New!

Battery Status Communication Information (BMU Data) Update. Additional data has been added to the BMU data, including cumulative charge/discharge cycles and product number (P/N).

This update applies to products shipped on or after June 15, 2025. For products shipped before this date, the new data can be accessed by updating the firmware.

(1/3) Specification Sheet

Li-Ion Battery Packs / LV Series

Application : AMR Robot, Motorized, Factory Automation, Industrial

7S (25V) / 14S (50V) LG Energy Solution 21700 Cylindrical Cell for Electric Vehicles / NCM Series

< Industrial / Indoor / Stationary >

Model : LV-25V□□AH Series
LV-50V□□AH Series

1. User manuals (precautions) and communication protocols are separate documents. Refer to "(2/3) User Manual_ LV Li-ion Battery" / "(3/3) Communication Protocol_ LV and LM Li-ion Battery".
2. use: indoor, factory use, not for outdoor forklifts, golf cars, etc.

< Product photos >

대표 이미지 : DH□□□

CH□□□ / CHCOM□□□
140(W)×99(H)×267~467(L)

대표 이미지 : DV□□□

CV□□□ / CVCOM□□□
96(W)×143(H)×267~467(L)

대표 이미지 : VW2COM

VW2 / VW2COM
290(W)×88(H)×427/467(L)

대표 이미지 : VW3COM

VW3 / VW3COM
421(W)×88(H)×427/467(L)

대표 이미지 : VX2A/Handle1

VX2A
171(W)×117(H)×427(L)
핸들 포함시 H = 140

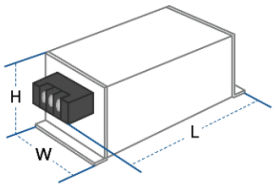
대표 이미지 : VX2COM

VX2 / VX2COM
171(W)×138(H)×427/467(L)

대표 이미지 : VX3COM

VX3 / VX3COM
250(W)×138(H)×427/467(L)

치수 확인시 참고



단위 : [mm]
"L"은 단자대 끝에서부터
브라켓 끝까지의 길이입니다.

◇ New products ship with a 30% charge. to charge and use.

◇ Documents required for export= MSDS (UN3481 , Class9) English/Chinese version and UN38.3 certificate --> Please request from us.
◇ Export HS Code : 8507.60.9000 / Classification : Lithium-ion Storage Batteries/Other

Revision History

■ July 10, 2025: Previously, there was an error in the battery weight. We have corrected the weight data for all models based on actual measurements.

■ June 15, 2025: We've added four new battery status monitoring data items generated by the Battery Monitoring Unit (BMU):

Accumulated charge/discharge cycles

Part Number (P/N)

Number of cells in series

Firmware version

This update applies to all types of TABOS batteries with "COM" in their model name that are shipped starting from June 15, 2025. For all TABOS batteries shipped before this date, these data items can be accessed by updating the BMU firmware to the latest version, which is provided by TABOS. This firmware can be downloaded from the TABOS website and installed directly by the battery user.

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1. Product lineup and individual specifications

◇ Charging= 0.7C continuous charging, but charging current may be reduced by the current rating limitations of the input and output terminals on the battery pack.

(Example 1) For a 100 AH battery.

The calculated maximum charge current is 100 x 0.7C charge = 70A, which means the calculated maximum charge current is 70A.

The terminal block on the battery pack is rated at 100A, and the maximum charge current is limited to 90A or less to allow for a safety margin.

Since the 70A calculated above is less than the terminal block allowance of 90A --> the concluded maximum charging current is 70A.

(Example 2) For a 150 AH battery.

The calculated maximum charge current is 150 x 0.7C charge = 105A, which means the calculated maximum charge current is 105A.

The terminal block on the battery pack is rated at 100A, and the maximum charge current is limited to 90A or less to allow for a safety margin.

Since the 105A calculated above is greater than the terminal block allowance of 90A --> Consequently, the maximum allowable charging current is limited to 90A.

◇ Discharge= 2C continuous discharge is possible, but the discharge current may be reduced by the current rating limits of the input and output terminals on the battery pack.

(Example 1) For a 40 AH battery.

The calculated maximum discharge current is 40 x 2C discharge = 80A, which means the calculated maximum discharge current is 80A.

The terminal block on the battery pack is rated at 100A, and the maximum discharge current is limited to 90A or less to allow for a safety margin.

Since the 80A calculated above is less than the terminal block allowance of 90A --> the concluded maximum discharge current is 80A.

(Example 2) For a 100 AH battery.

The maximum calculated charge current is 100 x 2C discharge = 200A, which means the maximum calculated discharge current is 200A.

The terminal block on the battery pack is rated at 100A, and the maximum discharge current is limited to 90A or less to allow for a safety margin.

Since the 200A calculated above is greater than the terminal block allowance of 90A --> Consequently, the maximum allowable discharge current is limited to 90A.

◇ Model Name Basic Structure : LV- V□□□□□ AH - (case number) / (option code)

* Models with "COM" in the model number have a battery status communication port. COM = communication
* Of the below certifications, UN38.3 certification is mandatory for international transportation.
* Case drawings for each model are uploaded on the TABOS homepage (pdf, dwg, 3D (stp, igs))
* The Wh value for each model is the same as the value recorded in the UN38.3 test report.
* Application in vertical transfer systems: Even if a hydraulic motor is used, the motor must be a speed regulated type such as BLDC and servo motor. Traditionally used hydraulic motor packs with non-speed regulated motors cannot be used. This is because when the hydraulic motor is started directly, the starting current is excessive and the battery is cut off with excessive current.
* Even if the maximum allowable discharge current value for each model is discharged for more than 30 minutes, the battery can be discharged continuously without time limit if the internal temperature of the battery remains low due to low ambient temperature.

Designed and produced by TABOS / Made in Korea / Applied lithium-ion battery cell (cylindrical 21700) for LG electric vehicles, cycle: Standard specifications below, customized customization by negotiation may be possible.

索引 Number	Product name (order number) COM = Status Communication Unit Mounting options	Authentication	Applied BLDC Motor Power (W) Soft_Start (ΔT ≥ 1.5 seconds)		Battery Energy (Wh)	Discharge current		Charging Current / Charger		Weight, size		Remarks
			(AGV Travel Motor) Max Power For intermittent occurrences	(Vertical Feed, Hydraulic Motor) Max Power *Caution: Hydraulic Motor No direct startup		Instantaneous Max Discharge Current(A)	Allowable discharge Max Current(A) (30 minutes)	Allowed Charges Maximum Current(A) (C_Rate)	Recommended maximum capacity for Tabos chargers (low current --> longer life)	Weight (Kg)	Size (mm) (length x width x height) (l x w x h)	
Below: 25V battery / nominal voltage 25.8V (recommended usage voltage range: min. 24V ~ max. 29V) < Over discharge end voltage (EODV) 21V or less, over charge end voltage (EOCV) 29.4V or more >												
25V-1	lv-25v25ah-dv215	UN38.3 CE (EMC) CE (EN62619)	1440	860	630	75 (0.1 sec.)	36	18	TC-700W-□	4.0	267 x 96 x 143	D:Aluminum case V: Vertical mounting
25V-2	lv-25v25ah-dv255com		1440	860	630	75 (0.1 sec.)	36	18	TC-700W-□	4.3	307x 96 x 143	D:Aluminum case V: Vertical mounting
25V-3	lv-25v25ah-dh215		1440	860	630	75 (0.1 sec.)	36	18	TC-700W-□	4.0	267 x 140 x 99	D:Aluminum case H: Horizontal mounting
25V-4	lv-25v25ah-dh255com		1440	860	630	75 (0.1 sec.)	36	18	TC-700W-□	4.3	307 x 140 x 99	D:Aluminum case H: Horizontal mounting
25V-5	lv-25v50ah-dv375	UN38.3 CE (EMC) CE (EN62619)	2800	1680	1,260	150 (0.1 sec.)	70	35	TC-700W-□ TC-1500W-□	7.2	427 x 96 x 143	D:Aluminum case V: Vertical mounting
25V-6	lv-25v50ah-dv415com		2800	1680	1,260	150 (0.1 sec.)	70	35	TC-700W-□ TC-1500W-□	7.5	467 x 96 x 143	D:Aluminum case V: Vertical mounting
25V-7	lv-25v50ah-dh375		2800	1680	1,260	150 (0.1 sec.)	70	35	TC-700W-□ TC-1500W-□	7.2	427 x 140 x 99	D:Aluminum case H: Horizontal mounting
25V-8	lv-25v50ah-dh415com		2800	1680	1,260	150 (0.1 sec.)	70	35	TC-700W-□ TC-1500W-□	7.5	467 x 140 x 99	D:Aluminum case H: Horizontal mounting

