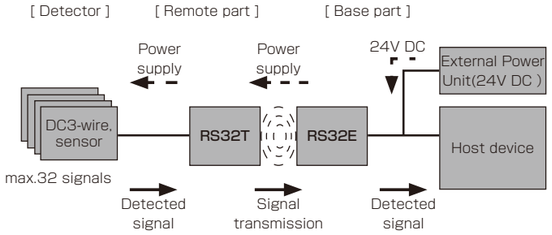
Remote System
User's Guide

Remote sensor sysytem
32 signal transmission / Compact shape
24V1A type

Remote part : **RS32T-427-PU-_ _**
Base part : **RS32E-427N-PU-_ _(NPN)**
RS32E-427P-PU-_ _(PNP)

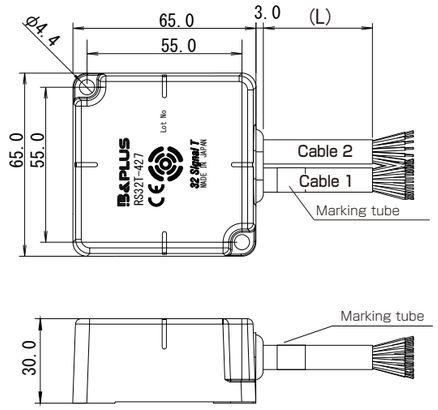
System configuration



【Function of each component】
Detector : Connects Detector sensor (max.32) and transmits the detected signals to Remote part.
Remote part : Provides power for Detector, also passes detected signals from Detector to Base part.
Base part : Puts out detected signal to external controller, also sends power for operating of Detector and Remote part.

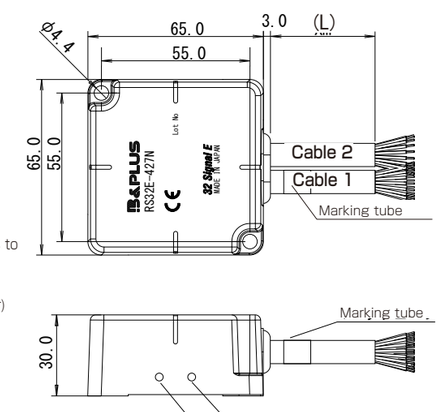
Dimension

Remote part : RS32T-427-PU-_ _



L=Cable length
The notation in meters to the end of the model
···PU-02 ⇒ 2m
max. 5m
(Remote part,Outputsensor)

Base part : RS32E-427N-PU-_ _ , RS32E-427P-PU-_ _



Specification of the System

Type		RS32T-427-PU-_ _
Applicable sensor		DC 3-wire sensor
Output voltage		24V ± 1.5V DC
Output current total		≦ 1A
Input signals		32(SI1··· 32)
Operating distance	In the case of 1A	0...4mm
	In the case of 0.5A	0...6.5mm
Center offset (1A)		± 5mm :Transmission distance is within 3mm
		± 2.5mm:Transmission distance 3...4mm
Center offset(0.5A)		± 7.5mm :Transmission distance is within 4.5mm
		± 3mm :Transmission distance 4.5...6.5mm
Operating temperature		0...+50℃
Protection class		IP67
Cable		Cable1 : PUR ϕ 8.6mm (2x0.5mm²+17x0.18mm²) 【RB】*1 Cable2 : PUR ϕ 8.6mm (2x0.5mm²+16x0.18mm²) 【RB】*1
Material	Case	Polyurethane
	Heat sink	Aluminum
Weight		Body 210g +Cable 110g/m x2pcs.

Type	NPN	RS32E-427N-PU-_ _
	PNP	RS32E-427P-PU-_ _
Supply voltage(Input voltage)		24 V DC ± 5 %
Current consumption	active	Max 1.5 A (with 1A drive)
	static	Max 0.1 A (when not facing)
Number of output signals		32+1(In zone)
Load current		≦ 50mA/ 1output
Frequency of operation		150Hz
LED indication		Status (Green), In zone (Orange)
Operating temperature		0...+50℃
Protection class		IP67
Protection circuit		Reverse connection protection, overheat protection, short circuit protection, overcurrent protection, output surge absorption protection, head metal facing protection *3
Cable		Cable1 : PUR ϕ 8.6mm (2x0.5mm²+17x0.18mm²) 【RB】*1 Cable2 : PUR ϕ 8.6mm (16x0.18mm²) 【RB】*1
Material	Case	Polyurethane
	Heat sink	Aluminum
Weight		Body 155g+ Cable 110g/m x 2pcs.

