

Remote power supply system  
120W power charging 24V type

Base : **RVE-433-2-PU-\_\_**  
Remote : **RVT-433-404-PU-\_\_**(Charging : lead battery)

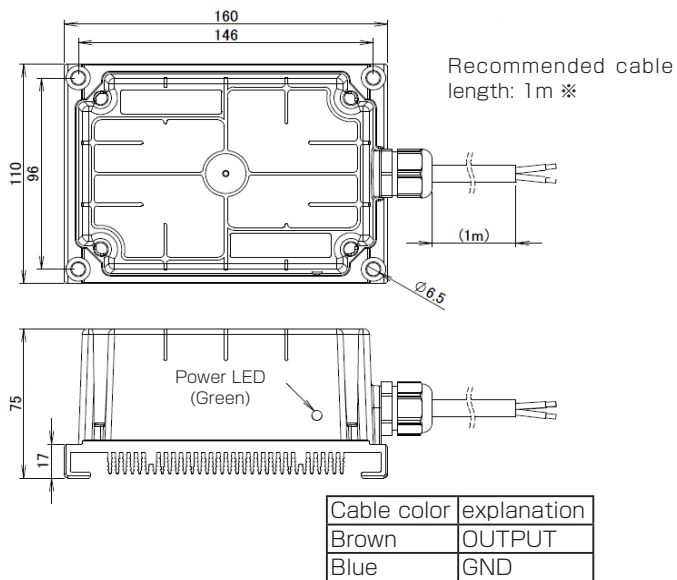


## Safety Considerations

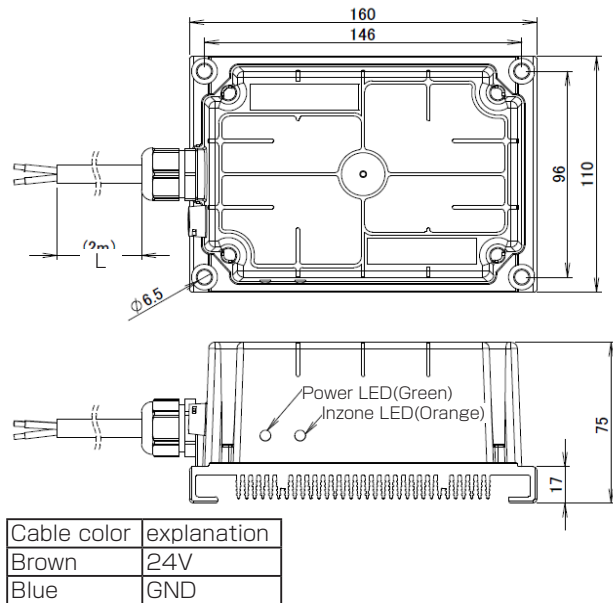
Before using the product, please check the specifications and installation precautions described in this specification before using the product.

## Dimention

Remote : **RVT-433-404-PU-\_\_**



Base : **RVE-433-2-PU-\_\_**



## Specification

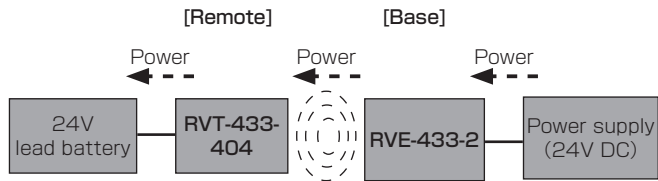
Type code	RVT-433-404-PU-__
Operating distance	0...10mm
Center off-set	± 4mm
Charging method	CCCV(Constant current/Constant voltage) CC : 4.3A (Varies with battery voltage) CV : 28.4V typ., 29.0V max.
LED	Green Power (Among the output)
Protection function	Battery conformity detection/Battery reverse connection protection/Battery unconnected protection
Operating temperature	0...+50℃
Protection class	IP65/IP67
Cable	PUR ϕ 8.6 / 3x2.5mm <sup>2</sup>
Material	Case : PPS / Heat sink : Aluminum
Weight	1.6kg + 0.15kg/m(cable)
Accessories	Two ferrite clamps

Specification of battery	
Battery type	Lead battery
battery voltage	24V DC
Charging current	≤ 4A

## Specification

Explanation	Function
Battery conformity detection	Charging does not start when the base part faces the remote part with a battery outside the adaptation voltage connected.
Battery reverse connection protection	If the battery terminal is accidentally connected in the reverse polarity, charging will not start.
Battery unconnected protection	If the cable connected to the battery is broken for some reason, charging will be cut off.

## System configuration



### 【Function of each component】

Remote part : It will supply power to the lead batteries.

