

Only be able to charge lead battery?  
I want to be able to charge lithium  
battery as well.

At present 1KW-3KW, the charge  
capacity is large, the installation cost is  
too high. 210W charge capacity is low

If it is 210W the error information is hard  
to understand, is there a product  
easier to understand error signal?

I want a signal not only from the charging  
unit but also from the power supply unit.

## Many opinions from the customers and we've found solutions

There are many wireless charging  
products from B & PLUS. It is  
hard to choose. Which one should we pick?

Is it okay to apply for high frequency  
use equipment for the first time?

On the same line using AGV, lead  
battery and lithium battery are  
different for each AGV.....

I want a wireless charging system  
that is just right for 50 AH-100 AH  
batteries



# Perfect fit! The charging zone that you never had before!

# 600W Max output (30V / 20A)

## Wireless charging system for AGV (automated guided vehicle)

24 V  
system

**Just by facing each other!  
Wireless Power Charging!**



You can easily install it  
in your AGV

### We made it from hearing customer's voice

- Lithium batteries can also be charged.  
(required consultation)
- It can be shipped with adjusted voltage and current.
- The error code can be output from the charging unit  
and the power supply unit.

### Benefits of the Wireless Power Charging!

#### [Report of good news from users]

With Wireless Power Charging,

- Replacement work became unneces-  
sary, and it released from heavy work.
- Spare battery became unnecessary.
- In terms of cost ...

Battery replacement, work twice a day,  
once a day for 15 minutes, and oper-  
ates 5 AGVs.

(Unit Price JPY 3,000 per hour)

Working day = 1year 240days

1,500 JPY x 240days x 5units

= **1.8 billion JPY**

Cost down!

Improvement in cost reduction was  
recognized.

## 600W Product Features

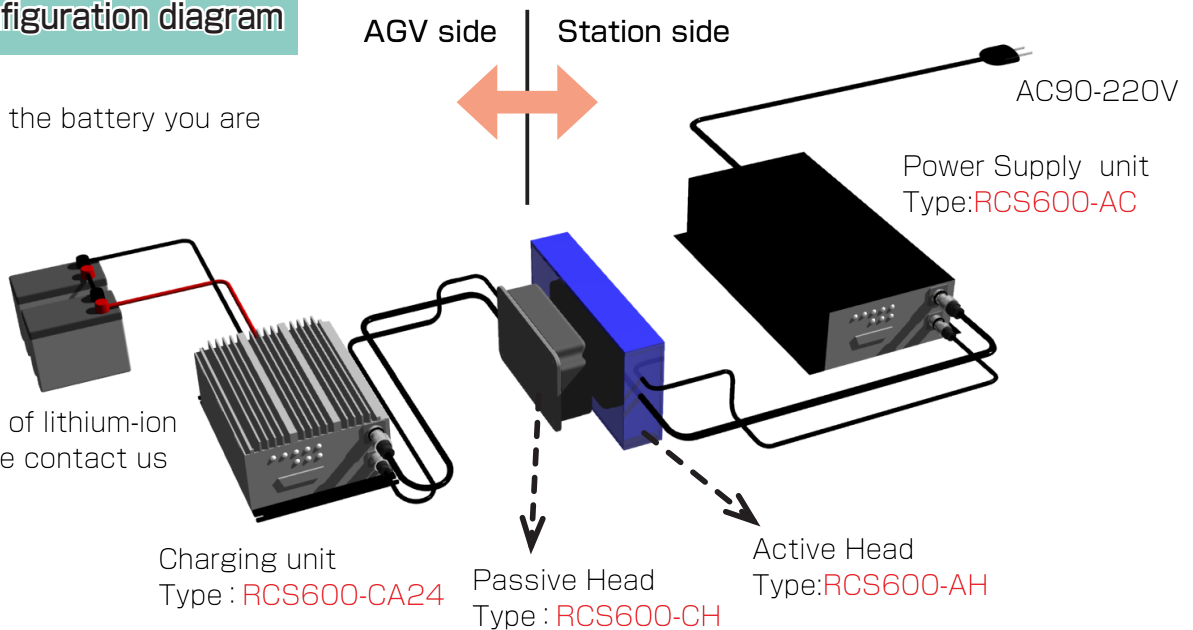
- The operating distance between heads is 20 mm (twice the operating distance of our 210W product).
- Battery friendly CC/CV (constant current/ constant voltage) method is adopted.
- During charging, various errors can be displayed on the LED and output to the outside (communication function).
- Recharge function: While both heads are facing each other, recharging is started when the voltage drops to  $24V \pm 0.5V$  after completion of charge.
- Over current, over voltage protection function: Charging stops when it exceeds a certain level.
- Monitor the battery temperature (thermistor monitoring function) and stops charging when the temperature reaches a certain level or higher.
- Charge current · Charge voltage can be set (please contact us).