索引 Number	Product name (order number) COM = Status Communication Unit Mounting options	Authentication	Applied BLDC Motor Power (W) Soft_Start (ΔT ≥ 1.5 seconds)		Battery Energy (Wh)	Discharge current		Charging Current / Charger		Weight, size		Remarks
			(AGV Travel Motor) Max Power For intermittent occurrences	(Vertical Feed, Hydraulic Motor) Max Power *Caution: Hydraulic Motor No direct startup		Instantaneous Max Discharge Current(A)	Allowable discharge Max Current(A) (30 minutes)	Allowed Charges Maximum Current(A) (C_Rate)	Recommended maximum capacity for Tabos chargers (low current --> longer life)	Weight (Kg)	Size (mm) (length x width x height) (l x w x h)	
25V-9	LV-25V80AH-VX2A	UN38.3 CE (EMC)	3600	2160	2,016	240 (0.1 sec.)	90	56	TC-1500W-□ TC-2000W-□	11.7	427 x 171 x 117	
~~25V-10~~	~~lv-25v80ah-vx2acom~~		~~3600~~	~~2160~~	~~2,016~~	~~300~~ (0.1 sec.)	~~90~~	~~56~~	TC-1500W-□ TC-2000W-□	~~12~~	~~467 x 171 x 117~~	(not currently available for production)
25V-11	LV-25V100AH-VW2	UN38.3 CE (EMC) CE (EN62619)	3600	2160	2,520	300 (0.1 sec.)	90	70	TC-1500W-□ TC-2000W-□	14.6	427 x 290 x 88	W: Wide,Slim
25V-12	lv-25v100ah-vw2com		3600	2160	2,520	300 (0.1 sec.)	90	70	TC-1500W-□ TC-2000W-□	15.0	467 x 290 x 88	W: Wide,Slim
25V-13	LV-25V100AH-VX2		3600	2160	2,520	300 (0.1 sec.)	90	70	TC-1500W-□ TC-2000W-□	13.6	427 x 171 x 138	
25V-14	lv-25v100ah-vx2com		3600	2160	2,520	300 (2 sec.)	90	70	TC-1500W-□ TC-2000W-□	14.2	467 x 171 x 138	
25V-15	LV-25V150AH-VW3	UN38.3 CE (EMC) CE (EN62619)	3600	2160	3,780	450 (0.1 sec.)	90	90	TC-3000W-□	20.7	427 x 421 x 88	W: Wide,Slim
25V-16	lv-25v150ah-vw3com		3600	2160	3,780	450 (0.1 sec.)	90	90	TC-3000W-□	21.4	467 x 421 x 88	W: Wide,Slim
25V-17	LV-25V150AH-VX3		3600	2160	3,780	450 (0.1 sec.)	90	90	TC-3000W-□	20.1	427 x 250 x 138	
25V-18	lv-25v150ah-vx3/v		3600	2160	3,780	450 (0.1 sec.)	90	90	TC-3000W-□	20.1	427 x 135 x 251	/V:Vertically mounted
25V-19	lv-25v150ah-vx3com		3600	2160	3,780	450 (0.1 sec.)	90	90	TC-3000W-□	20.4	467 x 250 x 138	HandleOptional
25V-20	lv-25v150ah-vx3com/v		3600	2160	3,780	450 (0.1 sec.)	90	90	TC-3000W-□	20.4	467 x 135 x 251	/V:Vertically mounted

索引 Number	Product name (order number) COM = Status Communication Unit Mounting options	Authentication	Applied BLDC Motor Power (W) Soft_Start (ΔT ≥ 1.5 seconds)		Battery Energy (Wh)	Discharge current		Charging Current / Charger		Weight, size		Remarks
			(AGV Travel Motor) Max Power For intermittent occurrences	(Vertical Feed, Hydraulic Motor) Max Power *Caution: Hydraulic Motor No direct startup		Instantaneous Max Discharge Current(A)	Allowable discharge Max Current(A) (30 minutes)	Allowed Charges Maximum Current(A) (C_Rate)	Recommended maximum capacity for Tabos chargers (low current --> longer life)	Weight (Kg)	Size (mm) (length x width x height) (l x w x h)	
Below: 50V battery / nominal voltage 51.7V (recommended usage voltage range: min. 48V ~ max. 58V) < Over discharge end voltage (EODV) 42V or less, over charge end voltage (EOCV) 58.8V or more >												
50V-1	lv-50v25ah-dv375	UN38.3 CE (EMC) CE (EN62619)	1600	960	1,250	75 (2 sec.)	40	18	TC-700W-□ TC-1500W-□	7.2	427 x 96 x 143	D:Aluminum case V: Vertical mounting
50V-2	lv-50v25ah-dv415com		1600	960	1,250	75 (2 sec.)	40	18	TC-700W-□ TC-1500W-□	7.5	467 x 96 x 143	D:Aluminum case V: Vertical mounting
50V-3	lv-50v25ah-dh375		1600	960	1,250	75 (2 sec.)	40	18	TC-700W-□ TC-1500W-□	7.2	427 x 140 x 99	D:Aluminum case H: Horizontal mounting
50V-4	lv-50v25ah-dh415com		1600	960	1,250	75 (2 sec.)	40	18	TC-700W-□ TC-1500W-□	7.5	467 x 140 x 99	D:Aluminum case H: Horizontal mounting
50V-5	LV-50V40AH-VX2A	Certification plans Undecided.	2400	1440	2.040	120 (2 sec.)	60	28	TC-1500W-□	11.7	427 x 171 x 117	
~~50V-6~~	~~lv-50v40ah-vx2acom~~		~~2400~~	~~1440~~	~~2.040~~	~~120~~ (2 sec.)	~~60~~	~~28~~	TC-1500W-□	~~12~~	~~427 x 171 x 117~~	(not currently available for production)
50V-7	LV-50V50AH-VW2	UN38.3 CE (EMC) CE (EN62619)	2800	1680	2,500	150 (2 sec.)	70	35	TC-1500W-□ TC-3500W-□	14.6	427 x 290 x 88	W: Wide,Slim
50V-8	lv-50v50ah-vw2com		2800	1680	2,500	150 (2 sec.)	70	35	TC-1500W-□ TC-3500W-□	15.0	467 x 290 x 88	W: Wide,Slim
50V-9	LV-50V50AH-VX2		2800	1680	2,500	150 (2 sec.)	70	35	TC-1500W-□ TC-3500W-□	13.6	427 x 171 x 138	
50V-10	lv-50v50ah-vx2com		2800	1680	2,500	150 (2 sec.)	70	35	TC-1500W-□ TC-3500W-□	14.2	467 x 171 x 138	

索引 Number	Product name (order number) COM = Status Communication Unit Mounting options	Authentication	Applied BLDC Motor Power (W) Soft_Start (ΔT ≥ 1.5 seconds)		Battery Energy (Wh)	Discharge current		Charging Current / Charger		Weight, size		Remarks
			(AGV Travel Motor) Max Power For intermittent occurrences	(Vertical Feed, Hydraulic Motor) Max Power *Caution: Hydraulic Motor No direct startup		Instantaneous Max Discharge Current(A)	Allowable discharge Max Current(A) (30 minutes)	Allowed Charges Maximum Current(A) (C_Rate)	Recommended maximum capacity for Tabos chargers (low current --> longer life)	Weight (Kg)	Size (mm) (length x width x height) (l x w x h)	
50V-11	LV-50V75AH-VW3	UN38.3 CE (EMC) CE (EN62619)	3600	2160	3,780	225 (2 sec.)	90	52	TC-3500W-□	20.7	427 x 421 x 88	W: Wide,Slim
50V-12	lv-50v75ah-vw3com		3600	2160	3,780	225 (2 sec.)	90	52	TC-3500W-□	21.4	467 x 421 x 88	W: Wide,Slim
50V-13	LV-50V75AH-VX3		3600	2160	3,780	225 (2 sec.)	90	52	TC-3500W-□	20.1	427 x 250 x 138	
50V-14	lv-50v75ah-vx3/v		3600	2160	3,780	225 (2 sec.)	90	52	TC-3500W-□	20.1	427 x 135 x 251	/V:Vertically mounted
50V-15	lv-50v75ah-vx3com		3600	2160	3,780	225 (2 sec.)	90	52	TC-3500W-□	20.4	467 x 250 x 138	
50V-16	lv-50v75ah-vx3com/v		3600	2160	3,780	225 (2 sec.)	90	52	TC-3500W-□	20.4	467 x 135 x 251	/V:Vertically mounted

2. Common specifications across all models

0) We strongly recommend upgrading safety features by installing additional optional items.

A. Necessity :

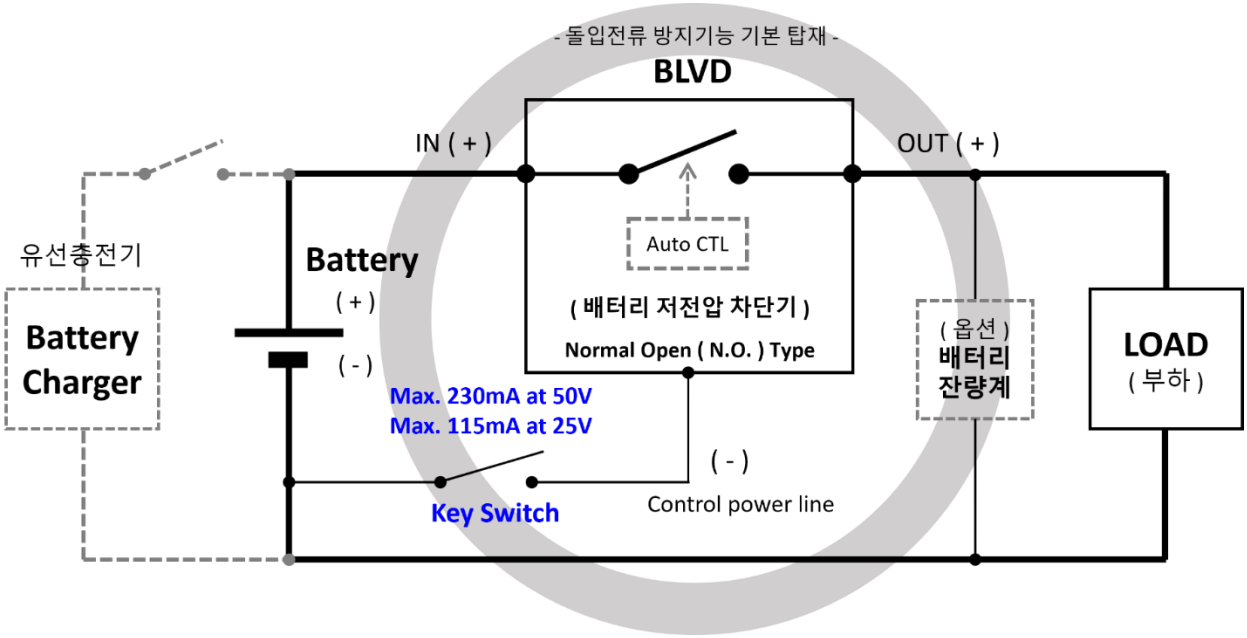
The lithium battery cells inside the battery pack have a very high risk of fire accidents due to overcharge.
However, looking at recent cases,
there have been many cases where the risk of fire accidents is high when trying to charge a battery in an over-discharge state.
So, Tabos has additionally developed a safety device that prevents over-discharge of the battery and ensures that the remaining capacity is around 5%,
and has made it available as a battery auxiliary component.

