

# SOLID STATE DIGITAL HOURMETERS & COUNTERS

## 700 SERIES



### DESCRIPTION

The Curtis 700 Series are highly reliable solid state hour meters and counters that offer an unprecedented combination of patented technology, performance, reliability and value.

**MODEL 700:** 2-Wire Hour Meter, displays only when powered. Available in AC/DC.

**MODEL 701:** 3-Wire Hour Meter, has a provision or continuous display. Available in AC/DC and DC-only.

**MODEL 703:** Pulse Counter. Available in AC/DC and DC-only.

### APPLICATIONS

A wide variety of industrial and commercial applications, including scheduled maintenance, warranty and leasing – for medical equipment, transport and industrial vehicles and other industrial equipment.

### FEATURES

- All-8's LCD function test: each digit displays an eight for one second after power-up.
- Attractive 6-digit LCD 5mm or 7mm high digits (7mm with optional backlighting) are much easier to read than electro-mechanical meters, which have only 3mm high digits.
- Silent operation – no moving parts. Eliminates annoying gear and motor noise.
- Exceptional reliability due to nonvolatile memory (EEPROM) which retains data for 25+ years.
- Wide voltage ranges, for example, one unit can be powered from 75 to 270 VAC anywhere between 48 and 440 Hz – ideal for distribution and worldwide markets without having to stock multiple model types.
- Electrical reset (optional).
- Available in ten case styles – all fit in standard hour meter/counter cutouts.
- Multiple mountings available – Metal U-bracket, "U" clamp/stud (D, Q, R and S cases), flange mount with hardware (F, T, G, J cases), or mounting clip (G, L, Y, Z, cases).
- Backlit units allow external illumination control, i.e., on/off or dimmer (12VDC only).
- Flashing hourglass icon indicates when the hour meter is accumulating time.
- Memory will arm only when power has been applied for five seconds (with no loss of time or counts).
- Low power consumption.
- UL and CE recognized.

# 700 SERIES

## SPECIFICATIONS

Case Style	Bezel Shape	Lens Material	Case Material	IP Rating Front/Rear	Termination	UL <sup>5</sup> /CE	Suggested Panel Cutout m
D	Rectangular	Acrylic	ABS	65/50	3/16" Spade	Yes	45.0 x 22.2
F/T	Hexagonal	Acrylic	ABS	65/65	Spade <sup>7</sup>	Yes	36.8 x 24.1
G	Hexagonal	Acrylic	ABS	65/65 <sup>1</sup>	Packard (2 pin) <sup>2</sup>	Yes	36.8 x 24.1
J	Hexagonal	Acrylic	ABS	65/65 <sup>1</sup>	Packard (4 pin) <sup>3</sup>	Yes	36.8 x 24.1
L	Rectangular	Polycarbonate	Polycarbonate	65/40	Molex <sup>4</sup>	Yes	36.8 x 24.1
Q	Round	Glass	Polycarbonate	65/50 <sup>6</sup>	1/4" Spade	Yes	ø52 (ø2-1/16)
R (5mm)	Round	Glass	Polycarbonate	65/50 <sup>6</sup>	3/16" Spade	Yes	ø52 (ø2-1/16)
R (7mm)	Round	Glass	Polycarbonate	65/50	1/4" Spade	Yes	ø52 (ø2-1/16)
S	Square	Glass	ABS	52/50	1/4" Spade	Yes	45.0 x 45.0
Y	Rectangular	Acrylic	ABS	65/65 <sup>1</sup>	Packard (4 pin) <sup>3</sup>	Yes	36.8 x 24.1
Z	Rectangular	Acrylic	ABS	65/65	1/4" Spade	Yes	36.8 x 24.1

Display 6 digit LCD, 5 or 7mm high, 6 o'clock viewing angle

Range & Resolution Hour meters: 99,999.9 hours  
Counters: 999,999 counts

Accuracy Hour meters: 0.1%  
Counters: ±1 count

Humidity 95%, non-condensing at 38°C

Operating Temperature -40°C to +85°C (-40°F to +185°F)

Storage Temperature -50°C to +85°C (-58°F to +185°F)

Mechanical Shock SAE J 1378, 55g

Mechanical Vibration SAE J 1378, 20g

Operating Frequency (AC powered units) 48 to 440 Hz

Memory Main power must be applied for 5 seconds to arm memory (with no loss of time/counts).  
EEPROM, data retained for 25+ years without power.

