M-55/B20	30	197	129	227	O	B	1/2	-	Ca/Ca	O
B24	PREMIUM PLUS	N-70/B24	36	238	129	227	O	B	1/2	-	Ca/Ca	O
D23	PREMIUM PLUS	Q-100/D23	52	232	173	225	O	A	1/2	-	Ca/Ca	O
D26	PREMIUM PLUS	S-115/D26	64	260	173	225	O	A	1/2	-	Ca/Ca	O
D31	PREMIUM PLUS	T-125/D31	70	306	173	225	O	A	1/2	-	Ca/Ca	O
B19	ECO	40B19	28	187	127	227	-	B	1/2	-	Ca/Ca	O
B19	ECO	44B19	32	187	127	227	-	B	1/2	-	Ca/Ca	O
B20	ECO	44B20	34	197	129	227	-	B	1/2	-	Ca/Ca	O
B24	ECO	60B24	36	238	129	227	-	B	1/2	-	Ca/Ca	O
D23	ECO	80D23	52	232	173	225	-	A	1/2	-	Ca/Ca	O
D26	ECO	90D26	55	260	173	225	-	A	1/2	-	Ca/Ca	O
B19	STANDARD	40B19	28	187	127	227	-	B	1/2	-	Ca/Ca	O
B24	STANDARD	55B24	36	238	129	227	-	B	1/2	-	Ca/Ca	O
D23	STANDARD	75D23	52	232	173	225	-	A	1/2	-	Ca/Ca	O
D26	STANDARD	85D26	55	260	173	225	-	A	1/2	-	Ca/Ca	O
D31	STANDARD	95D31	64	306	173	225	-	A	1/2	-	Ca/Ca	O
D23	HG-IS PLUS	80D23	52	232	173	225	O	A	1/2	-	Sb/Ca	O
D26	HG-IS PLUS	90D26	55	260	173	225	O	A	1/2	-	Sb/Ca	O
D31	HG-IS PLUS	105D31	64	306	173	234	O	A	1/2	-	Sb/Ca	O
E41	HG-IS PLUS	130E41	92	410	176	257	O	A	1/2	-	Sb/Ca	O
H52	HG-IS PLUS	225H52	176	521	278	270	O	A	4	-	Sb/Ca	O
D23	HG	75D23	52	232	173	225	-	A	1/2	-	Sb/Ca	O
D26	HG	85D26	55	260	173	225	-	A	1/2	-	Sb/Ca	O
D31	HG	95D31	64	306	173	225	-	A	1/2	-	Sb/Ca	O
D31	HG	115D31	70	306	173	225	-	A	1/2	-	Sb/Ca	O
E41	HG	120E41	88	410	176	234	-	A	1/2	-	Sb/Ca	O
F51	HG	130F51	96	505	182	257	-	A	4	-	Sb/Ca	O
F51	HG	160F51	112	505	182	257	-	A	4	-	Sb/Ca	O
F51	HG	170F51	120	505	182	257	-	A	4	-	Sb/Ca	O
G51	HG	155G51	120	508	222	257	-	A	4	-	Sb/Ca	O
G51	HG	165G51	136	508	222	257	-	A	4	-	Sb/Ca	O
G51	HG	195G51	140	508	222	257	-	A	4	-	Sb/Ca	O
H52	HG	210H52	160	521	278	270	-	A	4	-	Sb/Ca	O
H52	HG	245H52	176	521	278	270	-	A	4	-	Sb/Ca	O

※1 Ah：5-hour Rate Capacity
※2 BHD：Base Hold Down

How-To Read Battery Model

40 B 19
1 2 3

1. Performance Rank >>The higher the number, the better the performance.
2. Container Height and width
3. Length (cm)

Automotive Batteries

Tuflong BK BATTERY

JIS (Japan Industrial Standard) Type For use with Japanese-brand vehicles

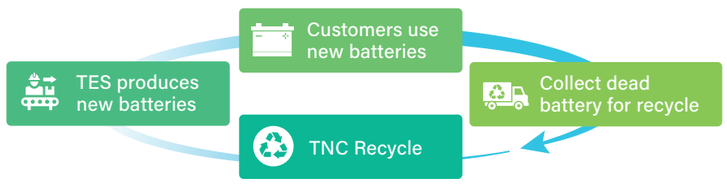
Thai Energy Storage Technology PLC. — Items

