

## 1170-007 Hand Held Reader (M7793/12-1)

Our model 1170-007 hand-held reader is designed to the MIL-DTL-7793/12A military specification for reading MIL-DTL-7793/13A, /14A, /15A, and /16A solid state elapsed time indicators and event counters. The 1170-007 reader (MIL P/N: M7793/12-1, NSA: 6645-01-338-8506) displays the number of hours or events when attached to one of the above specified devices. A single pushbutton switch activates the reader in approximately 2 seconds to display the hours or events. Once completed, the reader turns itself off.

### Features

- Designed to meet Mil Spec MIL-DTL-7793/12A
- Replaces Models 1170-004 and 1170-001
- Faster response time and easier to read LED display
- Rugged construction that is field serviceable with output cable options

### Specification - Designed to meet military specification MIL-DTL-7793/12A

Weight	Complete assembly, including battery, 15 oz maximum
Display	Seven light emitting diode (LED) digits and two LED indicators
Battery	Power supplied by one 9 volt NEDA
Durability	No mechanical or electrical degradation after 100 cycles
Temperature	Operational: -20° to +85C°, Storage: -55° to +85C°
Altitude	(non-operational) 15,000 feet maximum
Vibration	In accordance with MIL-STD-202, Method 201
Shock	In accordance with MIL-STD-202, Method 213
Operational Accuracy	No deviation from actual elapsed time as contained in the output data
Power consumption	Discharge current shall not exceed 80 milliamperes any time Discharge current shall not exceed 2 microamperes when non-operational
Input voltage overload protection	Shall not be damaged by continuous input overloads of $\pm 50$ volts or transient voltages of $\pm 500$ volts for up to 10 microseconds
Connector	Modified MS3106A10SL-3S or MIL-C-MS5015
Battery Life	1200 reading cycles
Moisture resistance	Method 106 of MIL-STD-202

# Tecknowledgey®

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## 7000 Series Solid State Elapse Time Indicators and Counters

The Tecknowledgey 7000 series solid state elapse time indicators and counters are designed to meet MIL-DTL-7793 military specification for gathering time and counting data. Our 7000 series devices are ideal for tracking service life for maintenance purposes and are rugged enough for military vehicles and equipment. The 7000 series outputs serial timing and counting data continuously that can be read by a computer or with a Tecknowledgey model 1170-007 handheld reader (MIL P/N: M7793/12-1).



**Model 7001** Solid State Elapse Time Indicator - Records time while power is applied up to 99,999.99 hours.

**Model 7002** Solid State Event Counter - Records the number of times that power has been applied for at least 5 seconds up to 9,999,999 counts.

**Model 7003** Solid State Pulse Counter - Records the number of pulses applied to the input up to 9,999,999 pulses

### Features

- Designed to meet MIL-DTL-7793/13A, /14A, /15A and /16A
- Also meets obsolete MIL-M-7793/13, /14, /15 and /16
- Can operate in extreme temperatures from -65° to +125° C
- Rugged compacted package design with low power consumption
- Available in both panel and PCB mount case styles
- Panel mount models are read with a 1170-007 reader (military P/N: M7793/12-1)
- PCB mount models provide continuous serial output for time and count data

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## Specifications

Designed to Meet Military Specifications MIL-DTL-7793/13A, /14A, /15A and /16A

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### Mechanical/Environmental

Maximum Weight	Panel Mount (NT): 1.0 oz, PCB Mount (PC): 0.2 oz
Temperature	Operational: -65° to +125° C, Storage: -80° to +125° C
Shock	MIL-STD-202, Method 213, Condition I
Vibration	MIL-STD-202, Method 204, Condition D
Salt Spray	MIL-STD-202, Method 101, Condition B
Moisture Resistance	MIL-STD-202, Method 106
Altitude	MIL-STD-202, Method 105, 0 to 80,000 feet

