

10108 SERIES

TOTALIZING COUNTER

10108H

ELAPSE TIME INDICATORS



- **8 Digit 0.3" High LCD Display**
- **Totalizer or Elapsed Time Indicator**
- **Replaceable Battery Supply**
- **Custom CMOS Technology**

The 10108 Series consists of two models - the 10108 Totalizer and the 10108H Elapsed Time Indicator for recording time in hours and hundredths of hours (0.01 Hr). Count input or time enable can be a contact closure, NPN or PNP open collector transistor, 2 or 3 wire proximity switch, or voltage pulse 24Vdc max. In addition, a voltage converter module, p.n. 10,000, will accept voltage inputs from 6 to 240Vac/dc. Input speed is 40 Hz (low) or up to 5 KHz (high).

Count total or time is displayed on 0.3" high (7mm) liquid crystal displays, LCD's. Power for the internal logic and displays is provided by two (2) Size N alkaline batteries with a projected four (4) year life. Mercury batteries, with an estimated eight (8) year life, can also be used. Two (2) of the alkaline batteries are included with each unit.

Dimensions were stressed during design stages. Height is 0.95", length 1.89" and depth 1.81" offering a compact, low profile unit. Mounting is through a 0.89" x 1.77" (22mm x 45mm) cut-out secured in place with a molded mounting clip. Connections are made to rear mounted clamp type screw terminals with up to 16 AWG wire.

Reset of count or time totals is by pushbutton located on the front panel or by remote contact. The front panel pushbutton reset is enabled by adding a jumper across terminals 5 & 6.

The 10108H will accumulate and display hours and hundredths of hours (0.01 Hr) when an input device is closed across terminals 1 &

2. The display will increment once every 36 seconds or 0.6 minutes. Its crystal controlled time base is accurate to ± 60 ppm.

The 10108 Series is a compact, lightweight, 1.7 oz., durable device enclosed in ABS Cyclac. Its front panel area is IP64 rated which is "dust tight and protected against splashing water". Its small front panel area of 0.95" x 1.89" allows placement on the most densely populated control panels.

INSTALLATION CONSIDERATIONS

The connections between the 10108 and the input device should be shielded wire and grounded at only one end. Either end can be earth grounded but not both. Lead length can be up to 16 feet long. Should a longer length be required, use an interface relay located near the 10108. It may be necessary to suppress the coil of that relay. The suppression can be done with an RC circuit for AC use such as Syrelec 1075 transient suppressor or a diode for DC use.

It is recommended that the counter be kept away from solenoids, contactors, fans, and other inductive devices. The 10108 should be suitably ventilated to insure operation within the temperature range of -14°F to $+122^{\circ}\text{F}$.

In a good industrial environment where there is little or no electrical "noise", the 10108 Series will function well. It may, at times, be necessary to take the precautions suggested to insure satisfactory operation.

SPECIFICATIONS

Electrical

Power	3V with 2 alkaline batteries, 4 year life
Count Input	Contact closure PNP Open Collector NPN Open Collector 2 or 3 Wire Proximity
Low Speed	40 Hz max.
Min. Pulse	12ms
Current Consumption	10 μA min. at 3V
High Speed	5KHz max.
1 State	3 to 24VDC
0 State	0.7V
Min. Pulse	100 μs
Input Impedance	33K Ω
Count Input Option	Voltage Converter Module P.N. 10000, 5 to 240VAC/DC
Reset - Pushbutton	Activate with jumper across terminals 5 & 6
Reset - Remote	Contact closure or NPN Open Collector to terminals 2 & 3.
Min. Pulse	12ms
Current Sink	10 μA at 3V
Memory	Yes - 2 Alkaline Batteries, Size N 1.5V

