HOUR METERS & COUNTERS

Hour Meter Series HM 36

Digital Hour Meters

Impulse Counter Series CR 18

Impulse Counter Series CR 26

Impulse Counter Series CR 36

Digital Counters

Digital Hour Meter & Counter

Rate Indicator & Totaliser

Hour Meter Series HM36

- Robust design with high degree of Accuracy and Compact size
- Frequency independent for AC applications
- Indicates operating time in hours and tenths with running indicators
- Totally sealed from Dust and Moisture
- Panel mountable with 7 Bezel options
- 6 Digit Non-Resettable with automatic recycle to zero
- Wide supply voltage range: 4 - 30V AC/DC, 10 - 80V DC & 90 - 264V AC
- Shock & Vibration Proof



Ordering Information

Cat. No.	Description
LA21F1	90 - 264 VAC, Rectangular Bezel
LA22F1	90 - 264 VAC, Rectangular 2 holes Bezel
LA23F1	90 - 264 VAC, Round Bezel
LA24F1	90 - 264 VAC, Round 3 holes Bezel
LA25F1	90 - 264 VAC, Square Mount Bezel
LA26F1	90 - 264 VAC, Cup Mount Bezel
LA27F1	90 - 264 VAC, Stirrup Mount Bezel
LD11F1	10 - 80 VDC, Rectangular Bezel
LD12F1	10 - 80 VDC, Rectangular 2 holes Bezel
LD13F1	10 - 80 VDC, Round Bezel
LD14F1	10 - 80 VDC, Round 3 holes Bezel
LD15F1	10 - 80 VDC, Cup Mount Bezel
LD16F1	10 - 80 VDC, Stirrup Mount Bezel
LD17F1	10 - 80 VDC, Square Mount Bezel
LC31F1	4 - 30 VAC/DC, Rectangular Bezel
LC32F1	4 - 30 VAC/DC, Rectangular 2 holes Bezel
LC33F1	4 - 30 VAC/DC, Round Bezel
LC34F1	4 - 30 VAC/DC, Round 3 holes Bezel
LC35F1	4 - 30 VAC/DC, Cup Mount Bezel
LC36F1	4 - 30 VAC/DC, Stirrup Mount Bezel
LC37F1	4 - 30 VAC/DC, Square Mount Bezel

Hour Meter Series HM36



Cat. No.	LA25F1	LD15F1	LC36F1
Parameters			
Supply Voltage (⏚)	90 - 264 VAC	10 - 80 VDC	4 - 30 VAC/DC
Frequency	50/60 Hz	N A	50/60 Hz
Over Voltage & Reverse Polarity Protection	N A	Protected for 2 times Battery voltage and / or Reverse polarity	Not applicable to AC and 48V for DC Application
Power Consumption (Max.)	0.5 VA	0.25 VA	1 VA
Bezel	Square Mount	Cup Mount	Stirrup Mount
Register	6 Digit (3.6mm)		
Read Out	99999.9		
Least Count	1/10 h		
Accuracy	± 0.02% over entire range		
Vibration	10-80Hz with 20g max (SAE J1378)		
Shock	55g @ 9-13ms (SAE J1378)		
Weight (unpacked)	47g		
Temperature	-40° C to +85° C		
Humidity (Non Condensing)	95% (Rh)		
Mounting	Panel		
Termination	¼" [6.3] Spade Terminal		
Degree of Protection	IP 66		
Approvals	SAE & NEMA 4X		SAE & NEMA 4X

VIEWS OF DIFFERENT BEZELS



Rectangular Bezel



Rectangular 2 holes Bezel



Round Bezel



Round 3 holes Bezel



Cup Mount Bezel



Stirrup Mount Bezel

Hour Meter Series HM36

- Robust design with high degree of Accuracy and Compact size
- Frequency independent for AC applications
- Indicates operating time in hours and tenths with running indicators
- Totally sealed from Dust and Moisture
- 6 Digit Non-Resettable with automatic recycle to zero
- Wide supply voltage range: 90 - 460V AC, 10 - 80V DC & 110 V DC
- Suitable for Control Panel applications



Ordering Information

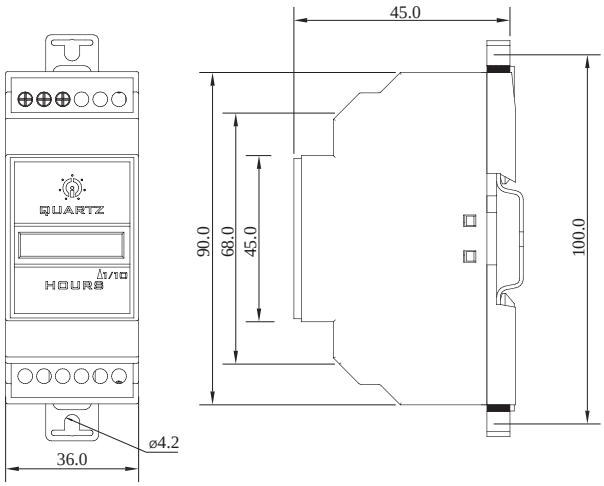
Cat. No.	Description
30A6B1	90 - 264 / 270 - 460 V AC, Hour Meter, Base/DIN
30A7B1	48 V AC, Hour Meter, Base/DIN
30D1B1	10 - 80 V DC, Hour Meter, Base/DIN
30D4B1	110 VDC, Hour Meter, Base/DIN

Hour Meter Series HM36

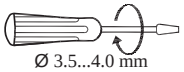


Cat. No.	30A6B1	30D1B1	30D4B1
Parameters			
Supply Voltage (⏚)	90 - 264 / 270 - 460 VAC	10 - 80 VDC	110 VAC
Frequency	50/60 Hz	N A	N A
Over Voltage	N A	96 VDC, 1 min	96 VDC, 1 min
Reverse Polarity Protection	N A	Yes	Yes
Power Consumption (Max.)	1 VA Max	0.25 VA	0.5 VA
Register	6 Digit (3.6mm)		
Read Out	99999.9		
Least Count	1/10 h		
Accuracy	± 0.02% over entire range		
Vibration	10-80Hz with 20g max (SAE J1378)		
Shock	55g @ 9-13ms (SAE J1378)		
Weight (unpacked)	70g		
Operating Temperature	-5° C to +55° C		
Storage Temperature	-20° C to +70° C		
Humidity (Non Condensing)	95% (Rh)		
Mounting	Base/DIN Rail		
Termination	¼" [6.3] Spade Terminal		
Degree of Protection	IP 20 for Terminals, IP 40 for Enclosure		
Approvals	CE RoHS Compliant		

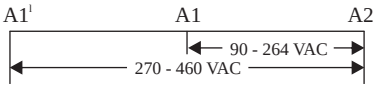
MOUNTING DIMENSIONS (mm)



TERMINAL TORQUE & CAPACITY

 Ø 3.5...4.0 mm	Torque - 0.54 N.m (5 Lb.in) Terminal screw - M2.6
	Solid Wire - 1 X 0.2...3.3 mm^2
AWG	1 X 24 to 12

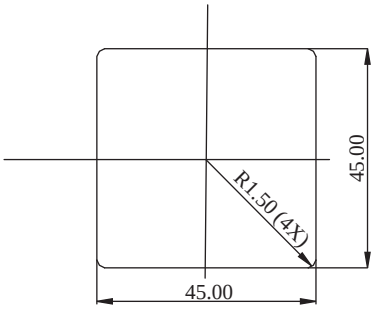
CONNECTION DIAGRAM



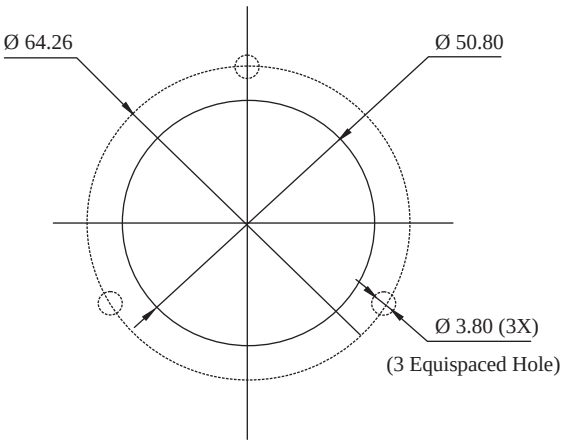
Hour Meter Series HM36

MOUNTING DIMENSION (mm)

