

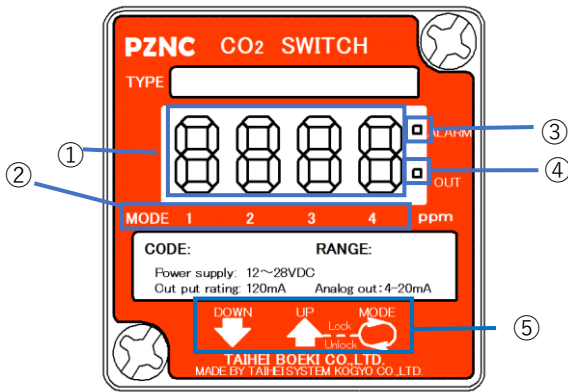


# Operating Instructions

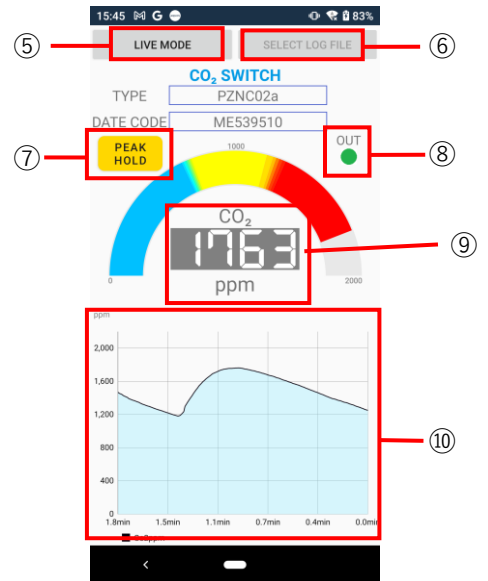
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## (1) DESCRIPTION OF CO2 SWITCH AND APPLICATION INTERFACE



- Main Body
- ① Concentration Indication
  - ② Mode Position
  - ③ Alarm LED
  - ④ Output LED
  - ⑤ Operating Switches



- APP
- ⑤ LIVE/LOG Mode Switching
  - ⑥ Log Calling
  - ⑦ Peak Hold
  - ⑧ Output LED (Mode3)
  - ⑨ Concentration Indication
  - ⑩ Graphic Indication

## (2) MODE INDICATION


### Flashing Positions

- Mode 0 Current CO2 Concentration (No Flashing)
- Mode 1 Concentration alarm1
- Mode 2 Concentration alarm2
- Mode 3 Contact High Limit
- Mode 4 Contact Low Limit

Each mode is obtained by clicking MODE button. The flashing positions, left picture, indicate each of the mode positions.

Save Energy Mode ※ The indication light will be turned off with this mode.

### (3) INSTRUCTIONS OF OPERATING METHODS AND INDICATIONS

- ① Apply power.
- ② LED display is turned on, and the display indicates the current concentration value on Mode 0.  
※After being applied the power, it takes 5sec for lighting on.
- ③ Setting up for concentration alarm (Mode1, 2)  
Press the MODE button. The display indicates Mode1, the concentration alarm value, with flashing.  
Press the UP-DOWN button to change the parameter of Mode1.  
When setting the parameter, press the MODE button to move on Mode2.  
Setting up for Mode2 is the same as above process.
- ④ Setting up for contact high and low limit (Mode3, 4)  
Press the MODE button. The display indicates Mode 3, contact high limit, with flashing.  
Press the UP-Down button to change the parameter of Mode3.  
When setting the parameter, press the MODE button to move on Mode4.  
Setting up for Mode4 is the same as above process.
- ⑤ Once setting up is done, please pressing the MODE button to be on mode 0 to store the parameters that you have set up. If you want to confirm or change the parameters, please switch the eligible mode by clicking the MODE button and change the parameters. Note: the parameters are not be stored in PZNC without reverting to Mode 0.
- ⑥ By holding down the UP-DOWN button, it changes the numbers at fast rate. When the number is close to the target value, please release from the button. This is valid for reducing the time to configure parameters.
- ⑦ Lock/Unlock  
While holding down the UP button at Mode0, pressing the MODE button to lock/unlock the switch.
- ⑧ Save Energy Mode  
Press the MODE button at Mode4, it turns to the save energy Mode. Even though the display light is turned off, the feature is still in working state.
- ⑨ Over indication  
The range is defined for each type of CO2 switch. When the concentration value exceeds the MAX limit, the display indicates .  
※While you set up the parameters, the configured output has been operated. When the risk is predicted, please shut down the system before proceeding.