Current Consumption (Power Terminals) 0.5mA max. @ 5VDC (0512D models)  
0.8mA max. @ 12VDC (1248D models)  
1.0mA max. @ 120VAC  
2.0mA max. @ 230VAC

Input Signal (DC-only) Counters (703 only): 500 Hz. max., 50% duty cycle (1ms low, min., between consecutive highs).

Input Signal (AC/DC) Hour meters (701 only): Power must be applied for 0.5s, min., to accumulate time.  
Counters (703 only): 1 Hz. max., 50% duty cycle (500ms low, min., between consecutive highs)

Reset 50ms min. at operating voltage. Main power must be applied for a minimum of 250ms prior to reset signal.

### NOTES:

1. Mating connector must be installed.
2. Equivalent to Delphi-Packard connector P/N 12162000 2-pin.
3. Equivalent to Delphi-Packard connector P/N 15336035 4-pin.
4. Equivalent to Molex connector P/N 43045-0412.

5. UL files AU1841 and E45175.

6. R(5mm) and Q housings also available in a 65/65 version (see model encodement).

7. F= 1/4", T= 3/16"

# 700 SERIES

## MODEL ENCODING

700	R	R	001	O	0512D0612A
Model	Case Style	Resetability	Additional Feature	Logo*	Operating Voltage
<b>700</b> = (2-wire hour meter, AC/DC only)	D F/T G <sup>1</sup>	<b>R</b> = Electrically resettable  <b>N</b> = Non-resettable	<b>001</b> = 5mm, non-backlit display (Standard)  <b>091</b> = Epoxy filled unit (moisture resistant, Q, R (5mm), cases only)  <b>601</b> = 7mm, backlit display (R or S case only)	<b>O</b> = Curtis Logo  <b>N</b> = No Logo	<b>0512D</b> = 5–12VDC nom., 4.75–15VDC abs. <b>1248D</b> = 12–48VDC nom., 9–60VDC abs. <b>48150D</b> = 48–150VDC nom., 36–185VDC abs. <b>0512D0612A</b> = 5–12VDC nom., 4.75–15VDC abs. 6–12VAC nom., 5–15VAC abs. <b>1248D2060A</b> = 12–48VDC nom., 9–60VDC abs. 20–60VAC nom., 15–75VAC abs. <b>48150D100230A</b> = 48–150VDC nom., 36–185VDC abs. 100–230VAC nom., 75–270VAC abs.
<b>701</b> = (3-wire hour meter, AC/DC or DC-only)	J L <sup>2</sup> Q R		<b>701</b> = 7mm, non-backlit display (R or S case only)		
<b>703</b> = (3-wire counter, AC/DC or DC-only)	S Y Z				

1. Only model offered: 700GN001N1248D2060A

2. Only models offered: 700LN001N1248D2060A, 700LN001N48150D100230A and 701LN001N1248D

\* Custom logos are available

Backlight available on 7mm R or S cases only.

## WIRING GUIDE

Case Style	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
D, F, T, J, Q, R (5mm), Y & Z	V+	V-	I	R	N/A	N/A
G	V+	V-	N/A	N/A	N/A	N/A
L	V+	V-	I	N/A	N/A	N/A
R (7mm), S	V+	V-	R	I	L	N/A

V+ Operating voltage

V- Common (ground)

I Enable (Optional, use operating voltage to power this pin to record elapsed time (701) or increment count (703).)

R Reset (Optional, supply with operating voltage when unit is to be reset to 0.)

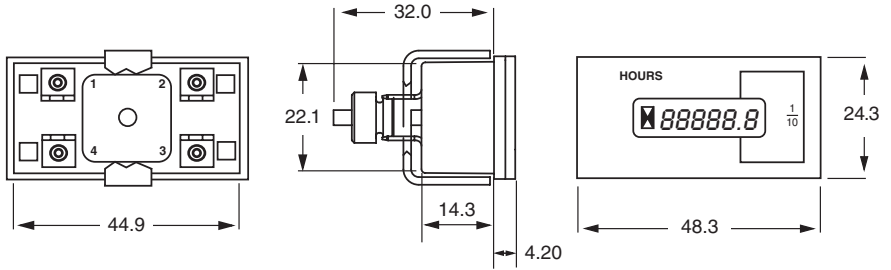
L Lighting control (Optional, 9–15VDC absolute only, regardless of operating voltage.)