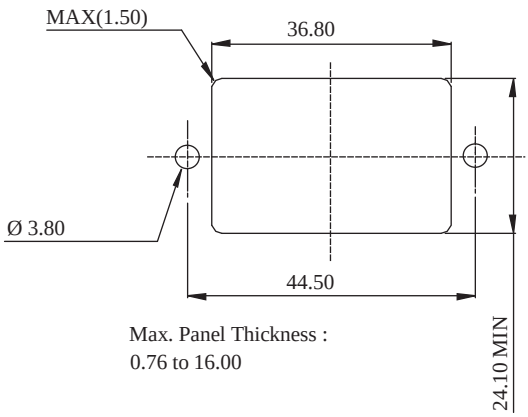
SQUARE MOUNT BEZEL (45 X 45 PANEL CUTOUT)



ROUND BEZEL, ROUND 3 HOLES BEZEL, CUP MOUNT BEZEL & STIRRUP MOUNT BEZEL



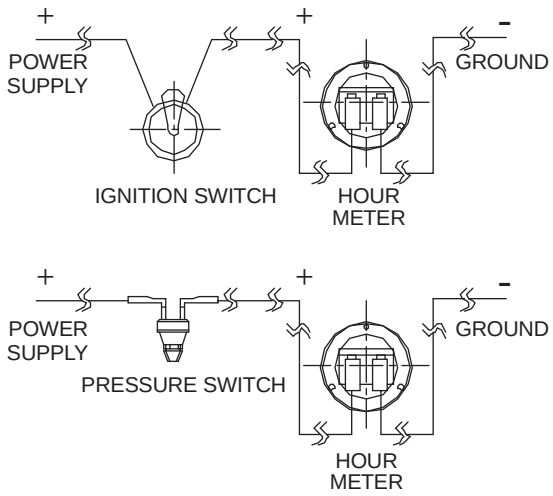
RECTANGULAR BEZEL



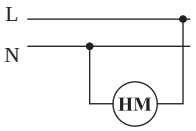
Max. Panel Thickness :
0.76 to 16.00

CONNECTION DIAGRAM

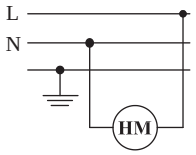
FOR: DC SERIES



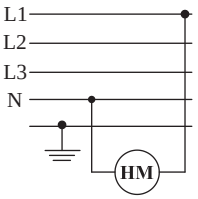
FOR: AC SERIES



Single phase, 2 wire, 120/240 V system: Connect power wire to one terminal and neutral wire to opposite terminal.



Single phase, 3 wire, 120/240 V system: Connect any one power wire to one terminal and neutral wire to opposite terminal.

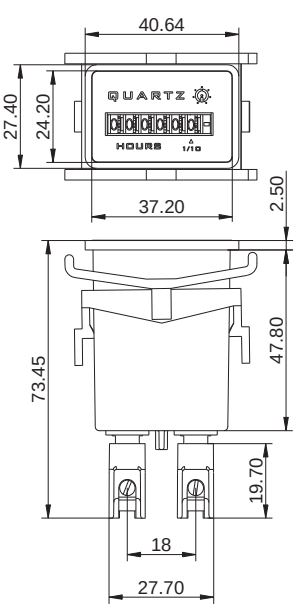


Three phase, 4 wire, 120/240 V system: Connect any one power wire to one terminal and neutral wire to opposite terminal.

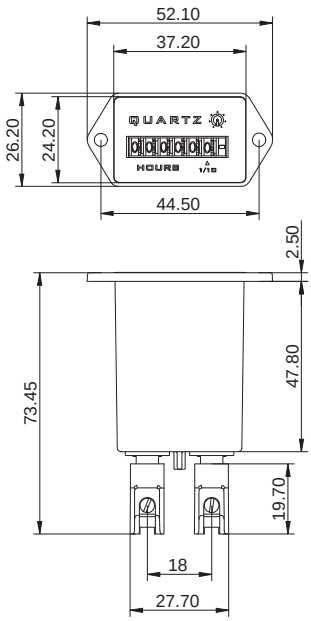
CAUTION
Tighten terminals with flat head screwdriver with tip size 4.3 x 0.6 mm.

Hour Meter Series HM36

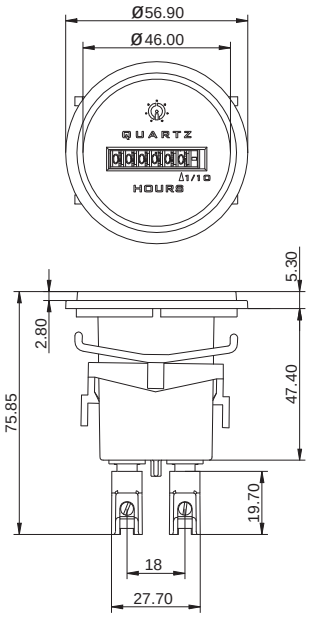
VIEWS OF DIFFERENT BEZELS



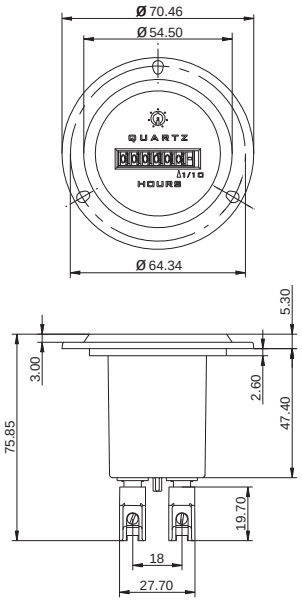
Rectangular Bezel



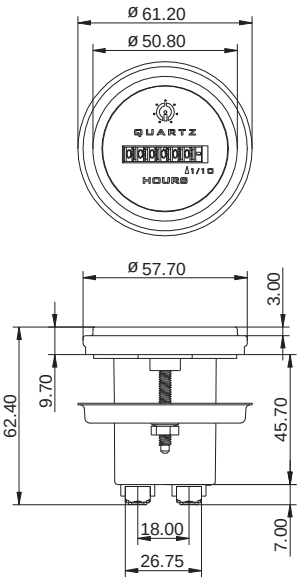
Rectangular 2 holes Bezel



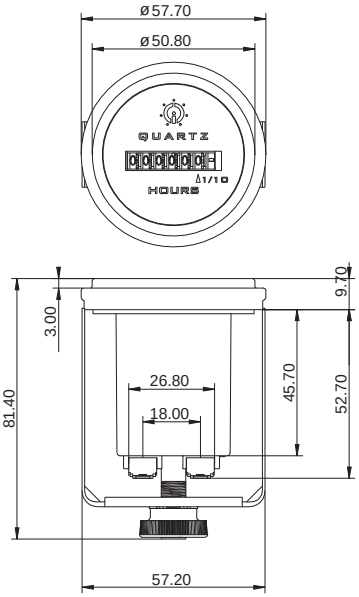
Round Bezel



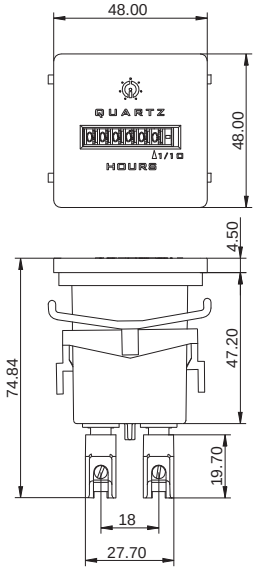
Round 3 holes Bezel



Cup Mount Bezel



Stirrup Mount Bezel



Square Bezel

Dimensions in mm

Digital Hour Meter

- 6-digit LCD
- In-built nonvolatile memory (EEPROM) offering exceptional reliability
- Wide range of supply voltage
- Remote reset
- Available in 3 different Bezels
- Low Power Consumption



