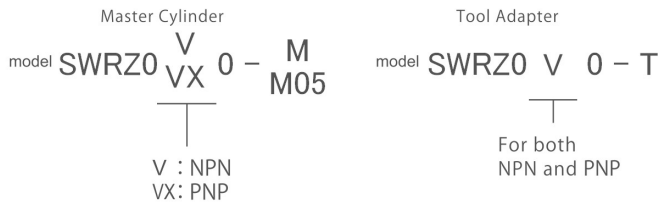


## External Option : Waterproof Electrode (Noncontact Waterproof Option) IP67



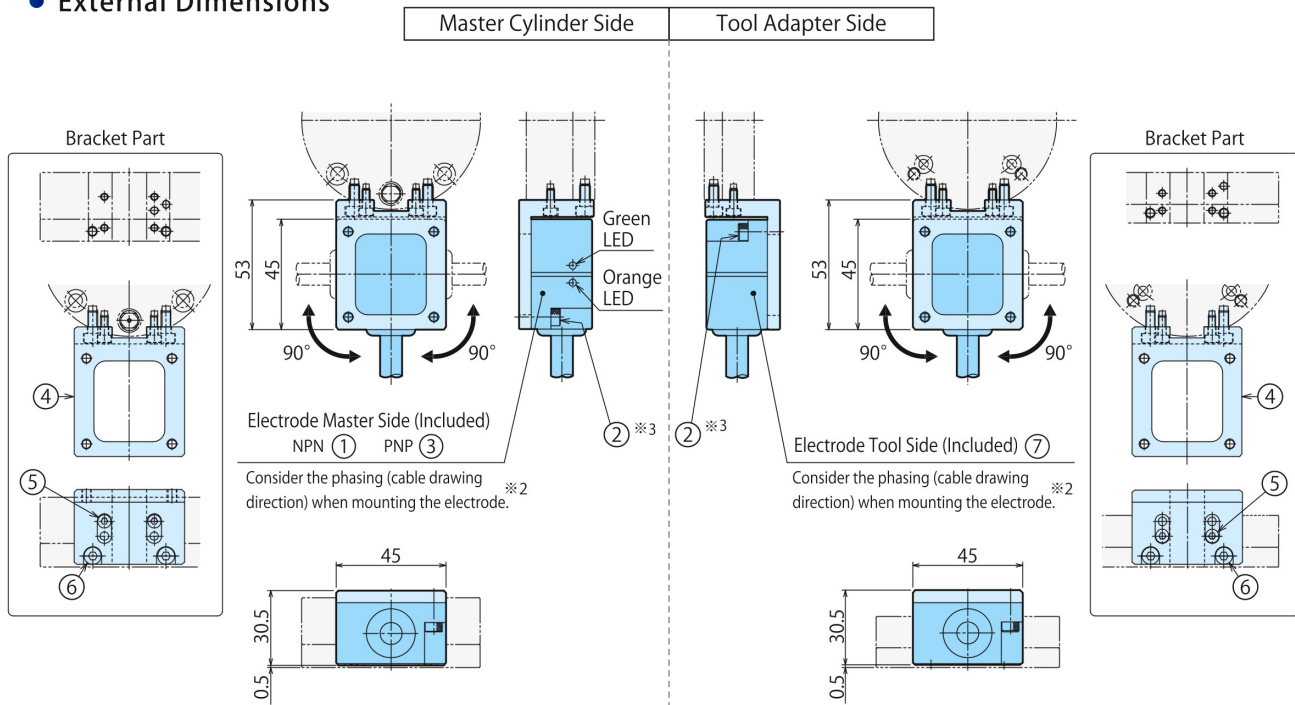
### Specifications

Number of Signals (per electrode)	12	
Protection Grade <sup>※1</sup>	IP67	
Cable	PUR $\phi$ 8.6 2×0.5mm <sup>2</sup> +13×0.18mm <sup>2</sup>	
Cable Length	- M	2m
	- M05	5m
	- T	1m
Weight <sup>※2</sup>	Master Cylinder Side - M (Cable 2m)	Electrode + Bracket 130g Cable 210g
	Master Cylinder Side - M05 (Cable 5m)	Electrode + Bracket 130g Cable 525g
	Tool Adapter Side	Electrode + Bracket 130g Cable 105g

※1. Protection grade of the electrode part.

※2. Weight per electrode.

