CSM E5 N E5 N-H operation TG E 3 3

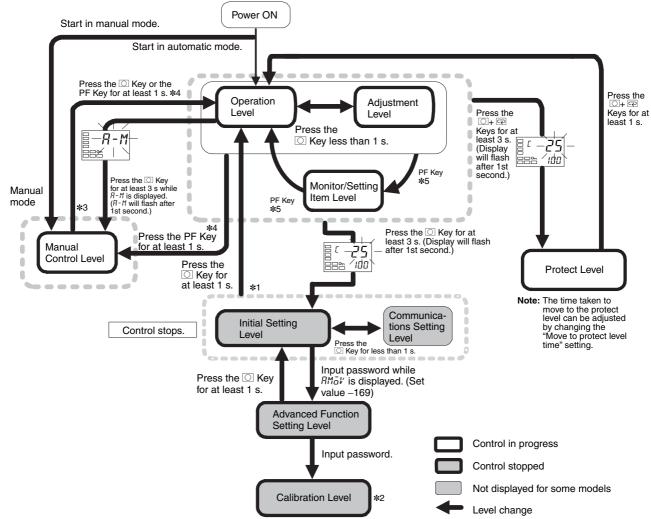
## **Operation**

### **Setting Levels Diagram**

This diagram shows all of the setting levels. To move to the advanced function setting level and calibration level, you must enter passwords. Some parameters are not displayed depending on the protect level setting and the conditions of use.

Control stops when you move from the operation level to the initial setting level.

# Basic Type E5CN/E5CN-U/E5AN/E5EN/E5GN



- **\*1.** You can return to the operation level by executing a software reset.
- \*2. It is not possible to move to other levels from the calibration level by operating the keys on the front panel. It can be done only by first turning OFF the power.
- \*3. From the manual control level, key operations can be used to move to the operation level only.
- \*4. When the PF Setting parameter is set to A-M for a Controller with a PF Key (E5AN/E5EN).
- \*5. When the PF Setting parameter is set to PFDP for a Controller with a PF Key (E5AN/E5EN).

## **Error Displays (Troubleshooting)**

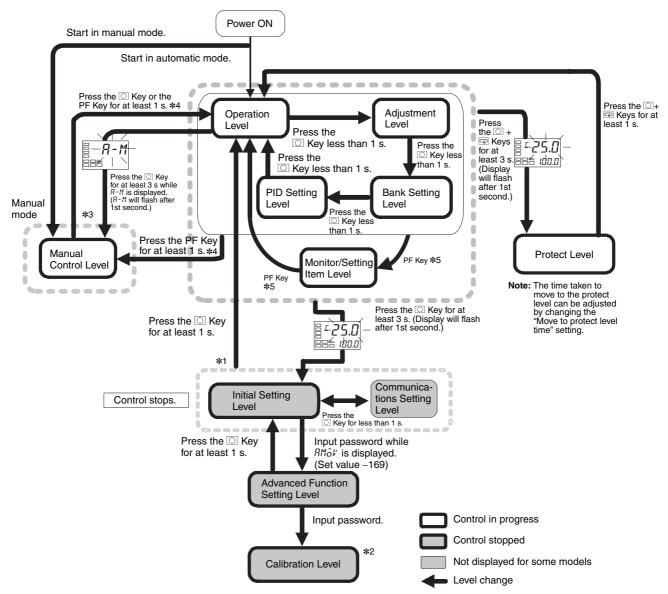
When an error occurs, the No.1 display shows the error code. Take necessary measure according to the error code, referring the table below.

No.1 display	Meaning	Action	Status at error	
			Control output	Alarm output
5, E R R (S. Err)	Input error	Check the setting of the input type. Also check the input wiring and check for broken wires or short-circuits in the temperature sensor.	OFF	Operates as above the upper limit.
E333 (E333)	A/D converter error	Turn the power OFF then back ON again. If the display remains the same, the controller must be repaired. If the display is restored to normal, then a probable cause can be external noise affecting the control system. Check for external noise.	OFF	OFF
E       (E111)	Memory error	Turn the power OFF then back ON again. If the display remains the same, the controller must be repaired. If the display is restored to normal, then a probable cause can be external noise affecting the control system. Check for external noise.	OFF	OFF

Note: If the input value exceeds the display limit (-1999 to 9999), though it is within the control range, CCCC will be displayed under -1999 and above 9999. Under these conditions, control output and alarm output will operate normally.

