

# USER'S OPERATING MANUAL FOR VERTICAL AUTOCLAVE CONTROLLER

(Models: VA-Clave)



VA-Clave  
(96 X 96)

## SPECIFICATIONS : -

### 1. DISPLAY TYPE

: 8 Digit seven segment LED

Model no.	VA-Clave	Color
Display height (PV)	0.80"	White
Display height (SV)	0.56"	Pure Green

### 2. STATUS LED'S

:HTR : Heater Control Output Status  
 P/E : Purg / Exhaust Output Status  
 ALM : Alarm Output Status  
 LWL : Low Water Level Status  
 AT : Auto Tune Status  
 ST : Soak Timer Running Status  
 SP : Lower display will show SP1  
 PR : Lower display will show calculated Pressure

ST, SP, PR : All Off :Lower display will show Input 2 Value

### 3. INPUT

Temperature Input : RTD Pt-100  
 Pressure Input : 0~10 Volts ; 4~20mA  
 Resolution :  $\pm 0.1$  °C  
 Accuracy :  $\pm 0.3$  °C  
 Sampling Time : 125 msec.  
 LWC for Pt-100 : Built in up to 18E max.  
 Digital Filter : 1 to 10 Sec.

### 4. RELAY OUTPUT

Contact type : N/O, COM  
 Contact Rating : 5A @ 250VAC or 30 VDC  
 Life expectancy : > 5,00,000 operations  
 Isolation : Inherent

### 5. SSR DRIVE OUTPUT

Drive Capacity : 12V @ 30mA.  
 Isolation : Non-Isolated.

### 6. FUNCTION

Output 1 : Heater output (Selectable)  
 1) Relay  
 2) SSR  
 Output 2 : Purg / Exhaust  
 Output 3 : Alarm Output

### 7. ENVIRONMENTAL

Operating Range : 0 ~50°C, 5~90% Rh  
 Storage Humidity : 95% Rh (Non-condensing)

### 8. POWER SUPPLY

Supply Voltage : 90~270VAC, 50/60Hz.  
 Consumption : 4W Maximum.

### 9. PHYSICAL

Housing : ABS Plastic

## INSTALLATION GUIDELINES

1. Prepare the cut-out with proper dimension as shown in figure.
2. Remove clamp from Controller.
3. Push the Timer through panel cut-out and secure the Controller in its place by tightening the side clamp.

## SAFETY INSTRUCTION

### MECHANICAL

- ❖ Ambient temperature and relative humidity surrounding the Controller must not exceed the maximum specified limits.
- ❖ The Controller in its installed state must be protected against excessive electrostatic or electromagnetic interferences.

### ELECTRICAL

- ❖ The Controller must be wired as per wiring diagram & it must comply with local electrical regulation.
- ❖ The Electrical noise generated by switching inductive loads might create momentary Fluctuation in display, latch up, data loss or permanent damage to the instrument. To reduce this use snubber circuit across the load.

Table 1 : Range as per Resolution

Resolution	Analog Input Low Value	Analog Input High Value	Process Value Offset 2
0000	-1999 to 9999	-1999 to 9999	-25 to 25
000.0	-199.9 to 999.9	-199.9 to 999.9	-25.0 to 25.0
00.00	-19.99 to 99.99	-19.99 to 99.99	-15.00 to 25.00
0.000	-1.999 to 9.999	-1.999 to 9.999	-1.500 to 2.500

# PROGRAMMING



Press and Hold SET & UP Key Simultaneously for 3 Sec.

Press and Hold SET & DOWN Key Simultaneously for 3 Sec.

Press & Hold Shift Key for 3 Sec. in Run Mode

Press SET Key Once in Run Mode

Configuration			
Display	Default	Parameter Name	Range
LOCK	15	Lock Code	1 ~ 9999
HSPL	135.0	Higher Setpoint Limit	0 ~ 135
PVDF	0.0	Process Value Offset	-25.0 ~ 25.0
FLt.1	4	Input Filter	Ref Table 2
OPtY	rLY	Output Type	Relay, SSR
IP-2	4-20	Input 2 Type	None, 0 - 10, 4 - 20
<input type="checkbox"/> rES2	0	Input 2 Resolution	0, 0.0, 0.00, 0.000
<input type="checkbox"/> OFS2	0	Process Value 2 Offset	Refer Table 1
<input type="checkbox"/> FLt.2	4	Input 2 Filter	1 ~ 10
<input type="checkbox"/> ALL2	0	Analog Range Low	Refer Table 1
<input type="checkbox"/> AHH2	1000	Analog Range High	Refer Table 1
unit	PSI	Unit for Pressure	PSI, KGCM
tunE	EnbL	Auto Tune	Enable, Disable

Configuration			
Display	Default	Parameter Name	Range
SP	EnbL	Control Setpoint	Enable, Disable
ArSP	EnbL	Air Setpoint	Enable, Disable
EHSP	EnbL	Exhaust Setpoint	Enable, Disable
CESP	EnbL	Cycle End Setpoint	Enable, Disable
ALSP	EnbL	High Alarm Deviation setpoint	Enable, Disable
SFSP	EnbL	Fail Safe Deviation Setpoint	Enable, Disable
<input type="checkbox"/> id-1	1	Device ID Number 1	1 ~ 254
<input type="checkbox"/> id-2	2	Device ID Number 2	ID - 1 + 1
<input type="checkbox"/> bAUD	9600	Baud Rate	9600, 1920, 3125, 3840, 7680
<input type="checkbox"/> PAR	o.81	Parity	n_81, n_82, o_81, o_82, E_81, E_82
LdSP	tOGL	Lower Display Message	Toggle, Timer, SP, PR, Auto, IP2
ULOC	15	User Lock Code	1 ~ 9999