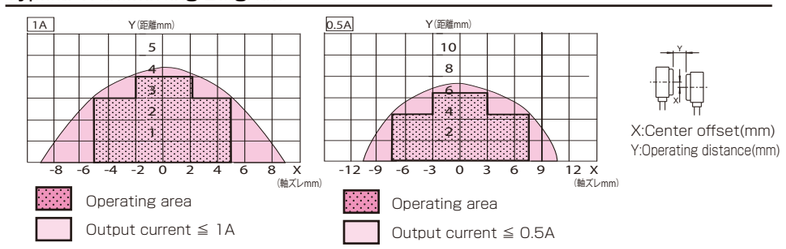
*1 【RB】represents robot cable specifications.
*2 Indicates the time from when the remote and base sections are energized in the transmittable area to when non-contact signal transmission is possible.
*3 Metal protection is a function to prevent metal heat generation when facing metal, and is not guaranteed to work on all metals. Do not intentionally place metal against the communication surface.

Available sensors

Use a sensor that operates correctly within the conditions in the table below.

Supply voltage	24V DC
Total currenconsumptoion	≦ 1A
Residual voltage	≦ 6.5V
Load current	-

Typical Transmitting Diagram (Supply voltage at 24V /non-flush mount)



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Wiring color

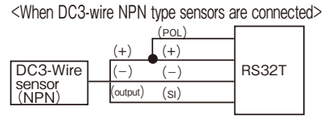
RS32T-427-PU-_ _			
Cable 1 (with marked tube)		Cable 2	
Output+24 V	WH	Output+24 V	WH
Output0V	PaleBU	Output0V	PaleBU
Polarity switching POL	BK	Input 17 (SI17)	BN
Input 1 (SI1)	BN	Input 18 (SI18)	RD
Input 2 (SI2)	RD	Input 19 (SI19)	OG
Input 3 (SI3)	OG	Input 20 (SI20)	YE
Input 4 (SI4)	YE	Input 21 (SI21)	GN
Input 5 (SI5)	GN	Input 22 (SI22)	BU
Input 6 (SI6)	BU	Input 23 (SI23)	VT
Input 7 (SI7)	VT	Input 24 (SI24)	GY
Input 8 (SI8)	GY	Input 25 (SI25)	BN ■
Input 9 (SI9)	BN ■	Input 26 (SI26)	RD ■
Input 10 (SI10)	RD ■	Input 27 (SI27)	OG ■
Input 11 (SI11)	OG ■	Input 28 (SI28)	YE ■
Input 12 (SI12)	YE ■	Input 29 (SI29)	GN ■
Input 13 (SI13)	GN ■	Input 30 (SI30)	BU ■
Input 14 (SI14)	BU ■	Input 31 (SI31)	VT ■
Input 15 (SI15)	VT ■	Input 32 (SI32)	GY ■
Input 16 (SI16)	GY ■		

RS32E-427N/P-PU_ _			
Cable 1 (with marked tube)		Cable 2	
Input+24 V	WH	Output 17 (SO17)	BN
Input0V	PaleBU	Output 18 (SO18)	RD
INZONE Iz	BK	Output 19 (SO19)	OG
Output 1 (SO1)	BN	Output 20 (SO20)	YE
Output 2 (SO2)	RD	Output 21 (SO21)	GN
Output 3 (SO3)	OG	Output 22 (SO22)	BU
Output 4 (SO4)	YE	Output 23 (SO23)	VT
Output 5 (SO5)	GN	Output 24 (SO24)	GY
Output 6 (SO6)	BU	Output 25 (SO25)	BN ■
Output 7 (SO7)	VT	Output 26 (SO26)	RD ■
Output 8 (SO8)	GY	Output 27 (SO27)	OG ■
Output 9 (SO9)	BN ■	Output 28 (SO28)	YE ■
Output 10 (SO10)	RD ■	Output 29 (SO29)	GN ■
Output 11 (SO11)	OG ■	Output 30 (SO30)	BU ■
Output 12 (SO12)	YE ■	Output 31 (SO31)	VT ■
Output 13 (SO13)	GN ■	OUtput 32 (SO32)	GY ■
Output 14 (SO14)	BU ■		
Output 15 (SO15)	VT ■		
Output 16 (SO16)	GY ■		

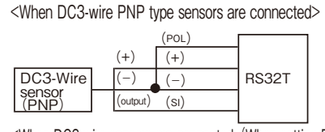
■ Polarity switch POL is used to switch the polarity (NPN/PNP) of the sensor connected to the transmission unit.
Check the wiring diagram, and wire it according to the sensor to be connected. If it is not wired, no signal will be detected.
■ When shipped from the factory, the unused core wire of the cable is cut. If the cable is shortened for wiring reasons, the unused core wire will be exposed. If you shorten the cable for wiring reasons, the unused core wire will be exposed, so please take care not to short-circuit the cable. Unused wires are as follows: Remote part Cable 2: Black Base part cabel2:Black,white,pale blue.