For details on the control range, refer to the E5CN/E5AN/E5EN/E5GN Digital Temperature Controllers User's Manual Basic Type (Cat. No. H156). \* Errors are shown only when the display is PV, PV/SV, or PV/MV. Errors are not shown for any other status.

#### Advanced Type E5CN-H/E5AN-H/E5EN-H



- **\*1.** You can return to the operation level by executing a software reset.
- \*2. It is not possible to move to other levels from the calibration level by operating the keys on the front panel. It can be done only by first turning OFF the power.
- \*3. From the manual control level, key operations can be used to move to the operation level only.
- \*4. When the PF Setting parameter is set to A-M for a Controller with a PF Key (E5AN-H/E5EN-H).
- \*5. When the PF Setting parameter is set to PFDP for a Controller with a PF Key (E5AN-H/E5EN-H).

# **Error Displays (Troubleshooting)**

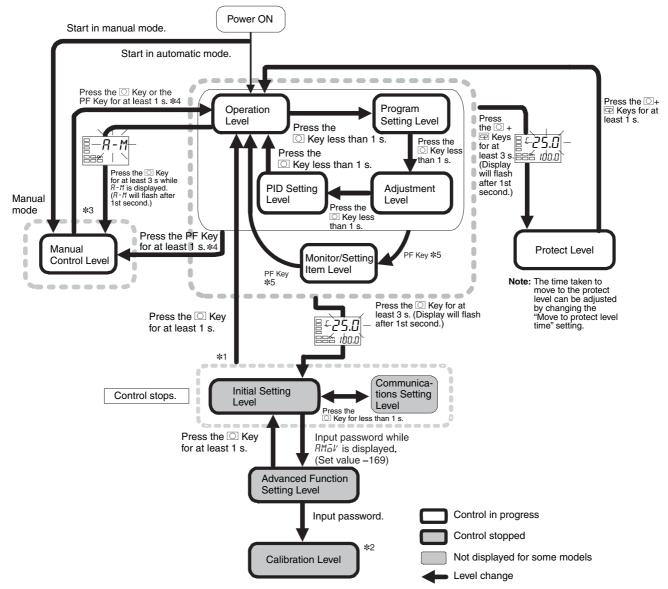
When an error occurs, the No.1 display shows the error code. Take necessary measure according to the error code, referring the table below.

No.1 display	Meaning	Action	Status at error	
			Control output	Alarm output
5, E R R (S. Err)	Input error	Check the setting of the input type. Also check the input wiring and check for broken wires or short-circuits in the temperature sensor.	OFF	Operates as above the upper limit.
E333 (E333)	A/D converter error	Turn the power OFF then back ON again. If the display remains the same, the controller must be repaired. If the display is restored to normal, then a probable cause can be external noise affecting the control system. Check for external noise.	OFF	OFF
E       (E111)	Memory error	Turn the power OFF then back ON again. If the display remains the same, the controller must be repaired. If the display is restored to normal, then a probable cause can be external noise affecting the control system. Check for external noise.	OFF	OFF

Note: If the input value exceeds the display limit (-19999 to 32400), though it is within the control range, CCCC will be displayed under -19999 and DDDD above 32400. Under these conditions, control output and alarm output will operate normally.

For details on the control range, refer to the E5CN-H/E5AN-H/E5EN-H Digital Controllers User's Manual Advanced Type (Cat. No. H157). \* Errors are shown only when the display is PV, PV/SV, or PV/MV. Errors are not shown for any other status.

