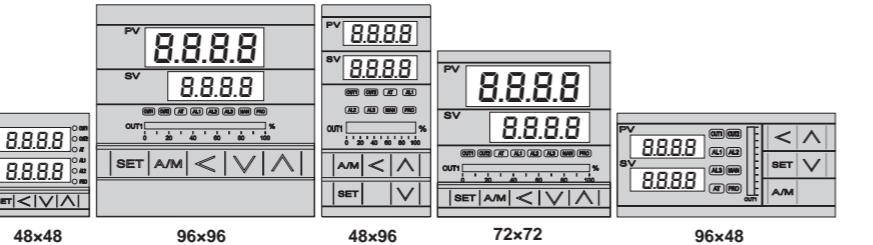


User's Manual

Digital PID Temperature / Process Controllers

VER 1.0 2018-05



1 Notes

Warning

1. Beware of Electric Shock!
2. Once controller is activated, do not touch AC power wiring terminals to avoid electric shock!
3. First to confirm power is OFF, before working on the wiring of controller power supply!
4. Before using this product, please read through this operating manual thoroughly to understand the correct usage based on the fundamentals of its content.
5. This product can be used in industrial equipment, working terminal, measurement equipment, but not in life-saving-related medical equipment.
6. In order to ensure safety even if the temperature controller fails, please set up another alarm system or safety redundancy.

Caution

1. Before the controller transmits power, make sure that the position of the AC power assembly leg is correct. Otherwise, the controller may be seriously damaged after power transmission is initiated.
2. Before powering on, please confirm whether the power supply voltage is in accordance with the controller's specification (AC 85~265V or DC 24V). Otherwise, the controller may be seriously damaged after power transmission is initiated.
3. Check if the wiring is connected to the terminal for the correct terminals (Input, Output.)
4. Do not install the controller in places subject to high-frequency interference, corrosive gases, and high temperature and humidity (normal working environment: 0 ~ 50°C, 20 ~ 90% RH).
5. To avoid noise interference, please keep the sensor wiring away from the power cord and the loading power cord.
6. When the thermocouple lead is extended, please use the compensation lead of the corresponding type to this thermocouple.
7. When the RTD lead wire is extended, please use those with lower resistance value. Please use the same wire between the three wires.

2 Basic Function Setting

2.1 Input Type Setting

1. PV 8825 Display after power-on. SV 8880	2. PV 88P1 Hold [SET] key + << key 3 seconds, then entering into LEVEL_3 upper display showing "INPT" with lower display showing current input type. SV 8880
3. PV 88P1, Press <<, the lower display flashes. SV 8880	4. PV 88P1 Press [SET] key and << key to enter the intended input type. SV 88P1
5. PV 88P1 Press [SET] key to store new value of INPT. SV 88P1	Modify input type needs to interchange of jumper location, and it needs to recalibration for linear input type change.

2.2 SV Value Setting

1. PV 8825 Display after power-on. SV 8880	2. PV 8825 When << key is pressed, the lower display flashes. SV 8880
3. PV 8825 Press << key and << key to adjust set value. SV 8850	4. PV 8825 Press [SET] key to store new value of SV. SV 8850

2.3 RUN/STOP Mode Selection

1. PV 8825 Display after power-on. SV 8850	2. PV 8825 Press [SET] key to enter parameter setup display, with "R_S" shown on the upper display. SV 8880
3. PV 8825 When << key is pressed, the lower display flashes. SV 8850	4. PV 8825 Press << key or << key to select RUN/STOP mode. SV 8880
5. PV 8825 Press [SET] key to store new value of R_S. SV 8850	When controller is in STOP mode, it shuts off OUTPUT and ALARM functions

2.4 Auto Tuning Execution

1. PV 8825 Display after power-on. SV 8850	2. PV 8825 Press [SET] key to get parameter setup display, as "OFF" will be shown on the upper display. SV 8880
3. PV 8825 When << key is pressed, the lower display flashes. SV 8850	4. PV 8825 Press << key or << key to select auto tuning execution or not. SV 8880
5. PV 8825 Press [SET] key to store new value of AT. SV 8880	When auto tuning AT LED lamp lit and start to output, through a few circles to get new PID value with the precise control, if finished the AT LED will be lamp off.