Wiring Diagram When wiring, please check the wiring diagram carefully to ensure that the wiring is correct.

<When DC3-wire NPN type sensors are connected>

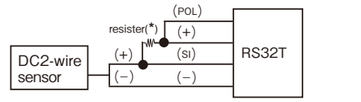


<When DC3-wire PNP type sensors are connected>

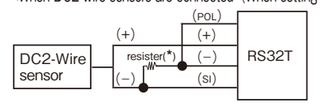


<Connecting to an external PLC, etc.>

<When DC2-wire sensors are connected (When NPN is set) >



<When DC2-wire sensors are connected (When setting PNP) >



*When connecting DC 2-wire sensors, wire a resistor with a resistance value of 3 to 4 k Ω and a rated power of 1/2 W or more.
The resistance value can be calculated by the following formula. To operate properly, select a resistance value smaller than the caluculated value.
Resistance value [Ω] ≦ (Output voltage lower limit 22.5 [V] - Sensor residual voltage [V]) / Sensor minimum load current [A]

Protective function

The explanation about the built-in protection function is as follows.

Reverse connection protection ・・・This function protects the circuit by preventing current from flowing to the internal circuit when +24V and 0V are connected in reverse on the power supply line of the base.

Overheat protection ・・・This function measures the temperature inside the Base part and stops the power supply when a certain temperature is exceeded. It will restart when the temperature drops.

Short-circuit protection ・・・This function protects the circuit by turning off the output for a certain period of time when a current exceeding the specifications flows through the signal output line due to unloaded wiring.

Overcurrent protection ・・・A function that protects the circuit by detecting the current inside the Base part and stopping transmission for a certain period of time when a certain current value is exceeded.

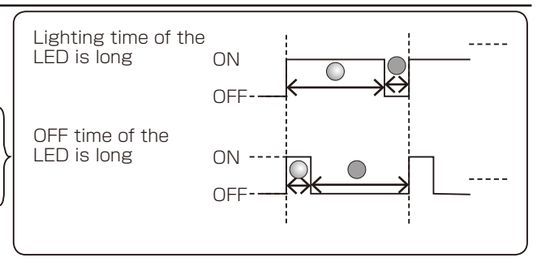
Output surge absorption protection ・・・A surge absorption circuit is built in to protect the output circuit.

Metal facing protection of the head ・・・When metal is detected, transmission is stopped for a certain period of time to protect the circuit.

LED indication

■ Status LED (Green)

LED	Blinking	Lighting pattern	Meaning
ON	-	-	The power supply is supplied.
OFF	-	-	The power supply is not supplied.
Blink	1.4sec/0.1sec	Off time of the LED is long	Anomalous temperature
		Lighting time of the LED is long	Oscillation circuit overcurrent.
Blink	0.55sec/ 0.05sec	Off time of the LED is long	Supply voltage is high.
Blink		Lighting time of the LED is long	Supply voltage is low.
Blink	0.2sec/0.2sec	The LED flashes at the same interval	Short circuit protection.

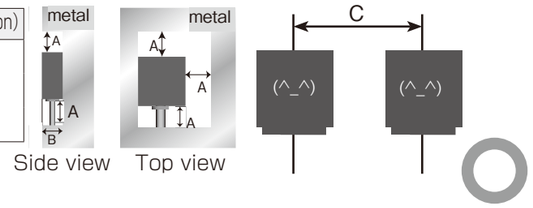


■ In zone LED (Orange)
The in zone LED lights up when the transmission part and the Base part are in a confronting state and communication is possible.

Installation method

・To avoid the influence of surrounding metals and mutual interference between products, be sure to open a space larger than the value shown in the table below. In addition to the mounting surface, only one surface of A (periphery) can be in contact with metal. (Fig. 1) The screw tightening torque is 1.5N·m.

Type code	A(Surroundings)	B(depth)	C (Parallel installation)
RS32T-427-PU-_ _	30mm	30mm	165mm
RS32E-427N-PU-_ _			
RS32E-427P-PU-_ _			



(Fig. 1) Arranged with a space

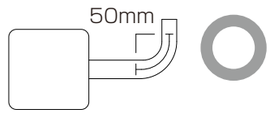
・When wiring the cable by bending it, use the cable outlet.
Install so that the cable is straight (approximate: about 10 mm)
Install the cable with a bending radius of 50 mm or more. (Figure 2)

・Excessive force on the cable during installation to avoid excessive stress Please do not pull with.

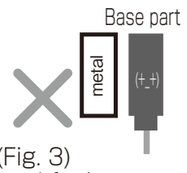
・Fix the cable so that the sensor, the base of the sensor, and the cable itself are not shaken or shocked.