# Programmable Type E5CN-HT/E5AN-HT/E5EN-HT



- **\*1.** You can return to the operation level by executing a software reset.
- \*2. It is not possible to move to other levels from the calibration level by operating the keys on the front panel. It can be done only by first turning OFF the power.
- \*3. From the manual control level, key operations can be used to move to the operation level only.
- \*4. When the PF Setting parameter is set to A-M. For the E5CN-HT, press the 🔄 + 🖎 Keys at the same time to implement the PF Key.
- \*5. When the PF Setting parameter is set to PFDP. For the E5CN-HT, press the □+ Keys at the same time to implement the PF Key.

# **Error Displays (Troubleshooting)**

When an error occurs, the No.1 display shows the error code. Take necessary measure according to the error code, referring the table below.

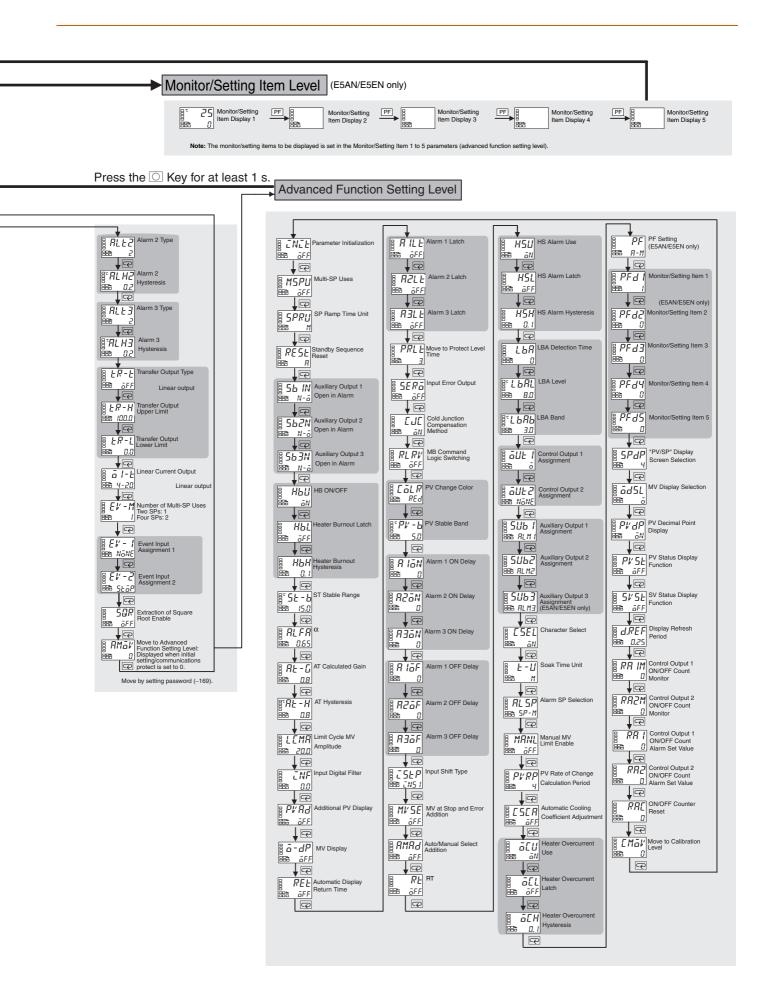
No.1 display	Meaning	Action	Status at error	
			Control output	Alarm output
5.E.R.R (S. Err)	Input error	Check the setting of the input type. Also check the input wiring and check for broken wires or short-circuits in the temperature sensor.	OFF	Operates as above the upper limit.
E333 (E333)	A/D converter error	Turn the power OFF then back ON again. If the display remains the same, the controller must be repaired. If the display is restored to normal, then a probable cause can be external noise affecting the control system. Check for external noise.	OFF	OFF
E       (E111)	Memory error	Turn the power OFF then back ON again. If the display remains the same, the controller must be repaired. If the display is restored to normal, then a probable cause can be external noise affecting the control system. Check for external noise.	OFF	OFF

Note: If the input value exceeds the display limit (-19999 to 32400), though it is within the control range, CCCC will be displayed under -19999 and SSSS above 32400. Under these conditions, control output and alarm output will operate normally.

For details on the control range, refer to the E5CN-HT/E5AN-HT/E5EN-HT Digital Controllers User's Manual Programmable Type (Cat. No.

