

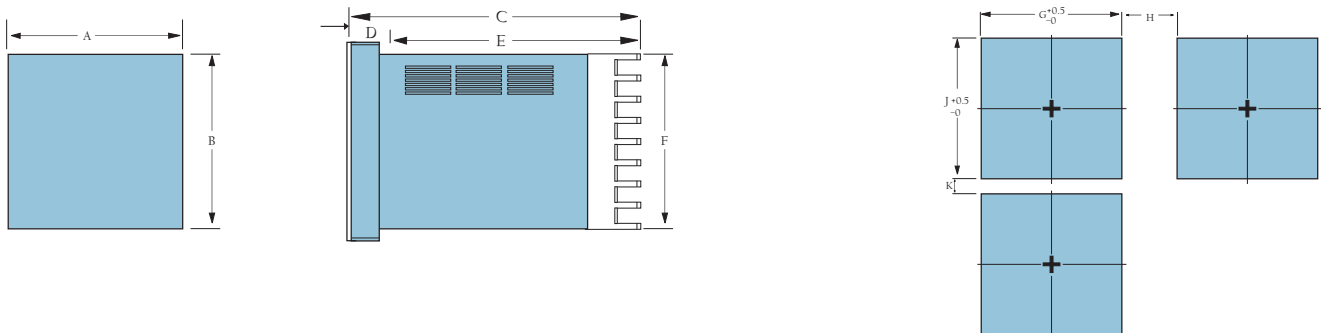
This section gives you all the information necessary to help you monitor and operate your controller including an Operator Interface overview, an explanation of the Displays, keys, LEDs, Mode access, and Operation Modes.



<b>INPUT</b>	Volt Input	R, Y, B, Three Phase (10VAC ~ 650VAC)
	CT Input	50 Ampere CT @ 3 NOs (1.0 AMP ~ 50.0 AMP) OR 100 Ampere CT @ 3 NOs (1 AMP ~ 100 AMP)
	DI Input	Start Input, Stop Input
<b>OUTPUT</b>	Relay	1CO, 7 Amp., 230 VAC (NO - C - NC)
	AUX. Accuracy	415 VAC, 50 Hz, $\pm 10\%$ $\pm 1\%$ of FSD
	Operating Temp.	0°C ~ 55°C
	Relative Humidity	Up to 95% RH Non Condensing
	Enclosure Material	Polycarbonate + ABS Plastic

## MOUNTING

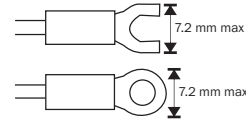
The controller can be mounted on either a vertical or tilted panel using the mounting bracket supplied. Adequate access space must be available at the back of the panel for installation and servicing activities. Overall dimensions and panel cutout requirements for mounting the controller are shown in Figure



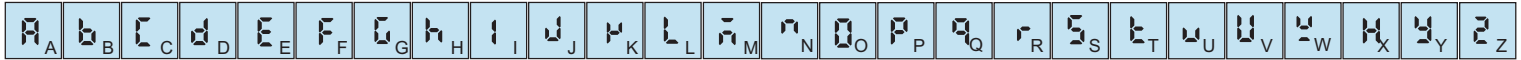
Size	A	B	C	D	E	F	G	H(Min)	J	K(Min)
(96 x 96)	96	96	66	3	63	90.3	92	25	92	25

## PRECAUTIONS WHEN WIRING

- Separate input leads and power lines in order to prevent external noise.
- Use specified size (M3.5, width 7.2 mm or less) crimped terminals for wiring. To connect bare wires to the terminal block, use copper braided or solid wires with a rated temperature of over 70°C and a gauge of AWG24 to AWG14 (equal to a cross-sectional area of 0.205 to 2.081 mm<sup>2</sup>). (The stripping length is 5 to 6 mm.) Up to two wires of same size and type, or two crimped terminals can be inserted into a single terminal.
- Use crimp terminals when wiring the terminals.
- Use the suitable wiring material and crimp tools for crimp terminals.
- Tighten the terminal screws to between 0.74 and 0.90 N-m.
- Use the following types of crimp terminals for M3.5 screws.