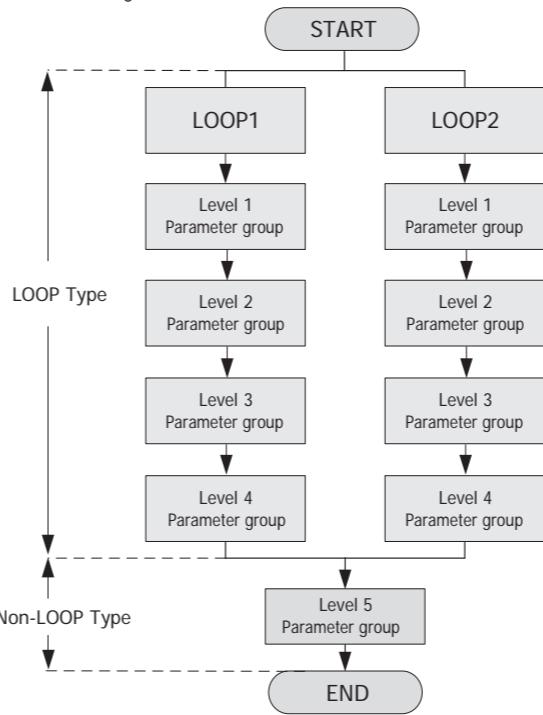
2.5 PID Value Setting

1. PV 8825 Display after power-on. SV 8880	2. PV 8825 Hold [SET] key 3 seconds, then entering into LEVEL_2 upper display showing "P1", with lower display show current P1 value. SV 8880
3. PV 8825 When << key is pressed, the lower display flashes. SV 8880	4. PV 8825 Press << key and << key to set the intended P1 value. SV 8880
5. PV 8825 Press [SET] key to store new value of P1. SV 8880	By the same procedure, use the same ways to set integral value(I1) and derivative value(D1).

3 Flow Chart of Parameter Setting

3.1 Parameter Structure

controller is an original dual-loop controller. The parameter group of Level 1~Level 4 is of LOOP type. There are two copies kept in LOOP1 and LOOP2. Level 5 parameter group non-LOOP type is of an independent, linked with Level 4 of LOOP1 or LOOP2, as the parameter structure is shown in the diagram below.



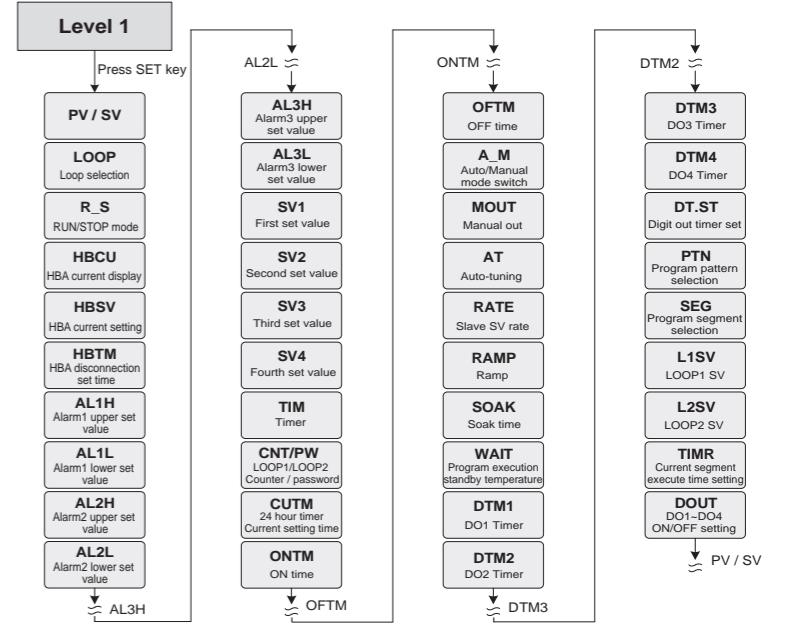
3.4 Data Lock Function

LOCK provides a parameter protection function to prevent the first line operator from touching or modifying important parameters. Conversely, when the parameter cannot be modified, please make sure that the set value of LOCK.

