Digital Hour Meter & Counter

- Suitable for Hour meter & Counter (Up / Down) application
- Wide Hour meter range from 1 sec to 9999999 hrs
- Wide counter range from 1 to 9999999 counts
- Prescaling facility for Counter
- Alarm facility for both Hour meter & Counter
- Relay & MOSFET Output with Over Load detection
- Retentive & Non-Retentive modes
- 7 Digit LCD with luxurious green backlight
- Compact size
- Suitable for panel mounting

Ordering Information

Cat. No.	Description
Z2301N0G1FT00	9-30 V DC (with dual MOSFET output)
Z2221N0G2FT00	85-265 V AC/DC (with Relay output)

Digital Hour Meter & Counter

Cat. No.	Z2301N0G1FT00			Z2221N0G2FT00
Parameters				
Supply Voltage (⏚)	9 - 30 VDC			85 - 265 VAC/DC
Power Consumption (W)	2 W max.			2 VA / 1W
Supply Frequency	50 / 60 Hz			
I/P Signal Characteristics				
Signal Voltage Range	9 - 30 VDC			85 - 265 VAC & 100 - 265 VDC
Signal Isolation	2kV			
Output Characteristics				
Output type	2 MOSFET: 30 VDC/60 mA (Max.) Note: Use isolated input supply			Relay: 1 C/O, Contact Rating: 5 A(Res.) @ 250 VAC/30 VDC Contact Material: Ag Alloy
Functional Characteristics				
Display	7 digit LCD , 6.5 mm Height, 12 O' Clock, Transmissive			
Number of keys	2 (SET key & RST key)			
Reset function	Reset type	Terminal	Front	Auto Reset
	Time (min.)	80 ms	3 Sec	-
Hour Meter Functions	Accuracy	± 2sec per Day		
	Ranges	Hrs : Min : Sec (999:59:59), Hrs : Min (99999:59), Hrs (9999999), Min (9999999), Sec (9999999)		
	Input Signal	For Hour counting detection, Signal has to be present for min. 3msec & signal has to be absent for min 20msec.		
Counter Functions	Accuracy	100%		
	Range	1 to 9999999.999		
	Decimal Point Position(max.)	3		
	Pre-scaler	4 Digit		
	Input Switching Freq.(max.)	10 Hz for AC and 40 Hz for DC		
	Signal Pulse Width min.	50ms ON/50ms OFF for AC, 12.5ms ON/12.5ms OFF for DC		
Environmental Characteristics				
Operating Temperature	-5° C to +55° C			
Storage Temperature	-10° C to +60° C			
Humidity	5 to 95% Rh (Without condensation)			
Maximum Operating Altitude	2000 m			
Pollution Degree	II			
Degree of Protection	Front side: IP40; Terminals: IP20, Housing : IP30			
Enclosure material	UL 94 V0 Plastic			
Casing color	Black			
Other Characteristics				
Mounting	Flush mounting on panel cut-out			
Panel Cut-out	22mm X 44.8mm			
Weight (Un-packed)	52 gm			
Operating position	Horizontal			
Termination wire Sizes	Wire size : 22-14 AWG, 0.3-2.5 mm			

EMI / EMC

Harmonic Current Emissions	IEC 61000-3-2
Voltage Flicker & Fluctuation	IEC 61000-3-3
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients (Supply)	IEC 61000-4-4
Electrical Fast Transients (Signal)	IEC 61000-4-4
Surge	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Power Frequency Magnetic Field	IEC 61000-4-8
Voltage Dips	IEC 61000-4-29
Conducted Emission	CISPR 11
Radiated Emission	CISPR 11

Safety Compliance:

Test Voltage (All terminal to housing)	IEC 60947-5-1
Single fault	IEC 61010-1
Leakage Current	UL 508
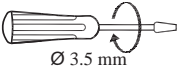
Environmental

Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

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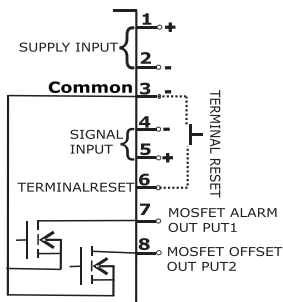
TERMINAL TORQUE & CAPACITY

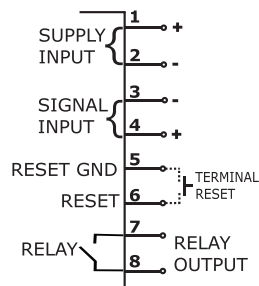|	
Ø 3.5 mm	Torque - 0.40 N.m (3.5 Lb.in) Terminal screw - M2.5
	Solid Wire - 1 X 0.3...2.5 mm^2
AWG	22 to 14

MOUNTING DIMENSIONS (mm)