* Refer to Tabos homepage / Lithium battery accessories / Battery low voltage disconnect (BLVD)

B. Installation method

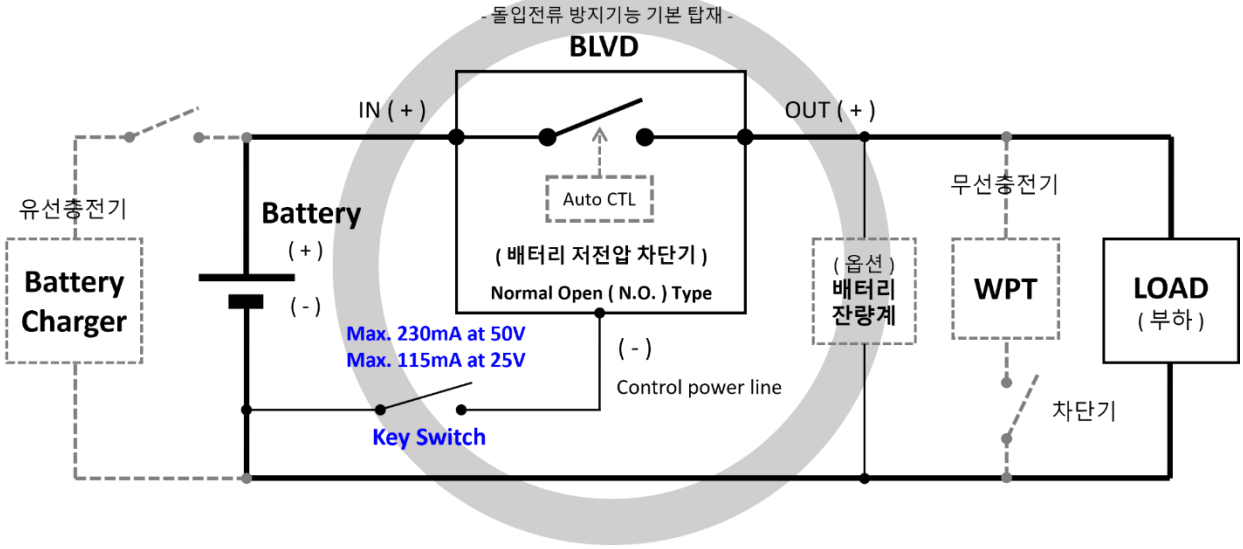
<Installation method 1>

General situation / When using BLVD as a main switch



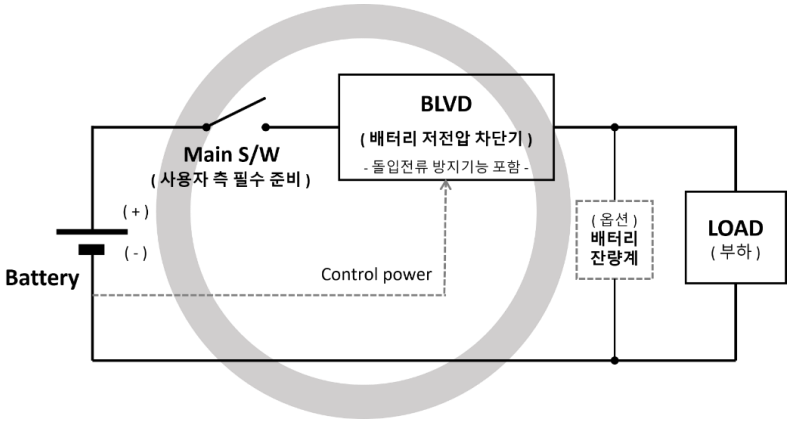
<Installation Method 2>:

General situation / When using BLVD as a main switch & when using a wireless charger

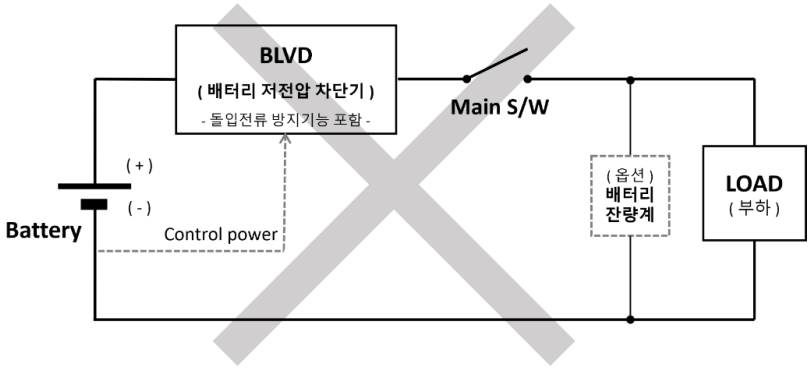


〈Installation Method 3〉:

When applying additional BLVD in a situation where the main blocking switch is used



(The right way)



(Wrong way)

*** Please refer to the BLVD specifications for other installation instructions.

1) Describe the safety and protection features

1) - 1. overcurrent protection (limit charge and discharge current) and auto return

The battery's protection circuit (BMS) limits the input and output currents to set values (refer to the model-specific specification sheet).

This feature helps keep the battery safe by preventing it from outputting excessive current.

1) - 2. Output blocking control in case of short circuit (short) : Restore normal when the short circuit is broken

In the event of a short circuit (short) between the output terminals due to mishandling, the BMS immediately disconnects the output.

When the short-circuit is cleared, it will revert back to normal and output normally.

1) - 3. Over Voltage Protection and Auto-Return

The voltage of each group of Li-ion cells is monitored by the battery's protection circuit (BMS).

When charging, if the voltage of each group of cells exceeds the prescribed voltage level, charging is stopped and resumes when the voltage returns to the prescribed level.

1)-4. Under Voltage Protection and Auto-Return

The voltage of each group of Li-ion cells is monitored by the battery's protection circuit (BMS), which stops discharging when each group of cells falls below a specified voltage level and resumes discharging when the voltage returns to the specified level.

1)-5. Over Temperature Protection and Auto-Return

It detects the temperature of the battery cell and the control circuit elements themselves and automatically shuts off charging and discharging when the temperature is above the allowable temperature. If the temperature drops below the allowable temperature after a certain period of time, it will automatically shut down and the battery will be available for use.

The cooling system (FAN) automatically kicks in when the battery temperature rises above a certain level.

1)-6. Cell Balancing monitoring function

Measure the voltage of each of the cells in series with each other in the battery pack to ensure that if any reach a voltage above the allowable range, the charge is immediately cut off to prevent overcharging.

1)-7. Battery Terminal Safety Cover

All TABOS batteries are shipped with an "L-shaped safety cover" similar to the one pictured below. (This prevents human hands from entering.)

2) List of Battery Management Systems (BMS) protection behaviors

(Note1): All Tabos batteries have a built-in BMS.

(Note2) : The following safety-related figures are subject to change without notice to improve product performance.

	Large categories	Protection operating conditions, characteristic values	Conditions for unlocking/reversing protection, or other
λ	Overvoltage protection (OVP) -------- = Overcharge protection	* 25V battery : EOCV = 29.4V or higher * 50V battery : EOCV = 58.8V or higher * EOCV = End of Charge Voltage=End of Charge Voltage	**< Overvoltage protection (OVP) release condition: >** Discharged (AND) * 25V Battery : Battery voltage≤ 29.2V * 50V Battery : Battery voltage≤ 58.4V Auto-revert when conditions are met. * If the overvoltage protection (OVP) function is triggered, it will only prevent charging, but discharging will be normal.
Charging Manage	Manage users Maximum allowable charging voltage	* 25V Battery: ~ Max. 29V * 50V Battery: ~ Max. 58V	To prevent the BMS from using OVP as a protection behavior Charge at or below the voltage shown on the left.
B	Undervoltage protection (UVP) -------- = Over-discharge protection	* 25V battery: EODV = 19.6V or less * 50V battery: EODV = 39.2V or less *EODV= End of Discharge Voltage) = Discharge Cutoff Voltage	**< Undervoltage protection (UVP) disable condition: >** is charged (AND) * 25V Battery : Battery voltage≥ 21.0V * 50V Battery : Battery voltage≤ 42.0V Auto-revert when conditions are met. * When the under voltage protection (UVP) function is activated, discharging is not allowed, but charging is normal.