## Display Alphabet Characters



## STARTING MENU

PRESS IF

CYC MODE (ENB)	CYT MODE (ENB)	DLF MODE (ENB)	DFT MODE (ENB)	NONE MODE
Press 000 Dry Run Ampere d-4 Use  & Press 000 Dry Reset Time d-r-t Use  & Press 000 On Time (in Min.) 0n Use  & Press 000 Off Time (in Min.) OFF Use  & Press 000 Auto Time (in Sec.) A-t-a Use  & Press - - - Save & Exit - - -	Press 000 Dry Run Ampere d-4 Use  & Press 000 Dry Reset Time d-r-t Use  & Press 000 On Time (in Min.) 0n Use  & Press 000 Off Time (in Min.) OFF Use  & Press 000 Auto Time (in Sec.) A-t-a Use  & Press - - - Save & Exit - - -	Press 000 Dry Run Ampere d-4 Use  & Press 000 Dry Reset Time d-r-t Use  & Press 000 On Time (in Min.) 0n Use  & Press 000 Auto Time (in Sec.) A-t-a Use  & Press - - - Save & Exit - - -	Press 000 Dry Run Ampere d-4 Use  & Press 000 Dry Reset Time d-r-t Use  & Press 000 On Time (in Min.) 0n Use  & Press 000 Auto Time (in Sec.) A-t-a Use  & Press - - - Save & Exit - - -	Press 000 Dry Run Ampere d-4 Use  & Press 000 Dry Reset Time d-r-t Use  & Press 000 Auto Time (in Sec.) A-t-a Use  & Press - - - Save & Exit - - -

	Password		Cyclic Function With Trigger		Delay Time
	Enable Function		Phase Sequence Function		Dry Reset Time
	Auto Delay Time		Cyclic Function		Ampere Offset Value
	None Mode		Function Disable		Difference Value
	Mode Selection		Function Yes		R Phase Offset
	Delay Off Time Function		High Voltage Function		Low Voltage Function



SPP Function ( Phase Loss )  
Delay Off Time With Trigger Function



Limit For Ampere Setting  
Start Delay Time ( Initial Delay )



Y Phase Offset  
B Phase Offset

## PARAMETER SETTING

PRESS For 5 Sec.

### Time Parameter

043 Default Screen  
PAS Use &

Press

030 Enter Password  
030 For Time Parameter  
PAS Use &

Press

d15 « » Eab  
Aba Auto Delay Time  
Use &

Press

n0n » dLF » dFt  
A0d Mode Selection  
C4C « C4E

Press

n0 « » 4E5  
Aba Memory Retain  
Use &

Press

025 Auto OL & DRY  
InPercentage Setting  
PER Use &

FOR MODEL : SD 96 /SD 96W

010 Star Delta  
Time Setting  
Str Use &

... Save & Exit

... Save & Exit

### Ampere Parameter

043 Default Screen  
PAS Use &

Press

070 Enter Password  
070 For Ampere Parameter  
PAS Use &

Press

300 Max. Ampere  
Limit Setting  
Lat Use &

Press

010 Start Delay  
Time Setting  
Std Use &

Press

005 Ampere Delay  
Time Setting  
dLY Use &

Press

Eab « » d15  
dLY Dry Run  
Function Use &

Press

Eab « » d15  
drt Dry Reset  
Time Setting Use &

Press

000 R Phase Ampere  
Offset Value Setting  
rOF Use &

Press

000 Y Phase Ampere  
Offset Value Setting  
yOf Use &

Press

000 B Phase Ampere  
Offset Value Setting  
bOf Use &

Press

... Save & Exit

... Save & Exit

### Voltage Parameter

043 Default Screen  
PAS Use &

Press

090 Enter Password  
090 For Voltage Parameter  
PAS Use &

Press

Eab « » d15  
SPP SPP Function  
Use &

Press

Eab « » d15  
SE9 Phase Sequence  
Use &

Press

Eab « » d15  
HU High Voltage  
Use &

Press

490 High Voltage  
HU Use &

Press

Eab « » d15  
LU Low Voltage  
Use &

Press

320 Low Voltage  
LU Use &

Press

005 Voltage Delay  
Time Setting  
dLY Use &

Press

050 Voltage Difference  
For Phase Lose  
dIF Use &

Press

000 R Phase Offset  
Value Setting  
rOF Use &

Press

000 Y Phase Offset  
Value Setting  
yOf Use &

Press

000 B Phase Offset  
Value Setting  
bOf Use &

Press

... Save & Exit

... Save & Exit

## Warranty and Application Considerations

### Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your venex representative if you have any questions or comments.

### Warranty and Limitations of Liability

#### WARRANTY

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VAPL Shall Not Be Responsible For Special, Indirect, Or Consequential Damages, Loss Of Profits, Or Commercial Loss In Any Way Connected With The Products, Whether Such Claim Is Based On Contract, Warranty, Negligence, Or Strict Liability.

In no event shall the responsibility of VAPL for any act exceed the individual price of the product on which liability is asserted

In No Event Shall VAPL Be Responsible For Warranty, Repair, Or Other Claims Regarding The Products Unless VAPL's Analysis Confirms That The Products Were Properly Handled, Stored, Installed, And Maintained And Not Subject To Contamination, Abuse, Misuse, Or Inappropriate Modification Or Repair.