## 600W configuration diagram

You can use the battery you are using now

Various 24V battery

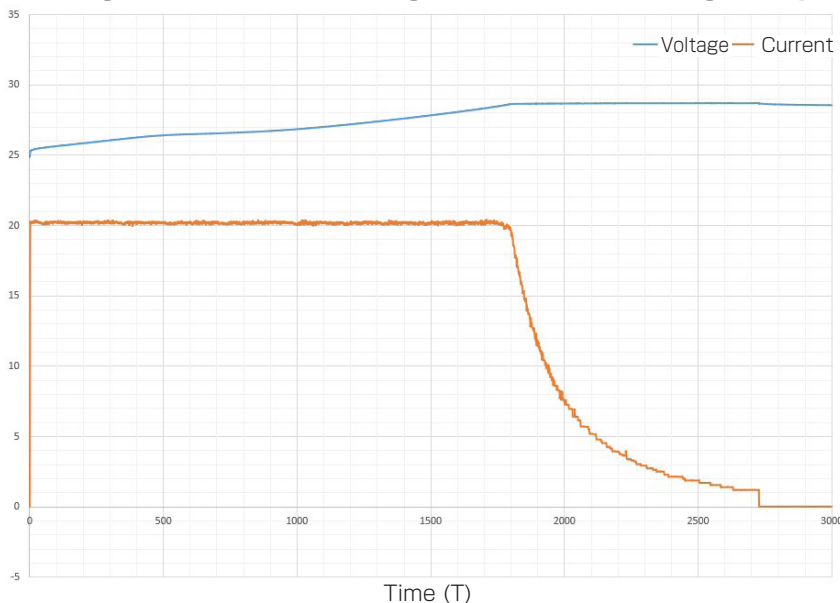
※ In the case of lithium-ion battery, please contact us



## CC · CV Charging Graph

Constant current/constant voltage (CC · CV) charging control function enables optimum charging for battery.

[SCIB SIP 24-23 50% (11Ah)  
Charge Characteristics after Discharge / CC Current 20 A CV Voltage 28.6 V]



### About charge control

When the battery is in a discharging mode (and the amount of charge is small), constant current (CC) is performed, but when the battery voltage increases to reach the charging voltage setting value, the operation proceeds to constant voltage charging control (CV).

The charging current is reduced so it will not exceed the set voltage.

When the charging current drops to 1.0 A ( $\pm 0.5$  A), it is regarded as a full charge and the charging is terminated.

### [Adjustable range of charge voltage/charge current]

Voltage:  $24V \pm 0.5V$  to  $30V \pm 0.5V$

Current:  $10A \pm 0.5A$  to  $20A \pm 0.5A$

### Factory setting

Voltage:  $28.8V \pm 0.5V$

Current:  $20A \pm 0.5A$

\* Setting can be handled at shipment \*

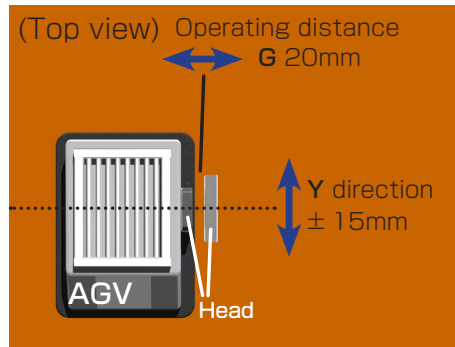
※ Charging to a 24V lead battery is the basic specification, but please contact us for application using lithium ion batteries. We have the past result to charge to the lithium ion capacitor.



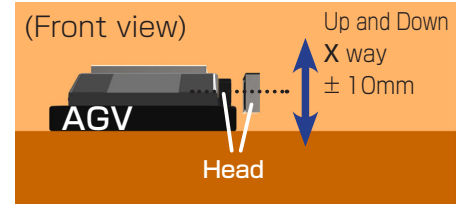
## Center offset and operating distance

Operating distance  
Up to 20 mm  
OK!

Operating distance can be up to 20mm.  
Ease of alignment!