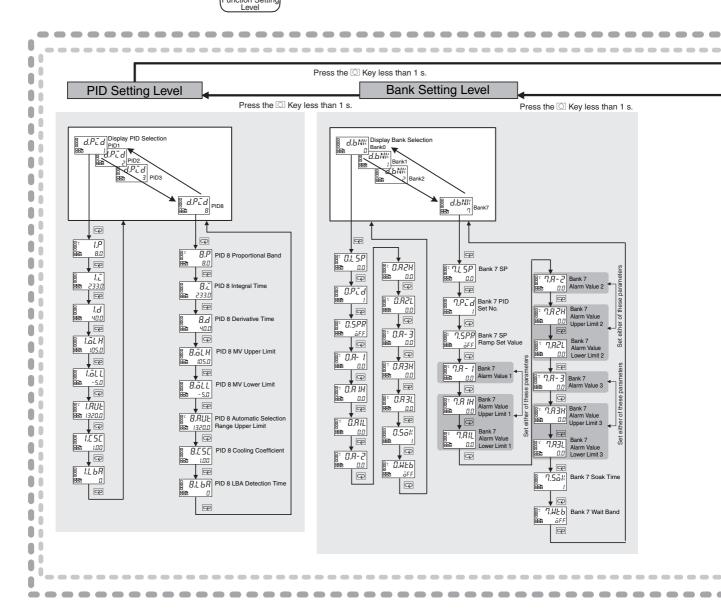
H169). \* Errors are shown only when the display is PV, PV/SV, or PV/MV. Errors are not shown for any other status.

