

ST-RL PULSE (Freq.) CONDITIONER WITH RS485, A/O & RELAY

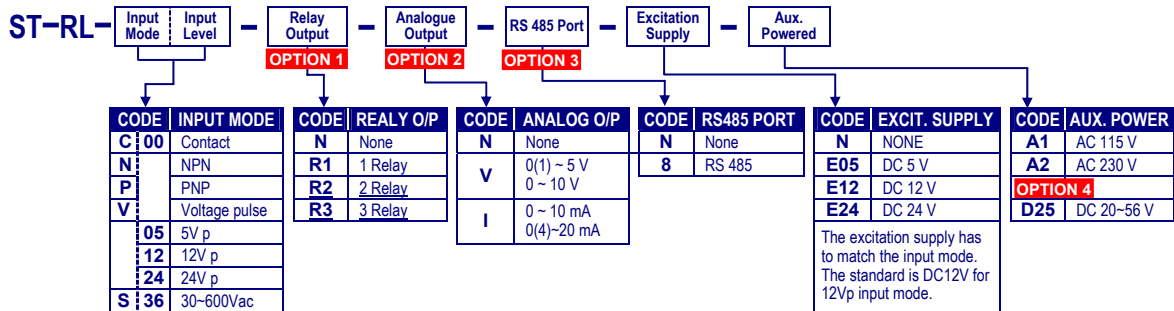
■ FEATURE

- Measuring Frequency **AUTO RANGE 0.01Hz~100KHz / ~140KHz(optional)** / Contact, NPN, PNP, Voltage pulse, Sine wave 30~600Vp
- Accuracy: $\pm 0.005\%$; Display range: 0~99999
- Decimal Point auto moving according to input frequency**
- User function, easily programmable via the top panel
- 1 Analogue output, 1 RS 485 port and 3 Relay output available for **multi-cross selection 3 outputs at most**
- CE Approved



■ ORDERING INFORMATION

[3 outputs can be specified at most for Analogue, RS485 & 3 Relay]



■ TECHNICAL SPECIFICATION

Input		
Input Frequency	Input Mode	Input Level
0.01Hz ~ 50 Hz	Mech. Contact	
0.01Hz ~ 50 Hz	NPN	High Level: 8~12V; Low Level: 0.0~4.0 V
0.01Hz ~ 100KHz	PNP	(with excitation supply 12Vdc)
0.01Hz ~ 140KHz (optional)	Voltage Pulse	High Level: over 2/3 of input level Low Level: under 1/3 of input level
➤ Input Mode(NPN, PNP, Contact) & Level(5Vp, 12Vp, 24Vp) changeable by dip switch on inside of top panel cover.		

Calibration:	Doesn't need calibration
Input range:	Auto range: 0.01Hz ~ 100KHz (~140KHz in option);
Accuracy:	$\leq \pm 0.005\%$ of FS $\pm 1C$;
Sampling time:	15 cycles/sec($\geq 15\text{Hz}$); f cycles/sec($\leq 15\text{Hz}$)
Response time:	≤ 100 msec(when the AvG = "1")
Time out function:	Auto, Manual programmable, In manual mode, the period of time out can be set 0.0 sec~999.9sec

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 RPM / RPS / Linear Line Speed / Frequency programmable
Display type:	0.0000~99999 with auto moving of decimal point
Display range:	Decimal point will Auto-changed according to input
Resolution of PV:	Auto / Semi-Auto / Fix; 3 mode programmable
(Auto-Moving for d.p.)	Compensate error from 0.001~9.999
Compensation factor:	ovFL, when input is over 120% of input range Hi
Over range indication:	Maxi & Mini Value of PV storage during power on.
Max / Mini recording:	PV / Max(Mini) Hold / RS 485 programmable
Display functions:	Up and down key can be set to be a function as ECL.
Front key functions:	Settable range: -19999~29999 counts
Low cut:	Pv.Zro: Settable range: 0~+99999
Digital fine adjust:	Pv.SPn: Settable range: 0~+99999

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
D.P. of set point:	Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Relay energized mode:	Energized levels compare with set-points: <i>Hi / Lo / Hi.HLd / Lo.HLd programmable</i>
Energizing functions:	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:	$\leq \pm 0.1\%$ 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 Voltage: 0~10V; $\geq 1000\Omega$; Current: 4(0)~20mA; $\leq 600\Omega$ max
Output capability:	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
Functions:	Ao.Zro: Settable range: -38011~+27524 Ao.SPn: Settable range: -38011~+27524
Digital fine adjust:	

