

Electrostatic Sensor Controller

EF-S1C

CME-EFS1C No.0032-47V

Thank you very much for using Panasonic products. Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

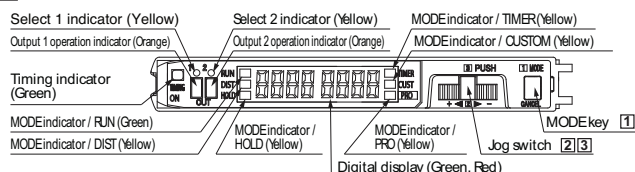


- Never use this product with a device for personnel protection.
- In case of using devices for personnel protection, use products which meet laws or standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

1 OUTLINE

- This product can be used in combination with a exclusive sensor head (EF-S1HS) (optional) to monitor electrical potentials on object surfaces.
- It can also be used together with an ionizer to check results of charge removal processes.

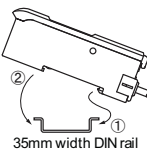
2 PART DESCRIPTION



3 MOUNTING

How to mount the controller

- 1 Fit the rear part of the mounting section of the controller on a 35mm width DIN rail.
- 2 Press down the rear part of the mounting section of the unit on the 35mm width DIN rail and fit the front part of the mounting section to the DIN rail.



How to remove the controller

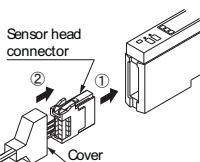
- 1 Push the controller forward.
- 2 Lift up the front part of the controller to remove it.

Note: Take care that if the front part is lifted without pushing the controller forward, the hook on the rear portion of the mounting section is likely to break.

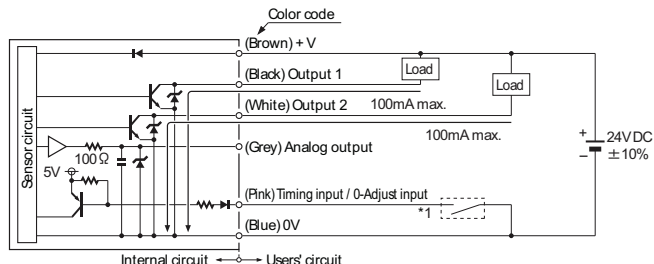


How to mount the sensor head

- 1 Insert the sensor head connector into the inlet until it clicks.
- 2 Fit the cover to the connector.

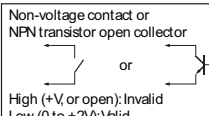


4 I/O CIRCUIT DIAGRAM



Note: If using together with an ionizer manufactured by Panasonic, share the 0V line of this product with the ground of the ionizer, and carry out O-Adjust when doing 0V measurements.

*1



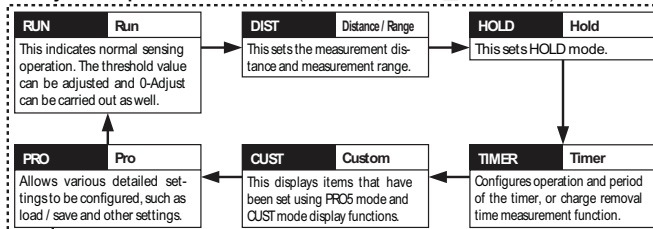
<Points to note when using analog output>

Because the 0V lines for judgment output and analog output are common, the analog output may vary depending on the load current. In order to satisfy the linearity specifications for the analog output, do not use the judgment output.

5 OPERATION PROCEDURE AND BASIC SYSTEM

MODEkey	Jog switch	
[1] Press	[2] Turn	[3] Press
	<div> <div>“+” side</div> </div> <div> <div>“-” side</div> </div>	
<ul style="list-style-type: none"> Switching NAVI mode Canceling while setting is in progress O-Adjust 	<ul style="list-style-type: none"> Moving setting menu Changing setting values Display value hold 	<ul style="list-style-type: none"> Confirming menu settings Confirming setting values

Basic system of operation for NAVI mode (For details, refer to '7 NAVI MODE'.)