Ordering Information

Cat. No.	Description
Z71FBX	85-265 VAC model
ZJ1FBX	12-48 VAC/DC model
ZH1FBX	10-80 VDC model
X	A = Round Bezel, B = 24x48 Bezel, C = Screw Mount Bezel

Digital Hour Meter



Cat. No.	Z71FBX	ZJ1FBX	ZH1FBX
Parameters			
Supply Voltage (⏚)	85 - 265 VAC	12 - 48 VAC/DC	10 - 80 VDC
Frequency	50/60 Hz	50/60 Hz	N A
Power Consumption (Max.)	0.8 VA	0.4 W	0.6 W
Range	99999.9 h		
Display	6-digit LCD 5mm Height		
Resolution	1/10 h		
Accuracy	± 0.02%		
Memory Retention	100 Years		
Operating Temperature Storage Temperature	-10° C to +50° C -20° C to +65° C		
Humidity	95% (Rh)		
Degree of Protection	IP54 (for front side only)		
Enclosure	UL94-V0		
Terminals	1, 2: Input Supply, 3: Enable 4: Reset		
Panel cut outs	Round Bezel, 24 x 48 Bezel, Screw Mount Bezel		
Mounting	Flush / Panel Mounting		
Certification	CE RoHS Compliant		
Weight (unpacked)	With Round Bezel- 35g, with 24 x 48 Bezel- 29 g, with Screw Mount Bezel- 31 g		

EMI / EMC

Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Voltage Dips & Interruptions (DC)	IEC 61000-4-29
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

Environmental

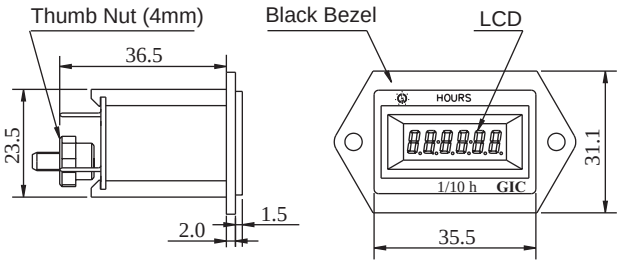
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

Digital Hour Meter

MOUNTING DIMENSION (mm)

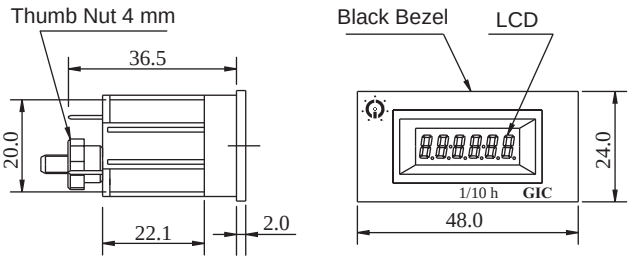
DIGITAL HOUR METER

SCREW MOUNT BEZEL



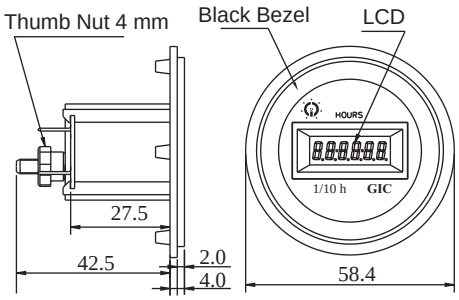
Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

24X48 BEZEL



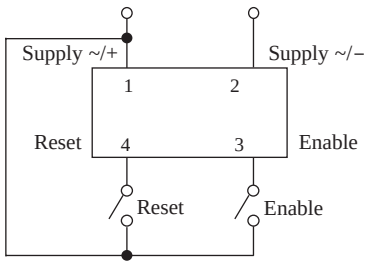
Recommended Panel Cutout :
45.5 (+0.5)mm x 23.0 (+0.5)mm

ROUND BEZEL



Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

CONNECTION DIAGRAM



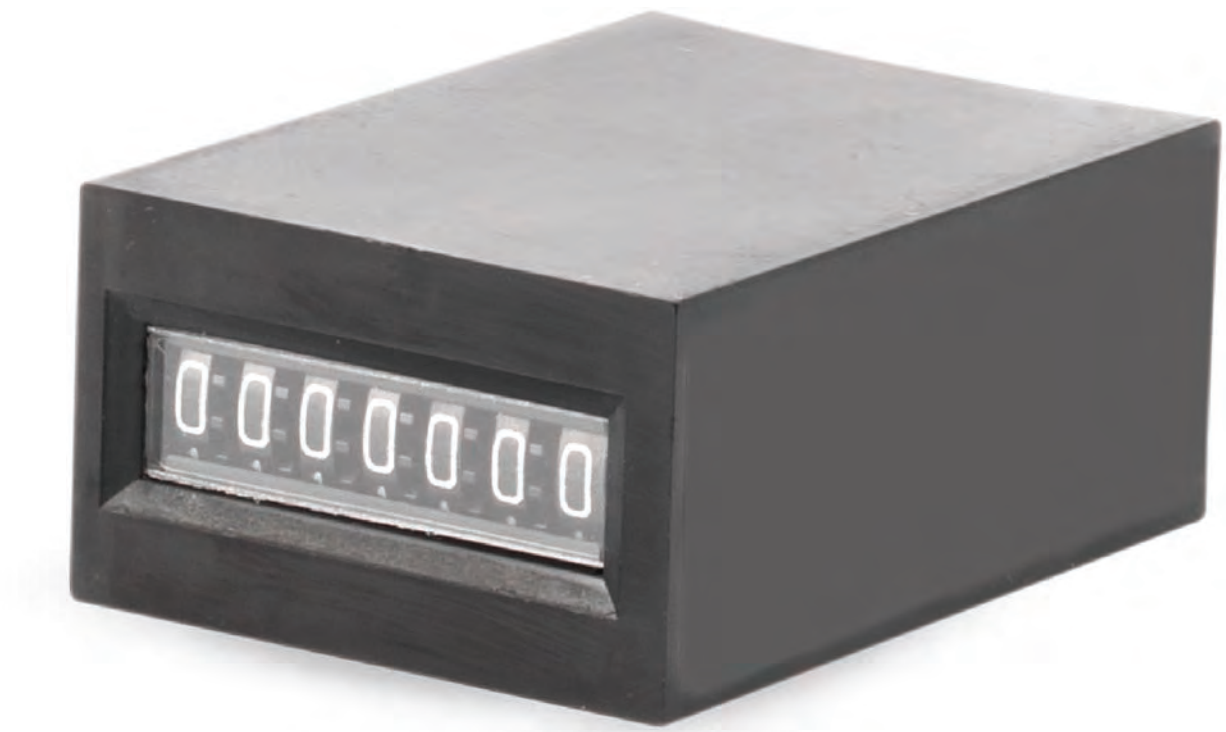
TERMINAL DESCRIPTION

Pin 1: Supply (~ / +)
Pin 2: Supply (~ / -)
Pin 3: Enable
Pin 4: Reset

DIGITAL HOUR METER

Impulse Counter Series CR 18

- 7-digit Compact Size
- High Accuracy and Reliability
- Requires no lubrication or maintenance
- Ideal where space is limitation
- Mounting options: Panel, PCB



Ordering Information

Cat. No.	Description
ED11A	12 V DC, Behind the panel (Screw mount)
ED11B	12 V DC, Behind the Panel With out Seal Hole (Screw mount)
ED22D	24 V DC, PCB mount (Straight)
ED23D	24 V DC, PCB mount (Right angle)
ED24C	24 V DC, Panel (Snap-in type)