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### Electrical

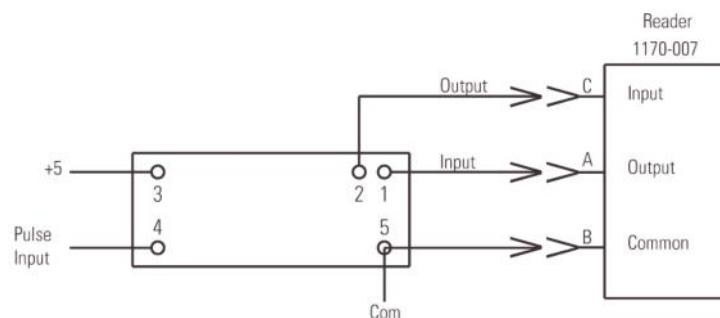
Operating Voltage Range	4.75 to 10VDC, 10-34VDC/20-30VAC or 75 to 150VAC
Ripple Voltage	5VDC: Operates normally when subjected to a 2 volt peak (4 volts peak-to-peak) ripple between 10 Hz and 10 KHz superimposed on 7.0 VDC. 28VDC/26VAC: The meter shall continue to operate as specified in MIL-DTL-7793 when subjected to a cyclic peak of ripple voltage (see Note 3) of less than 2.0 VDC and the frequency-voltage coordinates on figure 2.
Output Impedance	100k ohms +/- 1%
Maximum Power Consumption	5VDC: 2mW, 28VDC/26VDC: 50mW/25mW, 115V: 50mW
Transient Protection	5VDC Models: No temporary or permanent degradation in meter when subjected to +/- 25 volt transients of 10 microseconds duration occurring at 1 millisecond repetition rate. 28VDC/26 VAC models: No temporary or permanent degradation in meter for input voltage and time values shown in MIL-DTL-7793/14A. 115 VAC Models: No temporary or permanent degradation in meter if input voltage increases to 180 Vrms at 50 to 2400 Hz for a period of 150 milliseconds maximum.
Dielectric	Withstands the application of 600 Vrms (room) and 350 Vrms (altitude) between the terminals and the case
Insulation Resistance	MIL-STD-202, Method 302, Condition B
Operational Accuracy	+/- 0.1% (Model 7001), +/- 1 Count models (7002 and 7003)
Electromagnetic Compatibility	MIL-STD-461, Methods RE102 and CE102
Input Signal (Model 7003)	Logic 0: 0 to 0.5V, Logic 1: 3.3 to 5.5V, Pulse on/off: 1 msec min.
Output Signal	Logic 0: 0 to 0.2V, Logic 1: 3.3 to 6.6V, Serial binary coded decimal format

Models	Part #	Military P/N	Description	Mounting	Voltage	Maximum Power
	7001PC-005	M7793/13-1	Elapse Time Indicator 5VDC	PCB	4.75-10VDC	2mW
	7001PC-028	TBD	Elapse Time Indicator 28VDC/26VAC	PCB	10-34VDC/20-30VAC	50mW/25mW
	7001PC-115	TBD	Elapse Time Indicator 115VAC	PCB	75-150VAC	50mW
	7001NT-005	M7793/16-1	Elapse Time Indicator 5VDC	Panel	4.75-10VDC	2mW
	7001NT-028	M7793/14-1	Elapse Time Indicator 28VDC/26VAC	Panel	10-34VDC/20-30VAC	50mW/25mW
	7001NT-115	M7793/15-1	Elapse Time Indicator 115VAC	Panel	75-150VAC	50mW
	7002PC-005	TBD	Event Counter 5VDC	PCB	4.75-10VDC	2mW
	7002PC-028	TBD	Event Counter 28VDC/26VAC	PCB	10-34VDC/20	50mW
	7002PC-115	TBD	Event Counter 115VAC	PCB	75-150VAC	50mW
	7002NT-005	TBD	Event Counter 5VDC	Panel	4.75-10.0VDC	2mW
	7002NT-028	TBD	Event Counter 28VDC/26VAC	Panel	10-34VDC/20-30VAC	50mW/25mW
	7002NT-115	TBD	Event Counter 115VAC	Panel	75-150VAC	50mW
	7003PC-005	TBD	Pulse Counter 5VDC	PCB	4.75-10VDC	2mW
	7003PC-028	TBD	Pulse Counter 28VD/26/VAC	PCB	10-34VDC/20-30VAC	50mW
	7003PC-115	TBD	Pulse Counter 115VAC	PCB	75-150VAC	50mW
	7003NT-005	TBD	Pulse Counter 5VDC	Panel	4.75-10.0VAC	2mW
	7003NT-028	TBD	Pulse Counter 28VDC/26VAC	Panel	10-34VDC/20-30VAC	50mW/25mW
	7003NT-115	TBD	Pulse Counter 115VAC	Panel	75-150VAC	50mW