・Since metal overheating and internal elements may be damaged, install the Base part so that it does not face metal, and then turn on the power. (Fig. 3)

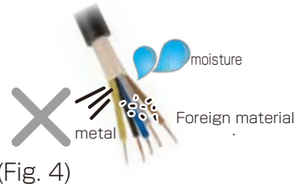
・If foreign matter get inside the device from the end of the cable, it may cause fire, smoke, fire, electric shock, or malfunction due to malfunction or short circuit. (Fig. 4)



(Fig. 2) Cable bending radius



(Fig. 3)
Metal facing output



(Fig. 4)
Foreign material invades inside the sensor

⚠ Precautions for installation and design

■ Be sure to check it as there are various dangers such as failure if it is installed incorrectly.

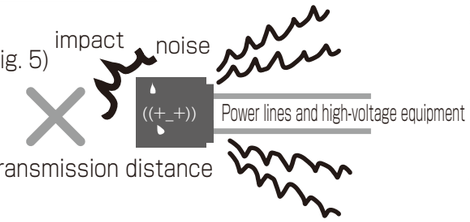
・To avoid heat generation and ignition due to induction heating, do not put metal objects between the operating heads.

・To avoid heat generation and unexpected accidents, remove metal chips and cutting chips from the transmission surface of the head.

・To avoid damaging the product due to abnormal heat generation, do not hold the transmission distance / center offset / overload condition outside the specifications for a long time.

・Impact and external noise may cause malfunction or failure. Route the cable away from power lines and high-voltage equipment without giving a shock. (Fig. 5)

(Fig. 5)



・Make sure that the total current consumption of the connected devices does not exceed the Output current value.

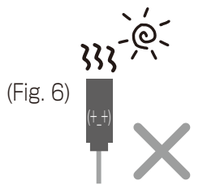
・In order to consider and reduce the self-heating of this product, take measures so that it can be used below the specified ambient temperature.

・To reduce the effect of self-heating (heat dissipation), it is recommended to mount it on metal using case mounting screws.

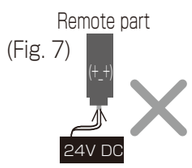
・If it is installed in a place where it is exposed to direct sunlight or hot air from a heater, it may cause a fire or malfunction. (Fig. 6)

・If you apply power to the Remote part or energize either one with the Base part facing each other, a failure may occur. (Fig. 7)

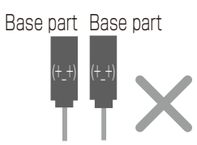
・Please use in an environment where it is not exposed to organic solvents or liquids containing them. (Fig. 8)



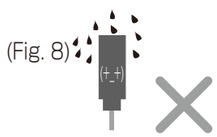
Direct sunlight and hot air



Power application



Energized by facing each other



Liquids such as organic solvents

・A remote sensor system is a system that supplies and transmits power and signals in a non-contact manner. Please do not use it for any purpose other than this purpose.

・Design with the combination described in the instruction manual or user's guide. Opposition in any other combination may cause malfunction or damage.

・Use a constant voltage power supply such as a switching power supply.
(If a power supply with ripples above the rating, such as a full-wave rectified power supply, is used, it may cause malfunction.)

・If the power supply exceeds the rated voltage, there is a risk of overheating and ignition.
Before supplying power, be sure to check that the power supply is specified in the specifications.

・Design it so that it can be used under the wiring and surrounding environment conditions specified in the specifications. Also, design to satisfy the "transmission distance", "center offset", "Output voltage", and "Output current". Designs outside the specifications may cause unexpected malfunctions, troubles, and malfunctions due to deterioration of internal parts.

・When wiring for installation, maintenance, failure, etc., be sure to check that the main breaker (power panel) is cut before performing the work. If you work while the line is live, you may get an electric shock or malfunction.

・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.

・Design the system so that the entire system works safely even if the external power supply is abnormal or the product fails.

・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.

⚠ Other notes

■ About product handling

・Do not disassemble or modify our products. It may cause a malfunction, fire, electric shock, etc., or cause serious damage. In addition, the warranty will be void if the product is disassembled or modified.

・If you are in an abnormal condition such as smoke, abnormal noise, or strange odor, discontinue use immediately as there is a risk of malfunction, fire, electric shock, or accident.

・Be sure to use accessories and specified parts. If you do not use it, it may cause malfunction, accident, malfunction, fire, etc.

・If you add or move equipment, please check the installation conditions again.

・When disposing of this product, dispose of it as industrial waste.

・Please note that the contents and specifications of this manual are subject to change without notice.
If you have any questions about the contents of this manual, please contact us.

■ 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.).

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.

B&PLUS K.K.
https://www.b-plus-kk.jp/ E-mail sales@b-plus-kk.jp