	Large categories	Protection operating conditions, characteristic values	Conditions for unlocking/reversing protection, or other
Discharge Manage	Battery Before the BMS blocks output with UVP The voltage at which the load should be disconnected (or a voltage that needs to be charged immediately)	Consider using a device that automatically disconnects the load before it drops below the voltage below, or a voltage that needs to be charged immediately. * 25V Battery : Min. Does not fall below 23.5~24V Don't. * 50V Battery : Min. Does not fall below 47~48V Don't. This ensures a safe, long-lasting battery.	Before the battery BMS shuts off due to over-discharge, Battery Low Voltage Disconnect (BLVD) should be used to disconnect the load first to extend battery life and prevent safety incidents. → Sold separately as a sister product to Tabos BLVD. If the battery frequently drops below the low voltage protection voltage, the chemical composition inside the battery changes, increasing the risk of fire.
③ â -1	Overcurrent protection when charging (OCP)	The maximum charging current values for each battery model can be found in the "Product lineup and individual specifications" table. It will cut off charging if it draws more current than the maximum current for that model. * OCP = Over Current Protection	< Charge overcurrent protection (OCP) release conditions :> < Auto return when the charger is disconnected from the battery
③ â -2	Overcurrent protection during discharge (OCP)	For the maximum discharge current values for each battery model, see the "Product Lineup and Individual Specifications" table. If a current greater than the maximum current for that model is drawn, it will cut off the discharge. * OCP = Over Current Protection	< Discharge overcurrent protection (OCP) release conditions :> < Automatic return when the load circuit is disconnected from the battery. ⚠Caution; models with a TABOS BMU, i.e, Models with battery status communicator (COM type) the Enable S/W must be OFF, as the communication device is recognized as a load from the battery perspective.
④ â	Short-circuit protection (SCP)	Protects the battery and load by automatically shutting off discharge in the event of a short circuit. This is a self-recursive eFUSE method.	< Conditions for releasing short-circuit protection (SCP) :> < When the load circuit is disconnected from the battery, it automatically reverts back to normal use of the battery. ⚠Caution; models with a TABOS BMU, i.e, Models with battery status communicator (COM type) the Enable S/W must be OFF, as the communication device is recognized as a load from the battery perspective.

	Large categories	Protection operating conditions, characteristic values	Conditions for unlocking/reversing protection, or other
⑤ â	Cell balancing Surveillance features	If the voltage of each group of cells connected in series is higher or lower than the average voltage level by a certain amount, the Block charging or discharging.	Auto-revert when the blocking condition is lifted.
⑥ ⑥	Overheat protection (OTP)	(Condition 1). When the battery cell surface temperature rises above 50℃ . (Condition 2). When the FET (battery charge/discharge ON/OFF switching element) temperature rises above 80℃ . Charging and discharging are automatically shut off.	**< Conditions for disabling overtemperature protection (OTP):> >.** Overheat protection is automatically turned off when the temperature drops more than 10 degrees below the corresponding temperature in (Condition 1) and (Condition 2).
⑦ â -1	Automatic cooling system ------ General (Products without battery communication)	* Auto ON/OFF cooling fan Runs when the internal temperature of the battery is above 40 degrees, Fans stop running after a period of time when the temperature drops.	
⑦ â -2	Automatic cooling system ------ COM-type : Add 'COM' to the battery type number Products containing text (BMU-equipped products, i.e., products with a communication function for transmitting battery status)	* FAN operation (ON) condition (Condition 1). When the temperature is above 40 degrees (Condition 2). When the charge/discharge current is 10A or higher If either of the above 2 conditions occur, the fan is activated (ON). ⚠Caution: The communication device must be powered on for the FAN to run.	* Conditions under which the FAN is turned off again (OFF) (Condition A). When the temperature is 35 degrees or lower. (Condition B). When the charging current is 5A or less. (Condition C). When the battery voltage drops 0.2V in an overvoltage condition. The FAN stops (OFF) when all three of the above conditions are met.
⑧	BMU (Battery Monitoring Unit)	* Standby current = approx. 50mA / 50V battery approx. 100mA / 25V battery	**When the battery is not in use, the BMU power switch must be turned OFF to reduce the standby power to 0.**

3) List of other common specifications / Cell→ Lifetime→ Temperature→ Transportation→ Storage→Disposal→Connect→Load→Charge→BMU

Large categories	Attribute values	内容
<0> Cell & Producer information	Cylindrical 21700, NCM (Nickel, Cobalt, Manganese) series	This product uses the LG Li-ion battery cells are used, Made in Korea by Tabos, where everything including the BMS is designed and built by Tabos.
<1> Click Nominal Wh, Ah Definition of	(Definition)	The charge capacity (Ah) and nominal energy (Wh) listed on this product are idealized capacities when charged at full charge voltage and 0.1C while maintaining a cell temperature of 20℃ . Charging faster or at higher temperatures will reduce the charging energy.
<2> Life expectancy	LV Series : 5,000 Cycles LM Series : 4,000 Cycles (estimate, usage dependent)	Life expectancy condition : 1) When used at a battery cell temperature of approximately 20°C. 2) Charge and discharge must be at 0.2C Rate. 3) When charging and discharging between 30% remaining ↔ 90% remaining, Life expectancy depends on usage conditions. The closer the battery temperature is to room temperature, and the smaller the charge and discharge currents are relative to the battery capacity, the longer the lifespan. 4) Avoid discharging it completely. The closer the level is to zero, the more rapidly the life will decrease.
<3-1> Temperature conditions / charge,discharge	Charging: 0°C to 45°C (Charging in sub-zero temperatures is not allowed) At discharge : -20°C to 60°C	* Cycle : The temperature here is not the ambient temperature, but the temperature of the lithium cell itself. The temperature. * Glass closer to room temperature, shorter life at lower temperatures and higher temperatures.
<3-2> Temperature conditions / Transportation and storage (outside temperature,humidity)	1) Transportation or storage conditions * Condition: State of Charge (SOC) 30% and below / Humidity 50% and below For 1 month : -20 to 55℃ 3 months : -20 to 45℃ More than 1 year : -20 to 25℃ * Note : Transportation is only possible with SOC 30% or less. / International transportation specifications Storage above 30% SOC is not a problem. If stored at 80% charge, the Can be stored for a long time. 2) Storage of products in a fully charged state (almost 100% SOC) / humidity below 50%. For 1 month : -20 to 45℃ 6 months or more: -20 to 25℃	
<3-3> Temperature conditions	Do not allow charging in subzero temperatures	
	When charging from 0 to 20℃ degrees	(Ideal Charge Temperature) The charge temperature that will give you the longest life.

Large categories	Attribute values	내용
/charge cell Changes in life expectancy with temperature	30 When charging at℃ degrees	There is some lifetime reduction.
	40 When charging at ℃	This is considered high temperature and will reduce battery life.
	50 When charging at ℃	Increases the risk of battery damage.
<3-4> Temperature conditions /Cell Temperature By bin Available energy (Wh) Change	minus (-) 20℃ for discharging from	At 0.2C discharge, the energy (Wh) is around 60%.
	minus (-) 10℃ when discharging from	At 0.2C discharge, the energy (Wh) is about 70%.
	0 When discharging from℃	At 0.2C discharge, the energy (Wh) is around 80%.
	Video 10 At℃ , you can watch the discharge	At 0.2C discharge, the energy (Wh) is around 90%.
	Video 20 At℃ , when discharging	At 0.2C discharge, the energy (Wh) is on the order of 1000%.
	Video 40 At℃ , click Discharge	0.2C At discharge, the energy (Wh) is about 95%.
	Video50 From℃ on discharge	At 0.2C discharge, the energy (Wh) is around 90%.
	When applying the above data Common things to use when calibrating and judging	*If the discharge rate is higher at the same temperature (i.e., the C rate is higher), then the More available energy (Wh) is reduced, A lower discharge rate reduces the amount of available energy less.
<4-1> Transportation methods	(Important) How to ship batteries domestically and internationally (This is a measure to prevent fire during transportation and follows international shipping regulations.) < For domestic and international transportation > Do not pack batteries with automation devices. Remove the battery from the machine (robot, etc.) on which it is mounted. ③ Check the battery voltage to make sure it is charged to 30% or less. To check for a charge below 30%, simply discharge the battery to a level that is about 1 volt below the nominal voltage. (Discharging too much is not good for battery life, so only discharge to a level that is 0 to 1 volt below nominal voltage.) Charging below 30% is very important. Do not violate this rule. This is a globally recognized rule because below 30%, no impact will cause a fire. < For international transportation > ④ As above, remove the batteries mounted on machines and robots, etc. and transport the batteries alone. Also, the batteries must be discharged to	

