

# FREQUENCY METER

CS1-F (1.0)

CS1-F

## FEATURE

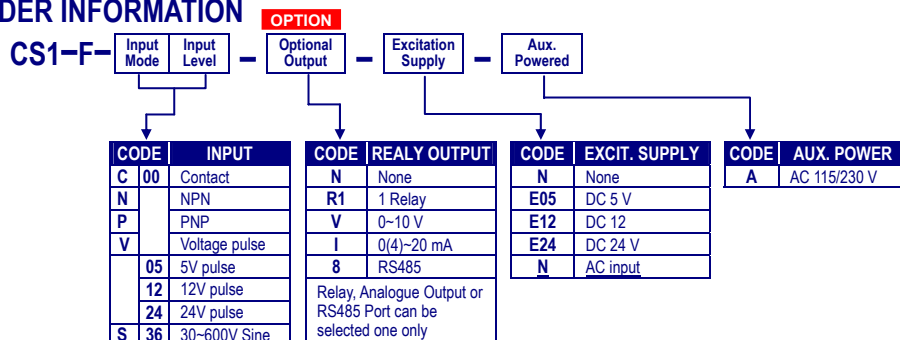
- Measuring Frequency **AUTO RANGE 0.001Hz~100KHz / ~140KHz(optional)**  
/ Contact, NPN, PNP, Voltage pulse, 30~600V sine wave
- Accuracy:  $\pm 0.005\%$ ; Display range: 0~99999
- **Decimal Point auto moving according to input frequency**
- User function, easily programmed by the front panel
- **1 relay, 1 Analogue output or RS 485 communication port in option with flexible functions**
- CE Approved



The Newest

WWW.TRANDUCERSANDMETERS.COM

## ORDER INFORMATION



## SPECIFICATION

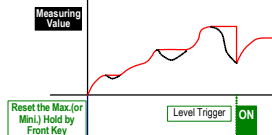
Input Frequency	Input Mode	Input Level
0.001~50 Hz	Contact	
0.001~50 Hz 0.001 Hz~100 KHz <b>0.001 Hz~140 KHz (optional)</b>	NPN	High Level: 8~12V; Low Level: 0.0~4.0 V (with excitation supply 12Vdc)
	PNP	
	Voltage Pulse	High Level: over 2/3 of input level Low Level: under 1/3 of input level
	Sine Wave	30~600Vac

➤ Input Mode can be selectable by dip switch of rear terminal block

- Calibration: Without calibration process.
- Accuracy:  $\leq \pm 0.005\%$  of RDG  $\pm 1C$ ;
- Sampling time: 10 cycles/sec ( $\geq 10Hz$ );  
f cycles/sec ( $\leq 10Hz$ )
- 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  
Up key: increase the number / back to previous  
Down key: decrease the number / go to next function  
Shift/Escape key: move the flash digit position /  
Return back to upper level  
Enter/Fun key: enter the parameters you set or  
function select
- Key control input: **Down key can be defined to be Relative PV / PV Hold / Maximum/Minimum reset / Reset for Relay Hold**
- Security function: 4 digits password
- Lock function: 3 function group lock level for None/User Level/ Engineer Level / All(Engineer Level & User Level)
- Display & functions**
- LED: Measuring value: 0.56" red high-brightness LED  
Relay output indication: square red LED  
RS 485 communication: square orange LED  
Max. / Mini. Hold: square red LED
- Low Cut function: **Low.cut** : Settable range: -19999~19999 counts
- Average function: **AvG** :Settable range: 1~99 times
- Digital Filter: **D.FiLt** : Settable range: 0(None)/1~99 times
- Reading functions**
- Input range: 0.01Hz~100KHz; **0.001Hz ~140KHz specify in option**
- Resolution: **Auto / Semi-Auto / Fix; 3 mode selectable**  
(Auto-Moving for d.p.) **Decimal point will Auto-changed according to input**

- Compensation factor: Compensate error from 0.0001~9.9999
- Over range indication: **ovFL**, when input is over 120% of input range **Hi**
- Under range indication: **-ovFL**, when input is under -120% of input range **Lo**
- Display functions: **Present Value / Maximum Hold / Minimum Hold / Write to display by RS485 command**

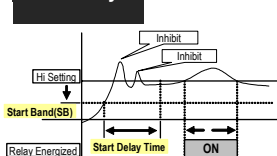
### Max. (or Mini.) Hold & Reset



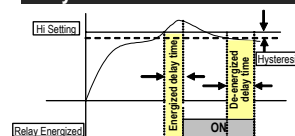
### Control functions(optional)