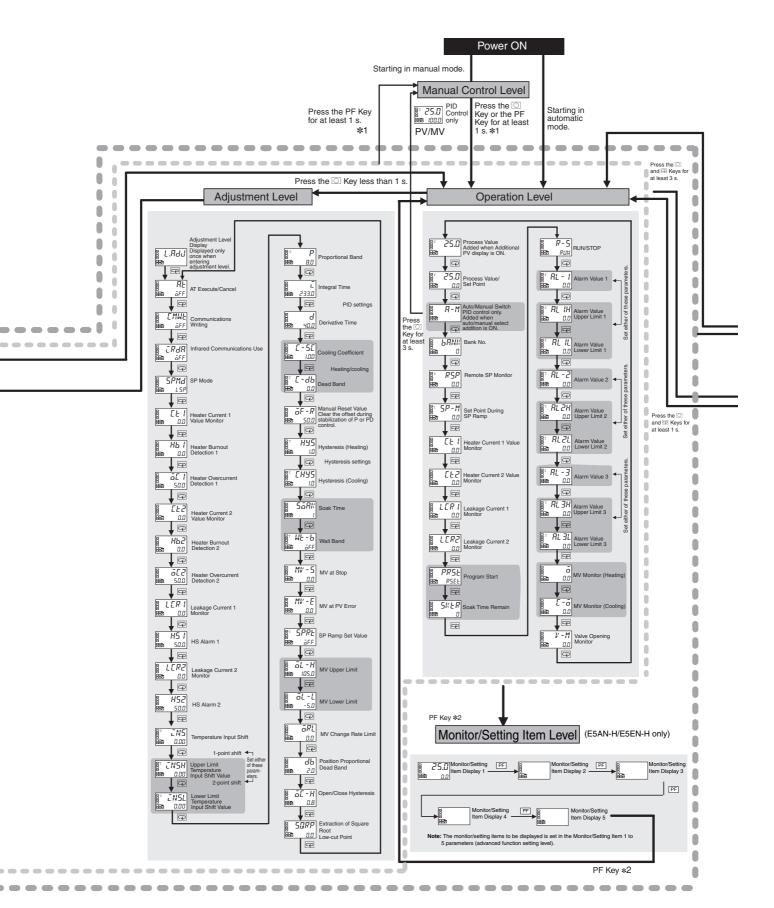
#### **Parameters Basic Type** E5CN/E5CN-U/E5AN/E5EN/E5GN Some parameters are not displayed depending on the model of the Controller and parameter settings. PF Key \*2 For details, refer to the E5CN/E5AN/E5EN/E5GN Power ON Digital Temperature Controllers User's Manual Basic Type (Cat. No. H156). Starting in manual mode Press the O Key for at least 3 s. PF Other than the Auto/Manual Switch display Starting in Manual Control Level automatic mode Initial Setting Level Press the PF Key for Press the [3 Key or the PF Key for at least at least 1 s. \*1 Press the Press the Key less than 1 s. Key for at least 1 s PV/MV \*1 N-L Input Type Press the O Key less than 1 s. Adjustment Operation Level Level Scaling Upper Limit Press the O Key less than 1 s. 888 ₩Q R-5 RUN/STOP Scaling Lower Limit IN-L RUN **↓** 🕝 Displayed only once when Temperature Input Shift ₩ Œ BL.RdJ Process Value Set Point RL - I Decimal Point 0.0 1-point shift ◀ For input type of analog ₩ 🕶 Upper Limit Temperature of these paramete 2-point shift 4 ₩. R - M Auto/Manual Switch PID control only. Added when auto/manual select addition is ON. Alarm Value Upper Limit 1 RE AT Execute/Cance Temperature Unit ōFF For input type of temperature Key for at least 3 s. Lower Limit Temperature Input Shift Value EMWE Comm M-5P Multi-SP Set Point Setting Br RL IL Alarm Value Lower Limit 1 SP Upper Limit **↓** 🕝 V ←P Limit the set poir LE I Heater Current 1 Value Monitor Proportional Band - M Set Point During SP Ramp 8º AL - 2 5L - L SP Lower Limit 8.0 0 P P Hb / Heater Burnou LE I Heater Current 1 Value NEL PID ON/OFF Integral Time Z 233 Alarm Value Upper Limit 2 888 0.0 PID setting BBB GNGF **↓**@ **▼**□ **▼** □ d Derivative Time Heater Overcurrent Detection 1 LEZ Heater Current 2 Value Monitor RLZL Alarm Value 5-HC 5-HE Standard or Heating/Cooling 50.0 40 0.0 -5[ Cooling Coefficient **▼**@ Heater Current 2 Value Monitor 8° RĹ - 3 LEAkage Current 1 5Ł ST (Self-tuning) 1.00 0.0 0.0 For input type of temperature, star control, or PID **▼**□ āN ↓@ **↓**@ **P** Leakage Current 2 Monitor C-db Dead Band Heater Burnout Detection 2 Alarm Value Upper Limit 3 PLRN Program Pattern 0.0 0.0 When assigning PID or control output to ON/OFF PRSE Program Start **P** P **₩** 💬 control output Manual Reset Value Clear the offset during stabilization of P or PD control. Heater Overd Detection 2 RL 3L Alarm Value Lower Limit 3 [P 50.0 RSEL Įœ **▼** □ Set the ON/OFF output cycle. LER / Leakage Current 1 SKER Hysteresis setting: æ Hysteresis (Cooling) HS / HS Alarm 1 [ - ] MV Monitor (Cooling) Direct/Reverse Operation 50.0 0.0 55RK Soak Time Leakage Current 2 Monitor Press the and Keys for at least 3 s. Monitor Monitor HS Alarm 2 RLE / Alarm 1 Type and 🖃 Keys for at least 1 s. 10 Communications WE - B Wait Band **↓**₽ Protect Level Setting Level FALH | Alarm 1 Hysteresis SAL 888 ōFF Note: The time taken to move to the protect level can be adjusted by changing the "Move to protect level time" setting Note: Displayed only for models with communica Changes are effective after cycling power after a software reset. æ -5 MV at Stop 8°5P-0 Move to Protect Level: Displayed only when a password is set. Restricts moving to protect level. PSEL Switches between CompoWay/F (SYSWAY) and Modbus. **▼** □ -E MV at PV Error Operation/Adjustment Protect: Restricts displaying and set of the protect of the ■ 0.0 ▼ SPRE SP Ramp Set Value Communications Unit No. ₩ Œ **↓**@ § 5P-2 Initial Setting/ CTPL Communications Protect: This protect level restricts move to the initial setting, communicating, and advanced function sevels. ōFF 6P5 Communications Baud Rate P ōL −H MV Upper Limit 5P-3 SP3 \*1. When the PF Setting æ parameter is set to A-M for a Setting Change Protect: Protects changes to setups by operating the front panel keys. LENS P **▼**□ Controller with a PF Key MV Lower Limit āL-L (E5AN/E5EN). 888 -5.0 Shit MV Change Rate Limit \*2. When the PF Setting parameter is set to PFDP for a **₽** 🚾 0.0 Parameter Mask Enable Displayed only when a parameter mask is set. PREY Communications Parity Controller with a PF Key ₽Œ SURP Extraction of Square Root (E5AN/E5EN). D.D Low-cut Point PRLP Password to Move to Protect Le 5dWE Send Data Wait Time Q 0 [c