### Application Considerations

#### SUITABILITY FOR USE

VAPL shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products. Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

Never Use The Products For An Application Involving Serious Risk To Life Or Property Without Ensuring That The System As A Whole Has Been Designed To Address The Risks, And That The VAPL Products Are Properly Rated And Installed For The Intended Use Within The Overall Equipment Or System.

### DISCLAIMERS

#### PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of VAPL's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the VAPL Warranty and Limitations of Liability.

#### CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your VAPL representative at any time to confirm actual specifications of purchased product.

#### DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

## SAFETY PRECAUTIONS

Do not touch the terminals while power is being supplied.

Doing so may occasionally result in minor injury due to electric shock.



Do not allow pieces of metal, wire clippings, or fine metallic shavings or filings from installation to enter the product. Doing so may occasionally result in electric shock, fire, or malfunction.



Do not use the product where subject to flammable or explosive gas. Otherwise, minor injury from explosion may occasionally occur.



Never disassemble, modify, or repair the product or touch any of the internal parts. Minor electric shock, fire, or malfunction may occasionally occur



If the output relays are used past their life expectancy, contact fusing or burning may occasionally occur. Always consider the application conditions and use the output relays within their rated load and electrical life expectancy. The life expectancy of output relays varies considerably with the output load and switching conditions



Tighten the terminal screws to between 0.74 and 0.90 N-m. Loose screws may occasionally result in fire.



Set the parameters of the product so that they are suitable for the system being controlled. If they are not suitable, unexpected operation may occasionally result in property damage or accidents.



A malfunction in the Temperature Controller may occasionally make control operations impossible or prevent alarm outputs, resulting in property damage. To maintain safety in the event of malfunction of the Temperature Controller, take appropriate safety measures, such as installing a monitoring device on a separate line.



### VBTRON AUTOMATION PVT. LTD.

132, Vishala industrial Estate,  
Nr. Odhav Ring Road Circle,  
Kathwada, Ahmedabad.  
(GUJARAT) INDIA

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product improvement, specifications are  
subject to change without notice.

## PRECAUTIONS FOR SAFE USE

Be sure to observe the following precautions to prevent operation failure, malfunction, or adverse effects on the performance and functions of the product. Not doing so may occasionally result in unexpected events.

- The product is designed for indoor use only. Do not use the product outdoors or in any of the following locations.
  - Places directly subject to heat radiated from heating equipment.
  - Places subject to splashing liquid or oil atmosphere.
  - Places subject to direct sunlight.
  - Places subject to dust or corrosive gas (in particular, sulfide gas and ammonia gas).
  - Places subject to intense temperature change.
  - Places subject to icing and condensation.
  - Places subject to vibration and large shocks.
- Use/store within the rated temperature and humidity ranges. Provide forced-cooling if required.
- To allow heat to escape, do not block the area around the product. Do not block the ventilation holes on the product.
- Be sure to wire properly with correct polarity of terminals.
- Use specified size (M3.5, width 7.2 mm or less) crimped terminals for wiring. To connect bare wires to the terminal block, use copper braided or solid wires with a rated temperature of over 70 °C and a gauge of AWG24 to AWG14 (equal to a cross-sectional area of 0.205 to 2.081 mm<sup>2</sup>). (The stripping length is 5 to 6 mm.) Up to two wires of same size and type, or two crimped terminals can be inserted into a single terminal.
- Do not wire the terminals which are not used.
- Allow as much space as possible between the controller and devices that generate a powerful high-frequency or surge. Separate the high-voltage or large-current power lines from other lines, and avoid parallel or common wiring with the power lines when you are wiring to the terminals.
- Use this product within the rated load and power supply.
- Make sure that the rated voltage is attained within two seconds of turning ON the power using a switch or relay contact. If the voltage is applied gradually, the power may not be reset or output malfunctions may occur. into consideration when performing control.
- Make sure that the Controller has 30 minutes or more to warm up after turning ON the power before starting actual control operations to ensure the correct temperature display.
- A switch or circuit breaker should be provided close to this unit. The switch or circuit breaker should be within easy reach of the operator, and must be marked as a disconnecting means for this unit.
- Do not use paint thinner or similar chemical to clean with. Us standard grade alcohol.
- Design system (control panel, etc) considering the 2 seconds of delay that the controller's output to be set after power ON.
- The output may turn OFF when shifting to certain levels. Take this into consideration when performing control.
- The number of non-volatile memory write operations is limited