LOCK	LEVEL					Descriptions
	Level_1 USERLevel	Level_2 PIDLevel	Level_3 INPUTLevel	Level_4 SETLevel	Level_5 QC Level	
0000	◎	◎	◎	X	X	All parameters of Level 1, 2 & 3 are able to be modified (Factory default setting)
1111	◎	◎	X	◎	X	All parameters of Level 1, 2 & 4 are able to be modified
1000	◎	◎	X	X	◎	All parameters of Level 1, 2 & 5 are able to be modified
0011	◎	◎	X	X	X	Only SV, LOOP, R_S, A_M,LOCK can be modified
0101	◎	◎	X	X	X	Only LOCK can be modified
0110	◎	◎	X	X	X	Only parameters of Level 1 and LOCK can be modified
Other	◎	◎	◎	X	X	Once jumping to other levels, LOCK will be automatically restored to 0000

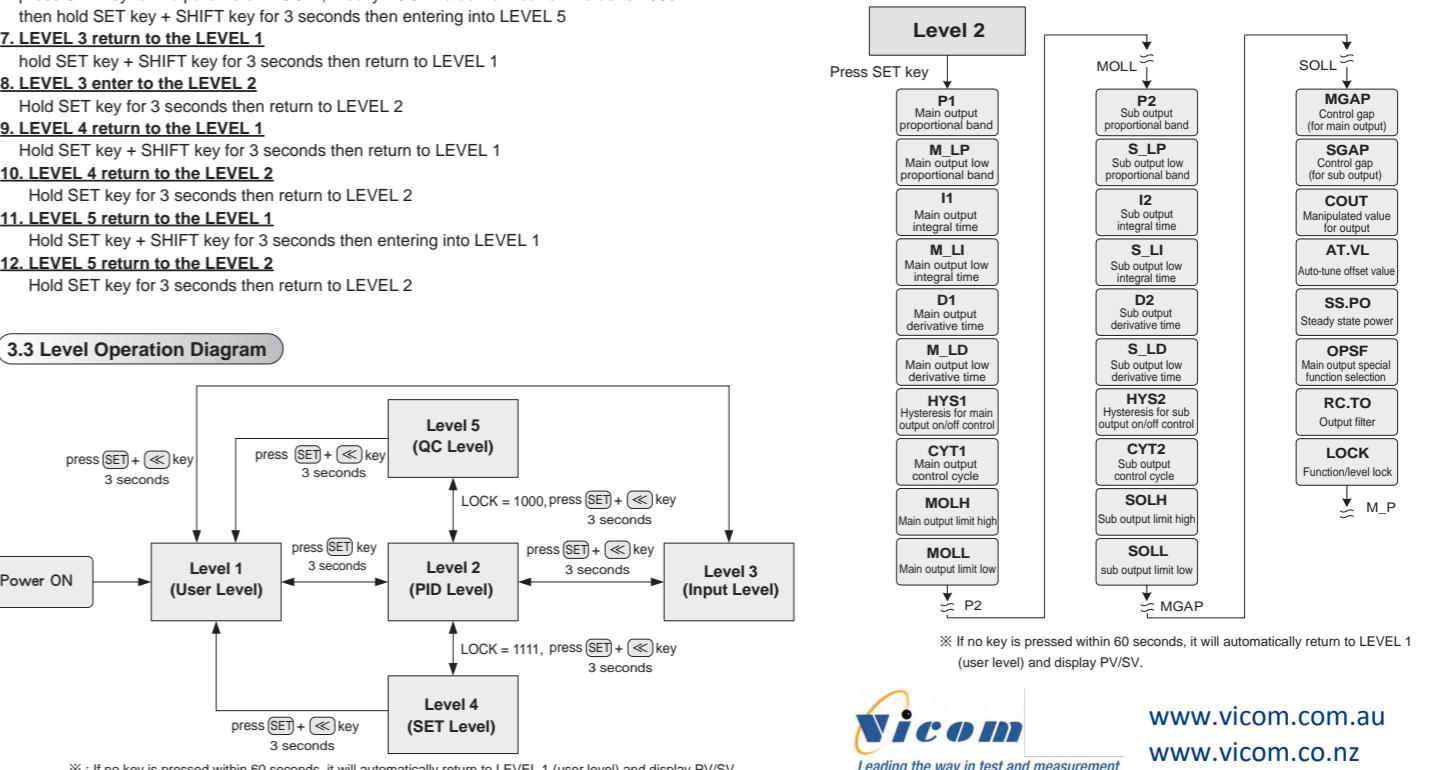
◎ : able to enter X : unable to enter

3.5 Level 1 (User Level) All Parameters Display



* If no key is pressed within 60 seconds, it will automatically return to LEVEL 1 (user level) and display PV/SV.

3.6 Level 2 (PID Level) All Parameters Display



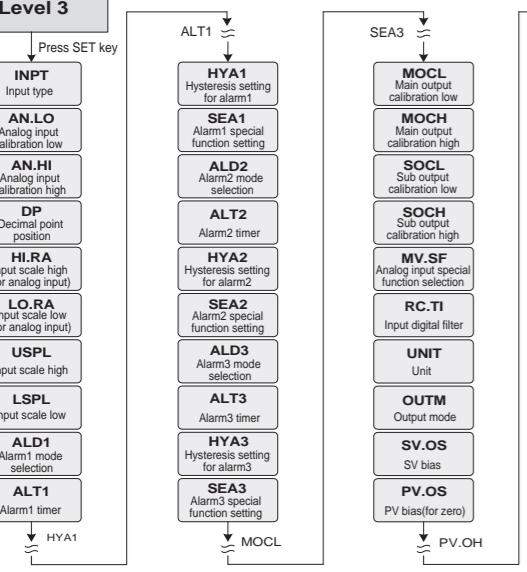
* If no key is pressed within 60 seconds, it will automatically return to LEVEL 1 (user level) and display PV/SV.



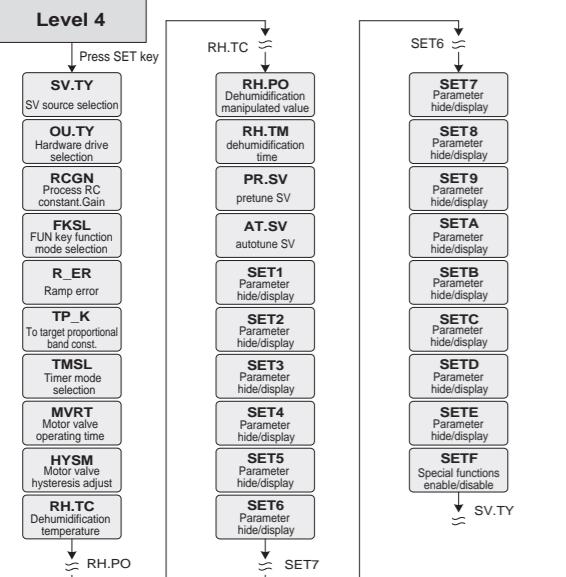
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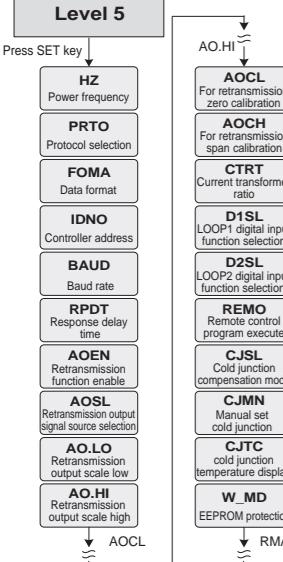
3.7 Level 3 (Input Level) All Parameters Display