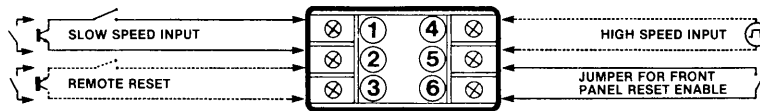
Physical Environmental

Displays	8 Digits LCD
Character Height	Leading Zero Blanking 0.3" High, 7.4mm
Case Material	ABS Cyclac
Front Panel Rated	Nema 4
Mounting	Spring Clip, 0.28" (7mm) Panel Thickness max.
Connections	6 screw terminal - 16AWG
Battery Life	Size N Alkaline 4 yrs or Mercury 8 yrs.
Dimensions	H - .95" (24mm) L - 1.89" (48mm) D - 1.81" (46mm)
Operating Temp	-14°F to $+122^{\circ}\text{F}$ -10°C to $+50^{\circ}\text{C}$
Storage Temp	-13°F to $+158^{\circ}\text{F}$ -25°C to $+70^{\circ}\text{C}$
Ambient Humidity	80% RH non-condensing
Weight	1.77 oz., (50 grams includes 2 20 gram batteries)

INPUT WIRING:

	HIGH SPEED 5K Hz	SLOW SPEED 40 Hz	RESET INPUT
VOLTAGE PULSE			
CONTACT CLOSURE			
TRANSISTOR PNP OPEN COLLECTOR OR 3 WIRE PROX. SWITCH			
TRANSISTOR NPN OPEN COLLECTOR OR 3 WIRE PROX. SWITCH			
2 WIRE PNP PROXIMITY SWITCH			
2 WIRE NPN PROXIMITY SWITCH			

Note: 1. Low voltage and current (3V and 10 μa) require good quality contacts (gold flashed).
 2. External resistor R2 680Ω, 1 watt for proximity switches with leakage current equal to or less than 1.5ma.



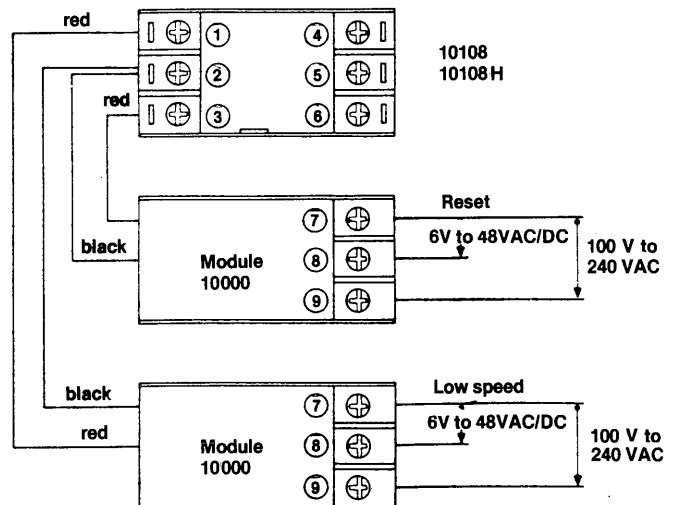
VOLTAGE CONVERTER MODULE:

Input to the 10000 can be from a voltage source 6 to 240V AC or DC.

SPECIFICATIONS/WIRING:

VOLTAGE INPUT	
VOLTAGE SUPPLIED CONTACT INPUT	
PNP TRANSISTOR or 3 wire proximity switch	
NPN TRANSISTOR or 3 wire proximity switch	
2 wire PNP PROXIMITY SWITCH	
2 wire NPN PROXIMITY SWITCH	

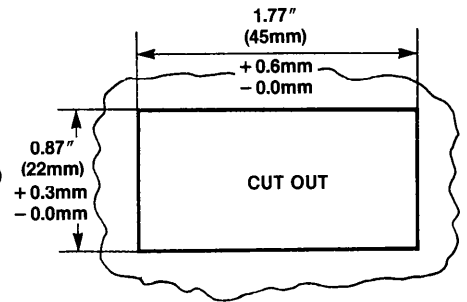
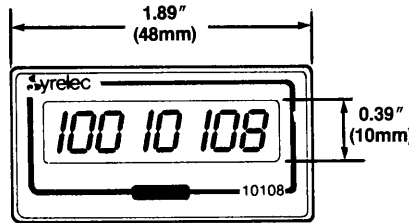
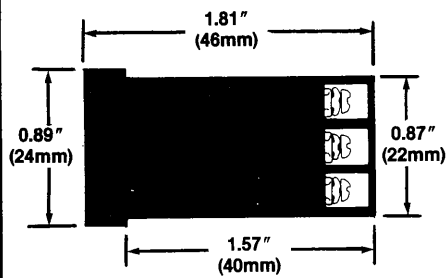
Input Voltage (AC/DC)	Maximum Frequency		Minimum On Time		Current Consumption		Photo Coupler Isolation
	DC	AC	DC	AC	Min	Max	
6 to 48V (AC/DC)	40 Hz	15 Hz	12 ms	25 ms	1 ma	17 ma	Yes
100 to 240V (AC)		15 Hz		25 ms	1.5 ma	4 ma	Yes