Impulse Counter Series CR 18

Cat. No.	ED11A	ED11B	ED22D	ED23D	ED24C
Parameters					
Supply Voltage (⎓)	12 V DC		24 V DC		
Supply Variation	-15% to +10%		±10%		-15% to +10%
Power Consumption (Max.)	1.2 W				
Figure	7 Digit, Black, 4.0 mm Height				
Maximum Range	99,99,999				
Operating Life	10,000,000 counts minimum				
Speed (Counts / Minute)	600 (50ms-ON / 50ms-OFF)		1200 (25ms-ON / 25ms-OFF)		600 (50ms-ON / 50ms-OFF)
Pulse Width (minimum)	50 ms		25 ms		50 ms
Connection	Lead wire with connector		Terminal PIN (Pitch : 10 mm)	Terminal PIN (Pitch : 3.80 mm)	Lead Wire
	#39-01-4031 #39-00-0039	# 03-09-2022 #02-09-2116			
Panel Cutout	N.A				1.20'(30.48) x 0.96'(24.38) Panel thickness - 0.04'(1.0) to 0.08'(2.0)
Protection for Housing	Tamper Proof housing		N.A		
Weight (unpacked)	142 g				
Operating Temperature	-5° C to +40° C (Non-Freezing)				
Humidity (Non Condensing)	45 to 85% (Rh)				
Display	0.12'(3.0) x 0.06' (1.6) - White & black background				
Continuous Energizing	Permissible				
Counting Method	One pulse - One count (energizing - ½ count, unenergized - ½ count)				
Reset	None				
Shock test	Endurance: 300 m/s² (30g) XYZ 5 times each direction, Total : 3, Mismovement :50 m/s² (5g) XYZ 4 times each direction, Total : 24.				
Vibrations test	Endurance: 16.7 Hz, Width : 4mm ; XYZ each direction for 1 hour Mismovement :10~55 Hz, Width : 0.5mm ; XYZ each direction for 10 mins				
Type of Mounting	Behind the panel (Screw mount)		PCB mount (Straight)	PCB mou(Right angle)	Panel (Snap-in type)
Degree of Protection	IP 30				
Construction	Cover : Plastic (Noryl UL94V-1), Black				
Approvals	CE RoHS Compliant				

VIEWS OF DIFFERENT BEZELS



Behind the panel (Screw mount)



Housing Behind Panel with Out Seal Hole (Screw mount)



PCB mount (Straight)



PCB mount (Right angle)

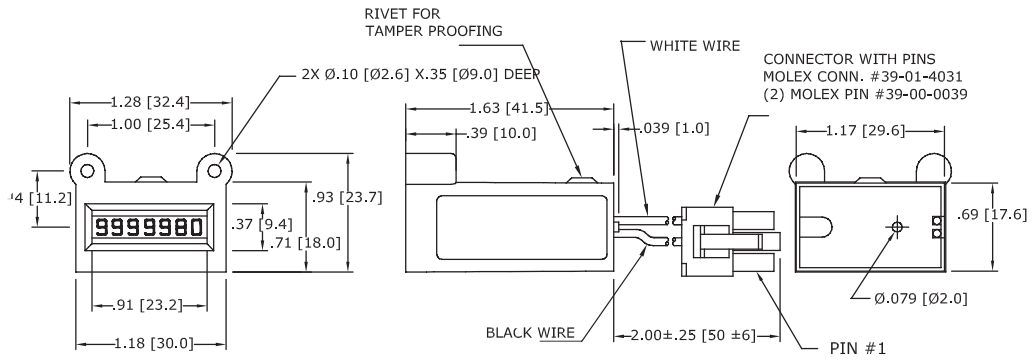


Panel (Snap-in type)

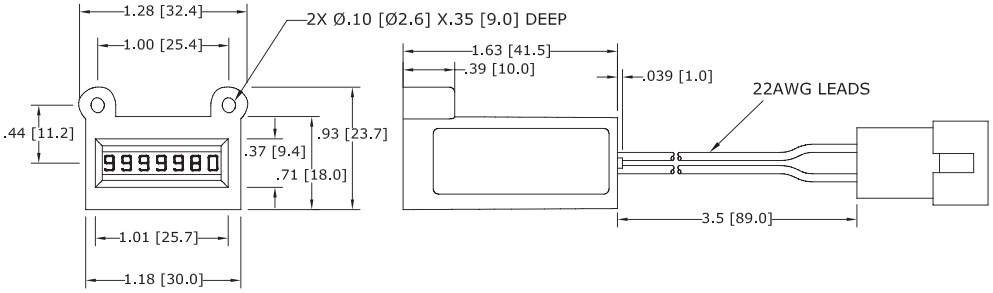
Impulse Counter Series CR 18

MOUNTING DIMENSION (mm)

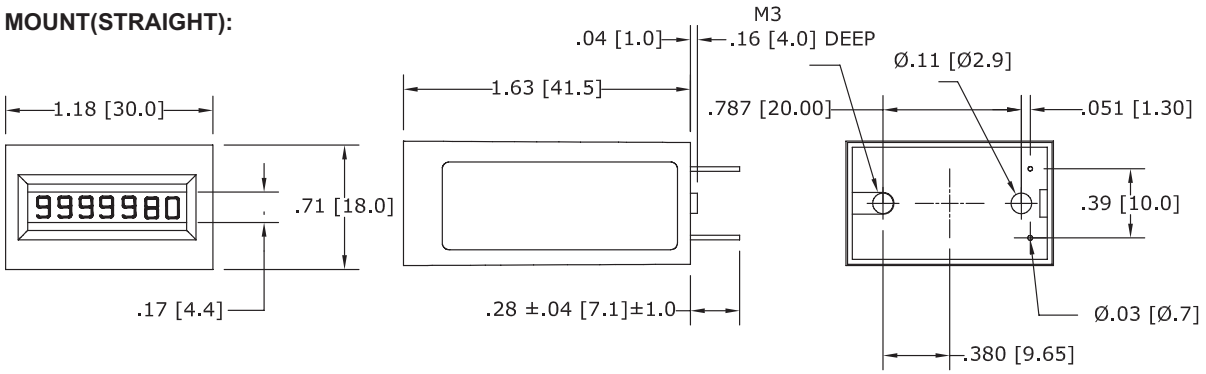
BEHIND THE PANEL (SCREW MOUNT):



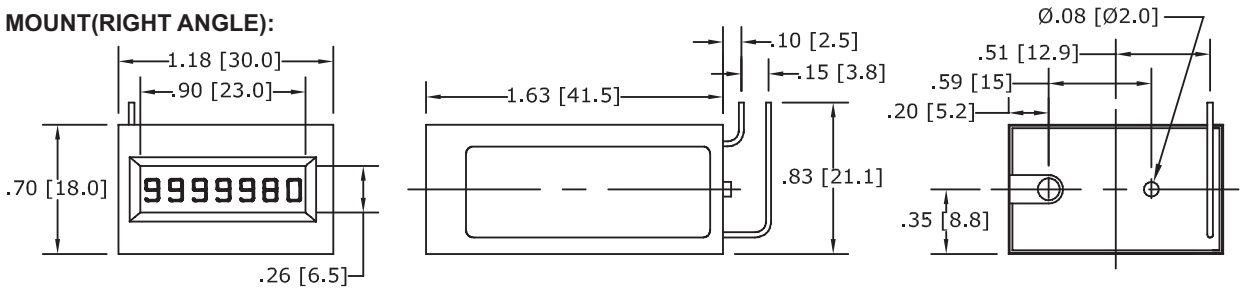
BEHIND THE PANEL (SCREW MOUNT):



