

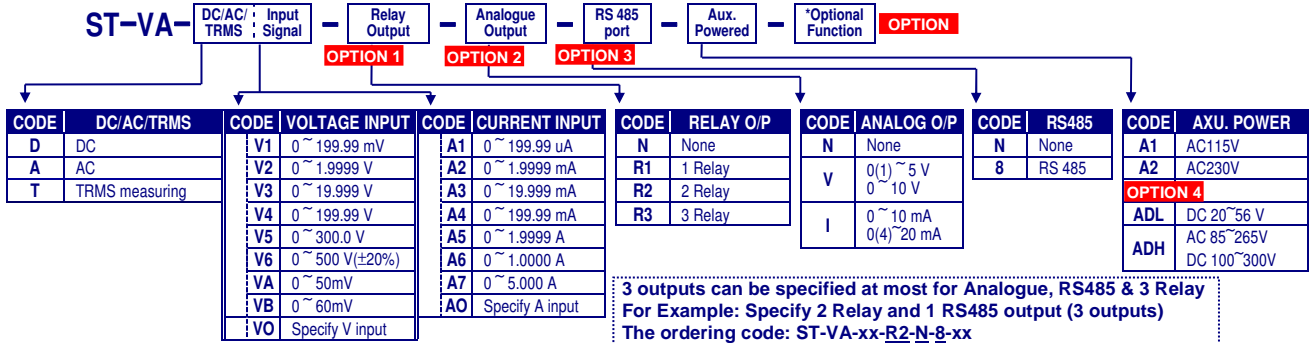
ST-VA VOLT / Current CONDITIONER WITH RS485, A/O & RELAY

FEATURE

- Measuring Voltage or Current for DC / AC / TRMS
- Accuracy: $\pm 0.04\%$ or $\pm 0.1\%$; Display range: -19999~29999
- User function, easily programmable via the top panel
- 1 Analogue output, 1 RS 485 port and 3 Relay output available for multi-cross selection in 3 outputs
- Design by CE standard



ORDERING INFORMATION



TECHNICAL SPECIFICATION

Input

	Measuring Range DC / AC / TRMS	Input Impedance	Measuring Range DC / AC / TRMS	Input Impedance
Voltage	0~50/100 mV	$\geq 5M \text{ ohm}$	Current	0~199.99uA
	0~199.99 mV	$\geq 5M \text{ ohm}$		0~1.9999 mA
	0~1.9999 V	$\geq 1M \text{ ohm}$		0~19.999 mA
	0~19.999 V	$\geq 1M \text{ ohm}$		0~199.99 mA
	0~199.99 V	$\geq 1M \text{ ohm}$		0~1.9999 A
	0~300.0 V	$\geq 2M \text{ ohm}$		0~5.000 A
	0~500.0 V($\pm 20\%$)	$\geq 2M \text{ ohm}$		

Calibration: Digital calibration by front key
A/D converter: 16 bits resolution
Accuracy: DC: $\leq \pm 0.04\%$ of FS $\pm 1C$
 AC: $\leq \pm 0.1\%$ of FS $\pm 1C$
Sampling rate: 15 cycles/sec
Response time: $\leq 100 \text{ msec.}$ (when the AvG = "1") in standard
Input range: Input High and Low programmable
Ai.Hi: Settable range: 0.00~100.00% of input range
Ai.Lo: Settable range: 0.00~100.00% of input range
AC frequency input range: 45~65Hz

Display & Functions

LED:
Numeric: 5 digits, 0.28"H green high-brightness LED
Relay output indication: 1 square red LED
RS 485 communication: 1 square red LED
Max/Mini Hold indication: 2 square red LED
Display range: -19999~29999;
Scaling function: Lo.SC: Low Scale; Settable range: -19999~+29999
 Hi.SC: High Scale; Settable range: -19999~+29999
 Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Decimal point: ovFL, when input is over 120% of input range Hi
Over range indication: -ovFL, when input is under -120% of input range Lo
Under range indication: Maximum and Minimum value storage during power on.
Max / Mini recording: PV / Max(Mini) Hold / RS 485 Programmable
 Settable range: -19999~29999 counts
Display functions: Pv.Zro: Settable range: -19999~+29999
 Pv.SpN: Settable range: -19999~+29999
Low cut:
Digital fine adjust:

Reading Stable Function

Average: Settable range: 1~99 times
Moving average: Settable range: 1(Non)~10 times
Digital filter: Settable range: 0(Non)/1~99 times

Control Functions(option)

Set-points: Three set-points
Control relay: Three relays(Maximum); FORM-A, 1A/230Vac, 3A/115V
Relay energized mode: Energized levels compare with set-points:
 Hi / Lo / Hi.HLd / Lo.HLd programmable
DO function: Energized by RS485 command of master.
Energizing functions: Start delay / Energized & De-energized delay / Hysteresis / Energized Latch
Start band: (Minimum level for Energizing): 0~9999counts
Start delay time: 0:00.0~9(Minutes):59.9(Second)
Energized delay time: 0:00.0~9(Minutes):59.9(Second)
De-energized delay time: 0:00.0~9(Minutes):59.9(Second)
Hysteresis: 0~5000 counts

Analogue output(option)

Accuracy: $\leq \pm 0.1\%$ of F.S.; 16 bits DA converter
Ripple: $\leq \pm 0.1\%$ of F.S.
Response time: $\leq 100 \text{ msec.}$ (10~90% of input)
Isolation: AC 2.0 KV between input and output
Output range: Specify either Voltage or Current output in ordering
Voltage: 0~5V / 0~10V / 1~5V programmable
Current: 0~10mA / 0~20mA / 4~20mA programmable
Output capability: Voltage: 0~10V; $\geq 1000\Omega$;
 Current: 4(0)~20mA; $\leq 600\Omega \text{ max}$
Functions: Ao.HS(output range high): Settable range: -19999~29999
 Ao.LS(output range Low): Settable range: -19999~29999
 Ao.LMT(output High Limit): 0.00~110.00% of output High
Digital fine adjust: Ao.Zro: Settable range: -38011~+27524
 Ao.SPn: Settable range: -38011~+27524

RS 485 Communication(option)

Protocol: Modbus RTU mode
Baud rate: 1200/2400/4800/9600/19200/38400 programmable
Data bits: 8 bits
Parity: Even, odd or none (with 1 or 2 stop bit) programmable
Address: 1~255 programmable
Remote display: to show the value from RS485 command of master
Distance: 1200M
Terminate resistor: 150 Ω at last unit.

Electrical Safety

Dielectric strength: AC 2.0 KV for 1 min, Between Power / Input / Output / Case
 $\geq 100M \text{ ohm}$ at 500Vdc, Between Power / Input / Output
Insulation resistance: Between Power / Input / Relay / Analogue / RS485
Isolation: EN 55011:2002; EN 61326:2003
EMC: EN 61010-1:2001
Safety(LVD):

Environmental

Operating temp.: 0~60 °C
 Operating humidity: 20~95 %RH, Non-condensing
 Temp. coefficient: ≤100 PPM/°C
 Storage temp.: -10~70 °C

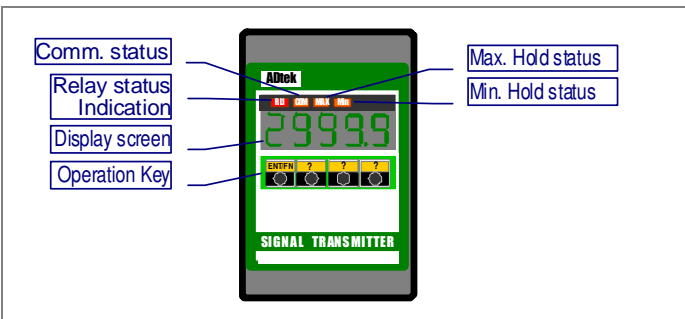
Mechanical

Dimensions: 50mm(W) x 134mm(H) x 80mm(D) with socket
 Case materiel: ABS fire-resistance (UL 94V-0)
 Mounting: DIN rail mounting (35mm standard)
 Terminal block: 11 pin Socket, 10A/500Vac, M2.6, 16~22AWG
 Weight: Under 480g(without socket)

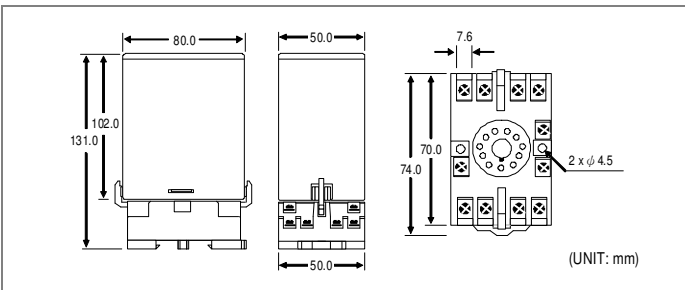
Power

Power supply: AC 115 or 230V ± 15%, 50/60Hz;
 Optional ADL:DC 20~56V, ADH:AC 85~265V,DC 100~300V
 Power consumption: 5.0VA maximum
 Back up memory: By EEPROM

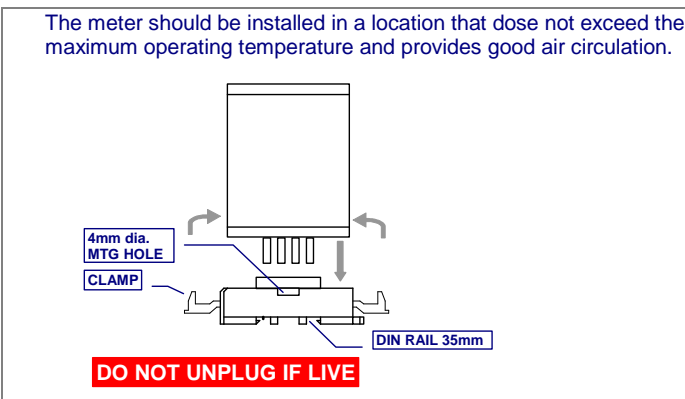
FRONT PANEL



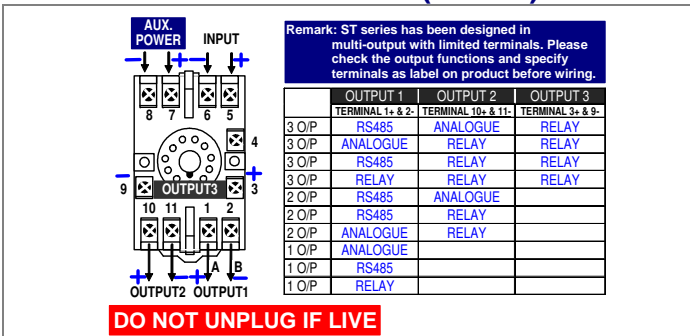
DIMENSIONS



INSTALLATION



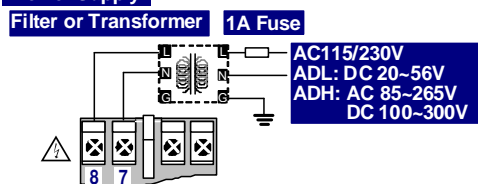
CONNECTION DIAGRAM(11 PIN)



DO NOT UNPLUG IF LIVE

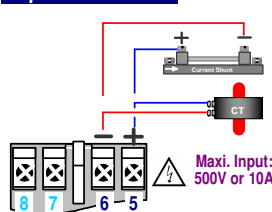
Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker.

Power Supply



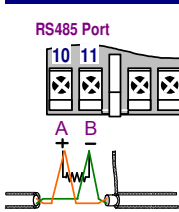
Due to the limited terminals for three outputs(Analogue, RS485, Relay), the outputs will be assigned as label on the product and above table. Please check it out before wiring.

Input connection



Remark:
 PT can not short in secondary.
 CT can not open in secondary.

RS485 Communication Port



Max. Distance: 1200M Terminate Resistor (at latest unit): 120~300ohm/0.25W; (typical: 150ohm)

ST-VA