### External Dimensions



Model No.	No.	Name	Quantity
SWRZ0V0 -M/M05	①	Electrode (Master Side) NPN Made by B & Plus RS12E-422N-PU-02/05	1
	②	Hexagon Socket Bolt M4×0.7×12 (SUS) <sup>※3</sup>	2
SWRZ0VX0 -M/M05	③	Electrode (Master Side) PNP Made by B & Plus RS12E-422P-PU-02/05	1
	②	Hexagon Socket Bolt M4×0.7×12 (SUS) <sup>※3</sup>	2
SWRZ0V0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Hexagon Socket Bolt M3×0.5×8 (SUS)	2
	⑥	Hexagon Socket Bolt M4×0.7×8 (SUS)	2

Model No.	No.	Name	Quantity
SWRZ0V0-T	⑦	Electrode (Tool Side) Made by B & Plus RS12T-422-PU-01	1
	⑧	Hexagon Socket Bolt M4×0.7×12 (SUS)	2
SWRZ0V0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Hexagon Socket Bolt M3×0.5×8 (SUS)	2
	⑥	Hexagon Socket Bolt M4×0.7×8 (SUS)	2

Notes: 1. For SWRZ0V0-M/M05 and SWRZ0VX0-M/M05, cable length of -M is 2m, and cable length of -M05 is 5m.

※2. Even if the mounting phase of electrode on master and tool sides is different, signals can be transmitted. Determine the mounting phase of electrodes based on the cable drawing direction.

※3. The tightening torque for M4 mounting bolts marked with ※3 should be 1.5 N · m.

# Details and Notes on External Option : Noncontact Waterproof Electrode

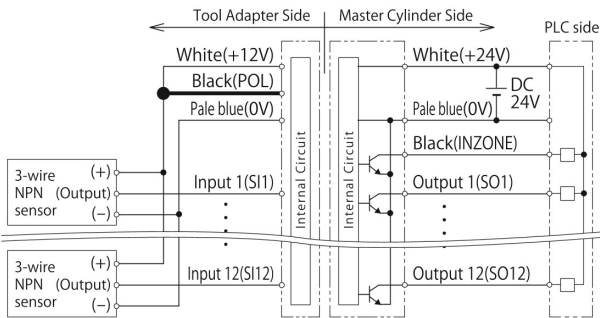
Applicable Sensor		Electrode Specifications (Tool Adapter Side)		Electrode Specifications (Master Cylinder Side)		LED Indication Status LED : Green	
Supply Voltage	12V DC	Model No.	SWRZ0V0-T	Model No.	NPN SWRZ0V0-M/M05	LED	Meaning
Total Current Consumption	≤230mA	Applicable Sensor	DC 3-Wire Sensor	Supply Voltage (Input Voltage)	24V DC ±10% (Including Ripple)	ON	The power is supplied.
Residual Voltage	≤3.5V	Output Voltage	12V ±1.5V DC	Current Consumption	≤600mA	OFF	The power is not supplied.
		Total Output Current	≤230mA	No. of Output Signals	12 +1 (INZONE)	Blink	Blinks in case of abnormality.
		No. of Input Signals	12	Load Current	≤50mA / 1 Output	LED Indication Inzone LED : Orange	
		Operating Distance	2~5mm	Operating Temperature	0 ~ 50°C	The master cylinder and tool adapter are opposed, LED is lit when you can communicate. When there is an output signal from each sensor, it flashes accordingly.	
		Operating Temperature	0 ~ 50°C	Protection Grade	IP67		
		Protection Grade	IP67	Material	ABS		
		Material	ABS	Cable	PUR φ8.6		
		Cable	PUR φ8.6 2×0.5mm <sup>2</sup> +13×0.18mm <sup>2</sup>	Cable	2×0.5mm <sup>2</sup> +13×0.18mm <sup>2</sup>		

※ Total current consumption of sensors must not exceed the total rated output current.

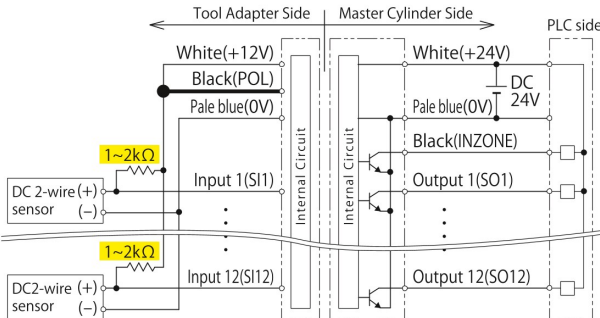
## Wiring Diagram

### SWRZ0V0-M/M05 (NPN)

■ For DC 3-wire NPN sensor connection



■ For DC 2-wire sensor connection (when NPN is set)