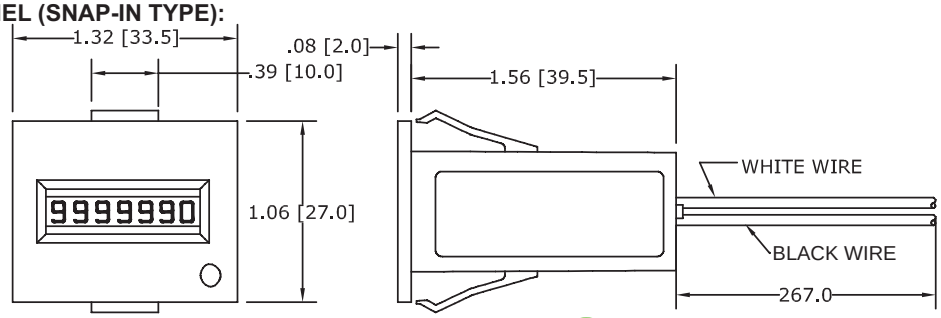
PCB MOUNT(STRAIGHT):



PCB MOUNT(RIGHT ANGLE):



PANEL (SNAP-IN TYPE):



Impulse Counter Series CR 26

- 6-digit Compact and Robust Design
- Push-button quick reset
- High Accuracy and Reliability
- Requires no lubrication or maintenance
- Optional locking for reset button
- Ideal where space is limitation
- Three mounting options: Bail, Panel, Base



X X X X X - X X X

Product

S	Resettable Series CR-26
N	Non-Resettable Series CR-26

Model

A	For AC
D	For DC

Voltage

AC		DC	
1		1	9 V
2		2	12 V
3	24 V 50/60 Hz	3	24 V
4	115 V 50/60 Hz	4	110 V
5	230 V 50/60 Hz	5	220 V
		6	2.5 V
		7	4 V
		8	6 V
		9	250 V
		A	125 V

Note: Other voltages will be made available upon request.

Mounting

1	Rectangular - 2 Hole
2	Bail Mounting
3	Base Mounting

Termination

A	With 2 - way terminal strip
B	With 22 AWG 254 mm long wire

Note: Terminal strip is not applicable for base mounting

Only for Rectangular - 2 Hole

356	Center Distance 35.6
385	Center Distance 38.5

Impulse Counter Series CR 26



Cat. No.	SD21A-385	SD31A-385	SA41A-356	SA51A-356
Parameters				
Supply Voltage (⏚)	12 VDC	24 VDC	115 VAC	230 VAC
Supply Variation	+10% to -15% (of ⏚)			
Power Consumption (Max.)	2 W		3 W	
Figure	6 Digit, White on Black, (4.0 mm) Height			
Maximum Range	9,99,999			
Operating Life	Beyond 100 million counts			
Speed	10 Hz Maximum (600 Counts / Minute)			
Pulse Width	50 ms minimum			
Counting Method	One Pulse - One count (energizing - 1/2 count, de-energized - 1/2 count)			
Continuous Energizing	Permissible			
Reset	Manual push button Reset (Reset button can be locked or sealed to avoid accidental reset)			
Weight (unpacked)	142 g			
Operating Temperature	-5° C to +50° C (Non-Freezing)			
Humidity (Non Condensing)	45 to 85% (Rh)			
Termination	22 AWG, 105° C wire leads, 254 mm long / 2 way Terminal Strip			
Type of Mounting	Panel, Bail & Base			
Degree of Protection	IP 30			
Certification	CE RoHS Compliant			
Applications	Ideal for use in - Machine tools, Business Machines, Test Instruments, Amusement Instruments and Measuring devices			

Note: Do not push reset button during change over.

Impulse Counter Series CR 26 (4-Digit)

- 4-digit Compact and Robust Design
- Push-button quick reset
- High Accuracy and Reliability
- Requires no lubrication or maintenance
- Optional locking for reset button
- Ideal where space is limitation
- Three mounting options: Bail, Panel, Base



4 X X X X X – X X X

Product

S	Resettable Series CR-26
N	Non-Resettable Series CR-26

Model

A	For AC
D	For DC

Voltage

AC		DC	
1		1	9 V
2		2	12 V
3	24 V 50/60 Hz	3	24 V
4	115 V 50/60 Hz	4	110 V
5	230 V 50/60 Hz	5	220 V
		6	2.5 V
		7	4 V
		8	6 V
		9	250 V
		A	125 V

Note: Other voltages will be made available upon request.

Termination

A	With 2 - way terminal strip
B	With 22 AWG 254 mm long wire

Note: Terminal strip is not applicable for base mounting

Mounting

1	Rectangular - 2 Hole
2	Bail Mounting
3	Base Mounting

Only for Rectangular - 2 Hole

356	Center Distance 35.6

Impulse Counter Series CR 26 (4-Digit)



Cat. No.	4SD21A-356	4SD31A-356	4SA41A-356	4SA51A-356
Parameters				
Supply Voltage (⏚)	12 VDC	24 VDC	115 VAC	230 VAC
Supply Variation	+10% to -15% (of ⏚)			
Power Consumption (Max.)	2 W		3 W	
Figure	4 Digit, White on Black, (4.0 mm) Height			
Maximum Range	9999			
Operating Life	Beyond 100 million counts			
Speed	10 Hz Maximum (600 Counts / Minute)			
Pulse Width	50 ms minimum			
Counting Method	One Pulse - One count (energizing - 1/2 count, de-energized - 1/2 count)			
Continuous Energizing	Permissible			
Reset	Manual push button Reset (Reset button can be locked or sealed to avoid accidental reset)			
Weight (unpacked)	113 g			
Operating Temperature	-5° C to +50° C (Non-Freezing)			
Humidity (Non Condensing)	45 to 85% (Rh)			
Termination	22 AWG, 105° C wire leads, 254 mm long / 2 way Terminal Strip			
Type of Mounting	Panel, Bail & Base			
Degree of Protection	IP 30			
Certification	CE RoHS Compliant			
Applications	Ideal for use in - Machine tools, Business Machines, Test Instruments, Amusement Instruments and Measuring devices			

Note: Do not push reset button during change over.

Impulse Counter Series CR 36

- Compact Size & Robust Design
- 7 Digit, Non-Resettable
- High Degree of Accuracy & Reliability
- Wide Temperature range
- Shock & Vibration Proof



Ordering Information

Cat. No.	Description
QD11A	12 VDC, Rectangular Bezel
QD21A	24 VDC, Rectangular Bezel
QD12A	12 VDC, Rectangular 2 Hole Bezel
QD22A	24 VDC, Rectangular 2 Hole Bezel
QD23A	24 VDC, Round Bezel

Impulse Counter Series CR 36



Cat. No.	QD11A	QD22A
Parameters		
Supply Voltage (⏚)	12 VDC	24 VDC
Supply Variation	-15% to +10%	
Power Consumption (Max.)	0.25 VA	
Figure	7 Digit, White on Black, (3.6mm) High	
Maximum Range	9999999	
Speed	10 Hz Maximum (600 counts/minute)	
Pulse Width	50 ms. minimum	
Counting Method	One Pulse - One Count (energizing - ½ count, de-energizing - ½ count)	
Weight	45 gm	
Operating Temperature	-5°C to +50°C	
Humidity (Non Condensing)	45% to 85% (Rh)	
Mounting	Panel	
Degree of Protection	NEMA 4X (IP 65)	
Certification	CE RoHS Compliant	

Digital Counters

- 6-digit LCD
- In-built nonvolatile memory (EEPROM) offering exceptional reliability
- Wide range of supply voltage
- Remote reset
- Available in 3 different shaped Bezels
- Low Power Consumption



Ordering Information

Cat. No.	Description
Z72FBX	85-265 VAC model
ZJ2FBX	12-48V AC/DC model
ZH2FBX	10-80V DC model
X	A=Round Bezel, B=24x48 Bezel, C=Screw Mount Bezel

