WARNING

To prevent electrical shock, the controller should be mounted on the panel so that you do not accidentally touch the terminals when power is being applied.

NOTE

The controller is shipped with the parameters set at the factory-set defaults. Check the default values against the "Parameter List" in the following page (P.15 to 17), and change the parameter settings that need to be changed.

The following section explains how to set and register parameter values.

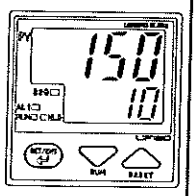
There are no setup displays for parameters specific to functions, such as the optional digital input functions or communication functions, if they were not selected at ordering.

The setting of some parameters (such as the control mode parameter CTL) determines whether the other parameters are displayed or not.

The flowchart (P.XXXXX) will help you understand how this works.

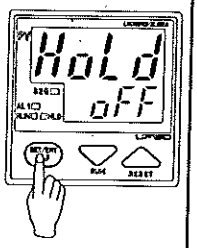
■ Changing Control Mode (CTL)

Step 1:
Confirm that the controller shows the operation display ①, ② or ③.

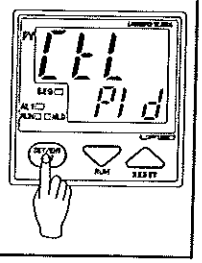


Step 2:
To enter the Operating parameter setting display, press the SET/ENT key for at least 3 seconds.

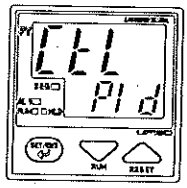
- When UP150 is in Program operation, the HOLD appears in the display.
- When UP150 is not in Program operation, the CTL appears. If then, go to Step 4.



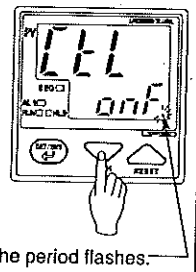
Step 3:
Press SET/ENT key twice to display the CTL.



Step 4:
Confirm the control mode by the display.
In this example, PID control mode is selected.

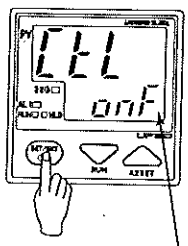


Step 5:
When On/off control mode is required, press RUN key to change control mode to On/off.



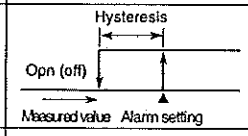
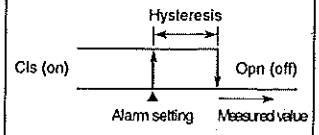
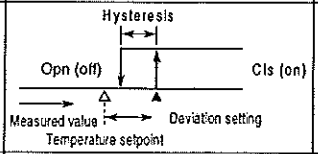
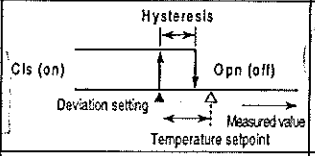
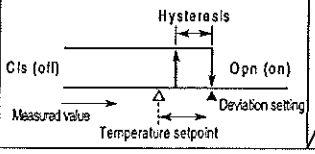
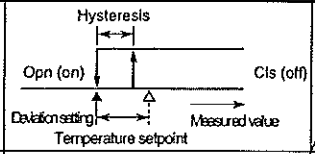
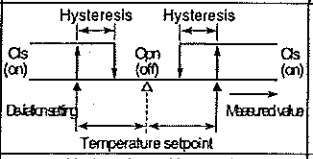
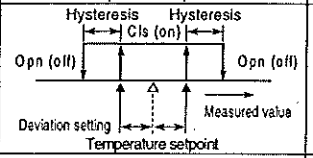
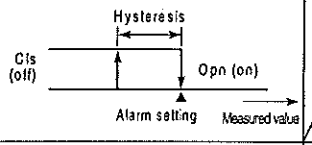
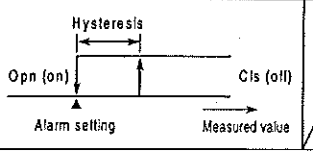
The period flashes.

Step 6:
Press the SET/ENT key once to register the setting.
Control mode is now changed.
Another press of the SET/ENT key calls up the "HYS" display. To return to the operation display ①, press the SET/ENT key for at least 3 seconds.



The period goes out.

■ PV Event (alarm) Function List

PV event (alarm) type	Action ("Opn" and "Cls" indicate that the relay contact is opened and closed; "(on)" and "(off)" indicate that the lamp is on and off; and white triangles indicate temperature control setpoints.)	PV event type code: Closed contact during PV event (alarm)	PV event type code: Open contact during PV event (alarm)
No alarm		OFF	
PV high limit		1	
PV low limit		2	
Deviation high limit		3	
Deviation low limit		4	
Deenergized on deviation high limit			5
Deenergized on deviation low limit			6
Deviation high and low limit		7	
Deviation within-high- and -low-limit		8	
Deenergized on PV high limit			9
Deenergized on PV low limit			10

■ Parameter Lists

(1) Target Setpoint (SP) and Timer Setting 1 and 2

Code	Name	Setting range and unit	Default	User setting
(SP value display)	Target setpoint	"Target setpoint", "Segment No. at present" and "Remaining segment time" are not parameters to be set. You can confirm the value of these.	SSP	
(SP value display)	Segment No. at present		Set value	
(SP value display)	Remaining segment time		Set value	