### (4) OUTPUT

Contact output : 1a(N.O) or 1b(N.C.) (relay output)

※the output display LED lights up when the concentration exceeds the upper limit setting value in either 1a and 1b cases.

Analog output: 4~20mA

Recommended allowable load resistance: at 250Ω, the voltage across is 1.0V - 5.0V.

### (5) CONCENTRATION ALARM FLASHING INTERVAL

- When CO2 concentration is reached at concentration attention 1, the concentration indicator and alarm LED will flash at interval of 1 sec.
- When CO2 concentration is reached at concentration attention 2, the concentration indicator and alarm LED will flash at interval of 0.5 sec.

## (6) PREPARING FOR CONNECTION TO PZNC APPLICATION

1. To connect Google Play, please read the QR code below by Android devices.



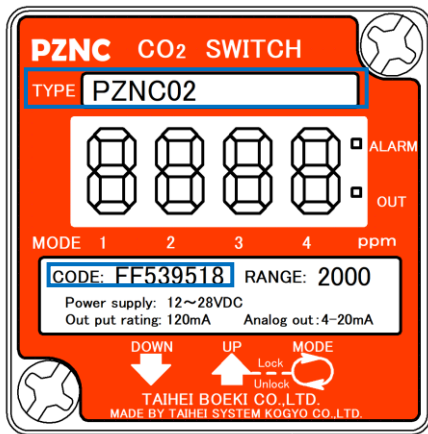
2. PZNC application will be on Google Play. Please press the **INSTALL** (インストール) tab.



3. The pop-up screen will be shown and press the **OPEN** (許可) tab after completing installation.



4. Apply the power of CO2 switch and confirm TYPE and CODE on the CO2 switch.



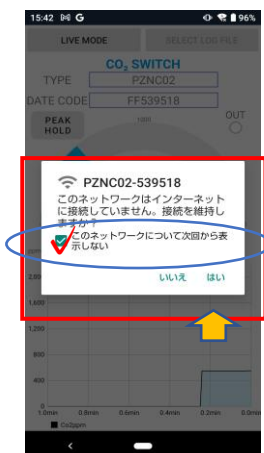
5. Open the Wi-Fi setting screen. Please choose SSID (TYPE+CODE), which is indicated on the CO2 switch.



6. Please input the password that is the CODE on CO2 switch.



7. Please check on the message below and press **YES** (はい) tab.

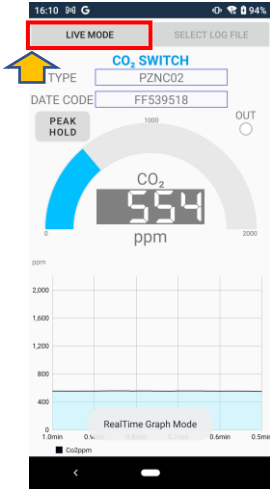


8. Please launch the Taihei Boeki PZNC application.

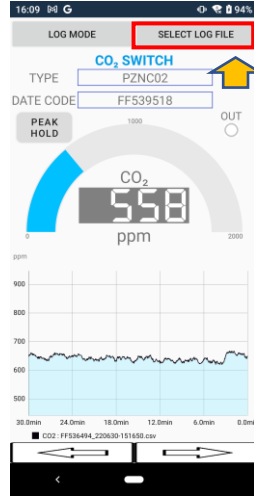


## (7) OPERATING INSTRUCTIONS OF PZNC APPLICATION

① Press the LIVE MODE tab to switch log data indicator Mode.