Digital Counters



Cat. No.	Z72FBX	ZJ2FBX	ZH2FBX
Parameters			
Supply Voltage (⏚)	85 - 265 VAC	12 - 48 VAC/DC	10 - 80 VDC
Frequency	50/60 Hz	50/60 Hz	N A
Power Consumption (Max.)	0.8 VA	0.4 W	0.6 W
Counting frequency	10Hz	10Hz	30Hz
Maximum Range	999999		
Display	Large 6-Digit display, easy to read		
Resolution	1 Count		
Reset	Electrical		
Memory Retention	100 Years		
Operating Temperature Storage Temperature	- 10° C to +50° C - 20° C to +65° C		
Accuracy	± 1 Count		
Humidity (Non Condensing)	95% (Rh)		
Degree of Protection	IP54		
Enclosure	UL94-V0		
Terminals	1 & 2: Input Supply, 3: Count 4: Reset		
Panel cut outs	Round Bezel, 24 x 48 Bezel, Screw Mount Bezel		
Mounting	Flush/ Panel Mounting		
Certification	CE RoHS Compliant		
Weight (unpacked)	With Round Bezel - 35g, with 24 x 48 Bezel - 29 g, with Screw Mount Bezel - 31 g		

EMI / EMC

Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

Environmental

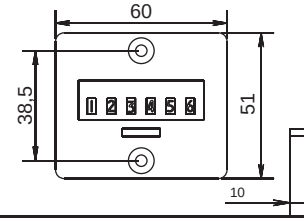
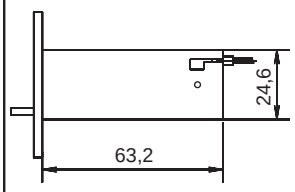
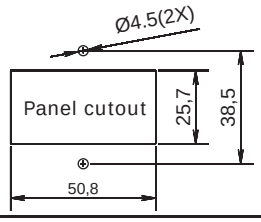
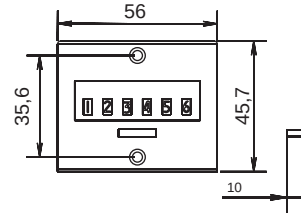
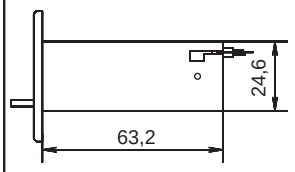
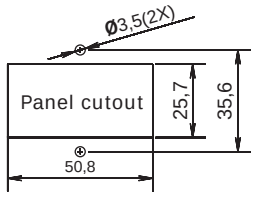
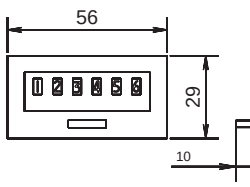
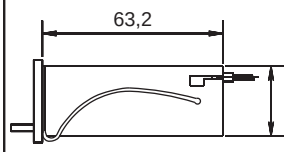
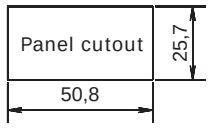
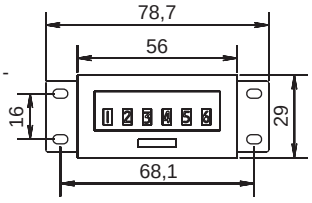
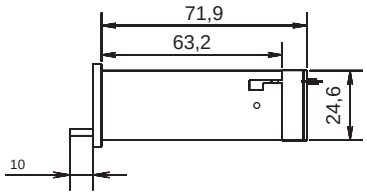
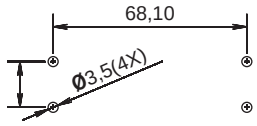
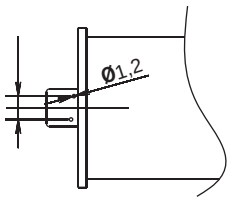
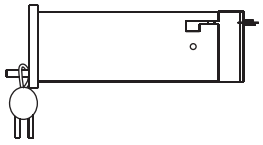
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

Impulse Counter Series CR 26

MOUNTING DIMENSION (mm)

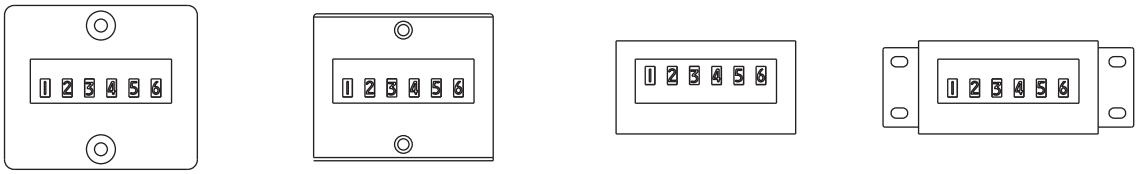
IMPULSE COUNTER CR 26

Resettable Counter
SXXXA

	A=With terminal strip	B=With 22 AWG 254 mm long wire	Panel cutout dimension
1. Panel Mount - 6 Figure SXXXX-385			
2. Panel Mount - 6 Figure SXXXX-356			
3. Bail Mount - 6 Figure			
4. Base Mount - 6 Figure	 		
5. Optional locking for reset button	  To avoid the tampering with the reset button you can seal the counter as shown in the above figure		

NON RESETTABLE COUNTER- NXXXA

A = Counter with Terminal Strip(not applicable for Base Mounting)
B = Counter with Wire (22 AWG 254 mm Long)



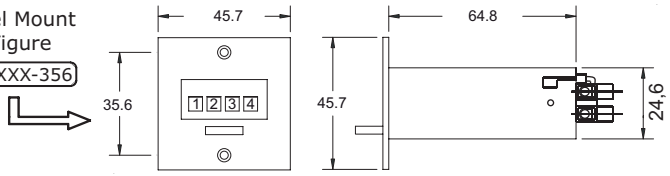
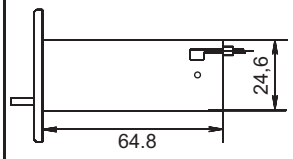
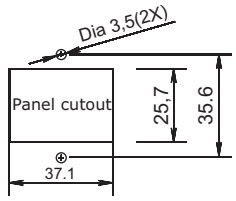
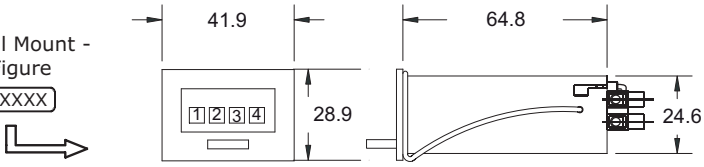
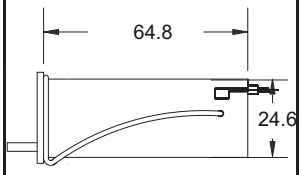
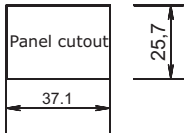
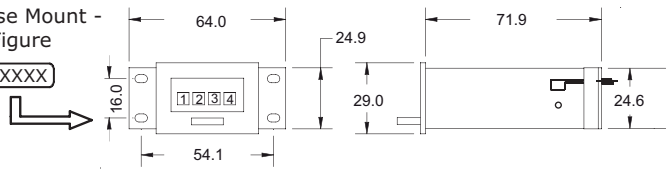
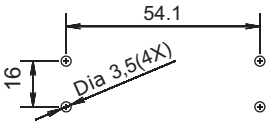
Note: For Non Resettable Counters, reset arm lever will not be present and all other details will be common with resettable counter.