Base part : It supplies a movement power supply necessary for the remote part.

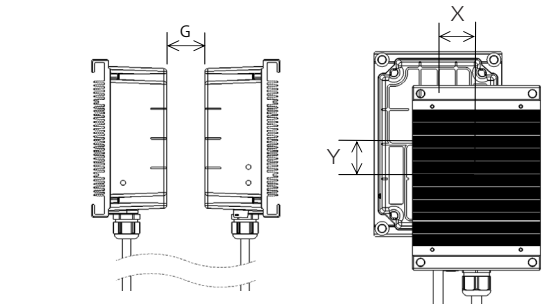
## Transmission distance

< If you do not keep the transmission distance, it may cause a malfunction >

- If the product is held for a long time under an out-of-specification operating distance / center offset / overload condition, the product may be damaged due to abnormal heating.
- When facing a remote part and a base part a bit away from the transmitting area, the built-in relay in RVT-433 might repeatedly open and close. When both parts remain facing condition, we recommend to use within rated transmitting area to prevent to shorten their life.
- Facing LED means a backup signal to confirm that the signal is established when used within the specifications. Please note that we do not guarantee signals outside the specifications.

Please set axis misalignment between RVE and RVT within X and Y respectively within 4 mm

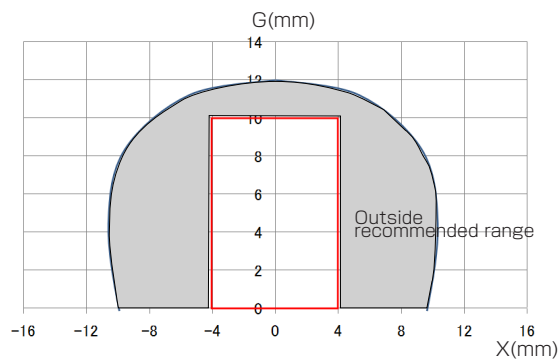
Type code	G	X	Y
RVE-433-2-PU-__	≤ 10	± 4	± 4
RVT-433-404-PU-__			



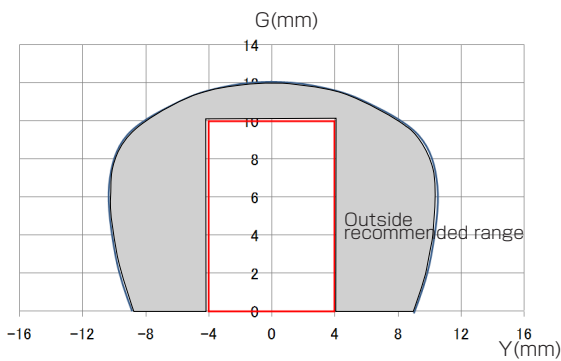
## Typical Transmitting Diagram

Curve:Representative example(When the power supply voltage is 21.6V / non-flush mount)

Square frame line:Operating distance



When the axis is misaligned in the X-axis direction



When the axis is misaligned in the Y-axis direction

## Installation note

In order to avoid influence of surrounding metal, or to avoid mutual influence between parallel-mounted sensors, keep the minimum free zone as described below.

Tightening torque ⇒ 3.5N·m

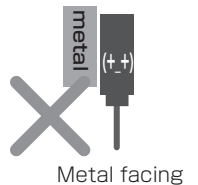
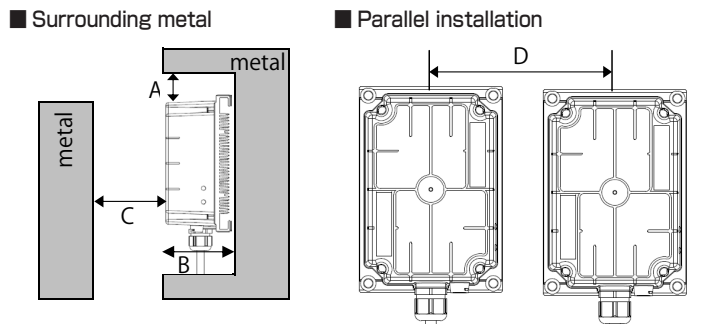
Type code	A(arround)	B(depth)	C(distance)	D (pitch)
RVE-433-2-PU-__	100	75	45	300
RVT-433-404-PU-__			---	

## 【Precautions surrounding metal and heat generation】

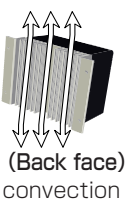
< It is very dangerous if the product faces metal.

