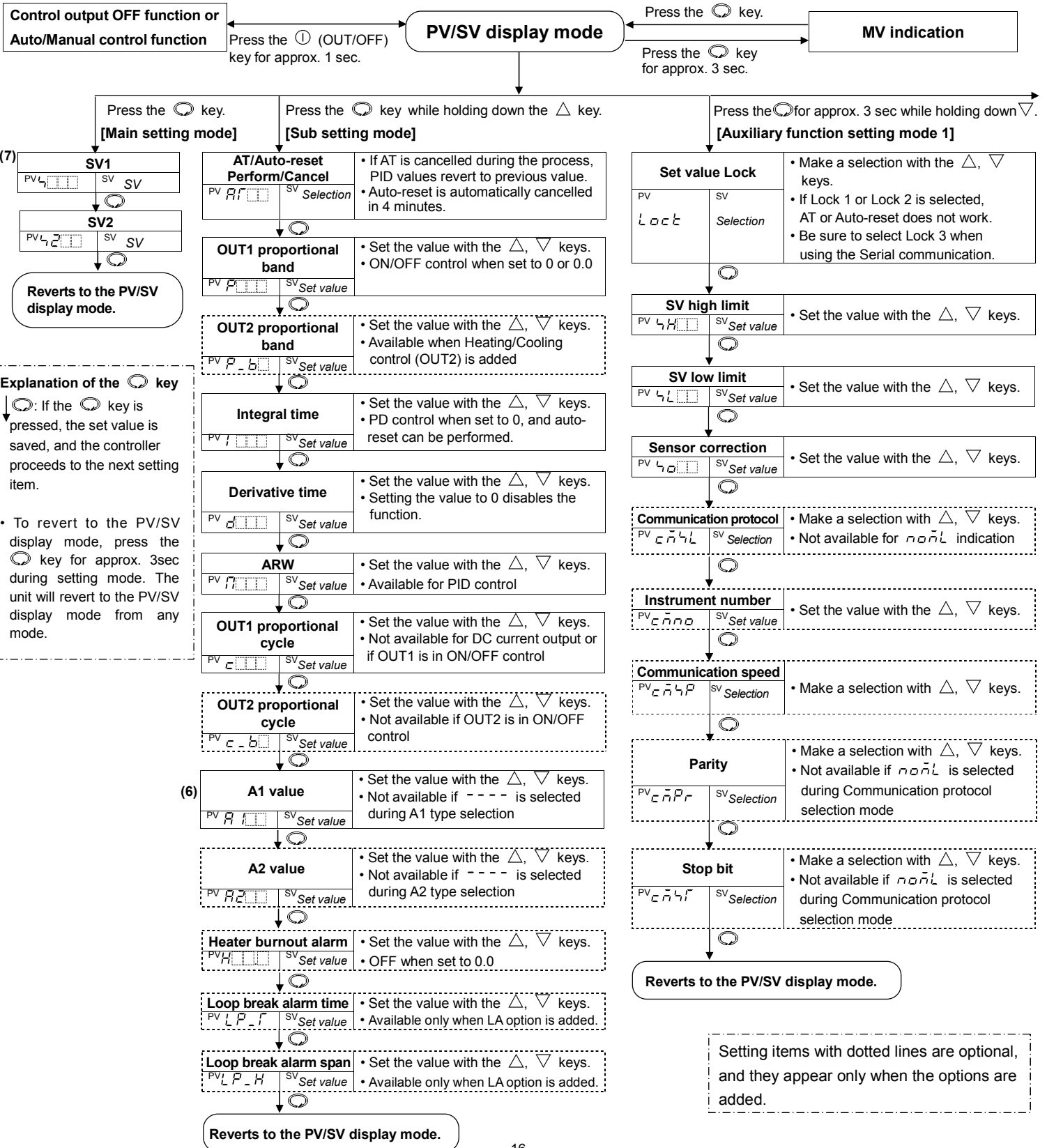# 5.1 Operation flowchart

Outline of operation procedure

Set an Input type, Alarm (type, value, etc.) and SV, following the procedures below. Setting item numbers (1) to (7) are indicated on the flowchart.

