

ST-RS RESISTANCE Conditioner WITH RS485, A/O & RELAY

■FEATURE

- Measuring resistance from 0~200Ω/2000Ω/20.0KΩ/200.0KΩ(2 Wire)
- Accuracy: ± 0.04%; Display range: -19999~29999
- User function, Easily programmable via the front panel
- Field calibration with resistance to meet the system requirement
- 1 Analogue output, 1 RS 485 port and 3 Relay output available for multi-cross selection 3 outputs at most.
- CE Approved



■ORDERING INFORMATION

ST-RS- [Input Signal] - [Relay Output] - [Analogue Output] - [RS 485 Port] - [Aux. Powered]

OPTION 1		OPTION 2		OPTION 3			
CODE	INPUT RANGE	CODE	RELAY O/P	CODE	ANALOG O/P	CODE	RS485 PORT
R1	0.00Ω ~ 200.00 Ω	N	None	N	None	N	None
R2	0.0Ω ~ 2000.0 Ω	R1	1 Relay	V	0(1) ~ 5 V 0 ~ 10 V	8	RS 485
R3	0.000Ω ~ 20.000 KΩ	R2	2 Relay	I	0 ~ 10 mA 0(4)~20 mA		
R4	0.00Ω ~ 200.00 KΩ	R3	3 Relay				
R0	Specify						

CODE	AXU. POWER
A1	AC 115 V
A2	AC 230 V
OPTION 4	
ADH	AC 85~264V DC 100~300V
ADL	DC 20~56V

3 outputs can be specified at most for Analogue, RS485 & 3 Relay
For Example: Specify 1 Analogue output and 2 Relay (3 outputs)
The ordering code: ST-RS-xx-R2-I-N-xx

■TECHNICAL SPECIFICATION

Input	
Measuring Range	Input Impedance
0.0 Ω ~ 200.00 Ω (2 Wire)	≥ 1M ohm
0.0 Ω ~ 2000.0 Ω (2 Wire)	
0.00 Ω ~ 20.000 KΩ (2 Wire)	
0.00 Ω ~ 200.00 KΩ (2 Wire)	

Calibration: Digital calibration by front key
Field calibration: Calibration with resistance 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: ≤± 0.04% of FS ± 1C;
Sampling rate: 15 cycles/sec
Response time: ≤100 msec.(when the AvG = "1") in standard
Input range: Input High and Low programmable
R_{Hi}: Settable range: 0.00~100.00% of input range
R_{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: 4 square red LED
RS 485 communication: 1 square orange LED
Max/Mini Hold indication: 2 square orange LED
Scaling function: L_oS_C: Low Scale; Settable range: -19999~+29999
H_iS_C: High Scale; Settable range: -19999~+29999
Decimal point: Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Over range indication: o_uF_L, when input is over 20% of input range Hi
Under range indication: -o_uF_L, when input is under -20% of input range Lo
Max / Mini recording: Maximum and Minimum value storage during power on.
Display functions: PV / Max(Mini) Hold / RS 485 Programmable
Low cut: Settable range: -19999~29999 counts
Digital fine adjust: P_uP_ro: Settable range: -19999~+29999
P_uS_Pn: 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: 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.
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: ≤± 0.1% of F.S.; 16 bits DA converter
Ripple: ≤± 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
Voltage: 0~10V: ≥ 1000Ω;
Current: 4(0)~20mA: ≤ 600Ω max
R_oH_S (output range high): Settable range: -19999~29999
R_oL_S (output range Low): Settable range: -19999~29999
R_oL_hL (output High Limit): 0.00~110.00% of output High
R_oP_ro: Settable range: -38011~+27524
R_oS_Pn: 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: 150Ω at last unit.

Electrical Safety

Dielectric strength: AC 2.0 KV for 1 min, Between Power / Input / Output / Case
Insulation resistance: ≥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
Vibration: 1~800 Hz, 3.175 g²/Hz

Amend: 2010/4/28: Change power supply code from D25 to ADL: AC/DC20~56V, ADH:AC 85~264V / DC 100~300V

Environmental

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

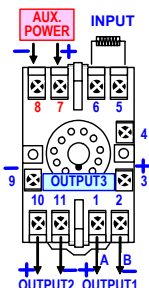
Mechanical

Dimensions:	50mm(W) x 134mm(H) x 80mm(D) with socket
Case material:	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: AC 85~264V / DC 100~300V, DC 20~56V
Power consumption:	5.0VA maximum
Back up memory:	By EEPROM

CONNECTION DIAGRAM(11 PIN)

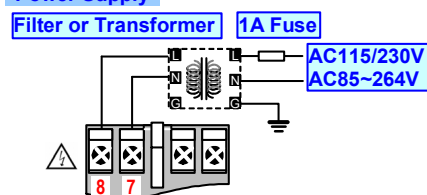


Remark: ST series has been designed in multi-output with limited terminals. Please check the output functions and specify terminals as label on product before wiring.

	OUTPUT 1 TERMINAL 1+ & 2-	OUTPUT 2 TERMINAL 10+ & 11-	OUTPUT 3 TERMINAL 3+ & 4-
3 O/P	RS485	ANALOGUE	RELAY
3 O/P	ANALOGUE	RELAY	RELAY
3 O/P	RS485	RELAY	RELAY
3 O/P	RELAY	RELAY	RELAY
2 O/P	RS485	ANALOGUE	
2 O/P	RS485	RELAY	
2 O/P	ANALOGUE	RELAY	
1 O/P	ANALOGUE		
1 O/P	RS485		
1 O/P	RELAY		

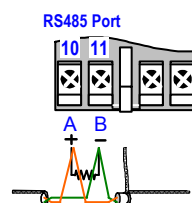
Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker.

Power Supply



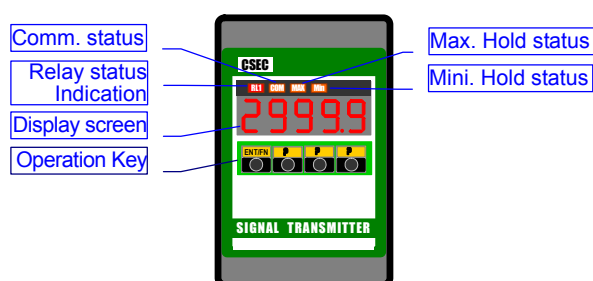
Due to the limited terminals for four outputs (Analogue, RS485, Relay, Excitation Supply), the outputs will be assigned as label on the product and above table. Please check it out before wiring.

RS485 Communication Port

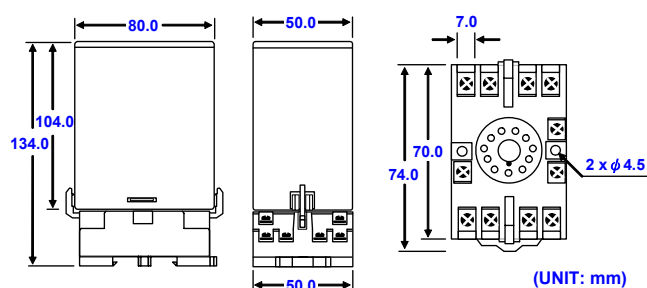


For more detail function description, please refer to the data sheet of CS2-RS or ST-RS operating manual

FRONT PANEL



DIMENSIONS



INSTALLATION

The meter should be installed in a location that dose not exceed the maximum operating temperature and provides good air circulation.