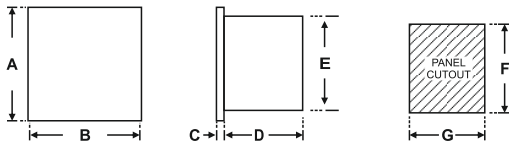
Control List			
Display	Default	Parameter Name	Range
LOCK	15	Lock Code	1 ~ 9999
Pb	5.0	Proportional Band	0.5 ~ 99.9 °C
<input type="checkbox"/> int	240	Integral Time	0 ~ 3600 Sec.
<input type="checkbox"/> dt	60	Derivative Time	0 ~ 300 Sec.
<input type="checkbox"/> CYCt	16.0	Cycle Time	1.0 ~ 100.0 Sec.
<input type="checkbox"/> CHYS	0.2	Control Hysterisis	0.1 ~ 10.0
<input type="checkbox"/> RHYS	0.2	Air Hysterisis	0.1 ~ 9.9
<input type="checkbox"/> HOld	nOnE	Hold Back Strategy	None, Up, Down Both
<input type="checkbox"/> Hbnd	0.1	Hold Band	0.1 ~ 5.0 Sec
<input type="checkbox"/> StdL	0	Soak Time Delay	0 ~ 99 Sec
<input type="checkbox"/> PrFL	Rbrt	Power Fail Recovery Method	Abrt, Start, Count

User List			
Display	Default	Parameter Name	Range
SP	0.0	Control Setpoint	LSPL ~ HSPL
SOkt	20	Soak Time	1 ~ 9999
ArSP	0.0	Air Setpoint	0 ~ SP
EHSP	0.0	Exhaust Setpoint	0 ~ HSPL
CESP	0.0	Cycle end Setpoint	0 ~ SP
ALSP	0.1	High Alarm Deviation Setpoint	0.1 ~ 10.0
SFSP	0.3	Fail Safe Deviation Setpoint	0.1 ~ 20.0

Auto Tuning Mode			
Display	Default	Parameter Name	Range
<input type="checkbox"/> tunE	n0	Auto Tunning Mode	Yes, No

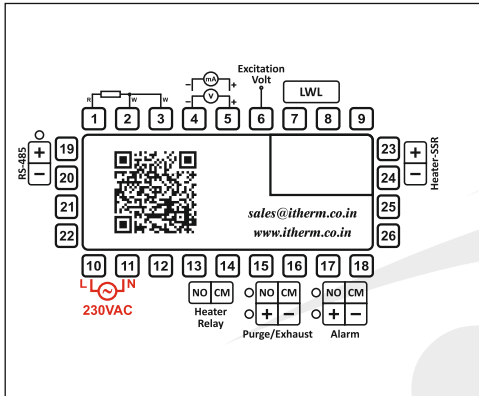
Parameter will display according to below symbols	
<input type="checkbox"/>	PB > 0
<input type="checkbox"/>	PB = 0
<input type="checkbox"/>	Input 2 = 0 ~ 10 V or 4 ~ 20mA
<input type="checkbox"/>	Factory Set RS-485 Given
<input type="checkbox"/>	Hold Back = Up, Down, Both

**OVER ALL DIMENSIONS & PANEL CUT OUT (IN MM)**

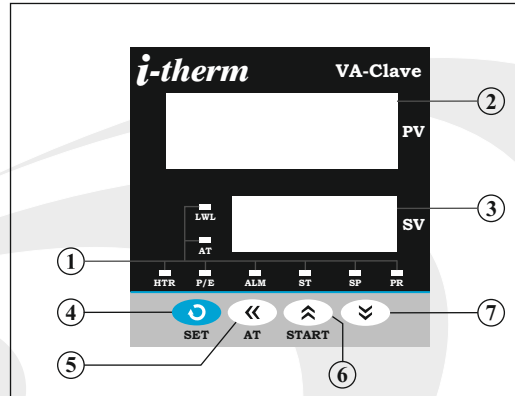


Model \ Dim	A	B	C	D	E	F	G	H
VA-Clave	96	96	10	65	89	92	92	9

**TERMINAL CONNECTIONS :**



**FRONT PANEL LAYOUT**



**FRONT PANEL LAYOUT DESCRIPTION :**

Sr.	NAME	FUNCTION
1	HTR LED	Heater Control Output Status
	P / E LED	Purg / Exhuast Output Status
	ALM LED	Alarm Output Status
	LWL LED	Low Water Level Status
	AT LED	Auto Tune Status
	ST LED	Soak Timer Running Status
	SP LED	Lower display will show setpoint
	PR LED	Lower display will show Pressure Value
2	UPPER DISPLAY	It will display (1) Measured value of selected input or Error messages in run mode. (2) Parameters value in program mode.
3	LOWER DISPLAY	It will display (1) SP (Main set point) / Pressure Value / Set Soak time value/ balance or elapsed soak time in run mode. (2) Parameter code in program mode.
4	SET KEY	(1) For SP programming. (2) To access Control mode along with Dn Key. (3) To access Configuration mode along with UP key. (4) To scroll the parameter & to store its value.
5	SHIFT KEY	(1) To enter in Tune Mode. (2) To increase/alter parameter value in program mode with Up/Dn key. (3) Press for 3sec in programming, this will help to go back to previous parameter.
6	UP KEY	(1) To Start Cycle. (2) To increase/alter parameter value in program mode. (3) To enter in configuration mode with SET key. (4) To acknowledge Alarm.
7	DOWN KEY	(1) To decrease/alter parameter value in program mode. (2) To enter in Control mode with Set key.



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