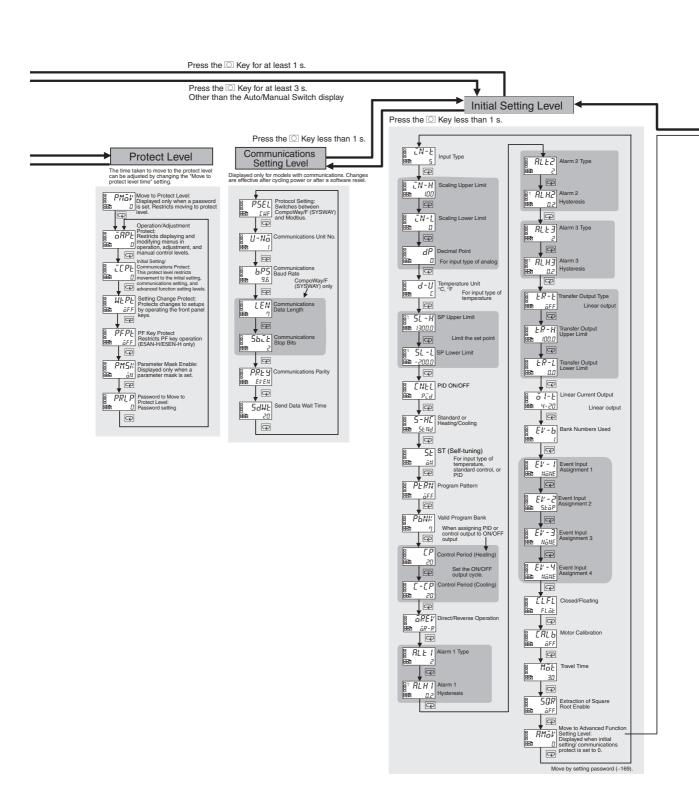
### Advanced Type E5CN-H/E5AN-H/E5EN-H

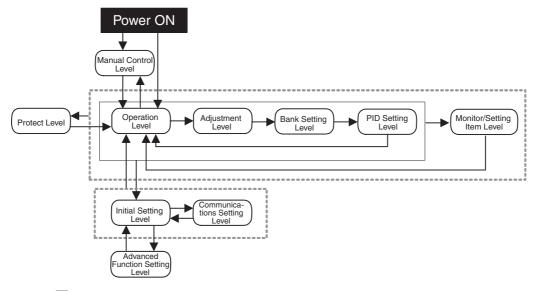
Some parameters are not displayed depending on the model of the Controller and parameter settings. Power ON For details, refer to the E5CN-H/E5AN-H/ E5EN-H Digital Controllers User's Manual Advanced Type (Cat. No. H157). Manual Control Level Operation Bank Setting PID Setting Monitor/Setting Protect Level Level Item Level Communica Initial Setting tions Setting Level Advanced Function Setting