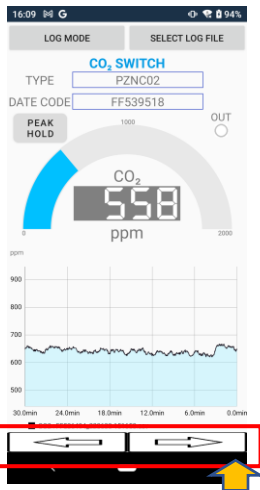
② Choose the SELECT LOG FILE tab to switch log Mode.  
NOTE: data is graphical data only.



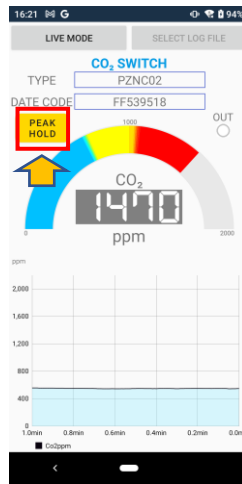
③ Pick the log file. The data is shown as graphical data.



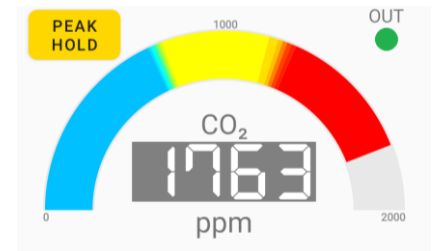
④ Press the button ⇐ and ⇒ to switch the data back and forth.



⑤ Press the button of "PEAK HOLD" to visible the highest concentration value. Repress the button of "PEAK HOLD" to be cleared.



⑥ Concentration set on Mode1 and 2 is displayed in the bar graph.  
Blue(normal value):0 ~ Mode1 configured value  
Yellow(concentration alarm1): Mode1 ~ Mode2 configured value  
Red(concentration alarm2):Mode2 configured value ~

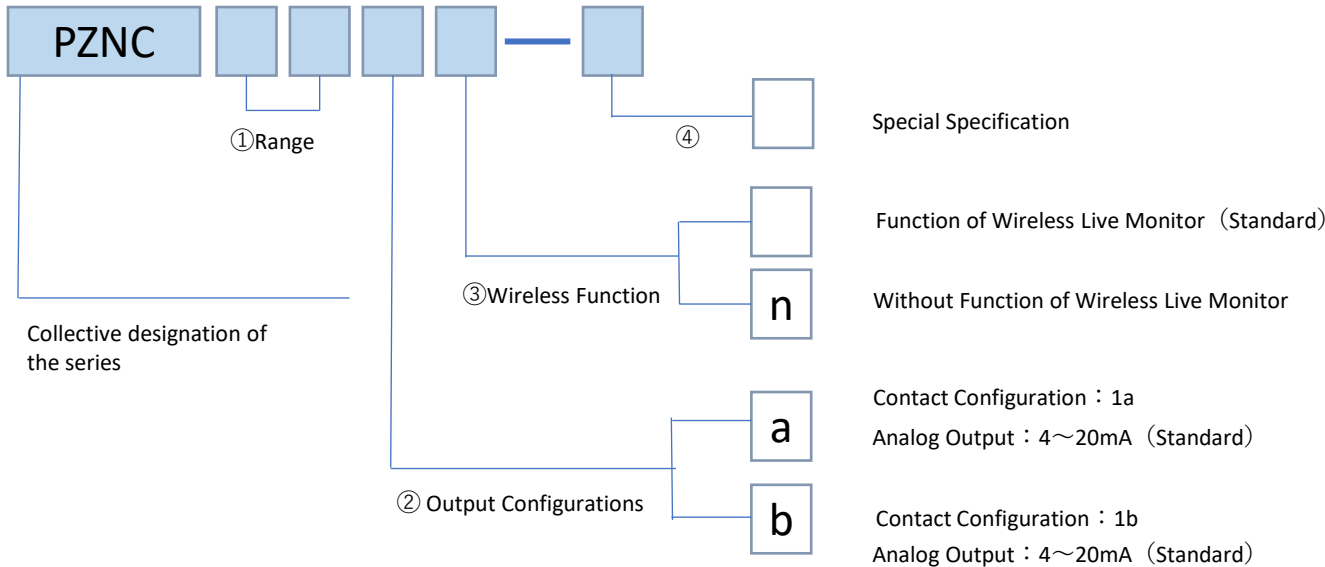


※The bar graph indicates the intermediate color when the color is changed.