NC No connection

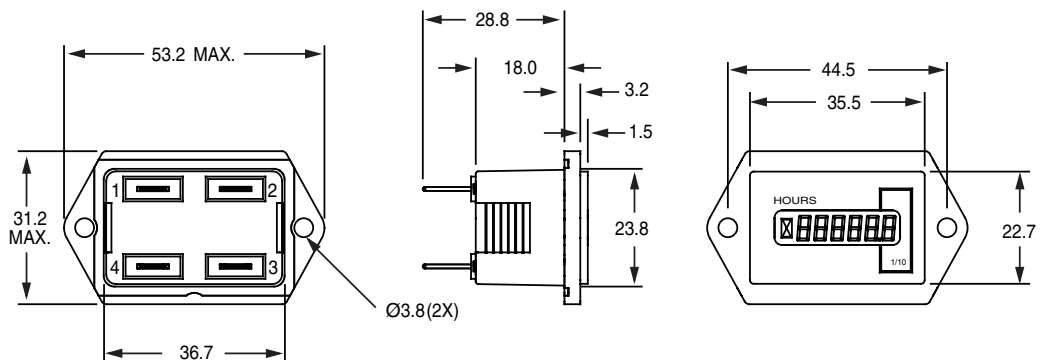
# 700 SERIES

## DIMENSIONS mm

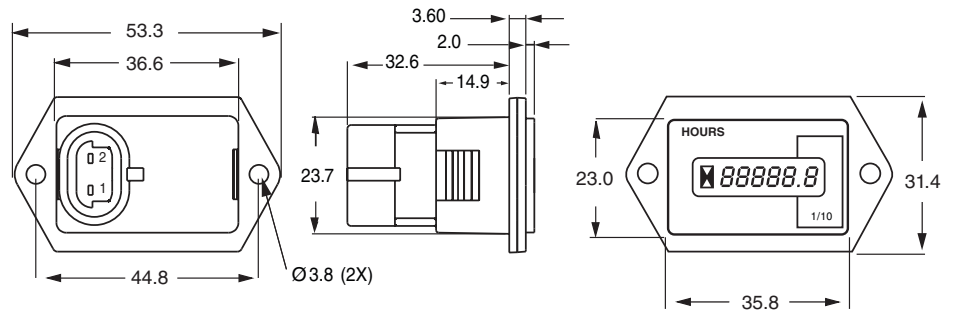
### Case Style D



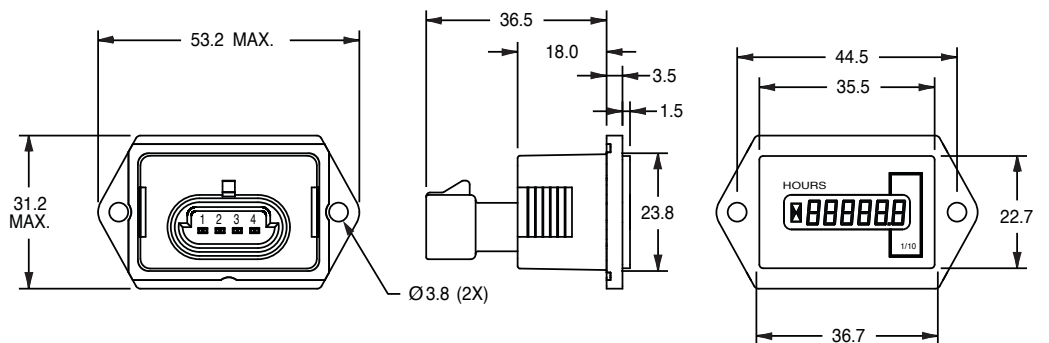
### Case Style F/T



### Case Style G



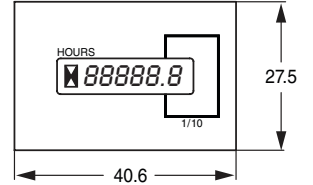
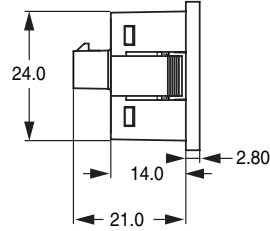
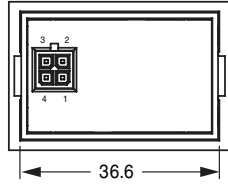
### Case Style J