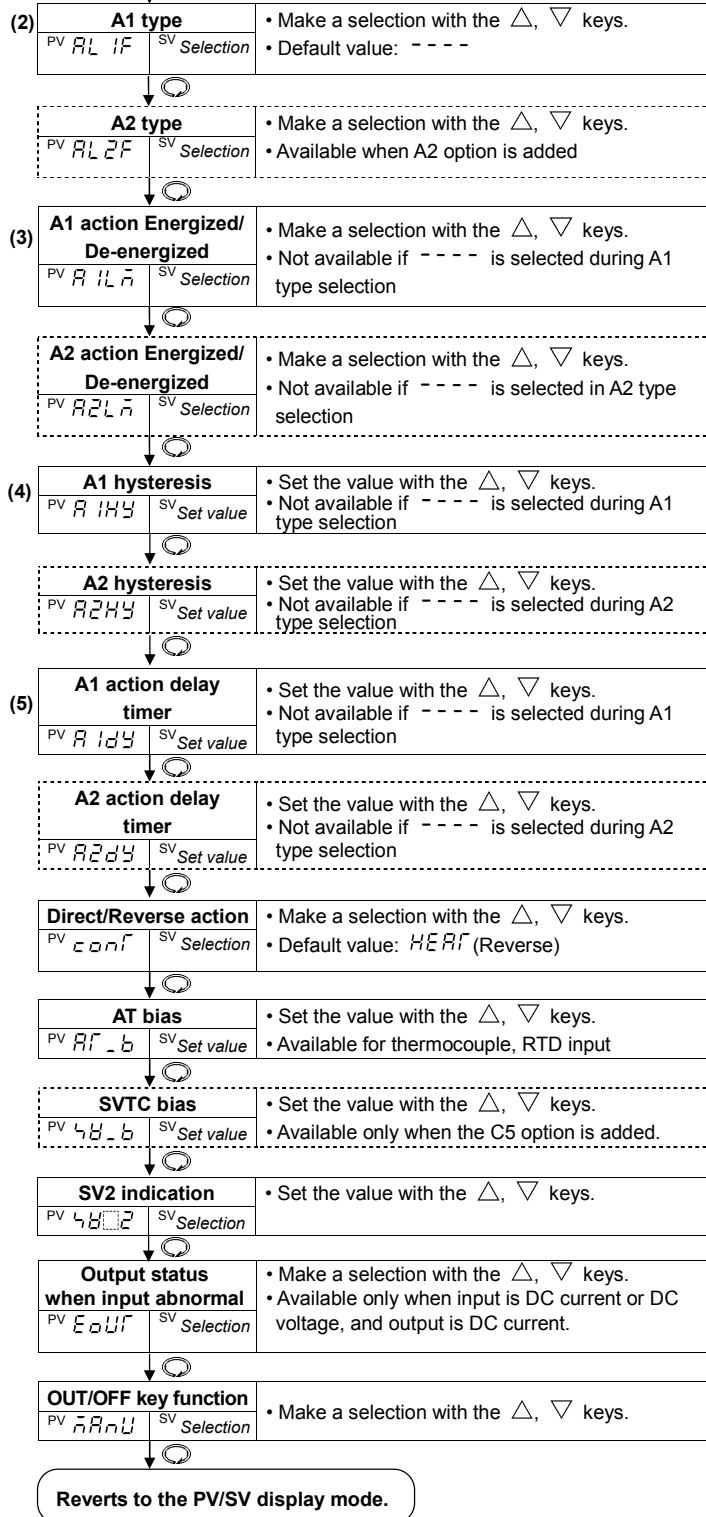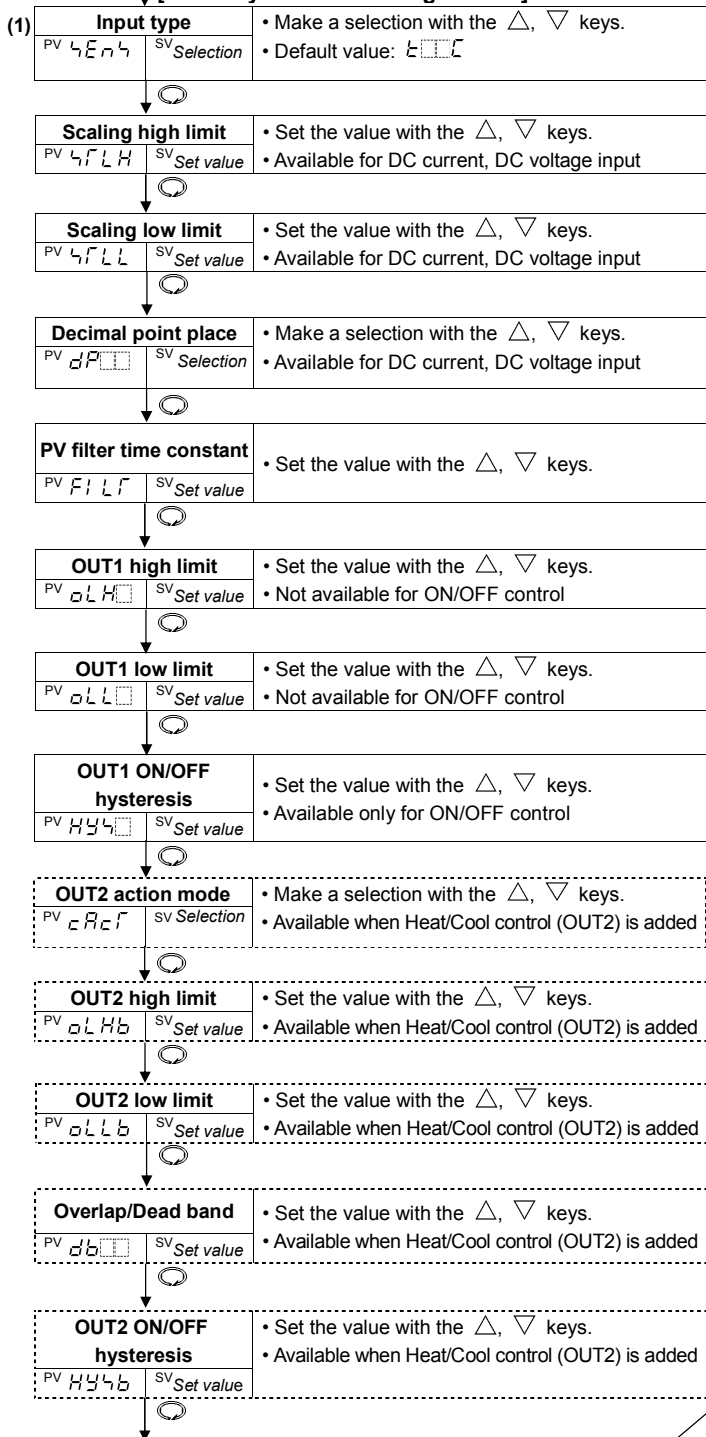| [Step 1 Operation before Run]	Turn the load circuit power OFF, and turn the power supply to the JCD, JCR-33A ON.
[Step 2 Auxiliary function setting mode 2]	Set an Input type and Alarm type, etc. in Auxiliary function setting mode 2. **(1) Input type**: Select an input type. Refer to "Input type (character indication) and range" on p.17. **(2) A1 type**: Select an alarm type. Refer to "Alarm type" on p.17. 　　[If an alarm type except for "– – – –" is selected, items (3) to (5) will be indicated and they can be set if necessary.] 　　**Note: If an alarm type is changed, the alarm set value becomes 0 (0.0). Therefore it is necessary to set it again.** **(3) A1 action Energized/De-energized**: Select Alarm 1 action Energized or De-energized. **(4) A1 hysteresis**: Set A1 hysteresis. **(5) A1 action delay timer**: Set A1 action delay time.
[Step 3 Sub setting mode]	**(6) A1 value**: Set an action point of A1 output in the Sub setting mode.
[Step 4 Main setting mode]	**(7) SV1**: Set the SV in the Main setting mode.
[Step 5 Run]	Turn the load circuit power ON. Control action starts so as to keep the control target at the SV.