(2) Operating Parameters

Code	Name	Setting range and unit	Default	User setting
HOLD HoLd	Program hold	OFF: Not Hold ON: Hold	OFF	
ADV AdV	Segment advance	OFF: Not execute advance ON: Execute advance	OFF	
CTL CtL	Control mode	ONF: On/off control PID: PID control	PID	off
AT AT	Auto-tuning	OFF: Stop auto-tuning ON: Start auto-tuning	OFF	
P P	Proportional band	1°C/°F to the temperature that corresponds to 100% of the measurement range span	5% of measurement range span	
I I	Integral time	1 to 3600 seconds; 0: no integral action	240 seconds	
D d	Derivative time	1 to 3600 seconds; 0: no derivative action	60 seconds	
MR mr	Manual reset	−100 to 100%	50.0%	
HYS HYS	Hysteresis for on/off control	0°C/°F to the temperature that corresponds to 100% of the measurement range span	0.5% of measurement range	5
CT Ct	Cycle time of control output	1 to 240 seconds	30 seconds	
FL FL	Input filter	OFF, 1 to 120 seconds	OFF	off
BS bS	PV bias	−100 to 100% of measurement range span	0% of instrument range span	0
LOC LoC	Key lock	0: No key lock 1: No key lock *note 2: Prevents all parameter changing operations −1: Set to enter the Setup parameter setting display *Note: Both "0" and "1" are No key lock.	0	0

(3) Setup Parameters

Code	Name	Setting range and unit	Default	User setting
IN In	Input type	1 to 47 (See input range code list.) OFF: No input	OFF	
SC SC	SUPER function	ON: Uses the SUPER function OFF: Does not use SUPER function Note: Not displayed when on/off control	OFF	
DR dr	Direct/reverse action	0: Reverse action 1: Direct action Note: Not displayed on heating/cooling models	0	
DIS dIS	Digital input selection	OFF: Function of /EX does not work ON: Mode (HOLD/RUN) can be switched by only Digital input signal. (Mode can not be switched by key operation)	OFF	
PSL PSL	Protocol selection	0: PC-link communication 1: PC-link communication with sum check 3: Modbus in ASCII mode 4: Modbus in RTU mode	0	
ADR Adr	Controller address	1 to 99 However, the number of controllers that can be connected per host device is 31 at the maximum.	1	
BPS bPS	Baud rate	2.4: 2400 bps 4.8: 4800 bps 9.6: 9600 bps	9.6	
PRI Pr1	Parity	NON: Disabled EVN; Even parity ODD: Odd parity	EVN	
STP StP	Stop bit	1 or 2 bits	1 bit	
DLN dLn	Data length	7 or 8 bits • 8 bits when ladder, MODBUS (RTU) • 7 bits when MODBUS (ASCII)	8 bits	
PRG PrG	Program parameter setting	0: Return to "Input type" setting display. –1: Set to enter the Program parameter setting display	0	1

STC

0

(4) Program Parameters

Code	Name	Setting range and unit	Default	User setting
EV1 EU 1	Event 1 type	0: PV event 1: Time event	0	0
AL1 AL 1	PV event 1 type	OFF or 1 to 10 (see the table of PV event function list)	1	4
A1 A 1	PV event 1 setpoint value	• PV alarm: EU (–100 to 100%) • Deviation alarm: EUS (–100 to 100%) Unit: °C/°F	Max. value of measurement range (PV alarm)	0
HY1 HY1	PV event 1 hysterisis	0 to 100% of measurement range span Unit:°C/°F	0.5% of measurement range span	5
EON1 Eon 1	Time event 1 on time	OFF or 0.00 to 99.59 (Hour, Min.)	OFF	
EOF1 EoF 1	Time event 1 off time	OFF (note) or 0.00 to 99.59 (Hour, Min.) Note: Time event 1 does not stop when "OFF" is set.	OFF	
EV2 EU2	Event 2 type	0: PV event 1: Time event	0	0
AL2 AL2	PV event 2 type	OFF or 1 to 10 (see the table of PV event function list)	2	4
A2 A2	PV event 2 setpoint value	• PV alarm: EU (–100%) to EU (100%) • Deviation alarm: EUS (–100%) to EUS (100%) Unit: °C/°F	Min. value of measurement range (PV alarm)	0
HY2 HY2	PV event 2 hysterisis	0 to 100% of measurement range span Unit:°C/°F	0.5% of measurement range span	5
EON2 Eon2	Time event 2 on time	OFF or 0.00 to 99.59 (Hour, Min.)	OFF	
EOF2 EoF2	Time event 2 off time	OFF (note) or 0.00 to 99.59 (Hour, Min.) Note: Time event 2 does not stop when "OFF" is set.	OFF	
SSP SSP	Start target setpoint	0 to 100% of measurement range span Unit:°C/°F	Min. value of measurement range	
SP1 SP 1	Target setpoint 1	0 to 100% of measurement range span Unit:°C/°F	Min. value of measurement range	
TN1 tn 1	Segment time 1	OFF or 0.00 to 99.59 (Hour, Min.)	Min. value of measurement range	off
*Note ⋮	⋮	⋮	⋮	⋮
SP16 SP 16	Target setpoint 16	0 to 100% of measurement range span Unit:°C/°F	Min. value of measurement range	
TN16 tn 16	Segment time 16	OFF or 0.00 to 99.59 (Hour, Min.)	Min. value of measurement range	
JC JC	Junction code	0: Reset 1: Hold 2: Repeat	0	0
WTZ WTZ	Wait zone	OFF or EUS (1%) to EUS (10%)	OFF	off

*Note: • The setting range and unit of SPn (n=2 to 15) are same as those of SP1 (and SP16)
• The setting range and unit of TMn (n=2 to 15) are same as those of TM1 (and TM16)