### Other operating methods/Precautions

- Log files are saved in the storage as a CSV file. It is possible to import the data to PC and leave records. the place of the storage: Setup→storage→File→Android→data→pzn.co2monitor→files→Documents
- Log data is recorded around 7days (168 hours). The oldest data is deleted automatically in order.
- Log file is erased when application is uninstalled.
- Since the communication is wireless, depending on the conditions, the waveform of the graph might be interrupted in the middle.
- Please restart the application when there are issues of the display or operation of the application.
- Please switch the SSID each time if observing multiple CO2 switches with a smart device. Maximum number of connections at the same time is 4 devices for each CO2 switch.
- It is possible to observe the concentration change trend by the display of the graph on smart devices. However, it is unsuited to measure the data.
- It is possible to scroll the display of the concentration value and time by swiping on the graph.

## (8) MODEL SELECTION GUIDE



## (9) Characteristic Concentration

ppm  
(%)

Type	Range	Display Pattern	Concentration
PZNC02	0~2000 (0~0.2)	 Mode 1 2 3 4 ppm	 Mode 1 2 3 4 ppm
PZNC05	0~5000 (0~0.5)	4 digit of Concentration Indication	Flashing alarm LED and display by setting up the value on Mode1 and Mode2
PZNC10	0~10000 (0~1)	Mode Display Mode1:Flashing Mode2:Flashing Mode3:Flashing Mode4:Flashing	Ex : Mode1 : Set up on 1500ppm, 1sec interval flashing when it is over 1500. Mode2 : Set up on 2000ppm, 0.5sec interval flashing when it is over 2000.

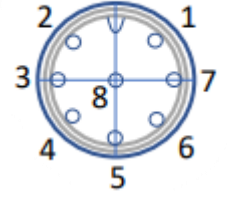
**Mode1 : 1sec interval flashing value**  
**Mode3 : Contact high limit**

**Mode2 : 0.5sec interval flashing value**  
**Mode4 : Contact low limit**

- Cannot be set up the parameters of concentration by remote control.
- The concentration display of the smart devices is slightly behind from the display of CO2 switch. If you want to check the exact value, please check the device of CO2 switch.
- Special specifications can also be produced. Please contact us.

**(10) ELECTRONICAL CONNECTION (M12 8P Connector)**

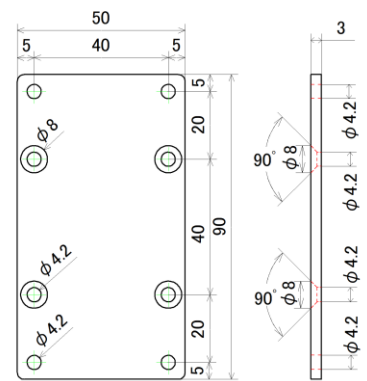
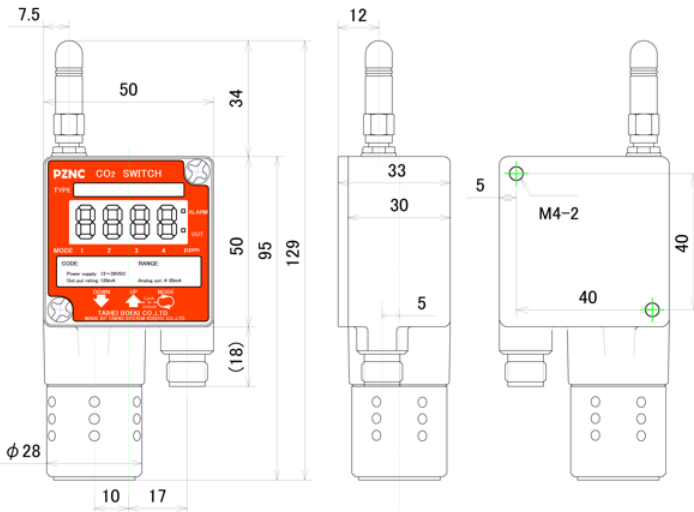
PIN #	Cable Color	Usage	
2	White	+	Power Supply (DC12~24)
7	Purple	-	
3	Blue	Relay Output (1a or 1b)	
1	Brown		
4	Black	+	Analog Current Output (4~20mA)
6	Peach	-	
5	Ash	no use	
8	Shield		