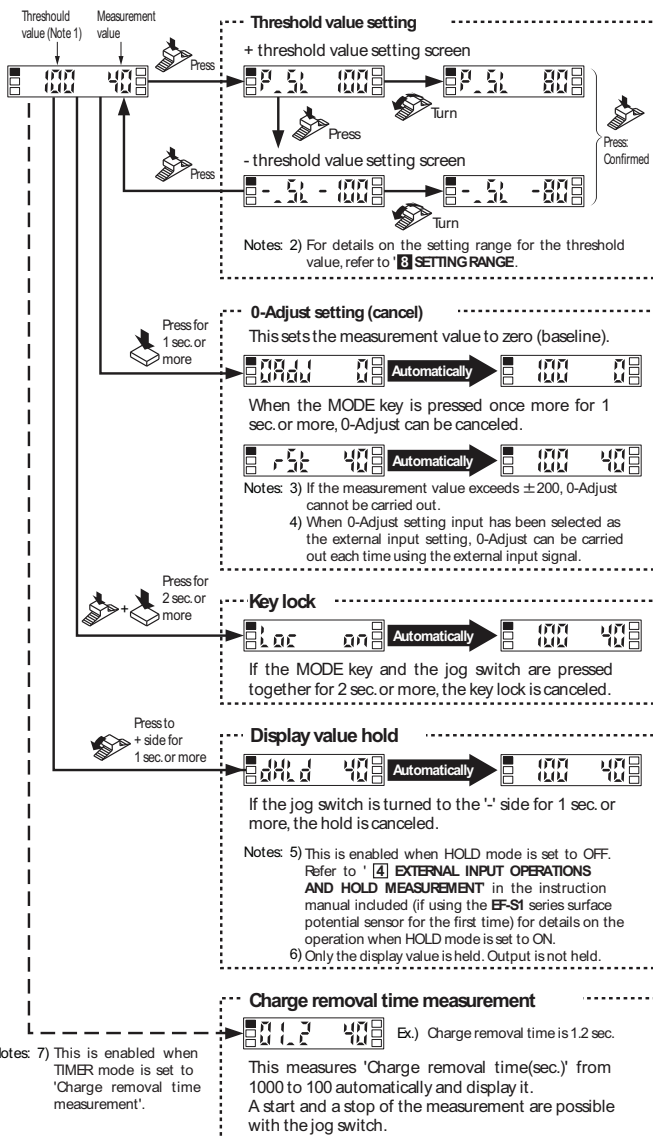
Basic system of operation for PRO mode (For details, refer to '9 PRO MODE'.)

- Notes: 1) Judgment output and analog output will become unstable while setting operations are being carried out. After settings have been completed, use in RUN mode.
2) If the power is turned off while settings are being confirmed (while the display is blinking), the settings may not be applied correctly.

6 RUN MODE

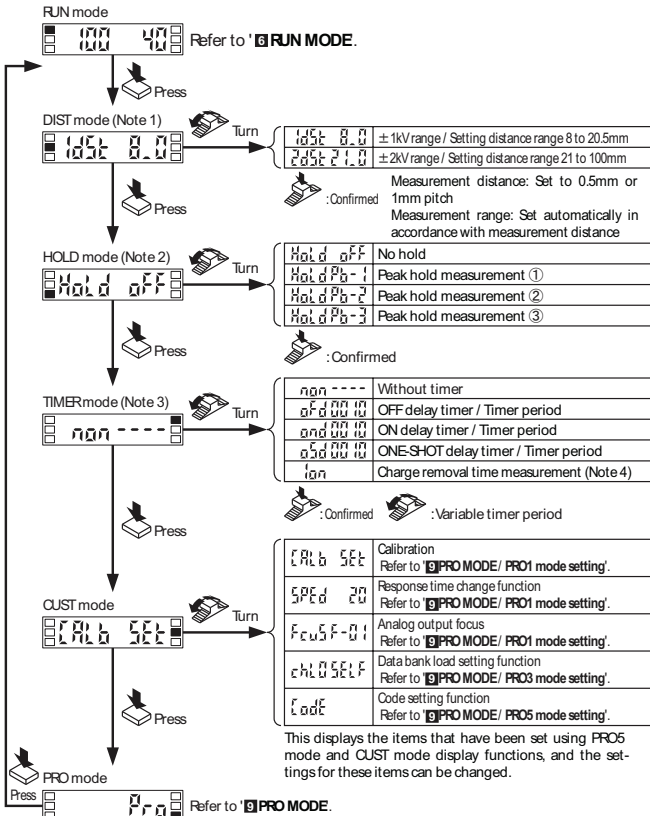
- In this mode, the current measurement value and threshold value are displayed, (Note 1) and the threshold value can be set and O-Adjust, key lock and display value hold and charge removal time measurement operations can be carried out.

- Notes: 1) At the time of shipment, the threshold value is set to be displayed in the green (left) digital display. When the symbol display setting is ON (refer to PRO2 mode), a symbol ("A") appears in the green (left) digital display.



7 NAVI MODE

- If the MODE key is pressed, the mode can be changed to a different mode.



Notes: 1) For details, refer to '8 SETTING RANGE'.

2) The values that are displayed during RUN mode will vary as shown in the table below depending on the setting for HOLD mode. (A '-' against the displayed value means that the value is negative.)

HOLD mode setting	Display value during RUN mode
HOLD OFF	Threshold value / Measurement value
HOLD Pb-1	Threshold value / Peak value
HOLD Pb-2	+ peak value / - peak value
HOLD Pb-3	Peak value / Measurement value

3) If HOLD mode is set to 'Pb-1', 'Pb-2' or 'Pb-3', the timer function will be automatically set to 'nan' (no timer), and it will not be possible to change timer operation.

4) When charge removal time measurement has been selected, the output operation will be without timer.