Size	Series	Model	Ah※1	L (mm)	W (mm)	TH (mm)	EFB	Terminal	Layout	BHD※2	Grid Alloy(+/-)	Water-replenishable type
B19	SVX40	44B19	40	187	127	222	-	B	1/2	-	Ca/Ca	-
B24	SVX60	46B24	50	236	129	222	-	B	1/2	-	Ca/Ca	-
D26	SVX80	80D26	70	257	172	222	-	A	1/2	-	Ca/Ca	-
D31	SVX120	95D31	80	303	173	222	-	A	1/2	B1	Ca/Ca	-
D31	SVX150	105D31	90	303	173	222	-	A	1/2	B1	Ca/Ca	-
B19	MAX60B	44B19	35	185	126	223	-	B	2	B14	Ca/Ca	O
B19	MAX60W	44B19	40	185	126	223	-	B	2	-	Ca/Ca	O
B24	MAX65	55B24	50	236	127	222	-	B	1/2	-	Ca/Ca	O
B24	MAX70	65B24	55	236	127	222	-	B	2	-	Ca/Ca	O
D23	MAX75	75D23	65	230	171	224	-	A	2	-	Ca/Ca	O
D26	MAX95	90D26	75	258	171	222	-	A	1/2	-	Ca/Ca	O
D31	MAX2000	90D31	75	303	171	222	-	A	1/2	-	Ca/Ca	O
D31	MAX2500	95D31	85	304	171	222	-	A	1/2	-	Ca/Ca	O
D31	MAX3000	135D31	100	304	171	222	-	A	1/2	-	Ca/Ca	O
D31	MAX3000B	135D31	100	304	171	222	-	A	1/2	B1	Ca/Ca	O
B24	PMF48	48B24	48	236	127	222	-	B	2	-	Ca/Ca	O
B24	PMF50	50B24	50	236	127	222	-	B	2	-	Ca/Ca	O
B24	EFB N55	80B24	55	236	127	224	O	B	2	-	Ca/Ca	O
D23	EFB Q90	90D23	70	230	171	224	O	A	2	B1	Ca/Ca	O
D31	HYBRID180	80D31	80	304	171	222	-	A	1/2	-	Sb/Ca	O
D31	HYBRID185	85D31	85	304	171	222	-	A	1/2	-	Sb/Ca	O
E41	HB-N100	110E41	100	407	174	232	-	A	4	-	Sb/Ca	O
F51	HB-N120	145F51	120	502	181	238	-	A	4	-	Sb/Ca	O
G51	HB-N150	180G51	150	505	221	255	-	A	3/4	-	Sb/Ca	O
H52	HB-N200	225H52	200	518	275	265	-	A	3/4	-	Sb/Ca	O
D31	SPIDER125	65D31	70	304	171	224	-	A	1/2	-	Sb/Sb	O
D31	NS100	75D31	75	304	171	224	-	A	1/2	-	Sb/Sb	O
D31	NS120	95D31	85	304	171	224	-	A	1/2	-	Sb/Sb	O
E41	N100	100E41	100	407	174	232	-	A	2	-	Sb/Sb	O
F51	N120A	110F51	110	502	181	238	-	A	4	-	Sb/Sb	O
F51	N120	120F51	120	502	181	238	-	A	4	-	Sb/Sb	O
G51	N150A	140G51	140	505	221	255	-	A	4	-	Sb/Sb	O
G51	N150	150G51	150	505	221	255	-	A	3/4	-	Sb/Sb	O
H52	N200	200H52	200	518	278	265	-	A	4	-	Sb/Sb	O
4DLT	4DLT	4DLT	135	506	207	203	-	A	4	-	Sb/Sb	O
H52	225H52	225H52	220	518	278	265	-	A	4	-	Sb/Sb	O

※1 Ah：5-hour Rate Capacity
※2 BHD：Base Hold Down

Battery Recycle

Thai Nonferrous Metal (TNC)