**(11) DIMENSIONAL DRAWING**

**PZNC□□**

**\*Option  
Mounting Plate**



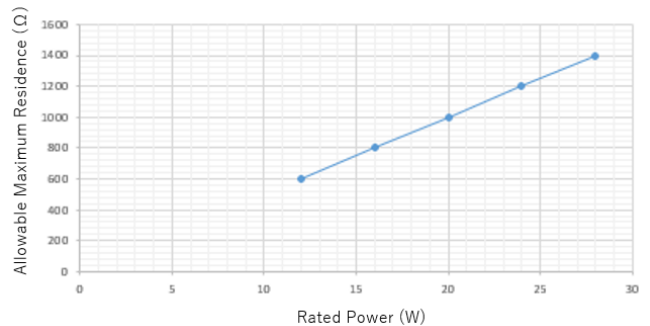




## 4~20mA Termination Allowable Value

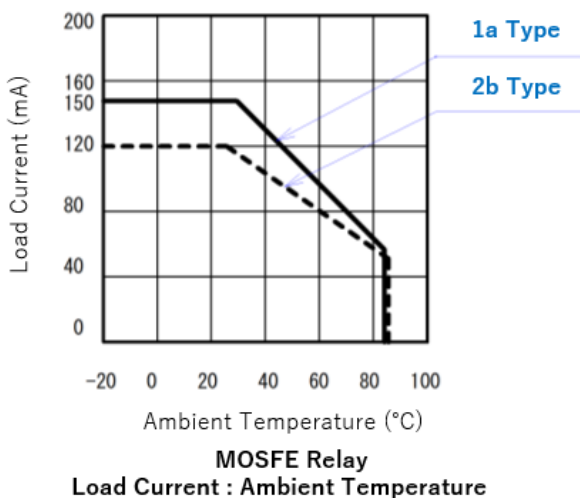
- 4-20mA system termination allowable value depends on supply power.
- To pass the maximum current 20mA,  $R_{max}$  is bigger than supply voltage divided by 20mA.
- However, our recommendation is to use the terminators that are smaller than  $R_{max}$ .
- Maximum current of 20mA cannot flow if the residence value is greater than  $R_{max}$ .
- The current can flow if resistance is smaller. However, the voltage that can be detected is smaller.  
(Although it can flow 4-20mA of current if the terminator is 0Ω, the voltage that can be detected as 0V.)
- Caring the rated power of resistance value should be taken.

Supply Voltage (DC)	Allowable maximum resistance (Ω)	Rated Power (W)
12	600	0.24 <b>1/2W</b>
16	800	0.32 <b>1/2W</b>
20	1000	0.4 <b>1/2W</b>
24	1200	0.48 <b>1W</b>
28	1400	0.56 <b>1W</b>



## MOSFET Relay

The graph below shows the characteristics of load current and ambient temperature. Please use CO2 Switch in the range of graph.



**TAIHEI BOEKI CO.,LTD**  
**2-2-2, Nihonbashi Honcho, Chuo-ku, Tokyo**  
**TEL: +81-3-3270-4825 FAX:+81-3-3245-1767**

**Manufacture: TAIHEI SYSTEM KOGYO CO.,LTD**