To prevent damage to the equipment due to the presence of metal, be sure to observe the following. >

- If the power is turned on with metal chips or cutting pieces adhering to the transmission surface of the "base head part" "remote head part", the "base head part" or adhering metal chips or cutting pieces the base head and attached metal chips and cutting pieces may generate heat, leading to an unexpected accident. Be sure to remove metal chips, cutting pieces, etc. adhering to the transmission surface of the head before operating the system.
- Do not put metal objects between the operating coils. There is a possibility of heat generation and ignition due to induction heating.
- If the product is energized and faced with metal, the possibility of failure is extremely high. Be sure to turn on the power after installation to avoid metal opposition.
- Since this product is a natural air cooling type, please install in consideration of heat dissipation so that heat does not accumulate around the main body.
- Because this product is to prevent malfunction or failure due to noise, please be attached so that the heat sink is grounded to the frame ground.
- When installing products in parallel, be sure to leave a space of at least the specified value to avoid mutual interference between the products.



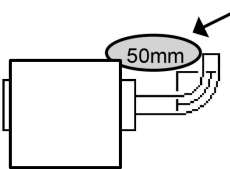
Metal facing



**B & PLUS K.K.**

<https://www.b-plus-kk.jp/> E-mail [sales@b-plus-kk.jp](mailto:sales@b-plus-kk.jp)

Bending radius of Cable



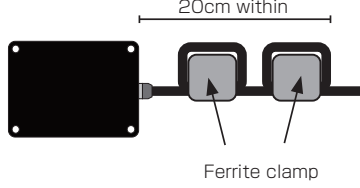
- The minimum bending radius for these sensors are 50mm.
- Never pull the cable strong in installing. It leads to damage and increases the risk of product failure.
- Install so that water and cutting water do not splash on the wiring at the end of the cable. Moisture may be infiltrated through the cable core to the main body, leading to problems such as short circuits and corrosion.


Wiring

(1) In order to meet the EMC (IEC61000-4-3.Radiation radio frequency electromagnetic field immunity) standards, the ferrite clamp of bundled, please attach two clamps within 20cm from the body. The number of turns is two turns.

(2) If you want to extend the cable is in consideration of the voltage drop, please use a sufficiently thick cable.

■ Ferrite clamp installation image





Charging voltage (CV) is specified with cable length 0 m. Since the resistance value per cable length used in this product is 30 m Ω / m, consider the voltage drop in actual use.

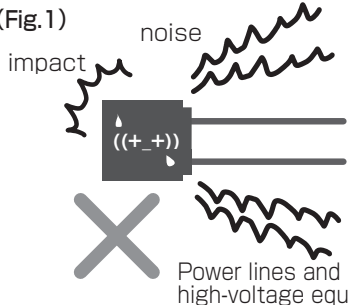
Product failures due to mishandling are increasing. Please be sure to read this manual, and if you have any concerns, please contact the following before energizing. Mail : sales@b-plus-kk.jp

⚠ Attention for installation

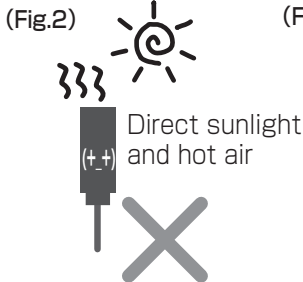
Please read carefully before using and full attention to Safety Considerations. Incorrect handling may cause not only malfunction or failure, leading to an accident or injury. Also in order to prevent damage or injury, please look after.

- [Installation condition]** < If you install it incorrectly, there are various dangers such as failure >
- Please be careful about the influence on the material degradation due to the installation environment and the intrusion of foreign material. Especially when using it outdoors, please install it with less influence from ultraviolet rays.
  - As with other electronic devices, inrush current may be generated when the system starts up, so please set the power supply in consideration of the inrush current.
  - Attach it to metal to reduce the effects of noise and self-heating.
  - Use the charging type within the range where the constant voltage and constant current values do not exceed the maximum charging voltage and maximum charging current of the connected battery.
  - Please use it with the heads facing each other correctly according to the specifications.
  - Regarding the installation location, in order to consider and reduce the self-heating of this product, take measures so that it can be used below the specified ambient temperature.
  - Impact and external noise may cause malfunction or failure. Do not subject it to shocks and be unaffected by noise. (Fig.1)
  - If it is installed in a place where it is exposed to direct sunlight or hot air from a heater, it may cause a fire or malfunction. (Fig.2)
  - If you apply power to the remote part or energize either one with the base part facing each other, a failure may occur. (Fig.3)
  - Please use the case in an environment where it is not exposed to organic solvents or liquids containing them. (Fig. 4)