3.8 Level 4 (Setting Level) All Parameters Display



3.9 Level 5 (Quality Control) All Parameters Display



4 Parameters Hide/Display Table on Level 4

SET1	SEE1	SET1_1	0 hide PRTO FOMA IDNO BAUD RPDT
		1 display	PRTO FOMA IDNO BAUD RPDT
	SET1_2	0 hide AOEN AOSL AO.LO AO.HI AOCL AOCH	
		1 display	AOEN AOSL AO.LO AO.HI AOCL AOCH
	SET1_3	0 hide CTRT D1SL D2SL	
		1 display	CTRT D1SL D2SL
	SET1_4	0 hide REMO	
		1 display	REMO
SET2	SEE2	SET2_1	0 hide HBCU HBSV HBTM
		1 display	HBCU HBSV HBTM
	SET2_2	0 hide AL1H AL1L	
		1 display	AL1H AL1L
	SET2_3	0 hide AL2H AL2L	
		1 display	AL2H AL2L
	SET2_4	0 hide AL3H AL3L	
		1 display	AL3H AL3L
SET3	SEE3	SET3_1	0 hide SV1 SV2
		1 display	SV1 SV2
	SET3_2	0 hide SV3 SV4	
		1 display	SV3 SV4
	SET3_3	0 hide TIM	
		1 display	TIM
	SET3_4	0 hide (CNT→LOOP1) (PW→LOOP2)	
		1 display	(CNT→LOOP1) (PW→LOOP2)
SET4	SEE4	SET4_1	0 hide WAIT
		1 display	WAIT
	SET4_2	0 hide DTM1 DTM2 DTM3 DTM4	
		1 display	DTM1 DTM2 DTM3 DTM4
	SET4_3	0 hide DT.ST	
		1 display	DT.ST
	SET4_4	0 hide PV1 PV2	
		1 display	PV1 PV2
SET5	SEE5	SET5_1	0 hide M_LP M_LI M_LD
		1 display	M_LP M_LI M_LD
	SET5_2	0 hide MOLH MOLL	
		1 display	MOLH MOLL
	SET5_3	0 hide S_LP S_LI S_LD	
		1 display	S_LP S_LI S_LD
	SET5_4	0 hide SOLH SOLL	
		1 display	SOLH SOLL
SET6	SEE6	SET6_1	0 hide COUT
		1 display	COUT
	SET6_2	0 hide AT.VL SS.PO	
		1 display	AT.VL SS.PO
	SET6_3	0 hide OPSF RC.TO	
		1 display	OPSF RC.TO
	SET6_4	0 hide LOOP R_S	
		1 display	LOOP R_S
SET7	SEE7	SET7_1	0 hide AN.LO AN.HI DP
		1 display	AN.LO AN.HI DP
	SET7_2	0 hide HI.RA LO.RA	
		1 display	HI.RA LO.RA
	SET7_3	0 hide LSPL USPL	
		1 display	LSPL USPL
	SET7_4	0 hide ALD1 ALT1 HYA1 SEA1	
		1 display	ALD1 ALT1 HYA1 SEA1
SET8	SEE8	SET8_1	0 hide ALD2 ALT2 HYA2 SEA2
		1 display	ALD2 ALT2 HYA2 SEA2
	SET8_2	0 hide ALD3 ALT3 HYA3 SEA3	
		1 display	ALD3 ALT3 HYA3 SEA3
	SET8_3	0 hide MOCL MOCH	
		1 display	MOCL MOCH
	SET8_4	0 hide SOCL SOCH	
		1 display	SOCL SOCH
SET9	SEE9	SET9_1	0 hide MV.SF
		1 display	MV.SF
	SET9_2	0 hide RC.TI	
		1 display	RC.TI
	SET9_3	0 hide UNIT	
		1 display	UNIT
	SET9_4	0 hide OUTM	
		1 display	OUTM
SETA	SEEA	SETA_1	0 hide SV.OS
		1 display	SV.OS
	SETA_2	0 hide PV.OS PV.OH	
		1 display	PV.OS PV.OH
	SETA_3	0 hide MLNB COMP OFFS	
		1 display	MLNB COMP OFFS
	SETA_4	0 hide SV.TY	
		1 display	SV.TY
SETB	SEE8	SETB_1	0 hide OUT.YT
		1 display	OUT.YT
	SETB_2	0 hide RCGN	
		1 display	RCGN
	SETB_3	0 hide FKSL	
		1 display	FKSL
	SETB_4	0 hide R_ER TP_K	
		1 display	R_ER TP_K
SETC	SEE8	SETC_1	0 hide TMSL
		1 display	TMSL
	SETC_2	0 hide MVRT HYSM	
		1 display	MVRT HYSM
	SETC_3	0 hide RH.TC RH.PO RH.TM	
		1 display	RH.TC RH.PO RH.TM
	SETC_4	0 hide PR.SV AT.SV	
		1 display	PR.SV AT.SV