Large categories	Attribute values	内容
	30% or less of their charge. Send them to a company specializing in the transportation of dangerous goods (forwarder) and ship them overseas. * The dangerous goods transportation company repackages the battery as dangerous goods according to recognized standards. * Documentation: MSDS provided by TABOS. Submit the UN38.3 document to the carrier. * If you do not know the battery shipping company, please contact TABOS. * Note: International battery shipping regulations : Worldwide, Air transport : IATA DGR , Worldwide, Sea ship : IMO IMDG Code , Europe, Land transport (ADR/RID /GGVSE)	
<4-2> Storage methods	The key to long-term battery storage is to keep them from discharging. Make sure the battery is disconnected from all loads. 1) Disconnect the output terminals (Main S/W OFF, etc.) 2) Disconnecting the self load (Communication board power contact OFF for COM model products) - Keep the green light on the front of the battery OFF. 3) Store with at least 30% state of charge (SOC).	
<4-3> Disposal methods	1) Connect a load (or electronic load) to the battery to discharge it sufficiently (or completely). You can then send them to a lithium battery recycler. 2) Go ahead and add salt to the water and let it soak for at least 4 hours. This is called electrolyzed water. Electrolyzed water is the kind of water used in Korea to marinate cabbage for kimchi. Electrolyte (salt water) for battery discharge should have a concentration of 8% to 10%. → -is 8 to 10 kg of salt dissolved in 100 liters (100 kg) of water. You don't have to stick to this ratio. 3) Immersing the battery in electrolyzed water will completely discharge the remaining electrical energy in the battery. 4) Research lithium battery recycling companies and arrange for them to pick up your dead batteries.	
<5-1> Connections /Enable battery parallel connection	Batteries of the same type can be connected in parallel, i.e. (+ to+ , (-) to (-))	< Condition > However, when connected in parallel, they must be within 0.5V of each other, have the same age, and the same internal resistance. This means that it's common to link them together when they're new, and you shouldn't link used ones together.
<5-2> Connections /Use series connection between batteries	←- Never.	It is absolutely prohibited to double the voltage by connecting batteries in series. The reason is that the BMS may not operate because the voltage withstand of the protective circuit elements exceeds the allowable value, causing a fire or other hazard.
<5-3> Connections /power terminal block Screw specifications		SEMS Hex Wrench Bolt : M6-15 Tightening torque : 25 (kgf*cm)

Large categories	Attribute values	内容
<6> Connecting loads	1) Check the charge level before connecting the battery to the load: First, measure the battery voltage: if it's near the nominal voltage, it's roughly 30% charged. First, connect the charger to charge it before use. Using it with a low level will cause over-discharge, which will significantly reduce battery life and is not safe. 2) Inserting a battery low voltage disconnect (BLVD) between the load and the battery before the BMS shuts off the output due to low battery voltage will ensure that the battery is safe to use. 3) If the load has a large capacitor on the input side (inverter, DCDC converter, motor driver, etc.) Inrush currents of hundreds of amperes (A) may be drawn when the battery is connected to the load, causing the battery's BMS to shut down the battery output. In this case, reduce the inrush current or use an additional inrush current limiter.	
<7-1> How to charge /What to look for when choosing a charger	1) Use a charger with simultaneous constant voltage (CV) + constant current (CC) capability. 2) Setting of charging voltage, current in the charger : * Charger's charge voltage ≤ battery's maximum allowable charge voltage * Charger's charge current ≤ battery's maximum allowable charge current 3) We recommend using an isolated charger. *Explanation: Isolated charger refers to a method in which the primary side (AC220V power supply) and the secondary side (DC battery charging side) are combined with a transformer that converts electricity into a magnetic field and transmits it to the secondary side. This prevents the AC220V high voltage from being applied directly to the battery when the charger burns out. 4) We recommend using a charger with an output current ripple of 5% or less. *Clarification: 0% ripple is fully direct current, while 5% ripple means that it contains 5% alternating current. The closer you charge a lithium battery to direct current, the better. 5) Charge at a moderate value below the rated charging current, as charging at the lowest possible current can extend battery life.	
<7-2> How to charge / When the battery is overdischarged and battery voltage is not available	1) Use a charger that has the ability to charge the battery even if it is over-discharged. (The Tabos charger has such a feature.) When charging, disconnect the load connected to the battery and connect the charger and battery 1:1 to charge. For batteries with a BMU (optional: /COM models), also turn off the BMU power switch. 2) There have been cases of people trying to force a dead battery to charge and catching fire.	

Large categories	Attribute values	内容
<8> Battery status Communication Port_BMU (/COM: Optional)	Communication content : Battery voltage, level, and temperature, Estimated charge time, estimated discharge time, Information about battery usage, including error status	1) When multiple batteries are connected in series or parallel, it is implemented as a master-slave method, which collects the capacity and status of multiple batteries and finally transmits battery status information from the master battery. 2) Provide pin map and protocol of communication port connector 3) RS232C / RS422 / RS485 / CAN User-selectable available. For more information, see the next chapter on BMUs

4) Battery Monitoring Unit (BMU) and ON/OFF Remote (Enable) Switch

4) - 1. Limited to models with the letters 'COM' in the configuration / battery model name.

* Example model name: LV-50V75AH-VX3COM or LM-MOTOR-25V-70AH-X2COM

◇ Removable threaded plug, Pluggable Type: PHOENIX / Order no. 177798

* Notes: Series: MSTB 2,5/2-STF-5,08), (2P plug, 5.08 mm pitch)

* Caution: This threaded removable plug is shipped with the mating piece in
You don't need to prepare a counterpart connector.

4) - 2. This remote switch does not turn battery power ON/OFF.

Only turn on/off the battery status communicator.

When this switch is off, the communication device is turned off, but the battery mains power is not turned off.

The battery's main power is always output, just like a car's lead-acid battery.

Shorting pins 1 and 2 of the green terminal will power the communication unit (BMU) and illuminate the green LED.

4) - 3. Communication device power consumption = 5W (Condition: When the remote ON/OFF switch is turned on and the FAN is not running)

Keep the remote switch OFF when the battery is not in use.

4) - 4. Brief description of communication device functions

◇ Displays battery status values (estimated time to discharge, estimated time to charge, battery temperature, etc.
◇ Communication type: CAN / RS485 / RS422 / RS232C

* For other details, please refer to the separate 'Communication protocol manual'.

4)-5. Features of SOC calculation of Guage IC and measures in case of problems

A) How to calculate the SOC of the Guage IC:

- The SOC (%) figure exported by the BMU is the one calculated by Gauge IC's own algorithm,
- The variables in the calculation are voltage, current, temperature, and cell (Chemistry Values on Calibration).

B) Guage IC's battery charge/discharge current related features.

- Conservatively calculates SOC rise proportional to current magnitude when charging.
- Conservatively calculates SOC drop proportional to current magnitude at discharge.

::: After charging (more than 3 minutes), it has the ability to recalculate itself if the discharge conditions are right,
You can see the SOC numbers recalculate (recalculated based on calibration values) :::

C) Causes and actions for SOC exceeding tolerance.

< Cause

- Some modules inside the pack are blocked by protective behavior, reducing Ah. - To be checked separately.
- Guage IC malfunctions (stops calculating) due to environmental noise, etc.

< What you can do in the field

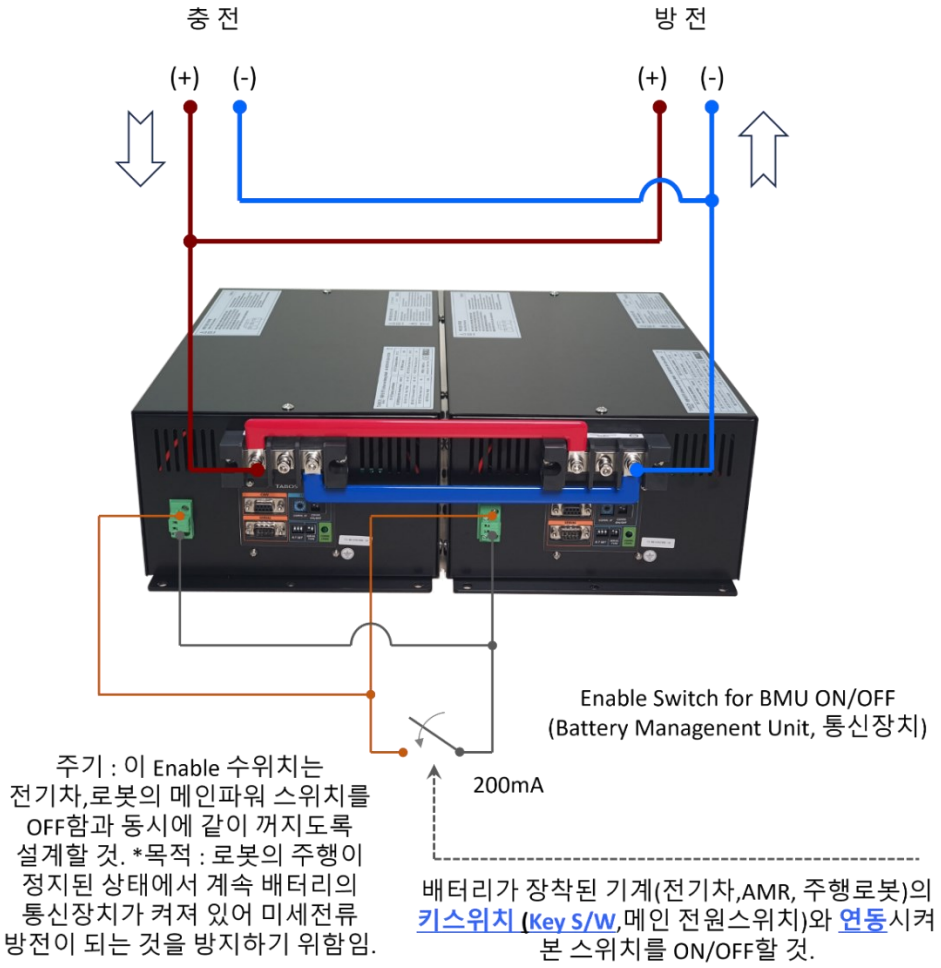
- Reset the board power using the green contact (BMU power switch) (current should be minimal)
- Recalculates itself after more than 3 minutes of charging and 2 minutes of discharge standby under 5A.
- If the above two actions don't work, it's time for a consultation.

