

4½ Digit *Frequency* or *RPM* with Alarm, A/O, RS485

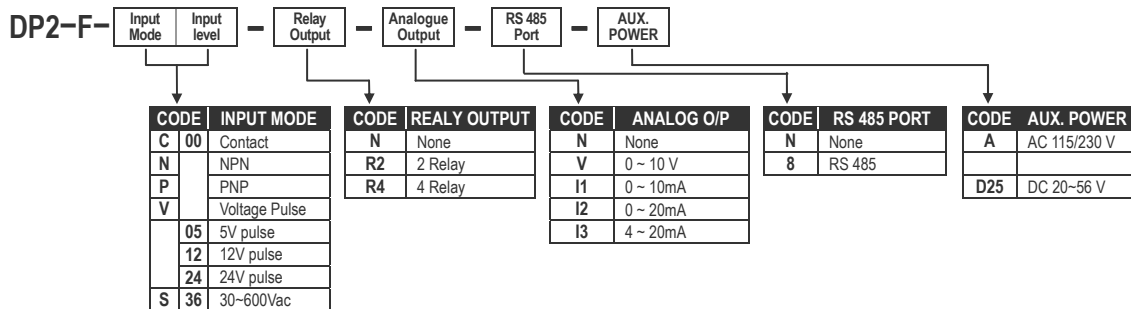
DP2-F

► FEATURES

- Measures and Displays Frequency **AUTO RANGE 0.001~100KHz / ~140KHz(optional)** / Contact, NPN, PNP, Voltage pulse. AC 30~600V
- Accuracy: $\pm 0.005\%$; Display range: 0~19999 (0~99999 AC)
- **Decimal Point auto set**
- Easily programmable via the front panel
- **Up to 4 relays available, with latching and time delay programmable**
- Analogue output and RS 485 Modbus options
- **3 external control inputs for Reset and hold functions**
- CE approved



► ORDER CODING



► SPECIFICATION

Input Frequency	Input Mode	Input Level
0.001Hz ~ 5 Hz	Contact	
0.001Hz ~ 50 Hz	NPN	High Level: 8~12V; Low Level: 0.0~4.0 V (with excitation supply 12Vdc)
	PNP	
0.001Hz ~ 100KHz <i>0.001Hz ~ 140KHz (optional)</i>	Voltage Pulse	High Level: over 2/3 of input level
		Low Level: under 1/3 of input level

► **Input Mode & Level changeable by dip switch on rear terminals (not AC).**

Calibration: Factory calibrated
 Accuracy: $\leq \pm 0.005\%$ of RDG $\pm 1C$;
 Sampling time: 10 cycles/sec ($\geq 10Hz$);
 f cycles/sec ($\leq 10Hz$)
 Response time: ≤ 100 msec (AvG = "1")

Operating
 Programming: 4 keys for Enter(Function) / Shift(Escape) / Up / Down
 Up key: increases the number /back to previous function
 Down key: decreases the number / go to next function
 Shift/Escape key: moves the flashing digit position / Return to upper level
 Enter/Fun key: enter the parameters you set or selects programming mode

4 keys for Enter(Function) / Shift(Escape) / Up / Down
 4 digit password

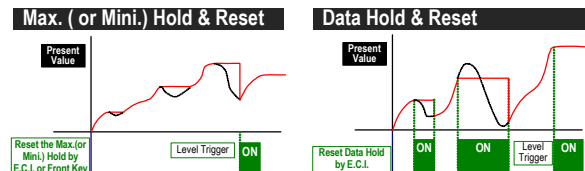
Security:
 Lock: 3 function group lock level for None/User Level/
 Programming: 3 security levels User / Master / None

Display & functions
 LED: Measuring value: 0.56" red high-brightness LED
 Relay output indication: square red LED
 External control input: square green LED
 RS 485 communication: square red LED
 Max. / Mini. Hold: square red LED

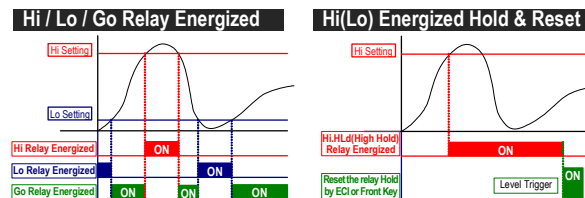
Low Cut function: Low.cut :Settable range: -5000~5000 counts
 Average function: AvG :Settable range: 1~99 times
 Digital Filter: D.FiLt : Settable range: 0(None)/1~99 times
 Over range indication: ovFL, when input is over 120% of input range Hi

Reading functions
 Input range: 0.001Hz ~ 100KHz
0.001Hz ~ 140KHz option
Resolution: Auto / Semi-Auto / Fixed: 3 mode selectable
 (Auto-Moving for d.p.) *Decimal point Auto ranging*