SEED	SETD_1	0 hide PRTO FOMA IDNO BAUD RPDT	
	1 display	PRTO FOMA IDNO BAUD RPDT	
	SETD_2	0 hide AOEN AOSL AO.LO AO.HI AOCL AOCH	
	1 display	AOEN AOSL AO.LO AO.HI AOCL AOCH	
SEEE	SETD_3	0 hide CTRT D1SL D2SL	
	1 display	CTRT D1SL D2SL	
	SETD_4	0 hide REMO	
	1 display	REMO	
SEEF	SETE_1	0 hide HBCU HBSV HBTM	
	1 display	HBCU HBSV HBTM	
	SETE_2	0 hide AL1H AL1L	
	1 display	AL1H AL1L	
SEEF	SETE_3	0 hide AL2H AL2L	
	1 display	AL2H AL2L	
	SETE_4	0 hide AL3H AL3L	
	1 display	AL3H AL3L	
SEEF	SET2_1	0 hide SV1 SV2	
	1 display	SV1 SV2	
	SET2_2	0 hide SV3 SV4	
	1 display	SV3 SV4	
SEEF	SET2_3	0 hide TIM	
	1 display	TIM	
	SET2_4	0 hide (CNT→LOOP1) (PW→LOOP2)	
	1 display	(CNT→LOOP1) (PW→LOOP2)	
SEEF	SET3_1	0 hide CUTM ONTM OFTM	
	1 display	CUTM ONTM OFTM	
	SET3_2	0 hide A_M MOUT	
	1 display	A_M MOUT	
SEEF	SET3_3	0 hide AT	
	1 display	AT	
	SET3_4	0 hide RATE RAMP SOAK	
	1 display	RATE RAMP SOAK	
SEEF	SET4_1	0 hide WAIT	
	1 display	WAIT	
	SET4_2	0 hide DTM1 DTM2 DTM3 DTM4	
	1 display	DTM1 DTM2 DTM3 DTM4	
SEEF	SET4_3	0 hide DT.ST	
	1 display	DT.ST	
	SET4_4	0 hide PV1 PV2	
	1 display	PV1 PV2	
SEEF	SET5_1	0 hide M_LP M_LI M_LD	
	1 display	M_LP M_LI M_LD	
	SET5_2	0 hide MOLH MOLL	
	1 display	MOLH MOLL	
SEEF	SET5_3	0 hide S_LP S_LI S_LD	
	1 display	S_LP S_LI S_LD	
	SET5_4	0 hide SOLH SOLL	
	1 display	SOLH SOLL	
SEEF	SET6_1	0 hide COUT	
	1 display	COUT	
	SET6_2	0 hide AT.VL SS.PO	
	1 display	AT.VL SS.PO	
SEEF	SET6_3	0 hide OPSF RC.TO	
	1 display	OPSF RC.TO	
	SET6_4	0 hide LOOP R_S	
	1 display	LOOP R_S	
SEEF	SET7_1	0 hide AN.LO AN.HI DP	
	1 display	AN.LO AN.HI DP	
	SET7_2	0 hide HI.RA LO.RA	
	1 display	HI.RA LO.RA	
SEEF	SET7_3	0 hide LSPL USPL	
	1 display	LSPL USPL	
	SET7_4	0 hide ALD1 ALT1 HYA1 SEA1	
	1 display	ALD1 ALT1 HYA1 SEA1	
SEEF	SET8_1		