Impulse Counter Series CR 26 (4-Digit)

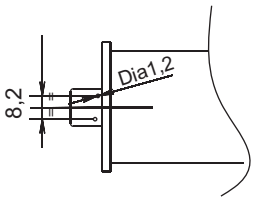
MOUNTING DIMENSION (mm)

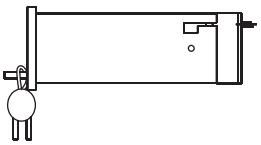
IMPULSE COUNTER CR 26 (4 FIG)

Resettable Counter
4XXXA

	A=With terminal strip	B=With 22 AWG 254 mm long wire	Panel cutout dimension
1. Panel Mount - 4 Figure 4XXXXX-356			
2. Bail Mount - 4 Figure 4XXXXX			
3. Base Mount - 4 Figure 4XXXXX			

4. Optional locking for reset button

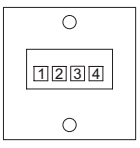


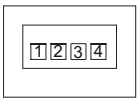


To avoid the tampering with the reset button you can seal the counter as shown in the above figure

NON RESETTABLE COUNTER- NXXXA

A = Counter with Terminal Strip(not applicable for Base Mounting)
B = Counter with Wire (22 AWG 254 mm Long)







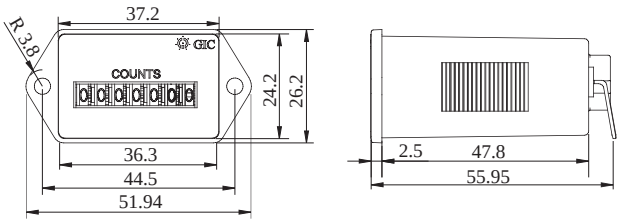
Note: For Non Resettable Counters, reset arm lever will not be present and all other details will be common with resettable counter.

Impulse Counter Series CR 36 & Digital Counter

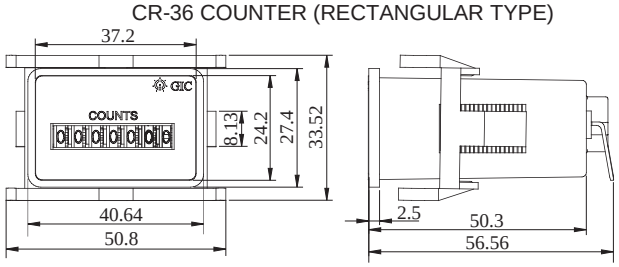
MOUNTING DIMENSIONS (mm)

IMPULSE COUNTER CR 36

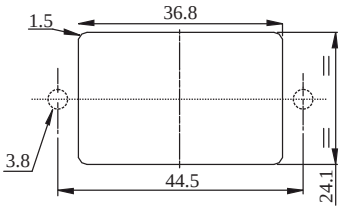
CR-36 COUNTER (RECTANGULAR 2 HOLE TYPE)



CR-36 COUNTER (RECTANGULAR TYPE)



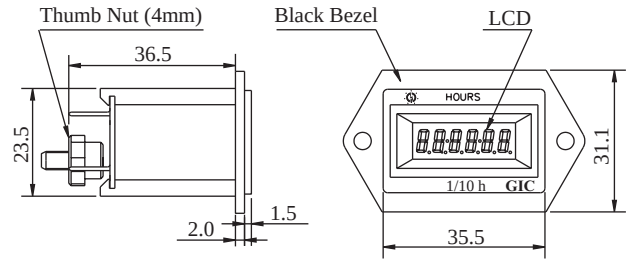
PANEL CUT-OUT



Max. Panel Thickness: 0.76mm to 10.20mm
Panel Cut-out Dimensions: Tolerance - 0.30mm
Panel Cut-out common for all models

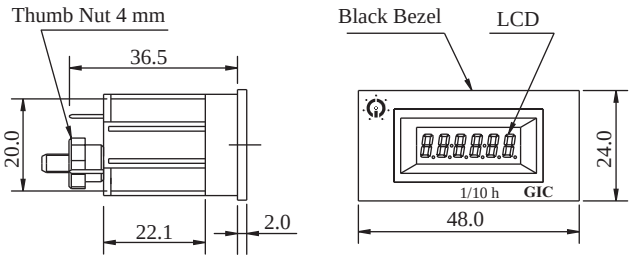
DIGITAL COUNTER

SCREW MOUNT BEZEL



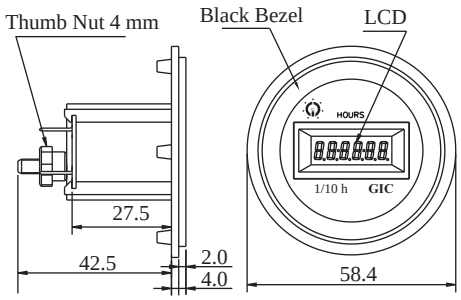
Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

24X48 BEZEL



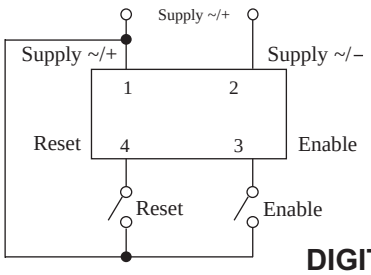
Recommended Panel Cutout :
45.5 (+0.5)mm x 23.0 (+0.5)mm

ROUND BEZEL



Recommended Panel Cutout :
37.0 (+0.5)mm x 24.6 (+0.5)mm

CONNECTION DIAGRAM



TERMINAL DESCRIPTION

Pin 1: Supply (~ / +)
Pin 2: Supply (~ / -)
Pin 3: Enable
Pin 4: Reset

DIGITAL COUNTER

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	
Reset function – Time (min.)	80 ms / 3 Sec / -	
Hour Meter Functions – Accuracy	± 2sec per Day	
Hour Meter Functions – Ranges	Hrs : Min : Sec (999:59:59), Hrs : Min (99999:59), Hrs (9999999), Min (9999999), Sec (9999999)	
Hour Meter Functions – 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%	
Counter Functions – Range	1 to 9999999.999	
Counter Functions – Decimal Point Position(max.)	3	
Counter Functions – Pre-scaler	4 Digit	
Counter Functions – Input – Switching Freq.(max.)	10 Hz for AC and 40 Hz for DC	
Counter Functions – 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

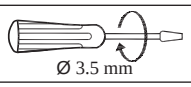
Environmental

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

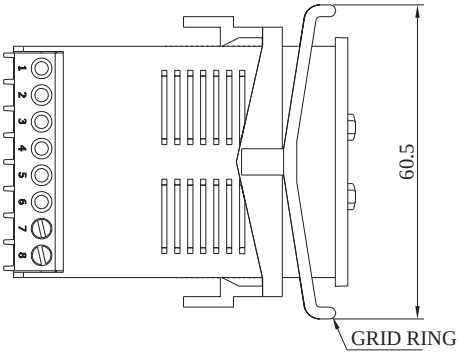
Digital Hour Meter & Counter

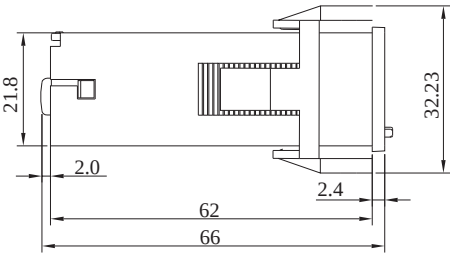


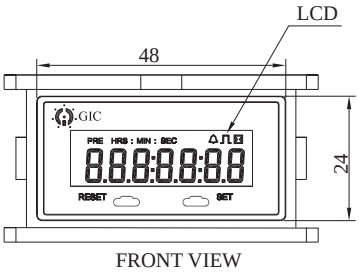
TERMINAL TORQUE & CAPACITY

 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

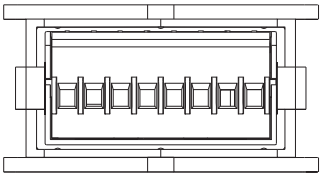
MOUNTING DIMENSIONS (mm)