4)-6. Use the remote switch contacts in conjunction with the AGV and system power.

In other words, work with the system (+) line switch to ensure that the communication unit (BMU) is powered off when the system is turned off.

To prevent battery over-discharge due to communication unit (BMU) standby current.

* For other details, please refer to the separate 'Communication protocol manual'.



4)-7. Caution⚠ : If the above Enable Switch is OFF, the battery cooling FAN is not activated, so the battery cooling FAN is not activated.

I'm having a problem.

*Continuing to charge or discharge the battery without the cooling fan running will cause the battery to heat up.

The battery will automatically stop charging or discharging when it overheats, i.e. when the battery cell temperature goes above 50 degrees.

After that, it will cool down naturally and become chargeable again when it drops below a certain temperature.

5) List of battery status data

/ COM model, i.e., only for models equipped with a BMU (Battery Monitoring Unit).

5) - 1. Battery information

Order	Type	單位	Scale	Range	Data content, description	When using battery parallel connection Data collection method
1	**Voltage**	V	**0.01**	0 to 655.35		Shows data for each battery in parallel. (However, since they are paralleled, the difference in voltage values should be within 0.5V).
2	**Current**	A	**0.01**	(-) 327.68 to (+) 327.67 (-): Discharge, (+): Charge **Declare the variable→ signed**		to show data from each of the paralleled batteries. If the data value difference between each battery more than 15% above the nominal voltage, it needs to be checked.
3	**SOC (Residual) (State Of Charge)**	Low	**1**	0 to 100		Shows the data of each battery in parallel. If the data value difference between each battery is more than 15%, it needs to be checked.
4	**Battery Status Information** (See next chapter ☞ for details)			If no data is displayed, the battery is healthy. Data is output only when there is a problem.	***Abnormal data types (contents) :** Over voltage, under voltage, over current, high temperature, low temperature, BMU communication error	It shows the data of each battery connected in parallel. If error information is displayed in one of the batteries, check it.
5	**Charging time**	min	**1**	0 to 65535	Formula :Charging time(H) = Ah to be charged / charging current A, Weighted average of these values to compensate.	
6	**Discharge Time**	min	**1**	0 to 65535	Formula : Discharge time(H) = Residual Ah / Discharge current A, Correct by weighted average of these values.	

Order	Type	單位	Scale	Range	Data content, description	When using battery parallel connection Data collection method
7	Temperature	℃	0.1	(-) 3276.8 to (+) 3276.7 (-): Below freezing, (+): Warm Declare the variable→ signed		Shows the data of each battery in parallel. If the data value difference between each battery is more than 10℃ , it needs to be checked.
8	SOH (State Of Health)	Low	1	0 to 100 (Reference value) :New : 95 ~100 Used, aged : 80% or less	If the value is 80% or less, have it checked or discard it. This is sometimes seen in modules connected in parallel inside a battery pack, where some modules have their charge or discharge capability limited by the BMS.	By showing data from each of the paralleled batteries. If the data values differ by more than 15% or more between each battery.
9	Residual capacity	Ah	0.01	0 to 655.35		By showing data from each of the paralleled batteries. If the data value difference between each battery If the data value differs by more than 15% from the nominal voltage, inspection is required.
10	Residual energy	Wh	0.1	0 to 6553.5		Shows data for each battery in parallel. If the data value difference between each battery If the data value differs by more than 15% from the nominal voltage, inspection is required.
11 (25.06 Added)	Charge/Discharge Cycles (Complete cycle information) 〈 See Note 2	Cycles	1		If the BMU is powered off and the battery is used, this data is not accumulated.	It shows the data of each battery connected in parallel. If the data value difference between each battery is more than 10%, it needs to be checked.

Order	Type	單位	Scale	Range	Data content, description	When using battery parallel connection Data collection method
12 (25.06 Added)	P/N (Product Number)				This data is used by the user by entering the P/N number directly using the GUI using separate software provided by Tabos.	It is used to show the data of each battery connected in parallel.
13 (25.06 Added)	**Number of cell series connections** (7 or 14)				The number of series connections of the Li-ion cells in the battery pack: 25V (7S) or 50V (14S) , This data is not managed by the battery user.	It is used to show the data of each parallel connected battery.
14 (25.06 Added)	**Firmware Version**				Display firmware rev.	By showing the data of each parallel connected battery.

Note 1: Added Data

Data number 11-14 apply to all types of Tabos batteries shipped from June 15, 2025, onwards. For all Tabos batteries shipped before this date, this data can be accessed by updating the Battery Monitoring Unit (BMU) firmware, provided by Tabos, to the latest version. This firmware can be downloaded from the Tabos website and installed directly by the battery user.

Note 2: Definition of 'Full Cycle'

Charge/discharge cycles (counts) can be classified into full cycles and partial cycles. The BMU data value here uses the concept of a "full cycle."

A) If you start using a fully charged battery (SOC 100%), discharge it to SOC 50%, and then recharge it to full, this counts as 0.5 full cycles. Performing this charge/discharge process twice results in 1 full cycle, or 2 partial cycles.

B) If you start using a fully charged battery (SOC 100%), discharge it to SOC 70%, and then recharge it to SOC 100%, this counts as 0.3 full cycles. Performing this charge/discharge process approximately 3.3 times results in 1 full cycle, or 3.3 partial cycles.

5) - 2. Battery status information

Bit	Description.	Bit
0	Battery overvoltage	8
1	Low battery voltage	9
2	Excessive charging current	10
3	Excessive discharge current	11
4	High temperature	12
5	Low temperature	13
6	BMU Errors	14

[Note 1]

The communication protocol is subject to change due to our circumstances. Please check the latest version.

The protocol specification is available for download on the home page.

[Note 2]

✧ State Of Charge (SOC):

1) Unit: 0~100%, full charge 100%, full discharge 0%.
2) State of charge (SOC) measurement method: The battery level is not calculated by simply using the battery voltage alone. SOC data is generated using a statistical method by using multiple information including the internal resistance of the battery, the battery voltage, and the cumulative current charged or discharged by the battery.
This means that even if the battery voltage fluctuates rapidly when charging and discharging the battery, the SOC value will fluctuate slowly instead of rapidly.
2) Fully Charged: Normally, this data value may not go to 99-100% when fully charged. To get to 100%, you'll need to charge very slowly, and you'll need to charge up to full pressure. If you see a reading of 95% or higher, you're usually good to go.
3) Discharged state: Normally, this data value may not go to 0% when discharged.
No, you need to charge it very slowly to get to 100%, and you need to charge it enough to get to full charge pressure, which is usually 95% or higher.

*Note: The battery must occasionally be in a full state for accurate calculations.
However, we typically don't charge the battery to a full charge for battery safety reasons, which makes the data a bit less precise.

[Note 3]

✧ State Of Health (SOH) :

1) Unit: 0~100
A value closer to 100% means the battery is at full capacity and a value closer to 0% means the battery is degraded.

*Note: The battery must occasionally be in a full state for accurate calculations.

However, we typically don't charge the battery to a full charge for battery safety reasons, which makes the data a bit less precise.
*Side note 2: To illustrate the usefulness of SOH values, consider the following example.
I've had the battery for 7 years and it's working fine, with SOH values of 80-90% or higher.
This value makes it ambiguous to determine if the battery is nearing the end of its life.
Then, as you use it more and more, the battery suddenly fails (usually because it has been used for a long time and the cell balancing is naturally out of order, making it completely unusable, etc.
Rather than a gradual decline with age, SOH values often work fine at values above 80% and then suddenly become unusable.
There are not many empirical statistics available yet.
Therefore, it is recommended to view this SOH value as a reference value.

---

6) How to charge the battery when it's fully discharged (when the output is cut off and the voltage is not working properly)

Models with the letters 'COM' in the battery model name / models described above
you must use
Charging must be done with the remote (Enable) switch OFF.

This is because the battery BMS has shut down its own output due to over-discharge.
The charger does not detect the battery output voltage and charges with a small current pulse wave, because if the above communication device is ON, the communication device consumes the small pulse wave current from the charger, and no current reaches the battery.