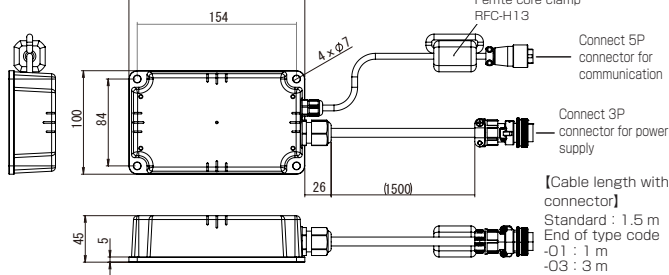
Direction	Distance
G	0 ~ 20mm
X	± 10mm
Y	± 15mm



## Specification

### AGV side

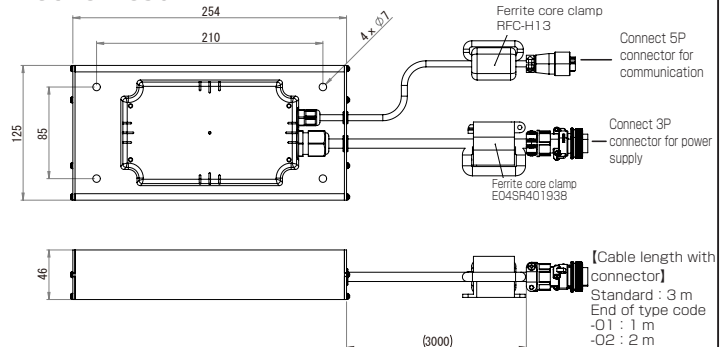
#### Passive Head



Type code	<b>RCS600-CH</b>
Operating distance	0 ~ 20mm
Center offset	± 10mm in the X axis direction and ± 15mm in the Y axis direction (see above)
Operating temperature	0...+50°C
Protection class	IP65 (Indoor type)
Connection	Power supply: Round 3 pins (female), Signal: Round 5 pins (female) to connect to charging unit
Housing	PPS, aluminum
Material	Output cable φ 8.6 2.5mm <sup>2</sup> x3 KVVU
Signal cable	φ 5.6 0.3mm <sup>2</sup> x4 PU
Weight	1950g(including cable connector part)
Accessories	Ferrite core clamp(Installed), Central positioning label

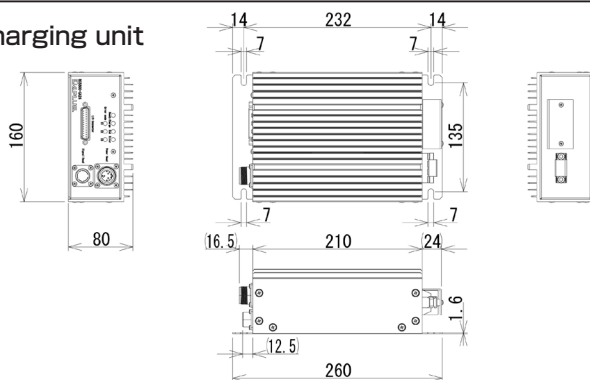
### Station side

#### Active Head



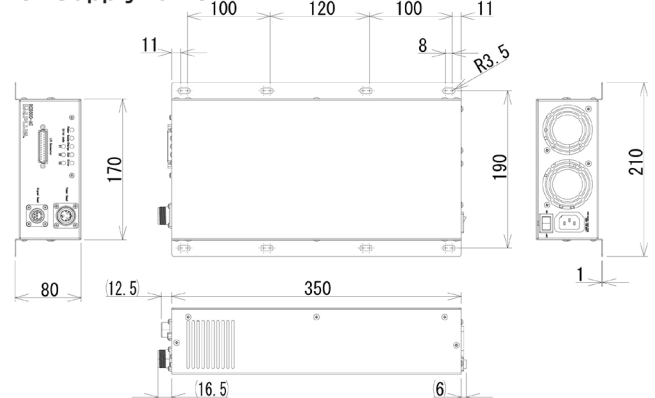
Type code	<b>RCS600-AH</b>
Operating temperature	0...+50°C
Protection class	IP65 (Indoor type)
Connection	Power supply: Round 3 pins (male), communication: Round 5 pins (male) to connect to Power unit
Housing	PPS, aluminum
Material	Output cable φ 8.6 2.5mm <sup>2</sup> x3 KVVU
Signal cable	φ 5.6 0.3mm <sup>2</sup> x4 PU
Weight	2960g(including cable connector part)
Accessories	Ferrite core clamp(Installed), Central positioning label

#### Charging unit



Type code	<b>RCS600-CA24</b>
Output voltage	≤ 30V
Output current	≤ 20A
External input	Starting charging signal
External output	Ready, Charge, End, Error, E1 ~ E3
Operating temperature	0...+50°C
Protection class	IP40 (Indoor type)
Connection	Feeding connector Round 3-pin connector Communication connector Round 5-pin connector For input/output Connector D-sub 25-pin battery Battery connection terminal block (terminal screw size M5) Thermistor Terminal block for thermistor connection (terminal screw size M4)
Weight	2680g
Accessories	Thermistor, Dsub25P-Connector for start signal ON