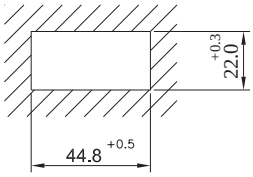




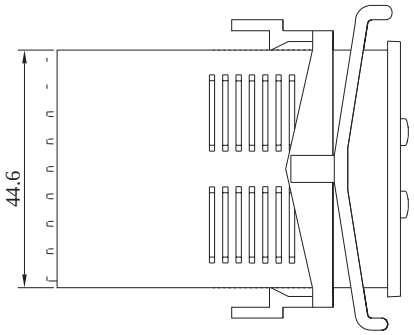


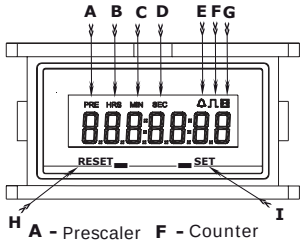
FRONT VIEW


BACK VIEW



PANEL CUTOUT

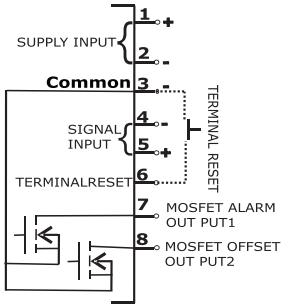




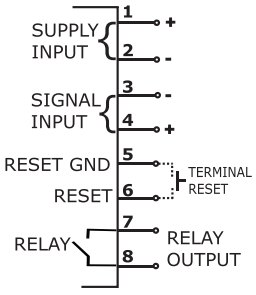
A - Prescaler
B - Hour
C - Minute
D - Second
E - Alarm
F - Counter
G - Hour Meter Symbol
H - RESET(RST)
I - SET

CONNECTION DIAGRAM

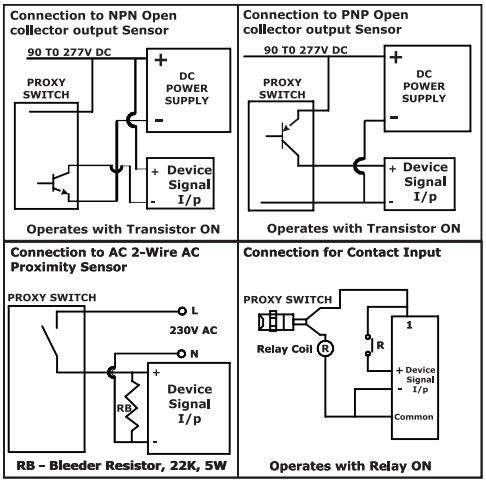
For Z2301N0G1FT00



For Z2221N0G2FT00



Proximity Switch Connection Diagram:



Rate Indicator & Totaliser

- Wide input signal sensing range 0.01Hz to 20KHz.
- Wide Totalizer range from 1 to 9999999.
- Wide Rate range from 1 to 999999.
- Prescaling facility for Rate Indicator.
- Alarm facility for both Rate Indicator & Totalizer.
- Password enabled.
- Signal Over-range displayed.



Ordering Information

Cat. No.	Description
Z3301N0G2FT00	9 VDC - 30 VDC (with Relay output)

Rate Indicator & Totaliser



Cat. No.		Z3301N0G2FT00		
Parameters				
Supply Voltage (⏚)		9 VDC to 30 VDC		
Max. Power Consumption (W)		0.73 W		
Input Signal		Range 1 : 0.1 Hz to 40 Hz		
Frequency Range		Range 2 : 0.1 Hz to 20 KHz		
Output Type		Relay: 1 C/O, Contact Rating:5 A(Res.) @250 VAC / 30VDC Contact Material: Ag Alloy		
Display		7 digit LCD, 6.5mm Height, 12 O' Clock, Transmissive		
Rate Display		6 digit Display		
Number of keys		2 (SET & RST)		
Reset	Reset type	Terminal	Front	Auto Reset
Function	Time (min.)	80 ms	3 Sec	-
Rate Accuracy		± 0.01%		
Totalizer Accuracy		100 %		
Decimal Point Position (max.)		4		
Pre-scaler		4 digits before decimal point & 3 digits after decimal point.		
Operating Temperature		- 10° 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		
Weight (Unpacked)		52g		
Operating Position		Horizontal		
Termination wire Sizes		Wire size : 22-14 AWG, 0.3-2.5 mm		
Panel Cut-out		22mm X 44.8mm		
Mounting		Flush / Panel Mounting		
Certification		CE RoHS Compliant		

EMI / EMC

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 & Housing)	IEC 60947-5-1
Signal 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

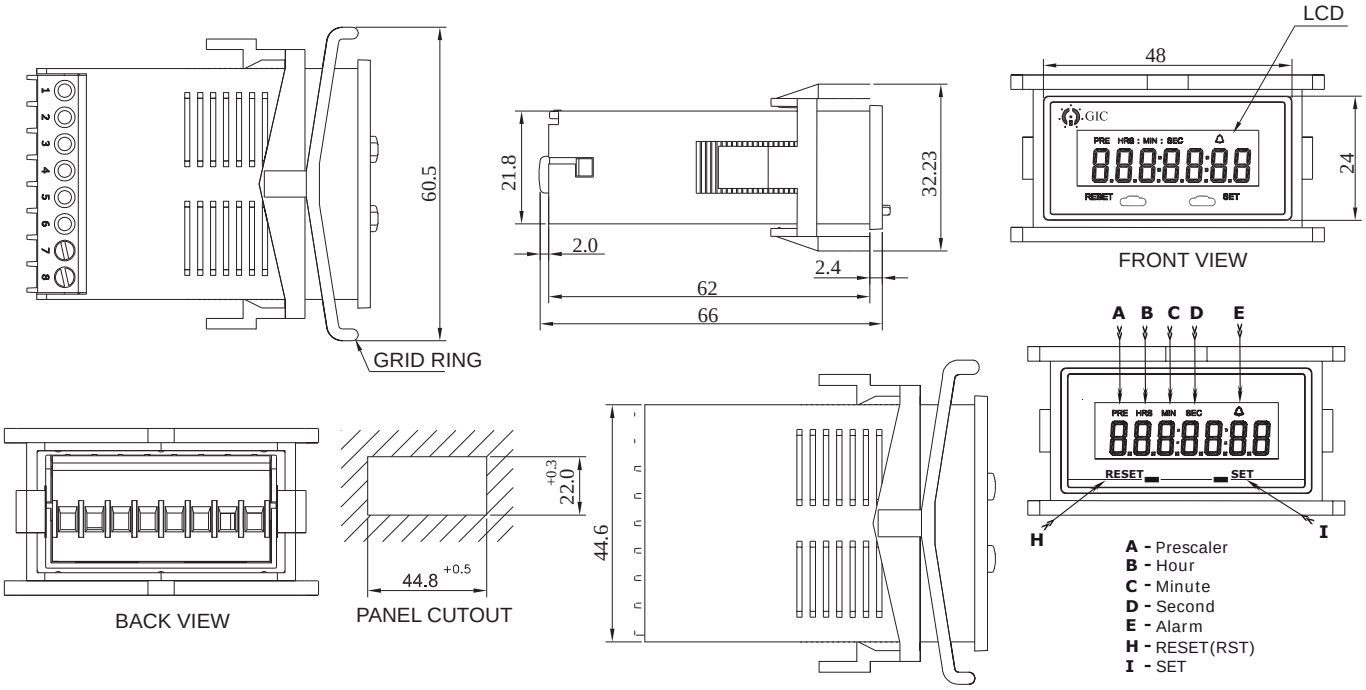
Rate Indicator & Totaliser



TERMINAL TORQUE & CAPACITY

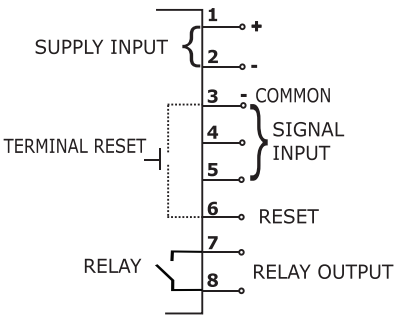
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MOUNTING DIMENSIONS (mm)

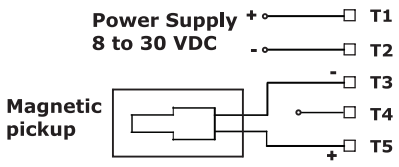


CONNECTION DIAGRAM

Z3301N0G2FT00



Magnetic pickup:



Proximity Switch Connection Diagram:

