

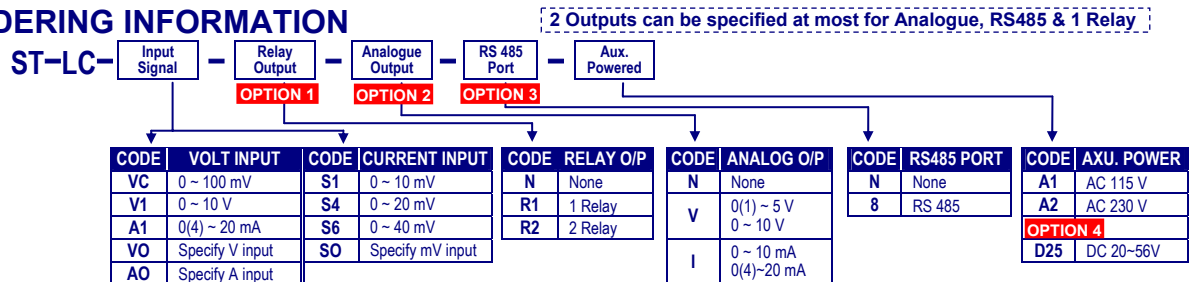
ST-LC DUAL CH. MATH CONDITIONER with RS485, A/O or RELAY

FEATURE

- Measuring 2 channels 0~10V / 0(4)~20mA or 0~10.0mV/~100.0mV and single display screen with *Mathematic function Addition / Subtraction / Multiplication / Division / high or low selector*
- Isolated between input 1, input 2, output and power
- Plug-in conditioner with display and operating key
- Accuracy: $\pm 0.04\%$, Display range: -19999~99999
- 1 Analogue output, 1 RS 485 port and 1 Relay output available for multi-cross selection 2 outputs at most.



ORDERING INFORMATION



TECHNICAL SPECIFICATION

Input

Input Range	Input Impedance	
0~10.0 mV	$\geq 1M$ ohm	Dual inputs can be selected individual in Voltage, Current and other signal such as Pt100 Ω , mV/V etc.
0~20.0 mV	$\geq 1M$ ohm	
0~40.0 mV	$\geq 1M$ ohm	
0~100.0 mV	$\geq 1M$ ohm	
0~10 V	$\geq 1M$ ohm	
0(4)~20 mA	250 ohm	

Calibration:

Digital calibration by front key

Field Calibration:

Calibration with sensor input high & low to meet system structure. And field calibration reset is not change the accuracy & linear of factory calibration.

A/D converter:

16 bits resolution

Accuracy:

$\leq \pm 0.04\%$ of FS $\pm 1C$

Sampling rate:

15 cycles/sec

Response time:

≤ 100 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

Display & Functions

LED:

Numeric: 5 digits, 0.28"H red high-brightness LED

Relay output indication: 1 square red LED

RS 485 communication: 1 square orange LED

Max/Mini Hold indication: 2 square orange LED

PV: -19999~29999; Mathematic: -19999~+99999

Display range:

Scaling function:

Individual programmable for dual input
Lo.SC: Low Scale; Settable range: -19999~+29999
Hi.SC: High Scale; Settable range: -19999~+29999

Decimal point:

Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000

Over range indication:

ovFL, when input is over 120% of input range Hi

Under range indication:

-ovFL, when input is under -20% of input range Lo

Max / Mini recording:

Maximum and Minimum value storage during power on.

Display

PV / Max(Mini) Hold / RS 485 Programmable

Mathematic

Programmable for Addition / Subtraction / Multiplication Division / High or Low selector

Low cut:

Settable range: -19999~29999 counts

Digital fine adjust:

Pv.Zro: Settable range: -19999~+29999

Pv.SPn: Settable range: -19999~+29999

Reading Stable Function

Average:

Settable range: 1~99 times

Moving average:

Settable range: 1(None)~10 times

Digital filter:

Settable range: 0(None)/1~99 times

Control Functions(option)

Set-points:

one set-points

Control relay:

one relays; 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:

≤ 100 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; $\leq 600\Omega$ 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

High/Low Selection output: The output will compare the 2 inputs which one is High(or Low) and tracking.

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

Insulation resistance:

$\geq 100M$ ohm at 500Vdc, Between Power / Input / Output

Isolation:

Between Power / Input / Relay / Analogue / RS485

EMC:

EN 55011:2002; EN 61326:2003

Safety(LVD):

EN 61010-1:2001

Environmental

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

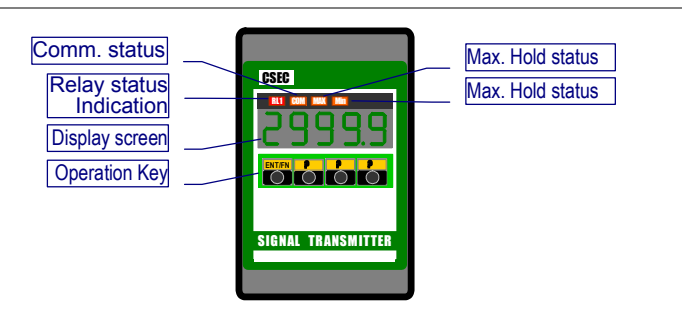
Mechanical

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)

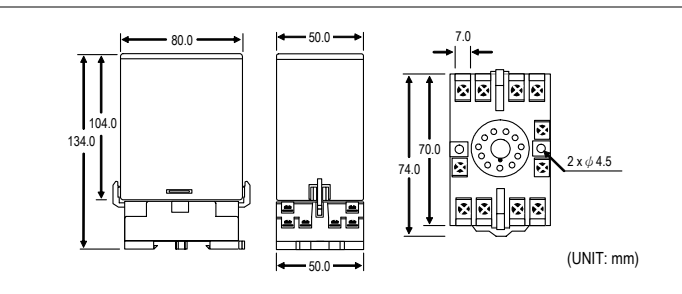
Power

Power supply: AC 115 or 230V ± 15%, 50/60Hz; **Optional DC20~56V**
Power consumption: 5.0VA maximum
Back up memory: By EEPROM

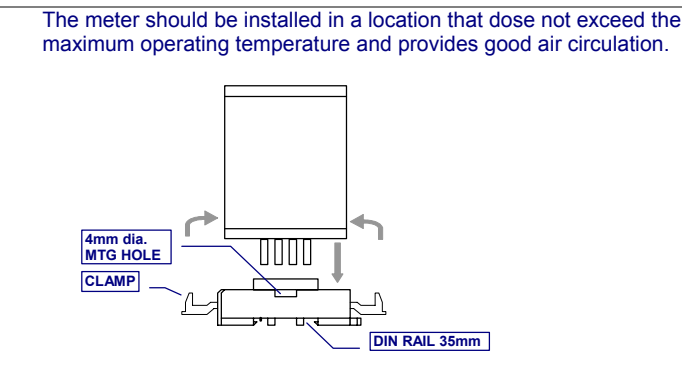
FRONT PANEL



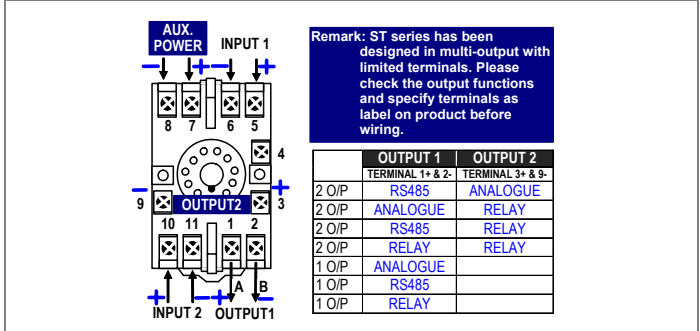
DIMENSIONS



INSTALLATION



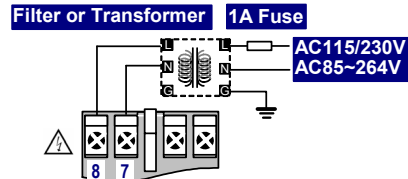
CONNECTION DIAGRAM(11 PIN)



Remark: ST series has been designed in multi-output with limited terminals. Please check the output functions and specify terminals as label on product before wiring.

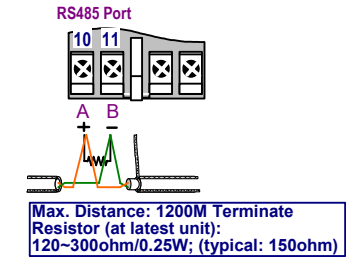
Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker.

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.

RS485 Communication Port



ST-LS