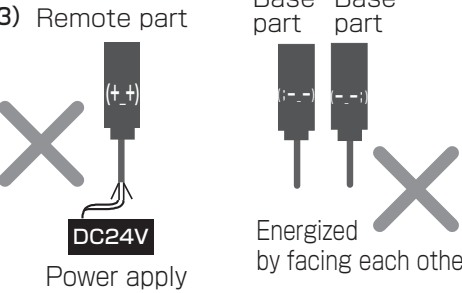
(Fig.1)




(Fig.2)



(Fig.3)



(Fig.4)

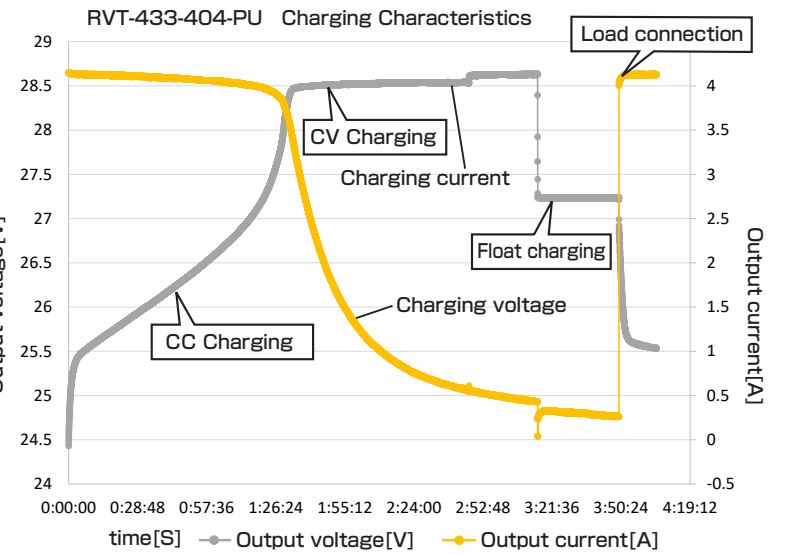


⚠ Other notes

- [Standards and regulations]**
- The control communication device installed in the product corresponds to a "weak radio station (weak radio wave device)", so the Minister of Internal Affairs and Communications' radio station permit (diploma) is not required. However, please be careful when operating it as it may affect electronic devices and medical devices (pacemakers, etc.).
  - To a product EMC Directive order, CE marking is on the product appearance or a cable. When using an output sensor with cable length longer than 10m, a measure to protect the sensor from surge current should be taken.
  - When using the product outside Japan, check the appropriate standards and regulations, etc. that the customer's system should meet, and then please take appropriate measures.

- [Other]**
- Please don't resolution remodeling or modify the product. Failure to do so may result in fire, electric shock or malfunction. In addition, there is a risk that can lead to serious injury.
  - Do not perform the resolution and remodeling.If you do these things, it will not be covered by the warranty.
  - Smoke, or in the case of such an abnormal state when abnormal noise or offensive smell is, please stop using it immediately. The malfunction or electric shock , the cause of the fire.
  - If you want to dispose of this product, you will be disposed of as industrial waste.
  - Always, use the specified parts and accessories. , It can cause the malfunction or accident or the cause of the fire.
  - Specifications subject to change without notice. If there is a point of notice about the contents of this document, feel free to contact us, thank you.

Charging Characteristics



[Battery notes]

- Refer to the above charging characteristics diagram, and connect and use batteries with matching charging characteristics. Also, due to individual product differences and battery characteristics, recharging may start immediately after charging is completed, so check the specifications of the battery to be used before using it according to the specifications.
- Since the remote part does not have a battery temperature protection function, manage it on the battery side.
- Some batteries do not output voltage unless they are started, so please refer to the instruction manual of the battery. If there is no output from the battery (0V), the remote system considers it a voltage error or disconnection and will not start charging.

Charging control

**[Adopt CCCV charging]**

CCCV charging...When the battery is low, it is charged by supplying a constant current as CC charging. When the battery approaches full charge, it switches to CV charging and gradually reduces the current. This is the most mainstream charging method.

Explanation	
Rated charge control	CCCV (Constant current / constant voltage) Maximum current at CC : 4.3 ± 0.1A Maximum voltage at CC : 28.4V typ., 29.0V max
Constant voltage control	In the over-discharge state (below the battery voltage of about 20V), to limit the charging current to about 1.2A. Usually returns to the charge cycle and when it is more than about 20V.
Float charging	When the output current from the RVT-433-404-PU is less than or equal to about 0.4A, it will transition to float charge.
Return to charging state	When the output current from the RVT-433-404-PU is more than about 0.8A, to migrate from the float charge to the normal state of charge.
Charging end control	Battery voltage is about 15V or less, or if you have connected the about 30V or more of the battery even when the opposing state does not start charging operation.