Setting items with dotted lines are optional, and they appear only when the options are added.

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Input type (character indication) and range

Character	Type	Range	Character	Type	Range
t □ C	K	–200 to 1370℃	t □ F	K	–320 to 2500℉
t □ C	K	–199.9 to 400.0℃	t □ F	K	–199.9 to 750.0℉
J □ C	J	–200 to 1000℃	J □ F	J	–320 to 1800℉
r □ C	R	0 to 1760℃	r □ F	R	0 to 3200℉
S □ C	S	0 to 1760℃	S □ F	S	0 to 3200℉
b □ C	B	0 to 1820℃	b □ F	B	0 to 3300℉
E □ C	E	–200 to 800℃	E □ F	E	–320 to 1500℉
r □ C	T	–199.9 to 400.0℃	r □ F	T	–199.9 to 750.0℉
n □ C	N	–200 to 1300℃	n □ F	N	–320 to 2300℉
PL2C	PL-Ⅱ	0 to 1390℃	PL2F	PL-Ⅱ	0 to 2500℉
c □ C	C(W/Re5-26)	0 to 2315℃	c □ F	C(W/Re5-26)	0 to 4200℉
Pt □ C	Pt100	–199.9 to 850.0℃	Pt □ F	Pt100	–199.9 to 999.9℉
JPtC	JPt100	–199.9 to 500.0℃	JPtF	JPt100	–199.9 to 900.0℉
PtC	Pt100	–200 to 850℃	PtF	Pt100	–300 to 1500℉
JPtC	JPt100	–200 to 500℃	JPtF	JPt100	–300 to 900℉
420A	4 to 20mA DC	–1999 to 9999			
020A	0 to 20mA DC	–1999 to 9999			
DC 1V	0 to 1V DC	–1999 to 9999			
DC 5V	0 to 5V DC	–1999 to 9999			
1C5V	1 to 5V DC	–1999 to 9999			
D 10V	0 to 10V DC	–1999 to 9999			

Alarm type

H□□□ (High limit alarm): The alarm action is the ±deviation setting from the SV. The alarm is activated if the input value reaches the high limit set value.

L□□□ (Low limit alarm): The alarm action is the ±deviation setting from the SV. The alarm is activated if the input value goes under the low limit set value.

HL□□ (High/Low limits alarm): Combines High limit and Low limit alarm actions. When input value reaches high limit set value or goes under the low limit set value, the alarm is activated.

□ □ d (High/Low limit range alarm): When input value is between the high limit set value and low limit set value, the alarm is activated.

A4□ (Process high alarm), rA4□ (Process low alarm): Within the scale range of the controller, alarm action points can be set at random and if the input reaches the randomly set action point, the alarm is activated.

H□□ (High limit alarm with standby), L□□ (Low limit alarm with standby), HL□ (High/Low limits alarm with standby):

After the power to the controller is turned on, even if the input enters the alarm action range, the alarm is not activated. If SV is changed while the controller is running, the alarm is not activated even if input is in the alarm action range.

(If the controller is allowed to keep running, once the input exceeds the alarm action point, the standby function will be released.)

Press the ▽ key for approx. 3 sec while holding down the △ key.