EN, DIN Type

Energywith Co., Ltd. — Items

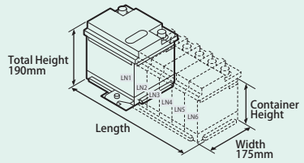
Size	Series	Model	Ah※3	L (mm)	W (mm)	TH (mm)	EFB	Terminal	Layout	BHD※2	Grid Alloy(+/-)	Water-replenishable type
LN0	EN	345LN0	38	175	175	190	-	A	1	B13	Ca/Ca	O
LN1	EN	360LN1	50	207	175	190	-	A	1	B13	Ca/Ca	O
LN2	EN	375LN2-ISS	60	242	175	190	O	A	1	B13	Ca/Ca	O
LN2	EN	375LN2	60	242	175	190	-	A	1	B13	Ca/Ca	O
LN2	EN	LN2	64	242	175	190	-	A	1	B13	Ca/Ca	-
LN3	EN	390LN3-ISS	70	278	175	190	O	A	1	B13	Ca/Ca	O
LN3	EN	390LN3	70	278	175	190	-	A	1	B13	Ca/Ca	O
LN3	EN	LN3	75	278	175	190	-	A	1	B13	Ca/Ca	-
LN4	EN	LN4	95	315	175	190	-	A	1	B13	Ca/Ca	O
LN5	EN	LN5	100	353	175	190	-	A	1	B13	Ca/Ca	-
LBN2	EN	LBN2	60	242	175	175	-	A	1	B13	Ca/Ca	-
LBN3	EN	LBN3	75	278	175	175	-	A	1	B13	Ca/Ca	-

Thai Energy Storage Technology PLC. — Items

Size	Series	Model	Ah※3	L (mm)	W (mm)	TH (mm)	EFB	Terminal	Layout	BHD※2	Grid Alloy(+/-)	Water-replenishable type
LN1	SVXLN1	LN1	44	207	175	190	-	A	1	B13	Ca/Ca	-
LN2	SVXLN2	LN2	65	242	175	190	-	A	1/2	B13	Ca/Ca	-
LN3	SVXLN3	LN3	75	278	175	190	-	A	1/2	B13	Ca/Ca	-
LN5	SVXLN5	LN5	100	353	175	190	-	A	1	B13	Ca/Ca	-
LN3	MAXLN3	DIN75	75	278	175	190	-	A	1	B13	Ca/Ca	O
LBN3	MAXLBN3	57113	71	278	175	175	-	A	1	B13	Ca/Ca	O
LN4	MAXLN4	58590	85	315	175	190	-	A	1	B13	Ca/Ca	O
LN3	EFBLN3	DIN75	75	278	175	190	O	A	1	B13	Ca/Ca	O
LN4	EFBLN4	DIN86	86	315	175	190	O	A	1	B13	Ca/Ca	O
DIN B	67018	67018	180	512	223	193	-	A	3/4	-	Sb/Sb	O

※2 BHD：Base Hold Down
※3 Ah：20-hour Rate Capacity

How-To Read Battery Model



LN1
① Size

Our Manufacturing Footprints

Energywith Co., Ltd.
(Japan, Saitama)

Thai Energy Storage Technology PLC.
(Thailand, Bangpoo)

Thai Energy Storage Technology PLC.
(Thailand, Gateway)

For more information

Catalog (Energywith) ▶
Digital Catalog Link

Catalog (Thai Energy Storage) ▶
Digital Catalog Link

Stationary / E-mobility Batteries

Feature Mapping Chart: Main Usage

Energywith CSB TES

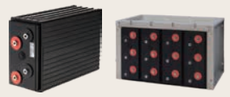
Power

High-Rate UPS

HF | XPL/XPL-FT | XHT | UPS | HR | UP-R | XHRL | HRL

* Chart illustration meant to show product features.
* Some products are slightly moved on the map to prevent them from overlapping.
* The assumptions for calculating product lifetime vary among each group company.

Renewable Energy



RE | Tuflong LL

General Purpose

HP | HSE | MSE | LHM | GP | GPL | XTV

Telecommunications

TPL | MSV | MSJ (Energywith) | MSJ (CSB) | MU (Energywith) | MU (CSB)

Energy

E-mobility

HC | EVH | EVX | Electric Golf Cart Battery

A Single Stop Solution

Energywith group offers an integrated service that holistically covers everything in the product life-cycle from purchase of batteries (Hearing to manufacturing), installation, maintenance, and recycling.