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

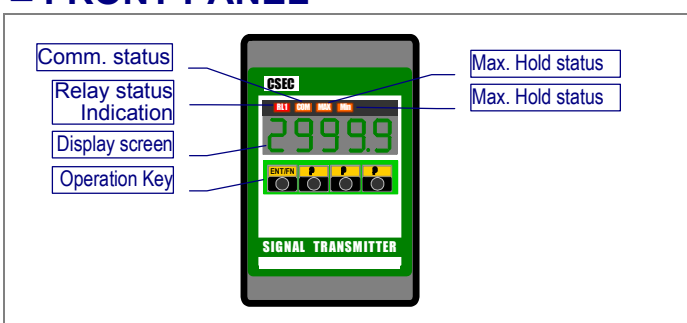
Mechanical

Dimensions:	50mm(W) x 134mm(H) x 80mm(D) with socket
Case 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)

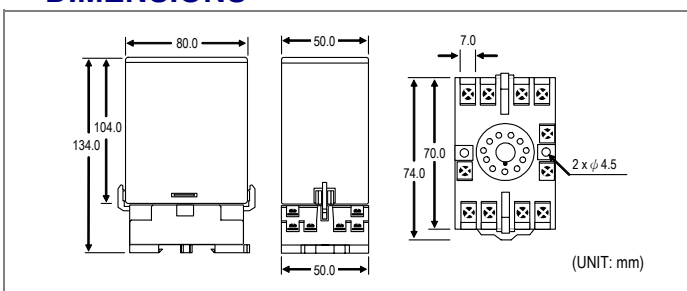
Power

Power supply:	AC 115 or 230V ± 15%, 50/60Hz; Optional DC20~56V
Excitation Supply:	DC12V, 24V/30mA maximum
Power consumption:	5.0VA maximum
Back up memory:	By EEPROM

FRONT PANEL

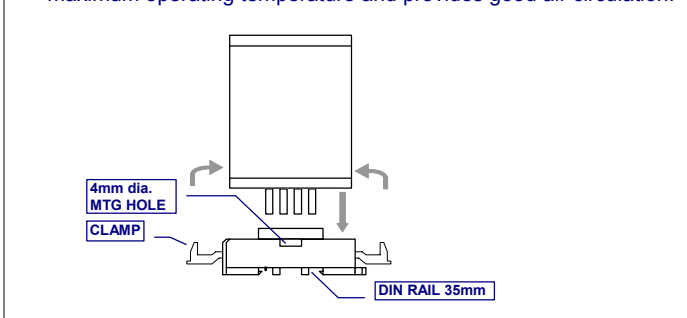


DIMENSIONS

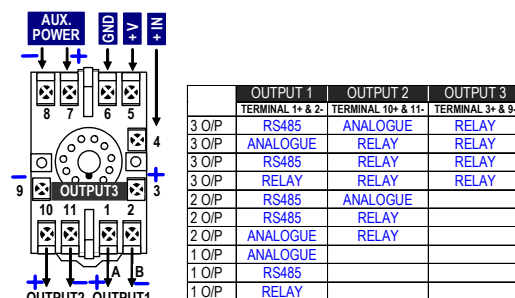


INSTALLATION

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



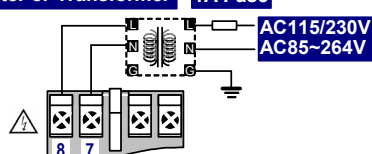
CONNECTION DIAGRAM(11 PIN)



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.

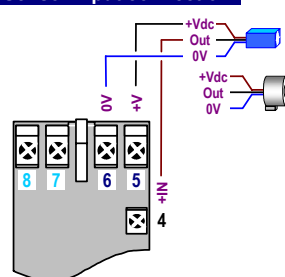
Power Supply

Filter or Transformer 1A Fuse



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.

Sensor input connection

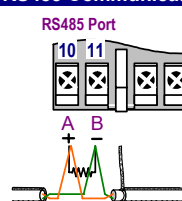


Please change the dip-switch on rear of meter to match the input mode and level.

D-S	1	2	3	4	5
NPN	ON				
PNP		ON			
M.C.	ON				ON
5V _p					
12V _p			ON		
24V _p				ON	

D-S is on when it is in down site

RS485 Communication Port



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