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3. Model name and order code descriptions and options

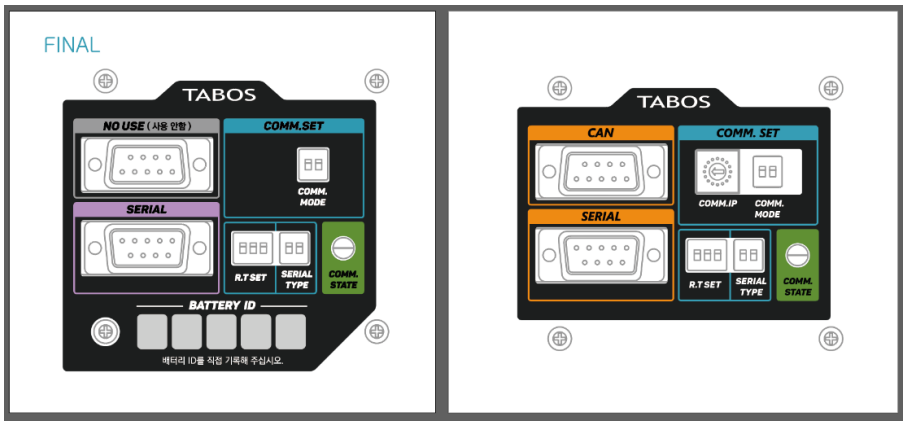
Model name basic structure : LV- V□□□□□ AH -(③Case number) / (④Option code)

Model name examples	λ	B (V,AH)	③ â (case)	④-1 (batteryID)	④-2 (Vertical mounting bracket)	④-3 (handle)
	Default Model Code			Code number for each option type		
				/ID -------- COM only applies to models with .	/V --------- Some models (VX3, VX3COM) only. (See 2D Drawing)	/Handle1 /Handle2 /Handle2SM ---------- Some models Only for (See 2D Drawing)
lv-25v50ah-dh375	lv- 25v50ah-dh375					
lv-25v100ah-vx2/id	LV-25V100AH-VX2			/ID		
lv-50v75ah-vx3com/v	lv- 50v75ah-vx3com				/V	
LV-25V100AH-VX2/Handle1	LV-25V100AH-VX2					/Handle1
lv-50v75ah-vx3com/id/v /Handle2SM				/ID	/V	/Handle2SM
LV-50V25AH-DV415COM/ID	lv- 50v25ah-dv415com			/ID		

Cycle: See the table below for a description of the option codes.

No	Item	内容
λ	Lithium-ion batteries Cell Type	LV : Application of lithium-ion battery cells for electric vehicles (Li-ion Vehicle) Cylindrical Cell 21700 (21Ø x 70H) LG Energy Solutions, Cell nominal voltage= 3.69V/cell , 5Ah/cell , 18.2Wh/cell Charge and discharge performance: 0.7C charge and 3C discharge capability,
B	Nominal voltage V Nominal capacity AH	Battery nominal voltage (V) x current capacity (AH) 25V --> The correct nominal voltage is 25.8V 50V --> The correct nominal voltage is 51.7V The AH capacity is the number you can expect to get when charging and discharging at 20 degrees Celsius or less; charging and discharging faster than this will result in a lower AH value.
③- 1	Case types	[Cycle 1] : If the voltage and current characteristics are different but the case model number is the same, the appearance (size, shape) is exactly the same. [Cycle 2] : The one with COM is the one with the status communication port. However, the case length is 40mm longer.

No	Item	内容
		◇ Type D Case : Aluminum profile case / DV(H)□□□ COM D= Aluminum case,□ = Body length (excluding fixing bracket), COM = Communication port mounted DV375 : V=Vertical, 375 = Aluminum profile length mm DV415COM : V=Vertical, 415 = Aluminum profile length mm DH375 : H=Horizontal, 375 = Aluminum profile length mm DH415COM : H=Horizontal, 415 = aluminum profile length mm ◇ VX type case: steel plate case, height about 145mm / VX□ COM V = Vehicle Battery Case, X = Tall Case,□ = Battery Module Quantity VX2COM: Two battery modules, VX3COM: 3 battery modules, battery width is 3/2 larger than VX2. ◇ VW type case: steel plate case, height about 88mm / VW□ COM V = Vehicle Battery Case, W = Wide (Slim) ,□ = Battery Module Quantity VW2COM: Two battery modules, VW3COM : 3 battery modules, battery width is 3/2 larger than VW2.
③- 2	COM Communications Mounted	◇ Models with COM suffix: battery status with or without optional communication port * COM = Battery Status Transmission, meaning Communication ◇ Feature: Ability to pass the battery status through the communication port. ◇ Status information: remaining charge (SOC), health (SOH), battery capacity (Ah, Wh), and temperature, Estimated charge time, estimated discharge time, etc. ◇ Supports all 4 communication methods (user selects port, switch) 1) Serial communication : RS232C / RS485 / RS422 → Battery-mounted communication output connector specification: Dsub 9-pin male. 2) Parallel Communication : CAN → Battery-mounted communication output connector specification: Dsub 9-pin female. [Cycle 2] : CAN is recommended as noise-resistant as possible, with RS485/ RS422 communication as a secondary consideration [Cycle 3] : Download and use the communication protocol from the Tabos homepage.

No	Item	내용
④-1	Identity options	< Caution >: This option is not necessary for general customers. It is an option that was applied to some products shipped to Company S in the past, and currently, if there is a '/COM' option among TABOS batteries, it has been upgraded so that users can directly input the P/N (Product Number). ◇ Randomly assign a unique 5-digit battery ID to the memory inside the battery (EEPROM). ◇ A separate PC application for ID entry is available (download from the Tabos homepage). → The '/ID' option is available for COM products, regardless of the model.   'COM/ID' model 'COM' model  'COM/ID' Model Details 'COM' Model Details ◇ Purpose: The unique battery number can be managed by software, which is useful for life management, history management, etc. of each battery. ■<1> By entering the battery ID directly into the software by the USER, Can be numbered with 5 hexadecimal digits. Each battery has a unique number, which can facilitate the history management of the battery. Protocol is not compatible with existing batteries. Set the battery ID software-wise. (CAN not available) ■<2> 232/485/422 communication does not use the rotary ID assignment method used by traditional front panels. Software assigns 1 to 65000 IDs for use. You can change your identity by using separate PC software or by sending a command. ■<3> ID can be changed only once after power on. To change the ID again, you need to power off/on the battery communication board and then change the ID. ■<4> Changed the ID data from 1 byte to 2 bytes in the existing communication protocol of 232/485/422. ■<5> Added commands to read the battery ID, and commands to save the battery ID.

<table>
<tr><th>No</th><th>Item</th><th>내용</th></tr>
<tr><td>④-2</td><td>Vertical Mounting Brackets Options</td><td>◇ Vertical mounting options

→ Applies to select models (VX3/V, VX3COM/V) only.
→ Add "/V" to the end of the name.
(See 2D drawing / download from Tabos homepage).

 
VX3COM/V/Handle2SM</td></tr>
<tr><td>④-3</td><td colspan="2">◇ Handle-mounted options: add the option code below to the end of the name

<table>
<tr><th></th><th>/Handle1</th><th>/Handle1SM</th><th>/Handle2S</th></tr>
<tr><td>Handle</td><td>Suitcase handle</td><td>Suitcase handle</td><td>Folder_Single Handle</td></tr>
<tr><td>Remarks</td><td></td><td>SM = SMaller side</td><td>Mounting on a wide surface, S = Single</td></tr>
<tr><td>Apply</td><td>dv375, dv415com
dh375, dh415com
VW2, VW2COM
VW3, VW3COM
VX2A
VX2, VX2COM
VX3, VX3COM
VX3/V, VX3COM/V</td><td>VX3/V, VX3COM/V</td><td>VW2COM</td></tr>
<tr><td>Example Photos</td><td> 
DH415COM/Handle1

 
VX2/Handle1

 
VW3COM/Handle1</td><td> 
VX3COM/V/Handle1SM</td><td> 
VW2COM/Handle2S

 
VW3COM/Handle2S</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>No</th><th>Item</th><th>内容</th></tr>
<tr><td>④-3</td><td colspan="2">◇ Handle-mounted options: add the option code below to the end of the name
<table>
<tr><th></th><th>/Handle2</th><th>/Handle2SM</th><th>/Handle3</th></tr>
<tr><td>Handle</td><td>Folder_Wide Side</td><td>Folder_Narrow Side</td><td></td></tr>
<tr><td>Remarks</td><td>Mounting on a wide surface, 2 Handles</td><td>SM = SMaller side</td><td>Install only one on the back,</td></tr>
<tr><td>Apply</td><td>VW3, VW3COM
VX2A
VX2, VX2COM
VX3, VX3COM
VX3/V, VX3COM/V</td><td>VX3, VX3COM
VX3/V, VX3COM/V</td><td>VW2, VW2COM
VW3, VW3COM
VX2, VX2COM
VX3, VX3COM
VX3/V, VX3COM/V</td></tr>
<tr><td>Example Photos</td><td> 
VW3COM/Handle2
 
VX3COM/Handle2</td><td> 
VX3COM/V/Handle2SM
 
VX3COM/Handle2SM</td><td> 
VX2COM/Handle3
 
VW2COM/Handle3</td></tr>
</table></td></tr>
</table>

[Optional product] Accessories_AndersonConnector Wires (ordered separately)

Anderson Connector Wires (See the product specification on the Tabos homepage)	

4. Model selection caveats

By applying a high voltage battery (50V), you can reduce battery heat generation and charge/discharge current, reduce wire thickness, and drive a motor with a larger output.

1) For 25V battery: The terminal block has an allowable current capacity of 100A, and the allowable current is limited to 90A for safety margin, so there is a limit to increase the battery charging and discharging current.
For this reason, 50V batteries are often advantageous for large capacity batteries.
2) For a 50V battery: Since the current is reduced by 1/2 compared to a 25V battery of the same capacity, there is room to increase the charging and discharging currents, so you can drive a larger power motor per battery.

◇ If one battery cannot handle the full power of the motor, use two or three batteries in parallel.