Energywith CSB

High-Rate UPS

UPS | Emergency lighting | Telecom equipment | Firefighting equipment | Medical equipment

Model	Voltage (V)	Capacity	Feature	Main Applications	Certification / UL
HF	12	17/28/44(Ah)*1	•High-rate battery. •3CA discharge time of 9-10 minutes. •5 years trickle expected life. (25°C, 0.25CA) •Flame-retardant resin (UL94V-0). •Low maintenance.		UL1989 (MH15705)
UP-R	12/24	27/50/75(Ah)*2	•Excellent high-current discharge characteristics. •Compact design. •Easy installation and inspection. •Supports large capacities through parallel operation. •Low maintenance.		Storage battery equipment certified product
HR	12	18/21/24/ 27/34/51/ 90/120(W)*3	•High-efficiency discharge battery. •Up to 5 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)
HRL	6/12	10/25/34/80/110/ 150/200/280/ 330/390/540 (W)*3	•High-efficiency discharge battery. •Up to 10 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)
XHRL	12	170/250/360/410/ 475/500/620/ 650(W)*3	•Ultra-high discharge rate and long-life battery. •Up to 10 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)
XPL/ XPL-FT	12	2,000/2,700/ 4,700/5,700/ 6,700/7,000/ 8,000/9,000(W)*4	•Front terminal access and space saving design. •Ultra-high discharge rate and long-life battery. •Up to 10 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)
UPS	12	240/360/460/ 580(W)*4	•Optimal high-rate discharge performance. •Up to 5 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)
XHT	12	7,000/8,000/ 9,000(W)*4	•Lower cooling costs. •Less power needed to operate cooling. •Less frequent battery replacements. Reduce carbon emissions.		IEC 60896-21/22:2004 UL1989 (MH14533) UL1973 (MH66728)

*1: 20hr-rate to 1.75V per cell@25°C
*2: 10min-rate to 1.60V per cell @25°C
*3: 15min-rate to 1.67V per cell @25°C
*4: 5min-rate to 9.6V per pcs@25°C

Stationary / E-mobility Batteries

Energywith CSB

Telecommunications

UPS Emergency lighting Telecom equipment Firefighting equipment Medical equipment

Model	Voltage (V)	Capacity	Feature	Main Applications	Certification / UL
MSJ	2/6/12	50/100/150/200/300 500/1,000/1,500 2,000/3,000(Ah)*5	•Longer life. •Low maintenance. •Can be also used as General Purpose.		Storage battery equipment certified product
MU	2	1,000/ 1,500(Ah)*5	•Adopts a unit structure. •Achieves longer life. •Easy inspection. •Low maintenance.		UL1989 (MH15705)
MSJ	2	150/200/260/300/ 400/500/650/800/ 1,000(Ah)*5	•Extremely long design life of up to 20 years for standby use. •Can be also used as General Purpose.		IEC 61056-1/2:2012 UL1989 (MH14533)
MSV	2	200/300/400/ 500/650/800/ 1,000(Ah)*5	•Extremely long design life of up to 15 years for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533)
MU	2	1,000/ 1,500(Ah)*5	•Extremely long design life of up to 20 years for standby use. •Low maintenance.		IEC 61056-1/2:2012 UL1989 (MH14533)
TPL	12	100/160/180/ 200(Ah)*5	•Front terminal access and space saving design. •Up to 12 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)