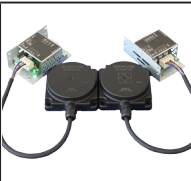



#### Power Supply unit



Type code	<b>RCS600-AC</b>
Rated input voltage/Supply voltage	AC100V · 200V / AC90V ~ 220V Single-phase 50/60Hz
Current consumption	9A(100V), 4.5A(200V)
External input	Starting charging signal
External output	Power, Ready, Charge, End, Error, E1 ~ E3
Operating temperature	0...+50°C
Protection class	IP20 (Indoor type)
Connection	Feeding connector Round 3-pin Communication connector Round 5-pin Output signal D-sub 25-pin Power 3P inlet
Weight	3340g
Accessories	Power cable with ferrite core clamp

# B&Plus has a lot of product lineup to choose from! Small to large capacity!

## Wireless charging system current lineup

	30W		120W		210W
					
Charging zone Corresponding battery	30W(14.4V/2A) Lead battery only	30W(28.9V/1A) Maxell lithium-ion battery only	120W (14.8V/8.5A) Lead battery only	120W (29.0V/4.3A) Lead battery only	210W (30V/7A) Lead battery only
Type code	RVT-210-502-PU RVE-210-2-PU	RCS30-LI24 RCS30-TH01 RCS30-EH01 RCS48-DC1	RVT-433-508-PU RVE-433-2-PU	RVT-433-404-PU RVE-433-2-PU	RCS210-PB24 RCS240PH RCS240AH RCS240-AC1
Size	80x80x30	Head:85x85x26 Amplifier: 60x93.5x32	110x160x75	110x160x75	Head : 100x140x40 Charging unit: 188x230x50.5 Power Supply unit: 210x300x80
Operating distance	4...10mm	0...20mm	0...10mm	0...10mm	0...10mm

and **600W**



**Compatible with lithium-ion battery!**

\* Please feel free to contact us \*

## It's hard to pick but with B&PLUS you can simulation charging!

### 【 Simulation confirmation items 】

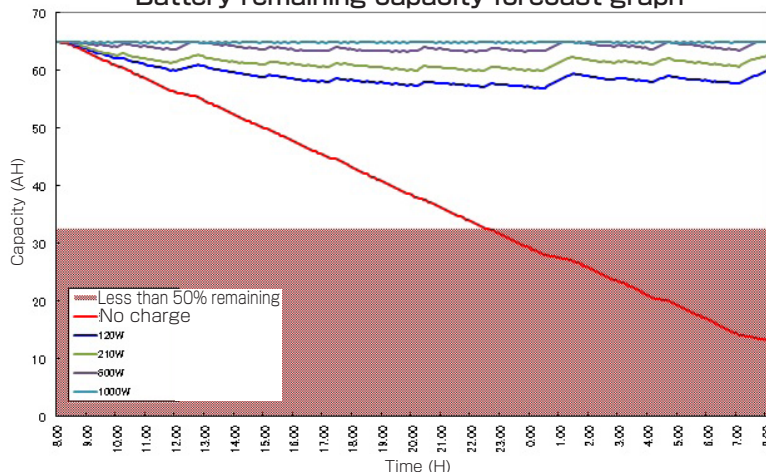
- ① Check Battery model and battery capacity
- ② Confirm running/stopping time ※ Running time/stop time per cycle
- ③ Confirm consumption current  
Running, stopping and resting time and each current consumptions.
- ④ Can you charge while paused? Does it stop without charging?
- ⑤ Operating hours per day  
Confirm the operation status of AGV at the time of starting/ending/  
lunch break/immediate and whole day

### 【 Things understood by simulation of the charging 】

If you use the charge simulation, you can see that the stop time is long and the charge can be done using the rest time etc. It may be possible to perform "additional charge".

A large capacity may not be able to substitute for a small capacity.  
As B&PLUS has various products to choose, you can find a reasonable one.

Battery remaining capacity forecast graph



\* Please feel free to contact us \*

### A Note on Using 600W

- This product, which is one of those high frequency utilization equipment of Radio Law.

In the case of using in Japan, please apply for a permission application for high frequency utilization equipment permission to Ministry of Internal Affairs and Communications.

In the case of using the product out side Japan, please take appropriate action after confirming by yourself the standards and regulations to which the customer's system should conform.

- For the control communication device that is installed in the product, there is no need for (diploma) radio station authorization of the Minister as it corresponds to "a weak radio station (weak radio equipment)" to.

However, please be careful on the occasion of the operation because it may affect medical equipment and electronic equipment (such as pacemakers).

Wireless Power Supply by  
**B & PLUS K.K.**

Mail : b-plus-usa@b-plus-kk.com

Web : <http://www.b-plus-kk.com>

\* Info may change the mention contents such as specifications without a notice.

Thank you for understanding

\* Please refer to the instruction manual. It can be download by HP.

BN1807Ce

2019.09