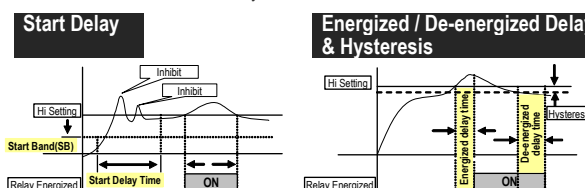
Compensation factor: Error compensation from 0.0001~9.9999
 Over range indication: ovFL, when input is over 120% of input range Hi
 Display functions: Present Value / Maximum Hold / Minimum Hold / Write to display by RS485 command



Control functions
 Relay: 2 Relays SPDT, 5A/230Vac, 10A/115V
 2 Relays SPST, 1A/230Vac, 3A/115V
 Relay Output: Energized levels are compared with set-points:
 Hi / Lo / Hi.HLd / Lo.HLd / do / Go-1.2 / Go-2.3
 DO function: Energized by RS485 command
 Relay Latching : Selectable Low or High Hold



Functions: Start delay / Energized & De-energized delay / Hysteresis
 Start band: 0~9999 counts
 Start delay time: 0:00.0~9(Minutes):59.9(Seconds)
 Energized delay time: 9(Minutes):59.9(Seconds)
 De-energized delay time: 9(Minutes):59.9(Seconds)
 Hysteresis: 0~5000 counts



4½ Digit Frequency or RPM with Alarm, A/O, RS485

DP2-RL

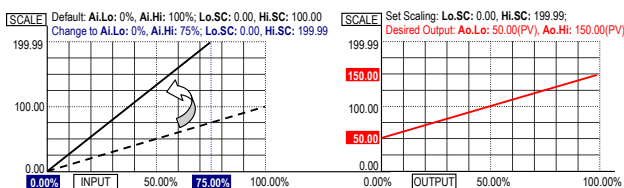
External Control Inputs(ECI)

Input mode: 3 inputs, Contact or open collect input
Functions: *Relative PV / PV Hold / Reset Max or Mini. Hold / DI / Reset for Relay Latch*
De-bounce time: 5 ~255 x 8mseconds

Analogue output(option)

Accuracy: $\leq \pm 0.1\%$ of F.S.; 16 bits AD converter
Ripple: $\leq \pm 0.1\%$ of F.S.
Response time: ≤ 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
Output Capability: Voltage: 0~10V: $\geq 1000\Omega$;
 Current: 0(4)~20mA: $\leq 600\Omega$

Functions: *Ao.Hi(output high): PV Hi vs. output range Hi*
Ao.Lo(output range Low): PV Low vs. output range
Ao.LMt(output High Limit): 0.00~110.00% of output High



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.: Setable 1 ~ 255
Write function: Write to display value from PC's RS485 command

Power

Excitation Supply: DC 12V, 30mA
Power Supply: AC 115/230V $\pm 15\%$, 50/60Hz
Optional DC 20~56V
Power consumption: 5.0VA
Back up memory: By EEPROM

Environmental

Operating temperature: 0~60 °C
Operating relative humi.: 20~95 %RH, Non-condensing
Temperature coefficient: ≤ 100 PPM/°C
Storage temperature: -10~70 °C
Enclosure: Front panel: IEC 549 (IP54)

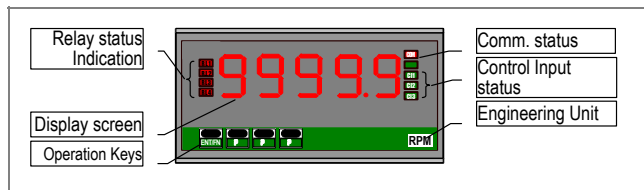
Electrical safety

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

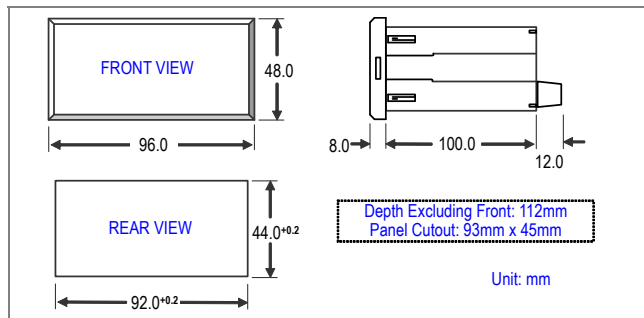
Mechanical

Dimensions: 96mm(W) x 48mm(H) x 120mm(D)
Panel cutout: 92mm(W) x 44mm(H)
Case Materiel: 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: 550g

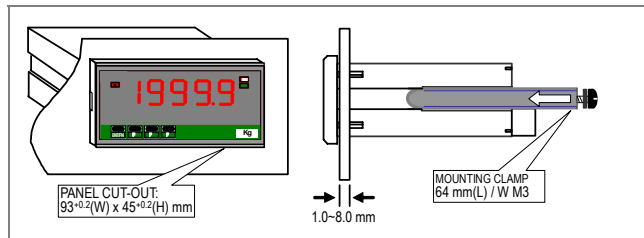
FRONT PANEL



DIMENSIONS



INSTALLATION



CONNECTION DIAGRAM