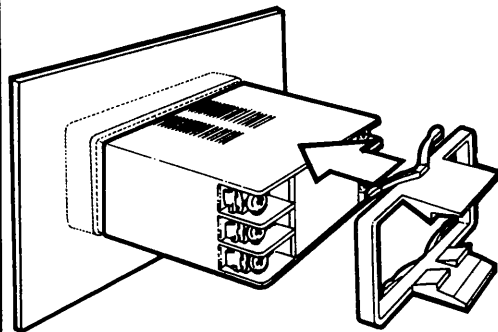
*R: External resistor 1 KΩ / 1 W for proximity switches with leakage current less or equal to 1.5 mA.

From 6V to 48VAC/DC ± 15% between terminals 7 and 8.
 From 100V to 240VAC/DC ± 15% between terminals 7 and 9.

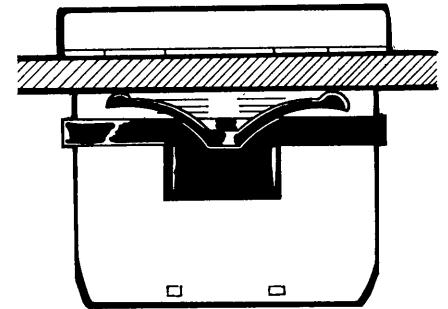
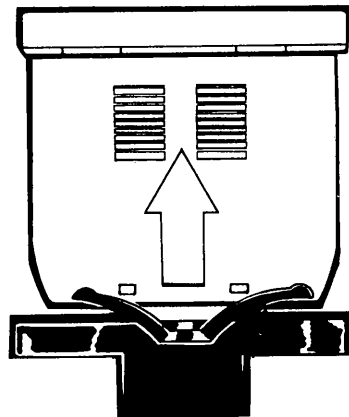
DIMENSIONS



MOUNTING

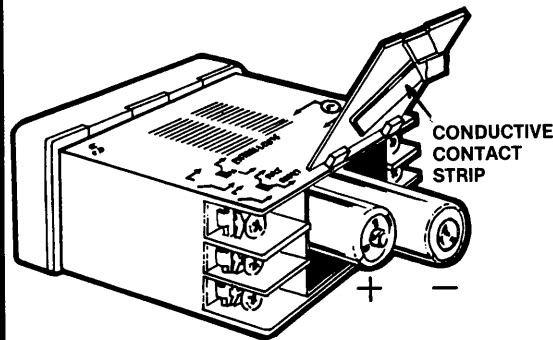


To secure molded mounting clip, press lightly on each side and push forward.

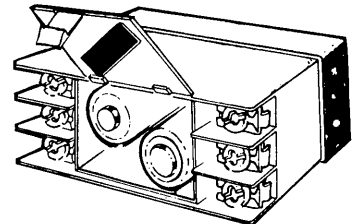


To remove molded mounting clip, press lightly on each side and pull gently.

BATTERY REPLACEMENT



The 10108 will function from 2.4V to 4V. It is shipped complete with 2 alkaline size N (2 x 1.5V) batteries. Mercury type batteries (2 x 1.4V) can also be used. The battery compartment door contains a conductive contact strip. The contact strip is covered with a thin plastic film to prevent discharge during shipment and storage. Open the back cover, remove the plastic film, check the battery positions, and replace the back cover to engage the batteries. Reset the counter after changing batteries.