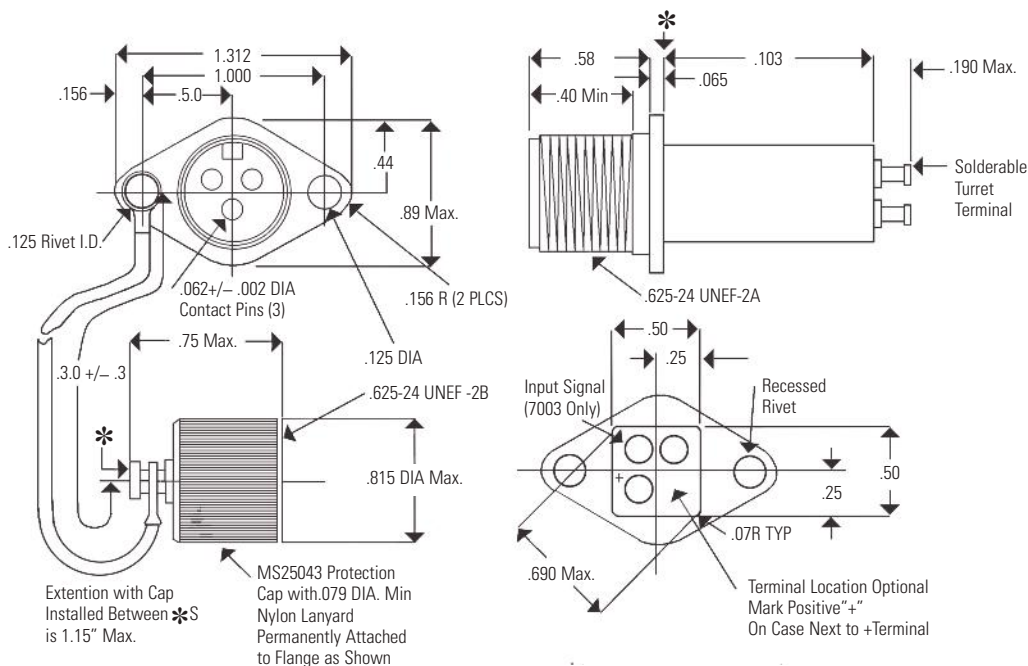
## 7000 Series Solid State Elapse Time Indicators and Counters

### Pin Assignment

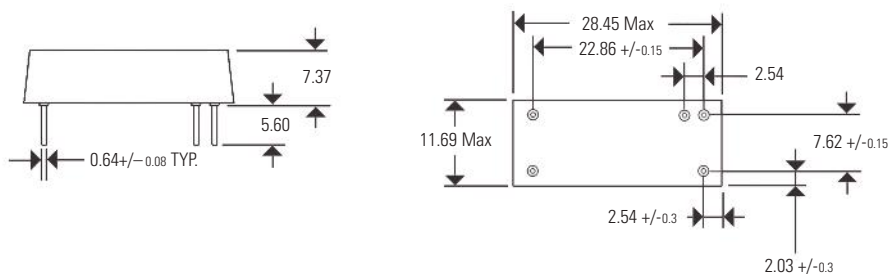
1. Input power from reader
2. Data output
3. 5VDC, 28VC, 26VAC or 115VAC depending on model
4. Common or Pulse Input (model 7003 only)
5. Common



## Panel Mount Unit



## PC Board Mount Unit



## Data Format