◇ The maximum charge voltage magnitude of the applicable charger determines the actual usable charge capacity. Caution when selecting battery capacity

1) For 25V battery: 28V charge will charge to about 80% SOC, 29V charge will charge to about 95% SOC
2) For 50V batteries: 56V charge to approximately 88% SOC; 58V charge to approximately 94% SOC
* SOC (State Of Charge): The amount of charge.

◇ If you need more than the maximum allowable charge and discharge current of a battery, connect multiple batteries in parallel.

5. Product drawings and photos

*** Refer to the accompanying drawings for a drawing of each model name. The last number in the model name is the instrument case type number.**

Example 1: LM-MOTOR-50V-35AH-X2COM → See 'X2COM' for the mechanical drawing.

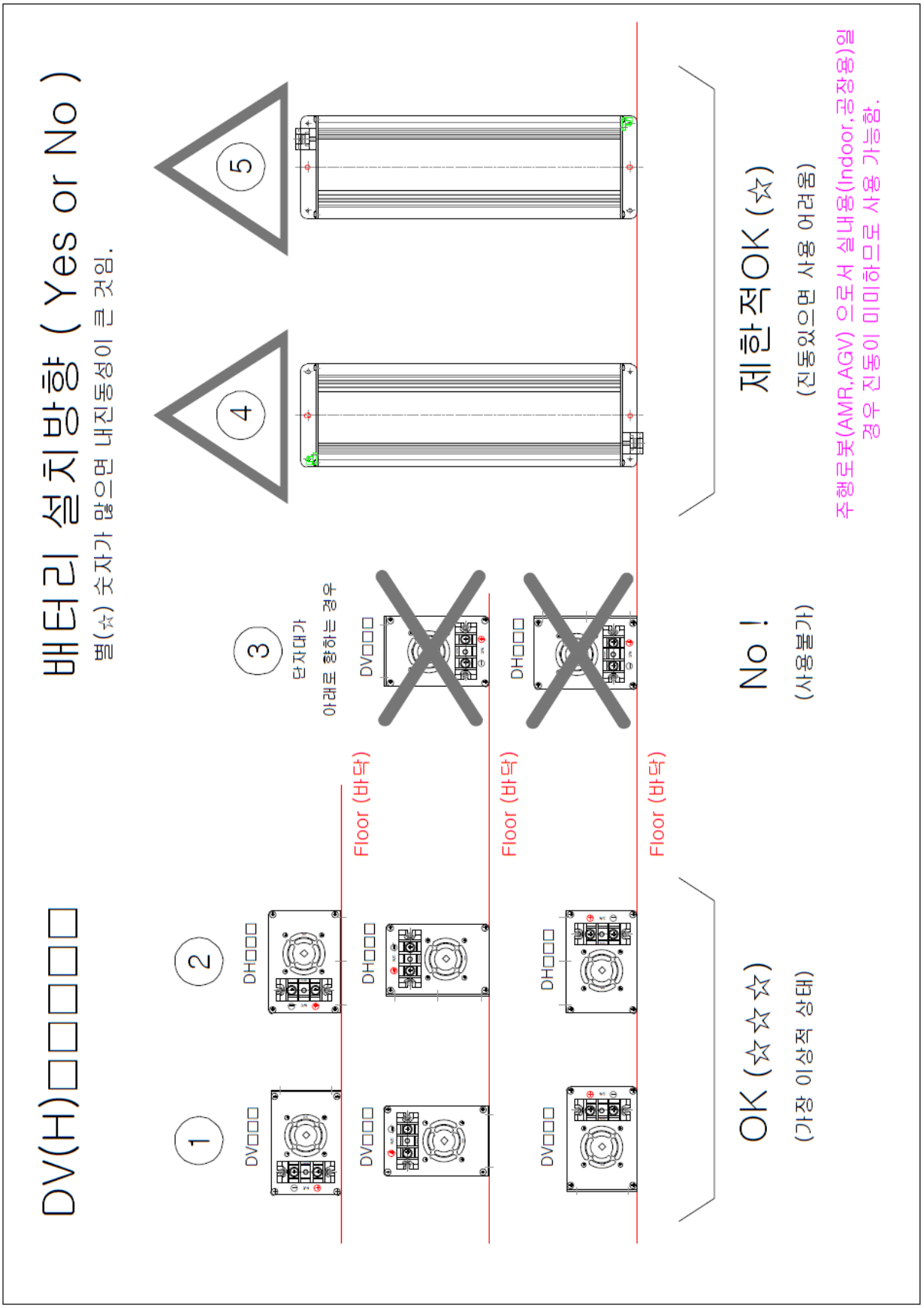
Example 2: LV-50V75AH-VX3COM/V → See 'VX3COM/V' for the mechanical drawing.

*** Drawings can be downloaded from the homepage / dwg, pdf, 3D (stp, igs)**

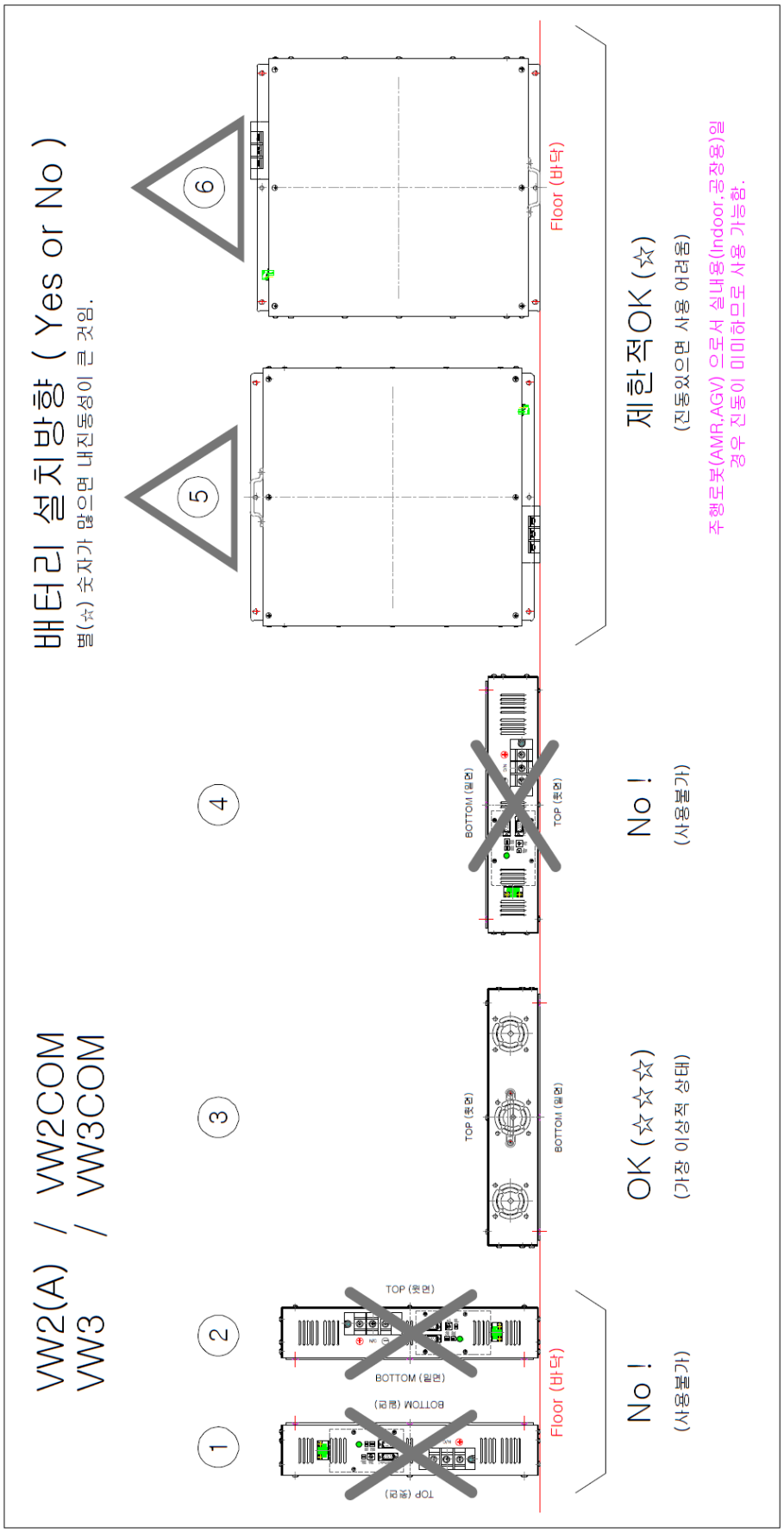
* The diagram below is simplified and for reference only.

VX2 	VX2COM 
VX3 	VX3COM 
VW2COM 	DH375 
VW3COM 	DV375 

< Battery Installation Direction / DV, DH Case



< Battery Installation Direction / W2, W2COM, W3, W3COM Case


VW2(A) / VW2COM
VW3 / VW3COM
배터리 설치방향 (Yes or No)
별(☆) 숫자가 많으면 내진동성이 큰 것임.
1
2
3
4
5
6
TOP (윗면)
BOTTOM (밑면)
Floor (바닥)
No !
(사용불가)
OK (☆☆☆)
(가장 이상적 상태)
No !
(사용불가)
제한적OK (☆)
(진동있으면 사용 어려움)
주행로봇(AMR,AGV) 으로서 실내용(Indoor,공장용)일 경우 진동이 미미하므로 사용 가능함.

< Battery Installation Orientation / VX2, VX2COM, VX3, VX3COM Cases > <