

# 4 1/2 DIGITAL VOLT / AMP METER

# CS2-VA

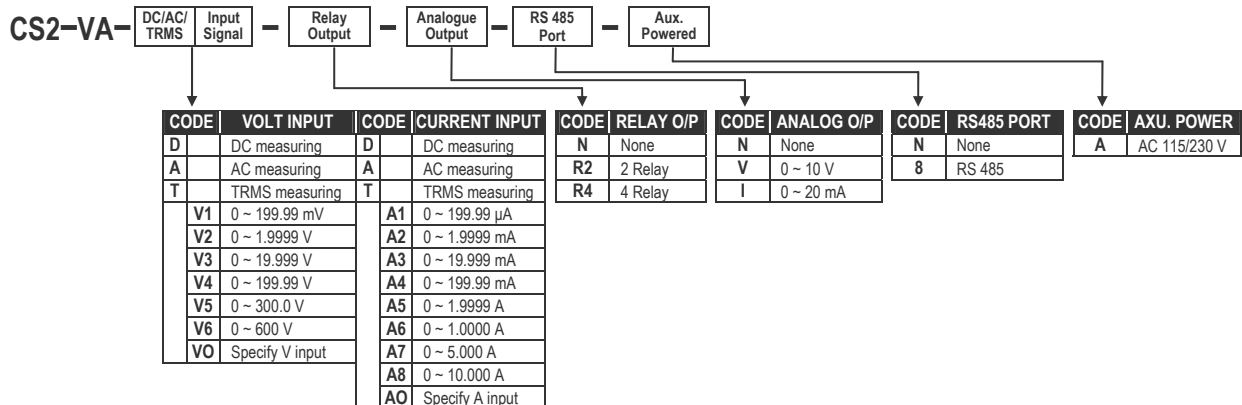
## FEATURE

- Measuring Voltage or Current for DC / AC / TRMS
- Accuracy:  $\pm 0.04\%$  or  $\pm 0.1\%$ ; 4 1/2 Digital display: -19999~19999
- User function, Easily programmable via the front panel
- 4 relay outputs with Start Delay / Hysteresis / DO / Trip Hold.....
- Analogue output and RS 485 communication port in optional
- 3 external control inputs for Relative PV / PV Hold / Maximum Hold / Minimum Hold / DI / Reset Relay hold
- CE Approved



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## ORDER INFORMATION



## SPECIFICATION

Measuring Range DC / AC / TRMS	Input Impedance	Measuring Range DC / AC / TRMS	Input Impedance
Voltage	0~199.99 mV $\geq 5M$ ohm	Current	0~199.99 $\mu$ A 1K ohm
	0~1.9999 V $\geq 1M$ ohm		0~1.9999 mA 100 ohm
	0~19.999 V $\geq 1M$ ohm		0~19.999 mA 10 ohm
	0~199.99 V $\geq 1M$ ohm		0~199.99 mA 1 ohm
	0~300.0 V $\geq 2M$ ohm		0~1.9999 A 0.05 ohm
	0~600.0 V $\geq 2M$ ohm		0~5.000 A 0.02 ohm
			0~10.000 A 0.01 ohm

- Calibration: System calibration by front key
- Accuracy:  $\pm 0.04\%$  of FS
- Response time:  $\leq 100$  msec.(when the AvG = "1")

### Operating

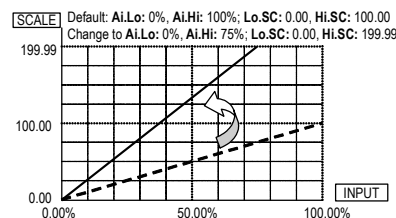
- Operation key: 4 keys for Enter(Function) / Shift(Escape) / Up / Down  
Up key: increase the number / back to previous function  
Down key: decrease the number / go to next function  
Shift key: move the flash digit position / Return back to upper level  
Enter/Fun key: enter the parameters you set or function select
- Security function: 4 digits password
- Lock function: 3 data lock level for None / Engineer Level / All(Engineer Level & User Level)

### Display functions

- LED: Measuring value: 0.56" red high-brightness LED  
Relay output indication: square red LED  
External control input: square green LED  
RS 485 communication: square red LED  
Max. / Mini. Hold: square red LED
- Low Cut function: Low.cut :Settable range: 000~5000 counts
- Average function: AvG :Settable range: 1(None)~99 times
- Digital Filter: D.Filt : Settable range: 1(None)~99 times
- Over range indication: oFL, when input is over 20% of input range Hi
- Under range indication: -oFL, when input is under 20% of input range Lo

### Scaling

- Input range function: Ai.Lo: 0~50% of input  
Ai.Hi: 50~100% of input
- Scaling function: Hi.SC(High scale): -19999~19999  
Lo.SC(Low scale): -19999~19999