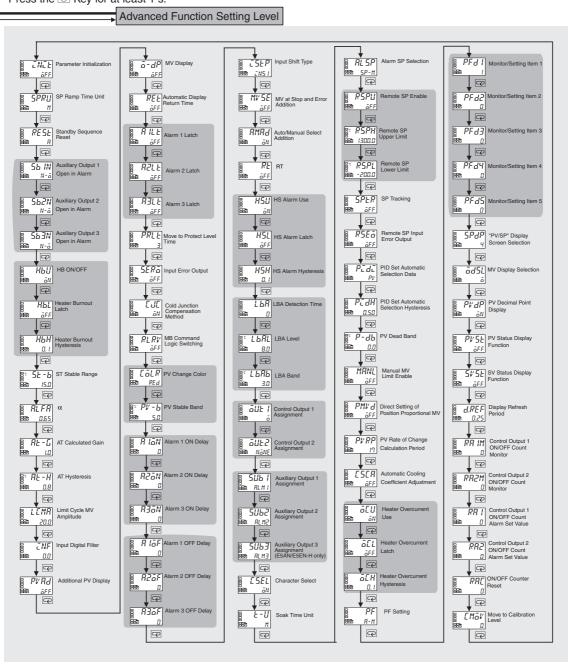


<sup>\*1.</sup> When the PF Setting parameter is set to A-M for a Controller with a PF Key (E5AN-H/E5EN-H).\*2. When the PF Setting parameter is set to PFDP for a Controller with a PF Key (E5AN-H/E5EN-H).





Press the O Key for at least 1 s.

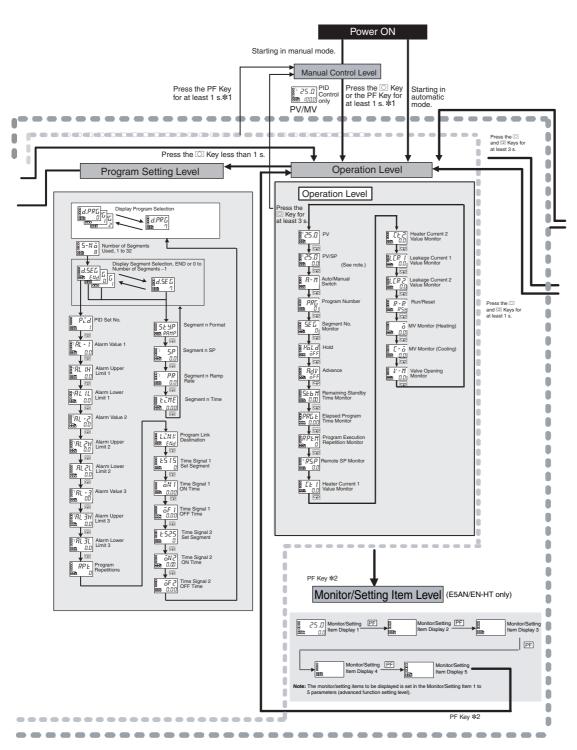


# Programmable Type E5CN-HT/E5AN-HT/E5EN-HT

Some parameters are not displayed depending on the model of the Controller and parameter settings. Power ON For details, refer to the E5CN-HT/E5AN-HT/ E5EN-HT Digital Controllers User's Manual Programmable Type (Cat. No. H169). Manual Control Level Adjustment Level Program Setting Level PID Setting Operation Monitor/Setting Item Level Level Initial Setting Level tions Setting p-----------Adjustment Level Press the O Key less than 1 s. Press the Key less than 1 s. MV - E MV at PV Error 0 PID Setting Level Press the O Key less than 1 s. 0 H52 0 0 dPLd Display PID Selection 0 ZN5 PIDI 1-point shint

INSH Upper Limit Temperature

1.000 Input Shift Valu
2-point shift 0 0 P dPid PIDS Position Proportional Dead Band æ I.P 8.0 R.P [E] 2330 P ld ΉЬΙ 8.8 400 LöL H P5P5 Program SP Shift Value l.ōL L PSD RSP 0 before I.RUE PID 8 Automatic 8° B.RUŁ Selection Range Upper Limit LESE P5 ID RSP 10 before 8.050 PID 8 Cooling LLЬЯ æ P P ₽ IO RSP Br P 1.......



\*1. When the PF Setting parameter is set to A-M for a Controller with a PF Key (E5AN/EN-HT).

<sup>\$2</sup>. When the PF Setting parameter is set to PFDP for a Controller with a PF Key (E5AN/EN-HT).