- Control relay: 1 Relay SPDT, 5A/230Vac, 10A/115V
- Relay Output: Energized levels compare with set-points:  
**Hi / Lo / Hi hold / Lo hold energize selectable**  
Start delay / Energized & De-energized delay / Hysteresis  
Start band: 0~9999 counts  
Start delay time: 0:00.0~9(Minutes):59.9(Second)  
**Energized delay time: 9(Minutes):59.9(Second)**  
**De-energized delay time: 9(Minutes):59.9(Second)**  
Hysteresis: 0~5000 counts

### Start Delay



### Energized / De-energized Delay & Hysteresis



### Analogue output(option)

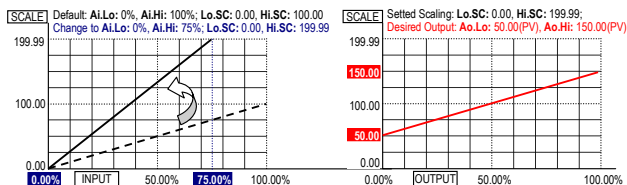
- Accuracy:  $\leq \pm 0.2\%$  of F.S.;
- Ripple:  $\leq \pm 0.1\%$  of F.S.
- Response time:  $\leq 200$  msec. (10~90% of input)
- Isolation: AC 2.0 KV between input and output
- Output range: Specify Voltage or Current  
Voltage: 0~5V / 0~10V / 1~5V selectable  
Current: 0~10mA / 0~20mA / 4~20mA selectable  
**Voltage: 0~10V:  $\geq 1000\Omega$**   
**Current: 0(4)~20mA:  $\leq 600\Omega$**
- Output Capability: **Ao.Lo(output range Low): PV Low vs. output range**  
**Ao.Hi(output high): PV Hi vs. output range Hi**
- Functions:

A1-03

# FREQUENCY METER

CS1-F (1.0)

CS1-F



## RS 485 communication(optional)

- Protocol: Modbus RTU mode
- Baud rate: Selectable 2400/4800/9600/19200/38400
- Data bits: Selectable 7 or 8 bit
- Parity: Selectable Even, odd or none (with 1 or 2 stop bit)
- Device no: Settable 1 ~ 255
- Write function: Write to display value from PC's RS485 command

## Power

- Power Supply: AC 115/230V  $\pm$  10%, 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)

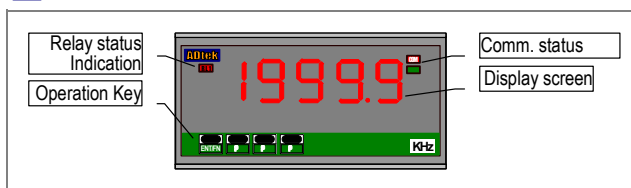
## Electrical safety

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

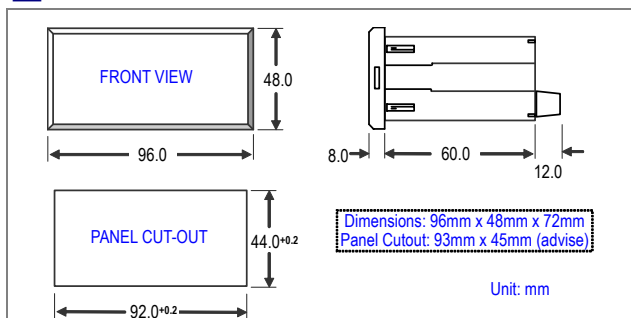
## Mechanical

- Dimensions: 96mm(W) x 48mm(H) x 72mm(D)
- Panel cutout: 92mm(W) x 44mm(H)
- Case Material: ABS fire-protection (UL 94V-0)
- Mounting: Panel flush mounting
- Terminal block: Plastic NYLON 66 (UL 94V-0)  
10A/300Vac, M2.6, 16~22AWG
- Weight: About 350g

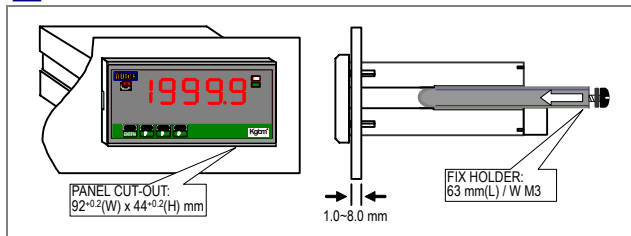
## FRONT PANEL



## DIMENSIONS



## INSTALLATION



## CONNECTION DIAGRAM