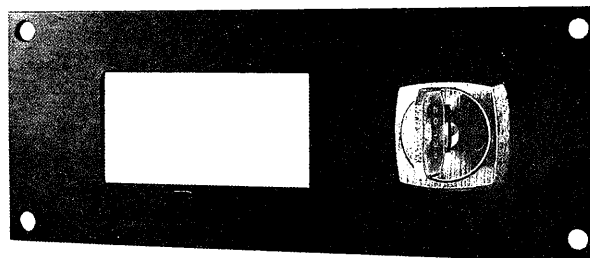
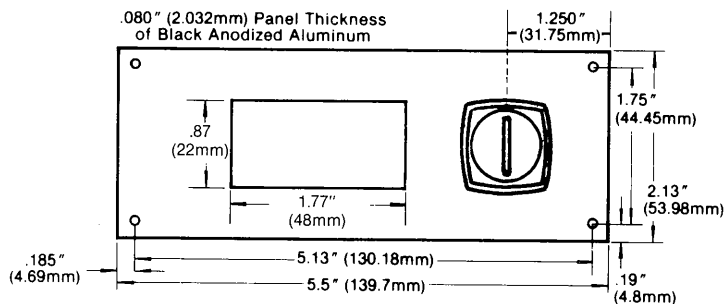
ORDERING INFORMATION

MODEL

- 10108 = 8 Digit Totalizer
- 10108H = 8 Digit Elapsed Time Indicator
Hours and Hundreds, 0.00.
- 10000 = 6-240V AC/DC Voltage Converter Module

ACCESSORIES FOR 10108 SERIES COUNTERS

10071 Retrofit Panel Plate with Keylock Reset

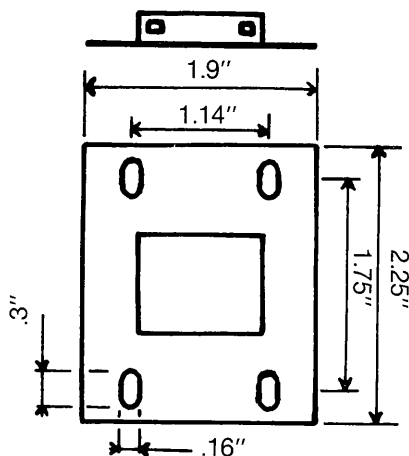


The 10071 panel plate comes complete with 6072 SPST key lock. It will retrofit following models:

RETROFIT INFORMATION

Redington	P102 Series
Veeder Root	1205, 1981, 7443, 7995, 7997
Durant	Key lock resettable RMF, MF, YP, 54000 Series

10080 Base Mount Adapter

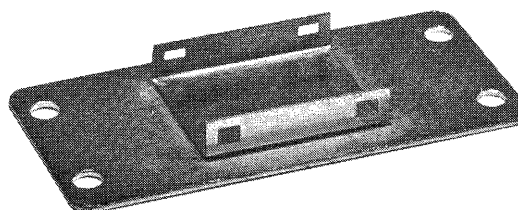
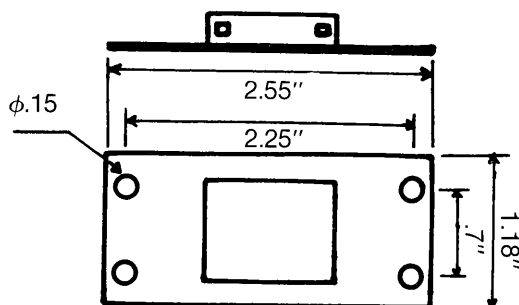


The 10080 base mount adapter allows easy retrofit of existing E.M counter.

Retrofit information

Veeder Root	7437, 7438
Red Lion	Cub 1 & Cub 2 with BMKI

10081 Base Mount Adapter



The 10081 base mount adapter allows easy retrofit of existing E.M counter.

Retrofit information

Veeder Root	1205, 1981, 7443, 7995 & 7997
Durant, Eaton	Y-RNF, Y-MF, YE, 6-CS & 5400
Red Lion	Cub 1 & Cub 2 with BMK 2