*5: 10hr-rate to 1.8V per cell@25°C

General Purpose

Model	Voltage (V)	Capacity	Feature	Main Applications	Certification / UL
MSE	2/6/12	50/100/150/200/300 500/1,000/1,500 2,000/3,000(Ah)*5	•Extensive product lineup and parallel operation support. •Low maintenance.		Storage battery equipment certified product
HSE	6/12	30/40/50/60 80/100(Ah)*5	•Extensive product lineup and parallel operation support. •Low maintenance.		Storage battery equipment certified product
HP	12	15/24/38/65(Ah)*1	•Suitable for both standby and cyclic use. •Low maintenance.		Storage battery Equipment certified product(M) UL certified product
LHM	12	15/24/38/65(Ah)*1	•Expected life of 13 years. •Suitable for high reliability. •Flame-retardant resin. •Low maintenance.		Storage battery Equipment certified product(M-S) UL1989 (MH15705)
XTV	12	5.5/7.2/8.5/12/ 20/55/80/100/ 110(Ah)*1	•Designed for use in extreme temperature environments (-20°C to 50°C). •Up to 12 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533)
GP	6/12	4.5/7.2/12/17/20/ 26/34/40/65/ 100(Ah)*1	•General purpose use. •Up to 5 years design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)
GPL	12	7.2/12/26/40/52/ 65/75/80/88/ 100(Ah)*1	•General purpose use. •Extended 10-year design life for standby use.		IEC 61056-1/2:2012 UL1989 (MH14533) UL1973 (MH66728)

*1: 20hr-rate to 1.75V per cell@25°C
*5: 10hr-rate to 1.8V per cell@25°C

Energywith CSB TES

Renewable Energy

About Renewable Energy System please see p17.

Model	Voltage (V)	Capacity	Feature	Main Applications	Certification / UL
Tuflong LL	8/12	50/400/ 1,000/ 1,500(Ah)*6	•Compatible with renewable energy applications •Long life / High cycle. •High input/output characteristics •Abnormality detection possible through remote monitoring. •Recyclable •No watering/specific gravity measurement required.	•Renewable Systems •Storage Power Stations •Self-consumption •VPP (Virtual Power Plant) •Microgrids / Smart Grids	UL1989 (MH15705)
RE	8/12	1,200/ 1,700(Ah)*7	•High cycle •For renewable energy (PSoC) applications. •More than 2700 cycles at 70% discharge	•Photovoltaic, wind, peak shaving and frequency regulation	IEC 61056-1/2:2012 UL1989 (MH14533)

*6: 10hr-rate
*7: 100hr-rate to 1.80V per cell@25°C

E-mobility

Model	Voltage (V)	Capacity	Feature	Main Applications	Certification / UL
HC	12	24/38(Ah)*1	•Cyclic use •Expected life is approximately 400 cycles. (25°C, 0.25CA ,100% discharge) •Low maintenance	•Electric wheelchairs •AGV •Solar systems •Power tools	
EVH	12	15/24/39(Ah)*1	•Achieves a long life of over 400 cycles at 100% discharge, extending operating time.	•Electric vehicles •Golf carts •Portable machine •Power tools	IEC 61056-1/2:2012 UL1989 (MH14533)
EVX	12	7.2/12/17/20/ 26/30/34/40/52/ 65/75(Ah)*1	•Achieves a long life of over 400 cycles at 100% discharge, extending operating time.	•Electric vehicles •Golf carts •Portable machine •Power tools	IEC 61056-1/2:2012 UL1989 (MH14533)
Electric Golf Cart Battery	6/8/12	160/170/ 225(Ah)*8	•Incessant high rate energy •Deep discharge rate (80%) •High vibration resistance •Easy to Re-Charge •Long life cycle	•Golf carts	

*1: 20hr-rate to 1.75V per cell@25°C
*8: 20hr-rate

Our Manufacturing Footprints

Energywith Co., Ltd. (Japan, Nabari)

CSB Energy Technology Co., Ltd. (Taiwan)

CSB Energy Technology Co.,Ltd. (Vietnam)

For more information

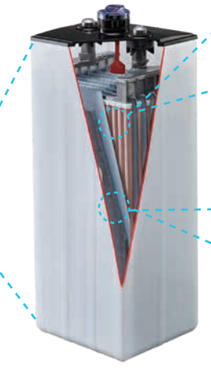
Catalog (Energywith) ▶ https://www.energy-with.com/sb-catalog/

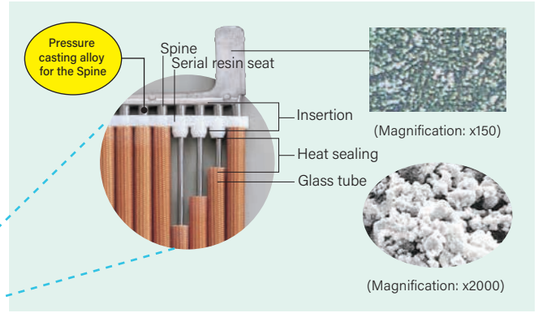
Catalog (CSB) ▶ Digital Catalog Link

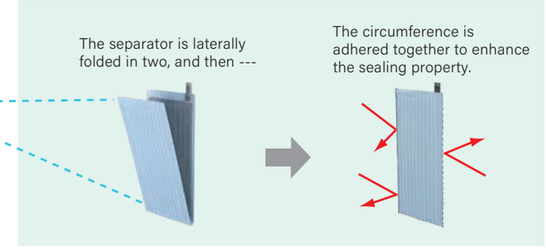
Traction Batteries [For Electric Forklift] LIFTTOP

Long Life

1. **Active Material Improvement**
   10% increase in active material means improvements in discharge capacity and low temperature performance.
2. **Glass Fiber Adoption**
   Adopting a pressure casting for the positive grid to reduce corrosion of the positive grid.
3. **Envelope-type Separator**
   Using envelope-type separator construction means risk reduction of
4. **Pressure Casting**
   Adopting a pressure casting for the positive grid.



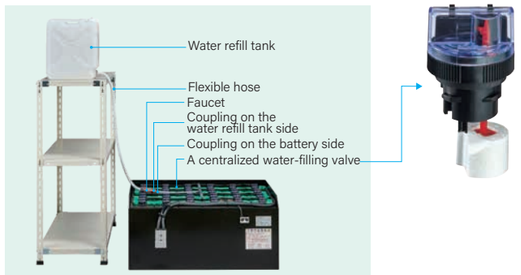




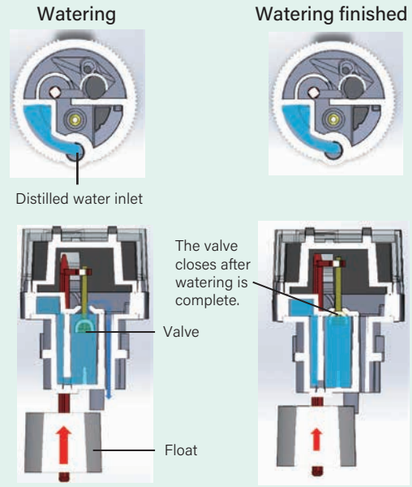
Water Filling System

A centralized water-filling valve replenishes multiple liquid taps connected by pipes at once and automatically stops when the liquid reaches the proper level.

- **Water sealing structure for safety.**
  A water sealing portion is provided for preventing entry of gas produced during charging into the water refilling hose in order to eliminate the hazard of induced explosion.
- **Automatic water stopping structure.**
  The water shutoff valve rises when water reaches the appropriate level, and stops water refilling automatically.
- **Significantly reduce rehydration time.**
- **Opening/closing the cap is unnecessary during water refilling operation.**
  The user only needs to snap-connect the couplings of the hoses on the tank and batterysides and open the faucet. Water is fed into all cells.
- **Liquid levels easily visible, making maintenance much simpler.**
  The liquid level is identifiable at a glance, thanks to the large level display. In addition, the large hole for measuring the specific gravity enables quick measurement of the specific gravity.



Operating principle of a centralized water-filling valve



Distilled water is replenished into the battery, and as the electrolyte level rises, the valve ascends with the float.

When the float reaches its upper limit, it presses the valve closed by the water pressure in the piping, there by stopping the water flow.

Single Battery cell Specification Table

※Only select major models are listed. Please see the digital catalog for a full list.

JIS (Japan Industrial Standard) Type

Part Number	Rated Capacity [5HR]	L (mm)	W (mm)	BH (mm)	TH (mm)	Factory
VSDX330M/VTDX330M	330	144	158	395	427	Japan/Thailand
VSDX400M/VTDX400M	400	144	158	395	427	Japan/Thailand
VSDX485MH/VTDX485MH	485	144	158	410	442	Japan/Thailand
VSDX450M/VTDX450M	450	161	158	395	427	Japan/Thailand
VSDX545MH/VTDX545MH	545	161	158	410	442	Japan/Thailand
VSDX565MH/VTDX565MH	565	177	158	410	442	Japan/Thailand
VSDX600MH/VTDX600MH	600	177	158	410	442	Japan/Thailand
*VSDX700H/VTDX700H	700	206	158	410	442	Japan/Thailand
VSFL201M/VTFL201M	201	58	158	490	522	Japan/Thailand
VSFL280/VTFL280	280	90	158	490	522	Japan/Thailand
VSFL320/VTFL320	320	90	158	490	522	Japan/Thailand
*VSFL858/VTFL858	858	225	158	490	522	Japan/Thailand
VSIL4/VTIL4	312	90	158	520	552	Japan/Thailand
VSIL370/VTIL370	370	90	158	520	552	Japan/Thailand
VSIL435/VTIL435	435	109	158	520	552	Japan/Thailand
VSI470/VTI470	470	109	158	520	552	Japan/Thailand
VSI565/VTI565	565	128	158	520	552	Japan/Thailand
*VSI1080/VTI1080	1080	24	158	520	552	Japan/Thailand

DIN (Deutsche Industrie Norm) Type

Part Number	Rated Capacitiy [5HR]	L (mm)	W (mm)	BH (mm)	TH (mm)	Factory
3PZE345	345	65	198	545	575	Thailand
3PZH465	465	65	198	720	750	Thailand
4PZE460	460	83	198	545	575	Thailand
4PZG560	560	83	198	685	715	Thailand
4PZH620	620	83	198	720	750	Thailand
5PZE575	575	101	198	545	575	Thailand
5PZG700	700	101	198	685	715	Thailand
5PZH775	775	101	198	720	750	Thailand
6PZH930	930	119	198	720	750	Thailand

※Marking of "*" indicates a double pole.
※Some of the designs and specifications are subject to change without prior notice.
※The normal voltage of single battery is 2V.

For more information

Catalog (Energywith) ▶ Digital Catalog Link

Catalog (Thai Energy Storage) ▶ Digital Catalog Link

How-To Read Battery Part Number

V S DX 400 M
1 2 3 4 5

1. V : Electric vehicle.
2. S/T : Clad type.
3. DX : Electrode plate type (B, C, DH, DX, FL, L and I).
4. 400 : Rated capacity (5hr) or the number of positive plates.
5. M : Height or width symbol of the battery container.

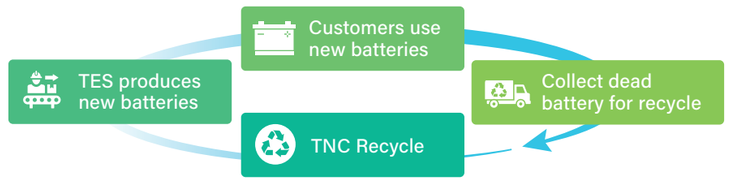
Our Manufacturing Footprints

Energywith Co., Ltd. (Japan, Nabari)

Thai Energy Storage Technology PLC. (Thailand, Bangpoo)

Recycle

Thai Nonferrous Metal (TNC)



Advanced New Products

Lithium Iron Phosphate Technology

PowerBox

Safe and Reliable

- 512Vdc Nominal Voltage
- Pack-level protection: short-circuit & fire safety in each module
- Level-3 BMS with real-time system monitoring
- UL9540A, UL1642, UN38.3 Listed

High Power Density and Efficiency

- Up to 320kW Power Per Rack
- 5-Min at 480Vdc Discharge
- Integrated battery monitoring intelligence

Ease of Installation

- Modular, space-saving design for easy installation & maintenance
- 7" HMI display standard
- Ideal for data centers, hospitals, rail, C&I, and government UPS systems

CSB PowerBox Li-Ion System
CSB PB-300
Up to 320 kW Power Per Rack (480Vdc)
Backup UPS & Demand Response
Lithium Iron Phosphate Chemistry

System Integrations

Battery Monitoring System

Optimal operation is key to a battery's long-term reliability and health. By using a battery monitoring system (BMS), Energywith integrated intelligence plaforms provide critical data to support battery longevity.

Operational Performance Visualization

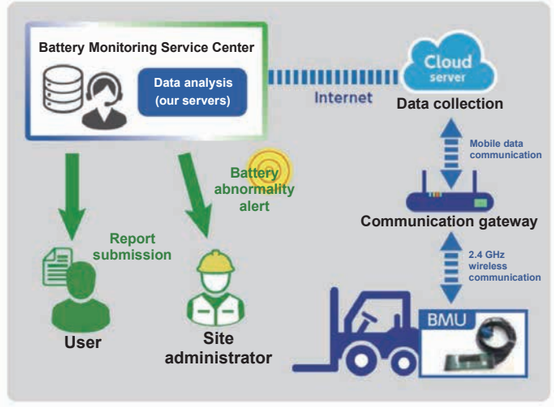
- Proactive anomaly alerts such as temperature changes or low water levels.
- Preventative data shown can provide insight into potential future issues.

Improving Battery Operation

- Visualizing the actual operating status of the forklift from measurement data of battery.
- Delivering data to users as recurring report.

Maximize Usable Battery Life

- Visualized operations for optimal use such as charging and battery hydration.
- Providing suggestions for maximizing usable battery life.



Renewable battery system

Providing optimal operation for renewable energy through high-cycle, long-life Tuflong LL battery and Energywith' s unique technology.

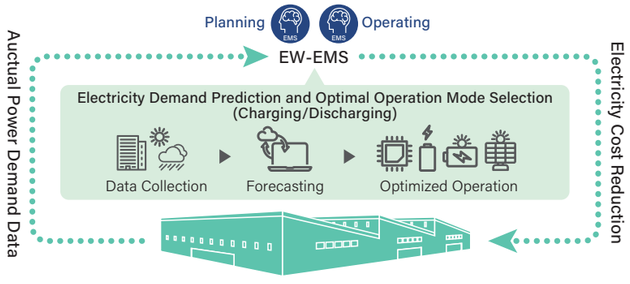
Planning- EMS

- Analyzes historical power usage and weather forecasts.
- Develops optimal future charge/discharge plans for optimal operation.

Operating-EMS

- Responds to deviations between the plan and current conditions.
- Ensures optimal charge/discharge through dynamic adjustment.

※EMS：Energy Management System



For more information

Web page (Battery Monitoring System) ▶ https://www.energy-with.com/products/forklift/

Catalog (Renewable Battery System) ▶ https://www.energy-with.com/sb-catalog/

Other Products

Power Supply System

Power supply system are emergency backup operations that protect critical infrastructure from unexpected power outages or frequency imbalances.

DC Power Supply Unit
(For Power Facilities)

Uninterruptible Power Supply (UPS)
(Made-to-order products)

Lead-acid battery model

DC Power Supply Unit
(For Power Facilities)

Lithium-Ion battery model

Uninterruptible Power Supply (UPS)

General-purpose / compact

UPS
(with Monitoring Unit)

Battery Monitoring System

Golf Carts

ESSJ developed the first electric golf cart in Japan. This pioneering technology has now evolved into the latest electromagnetic induction passenger golf cart. This technology is now used in various golf locations in Japan.

NEW

CARRYECO

Powered by a lithium-ion battery

Light weight | Long lifespan | Powerful driving performance

An optional air conditioner can be installed
to support comfortable play.

Foursome

Electric Golf Cart
Easy operation and nimble driving in manual mode.

FRONT CART CARRY

Electromagnetic-Guided Bag Carrier Cart
Automated golf bag transportation from the entrance to the caddie master's area.

New Technologies

Ni-Zn Battery

Ni-Zn batteries are more powerful than lead-acid, safer than lithium-ion, and eco-friendly.

POINT

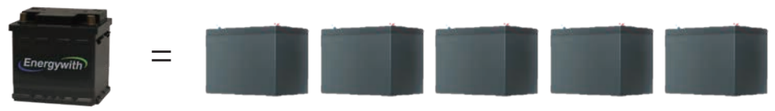
- High safety
- Environmentally friendly
- Recycling
- High energy density

Safety
Non-flammable

Application

Gasoline vehicles | EV | Trucks | AGV | Forklifts | Stationary batteries

One Ni-Zn battery has the power density of five lead-acid batteries.



Ni-Zn battery = lead-acid batteries

For more information

Catalog (Power Supply System) ▶ https://www.energy-with.com/sb-catalog/

Catalog (Golfcart) ▶ Digital Catalog Link