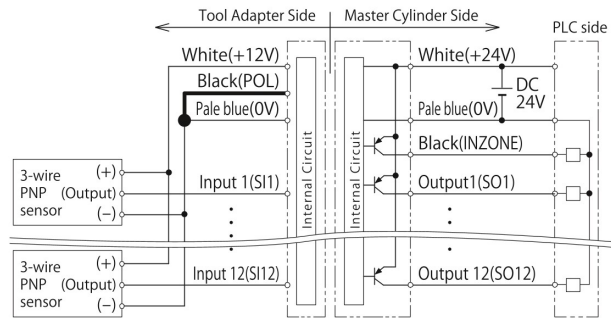


■ When connecting a DC 2-wire sensor, ensure to wire a resistor of about 1 to 2 kΩ.

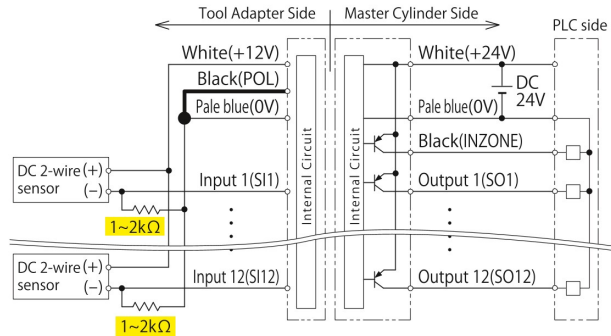
■ POL is wiring for switching the polarity (NPN/PNP) of the sensor.

### SWRZ0VX0-M/M05 (PNP)

■ For DC 3-wire PNP sensor connection



■ For DC 2-wire sensor connection (when PNP is set)



## Wiring Color

■ Electrode for Tool Adapter side

Output +12V	White
Output 0V	Pale blue
Polarity Switching POL	Black
Input 1 (SI1)	Brown
Input 2 (SI2)	Red
Input 3 (SI3)	Orange
Input 4 (SI4)	Yellow
Input 5 (SI5)	Green
Input 6 (SI6)	Blue
Input 7 (SI7)	Violet
Input 8 (SI8)	Gray
Input 9 (SI9)	Brown * ■ ■
Input 10 (SI10)	Red * ■ ■
Input 11 (SI11)	Orange * ■ ■
Input 12 (SI12)	Yellow * ■ ■

■ Electrode for Master Cylinder side

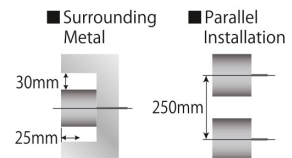
Input +24V	White
Input 0V	Pale blue
INZONE	Black
Output 1 (SO1)	Brown
Output 2 (SO2)	Red
Output 3 (SO3)	Orange
Output 4 (SO4)	Yellow
Output 5 (SO5)	Green
Output 6 (SO6)	Blue
Output 7 (SO7)	Violet
Output 8 (SO8)	Gray
Output 9 (SO9)	Brown * ■ ■
Output 10 (SO10)	Red * ■ ■
Output 11 (SO11)	Orange * ■ ■
Output 12 (SO12)	Yellow * ■ ■

■ \* is the line where ■ is printed on the core wire of each color. The unused lines are green \*, blue \*, and violet \*.

## Attention for Installation

(Read this section thoroughly before installation.)

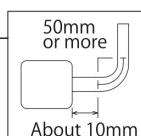
- ◆ Ensure the power is switched off during installation or maintenance operations.
- ◆ Use a regulated power supply, e.g. switch-model type. Simpler power supplies, such as a full-wave rectification type, will cause the permissible ripple rating to be exceeded and may cause malfunction.
- ◆ Do not put metal objects between electrodes during operation. Failure to do so may cause heat generation, ignition, or malfunction.
- ◆ Ensure correct connections by referencing the wiring diagram.
- ◆ To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.
- ◆ The control communication device in the product may affect electronic devices and medical devices. Persons wearing pacemakers should stay away from this product.
- ◆ In order to avoid influence of surrounding metal, or to avoid mutual influence between parallel-mounted sensors, keep the minimum free zone as described on the right.



## Bending Radius of Cable

The minimum bending radius for the sensors are 50mm.

※ Do not pull the cable with excessive force.



The information above is quoted from B & Plus K.K. Remote System User's Guide (No.T313A01Ue). Please contact B & Plus K.K. (TEL 81(0)-493-71-5160) for further information about electrodes (Model No. RS12E-422□-PU-02/05 and RS12T-422-PU-01).