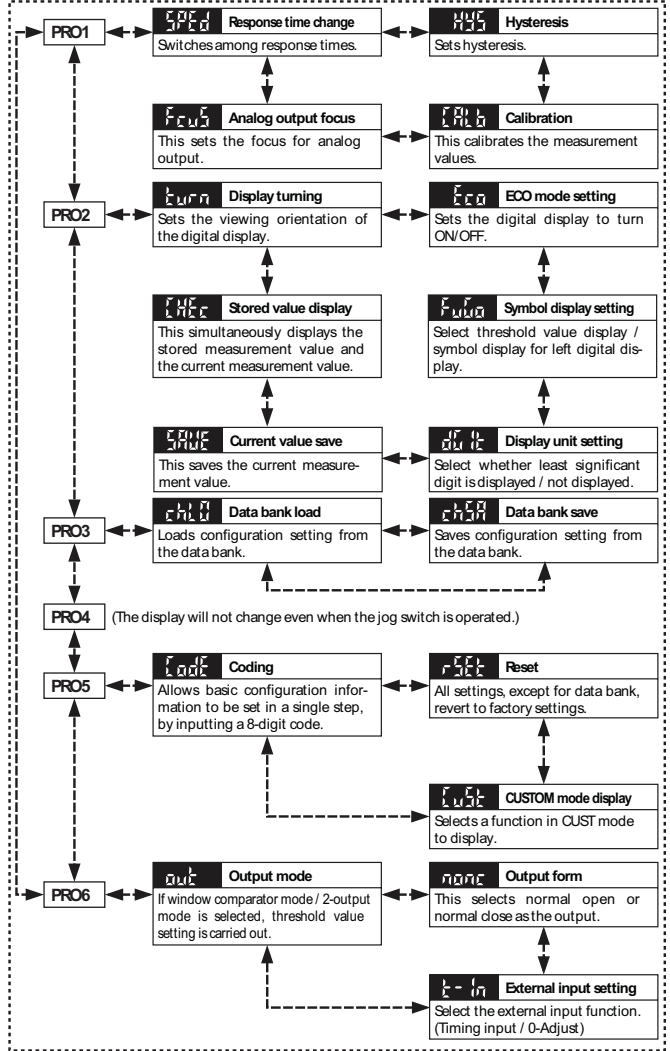
8 SETTING RANGE

- The threshold value can be set to within the following range.
 - Distance 8 to 20.5mm: $+5 \leq \text{Threshold value} \leq +500$
 - ($\pm 1\text{ kV range}$) $-5 \geq \text{Threshold value} \geq -500$
 - Distance 21 to 100mm: $+5 \leq \text{Threshold value} \leq +1,000$
 - ($\pm 2\text{ kV range}$) $-5 \geq \text{Threshold value} \geq -1,000$
- 0-adjust can be set to within the following range.
 - $-200 \leq \text{Measurement value} \leq +200$
- Calibration can be set to within the following range.
 - $0.5 \leq (\text{Display hold value} / \text{Current measurement value}) \leq 10$
 - Distance 8 to 20.5mm: $-1,000 \leq \text{Measurement value} \leq +1,000$
 - Distance 21 to 100mm: $-1,999 \leq \text{Measurement value} \leq +1,999$

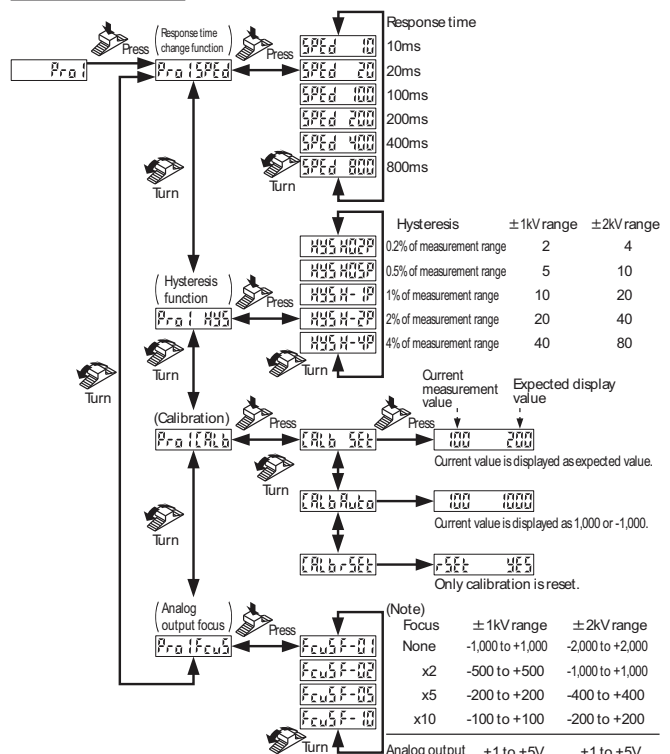
9 PRO MODE

- If 'PRO' is selected in NAVI mode, the mode changes to PRO mode.

Basic system of operation for PRO mode



PRO1 mode setting



Note: If a focus has been set for analog output, the resolution will change.