LCD

48

24

FRONT VIEW

60.5

GRID RING

21.8

2.0

32.23

2.4

62

66

BACK VIEW

PANEL CUTOUT

22.0 $^{+0.3}$

44.8 $^{+0.5}$

44.6

A B C D E F G

PRE HRS MIN SEC

RESET   SET

H   I

A - Prescaler   **F** - Counter
B - Hour   **G** - Hour Meter
C - Minute   Symbol
D - Second   **H** - RESET(RST)
E - Alarm   **I** - SET
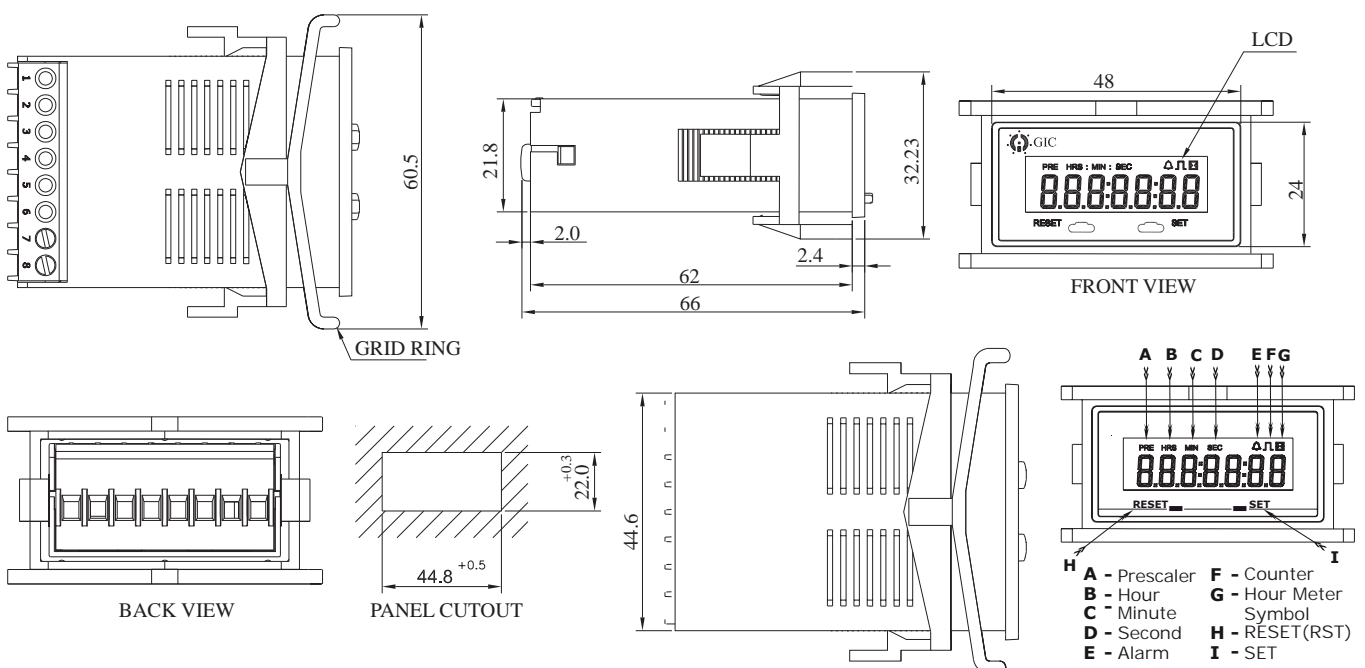
CONNECTION DIAGRAM

For Z2301N0G1FT00

SUPPLY INPUT
1 +
2 -
Common 3
SIGNAL INPUT
4 -
5 +
TERMINALRESET 6
7 MOSFET ALARM OUT PUT1
8 MOSFET OFFSET OUT PUT2
TERMINAL RESET

For Z2221N0G2FT00

SUPPLY INPUT
1 +
2 -
SIGNAL INPUT
3 -
4 +
RESET GND 5
RESET 6
RELAY 7
8
RELAY OUTPUT
TERMINAL RESET

Proximity Switch Connection Diagram:

Connection to NPN Open collector output Sensor
90 T0 277V DC
PROXY SWITCH
DC POWER SUPPLY
Device Signal I/p
Operates with Transistor ON

Connection to PNP Open collector output Sensor
90 T0 277V DC
PROXY SWITCH
DC POWER SUPPLY
Device Signal I/p
Operates with Transistor ON

Connection to AC 2-Wire AC Proximity Sensor
PROXY SWITCH
L
230V AC
N
Device Signal I/p
RB
RB – Bleeder Resistor, 22K, 5W

Connection for Contact Input
PROXY SWITCH
Relay Coil R
R
1
Device Signal I/p
Common
Operates with Relay ON