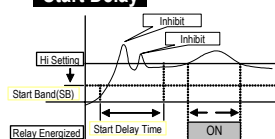


- Decimal point: Settable from 00000~0.0000

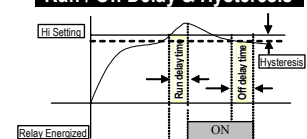
### Control functions

- Control relay: Relay 2 & 3: SPDT, 5A/230Vac, 10A/115V  
Relay 1 & 4: SPST, 1A/230Vac, 3A/115V
- Relay Output: Energized levels compare with set-points: Hi / Lo  
**DO function:** Energized by RS485 command  
Start delay / Run delay / Off delay / Hysteresis  
Start delay band: 0~10000 counts  
Start delay time: 0:00.0~19:59.9  
Energized delay time: 0:00.0~19:59.9  
**Off delay time: 0:00.0~19:59.9 and Trip Hold**  
Hysteresis: 0~10000 counts

### Start Delay



### Run / Off Delay & Hysteresis



### External Control Inputs(optional)

- Input mode: 3 ECI points, Contact or open collect input
- Functions: PV Hold / Max Hold /Mini. Hold / Relative PV / DI / Reset Relay (when relay has settled Trip Hold)  
Debouncing time: 12~255 x 8mseconds

A-09

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## CS2-VA

### Analogue output(option)

- Accuracy:  $\pm 0.1\%$  of F.S.; 16 bits AD converter
- Ripple:  $\pm 0.1\%$  of F.S.
- Response time:  $\leq 200$  msec. (10~90% of input)
- Isolation: AC 2.0 KV between input and output
- Output range: 0~10V or 0~20mA(Specify)  
**Ao.Hi(output range high):** 50~100% of output range Hi  
**Ao.Lo(output range Low):** 0~50% of output range Lo  
**Ao.LMt(output High Limit):** 50.0~120.0% of output High

### RS 485 communication(optional)

- Protocol: Modbus RTU mode  
 Baud rate: 2400/4800/9600/19200/38400  
 Data bits: 7 or 8 bit  
 Parity: Even, odd or none (with 1 or 2 stop bit)  
 Device no: 1 ~ 255

### Power

- Power Supply: AC 115/230V, 50/60Hz
- Power consumption: 5VA
- Back up memory: By EEPROM

### Environmental

- Operating temperature: 0~60 °C
- Operating relative humidity: 20~95 %RH, Non-condensing
- Temperature coefficient:  $\leq 100$  PPM/°C
- Storage temperature: -10~70 °C
- Enclosure: Front panel: IEC 549 (IP54)

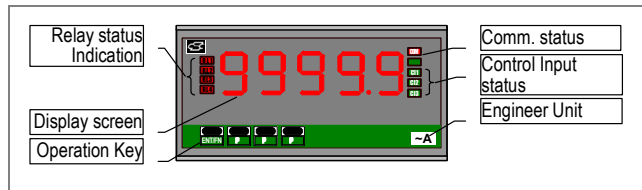
### Electrical safety

- Dielectric Strength: AC 2.0 KV for 1 min  
 Between Power / Input / Output / Case  
 $\geq 100\Omega$  ohm at 500Vdc
- Insulation resistance: Between Power / Input / Output
- EMC: EN61326
- Safety: EN61010

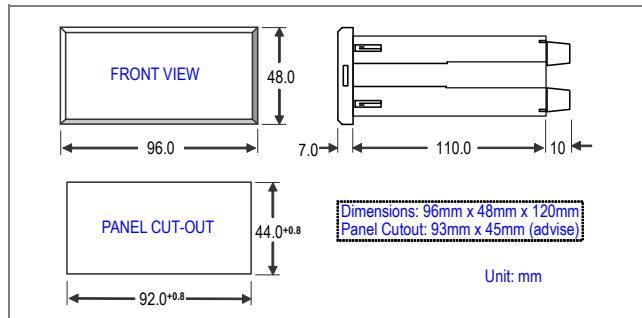
### Mechanical

- Dimensions: 96mm(W) x 48mm(H) x 120mm(D)
- Panel cutout: 93mm(W) x 45mm(H)
- Case Materiel: ABS fire-protection (UL 94V-0)
- Mounting: Panel flush mounting
- Terminal block: Plastic NYLON 66 (UL 94V-0)  
 #11~13(current input): 20A/300Vac, M3.5, 12~22AWG  
 Others: 10A 300Vac, M2.6, 16~22AWG
- Weight: 550g

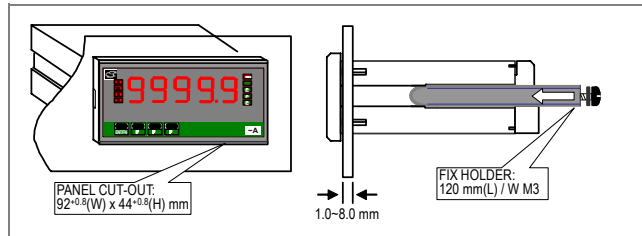
### FRONT PANEL



### DIMENSIONS



### INSTALLATION



### CONNECTION DIAGRAM