[Auxiliary function setting mode 2]

(1) Input type — PV SEnS / SV Selection
- Make a selection with the △, ▽ keys.
- Default value: t □ C

Scaling high limit — PV SCLH / SV Set value
- Set the value with the △, ▽ keys.
- Available for DC current, DC voltage input

Scaling low limit — PV SCLL / SV Set value
- Set the value with the △, ▽ keys.
- Available for DC current, DC voltage input

Decimal point place — PV dP □ / SV Selection
- Make a selection with the △, ▽ keys.
- Available for DC current, DC voltage input

PV filter time constant — PV FILT / SV Set value
- Set the value with the △, ▽ keys.

OUT1 high limit — PV oLH □ / SV Set value
- Set the value with the △, ▽ keys.
- Not available for ON/OFF control

OUT1 low limit — PV oLL □ / SV Set value
- Set the value with the △, ▽ keys.
- Not available for ON/OFF control

OUT1 ON/OFF hysteresis — PV HYS □ / SV Set value
- Set the value with the △, ▽ keys.
- Available only for ON/OFF control

OUT2 action mode — PV cAcT / SV Selection
- Make a selection with the △, ▽ keys.
- Available when Heat/Cool control (OUT2) is added

OUT2 high limit — PV oLHb / SV Set value
- Set the value with the △, ▽ keys.
- Available when Heat/Cool control (OUT2) is added

OUT2 low limit — PV oLLb / SV Set value
- Set the value with the △, ▽ keys.
- Available when Heat/Cool control (OUT2) is added

Overlap/Dead band — PV db □ / SV Set value
- Set the value with the △, ▽ keys.
- Available when Heat/Cool control (OUT2) is added

OUT2 ON/OFF hysteresis — PV HYSb / SV Set value
- Set the value with the △, ▽ keys.
- Available when Heat/Cool control (OUT2) is added

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(2) A1 type — PV AL1F / SV Selection
- Make a selection with the △, ▽ keys.
- Default value: - - - -

A2 type — PV AL2F / SV Selection
- Make a selection with the △, ▽ keys.
- Available when A2 option is added

(3) A1 action Energized/De-energized — PV A1LA / SV Selection
- Make a selection with the △, ▽ keys.
- Not available if - - - - is selected during A1 type selection

A2 action Energized/De-energized — PV A2LA / SV Selection
- Make a selection with the △, ▽ keys.
- Not available if - - - - is selected in A2 type selection

(4) A1 hysteresis — PV A1HY / SV Set value
- Set the value with the △, ▽ keys.
- Not available if - - - - is selected during A1 type selection

A2 hysteresis — PV A2HY / SV Set value
- Set the value with the △, ▽ keys.
- Not available if - - - - is selected during A2 type selection

(5) A1 action delay timer — PV A1dY / SV Set value
- Set the value with the △, ▽ keys.
- Not available if - - - - is selected during A1 type selection

A2 action delay timer — PV A2dY / SV Set value
- Set the value with the △, ▽ keys.
- Not available if - - - - is selected during A2 type selection

Direct/Reverse action — PV conT / SV Selection
- Make a selection with the △, ▽ keys.
- Default value: HEAT (Reverse)

AT bias — PV AT_b / SV Set value
- Set the value with the △, ▽ keys.
- Available for thermocouple, RTD input

SVTC bias — PV SV_b / SV Set value
- Set the value with the △, ▽ keys.
- Available only when the C5 option is added.

SV2 indication — PV SV □ 2 / SV Selection
- Set the value with the △, ▽ keys.

Output status when input abnormal — PV EoUT / SV Selection
- Make a selection with the △, ▽ keys.
- Available only when input is DC current or DC voltage, and output is DC current.

OUT/OFF key function — PV nAnU / SV Selection
- Make a selection with the △, ▽ keys.

Reverts to the PV/SV display mode.

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