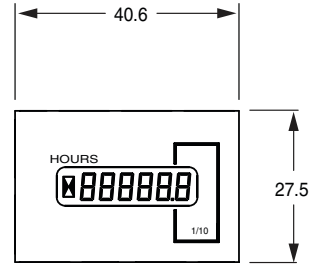
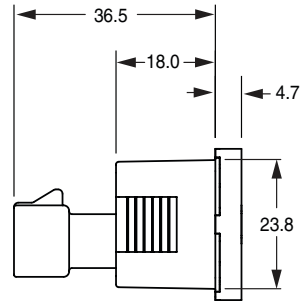
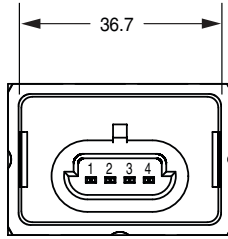
# 700 SERIES

## DIMENSIONS mm continued

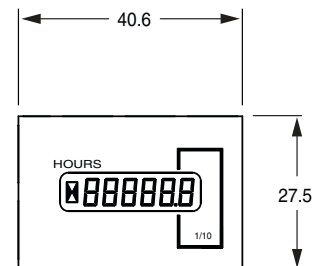
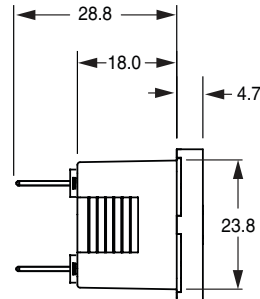
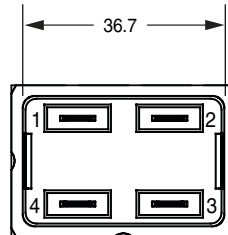
### Case Style L



### Case Style Y



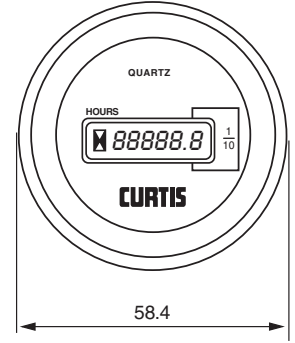
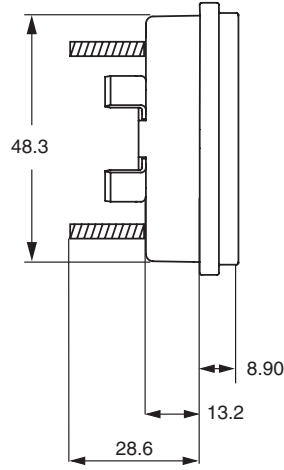
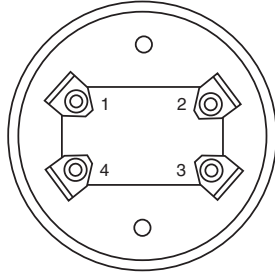
### Case Style Z



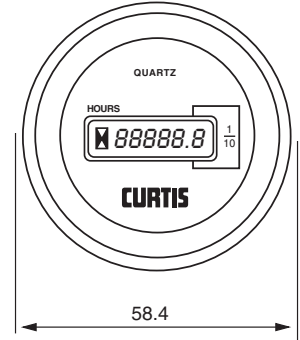
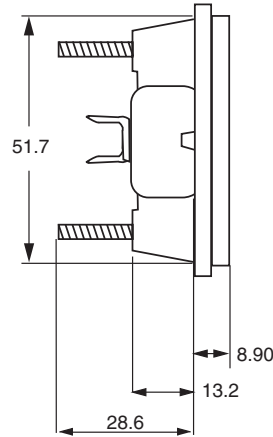
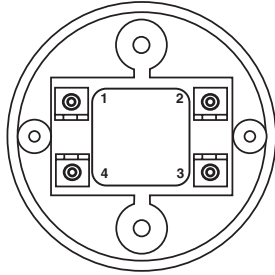
# 700 SERIES

## DIMENSIONS mm continued

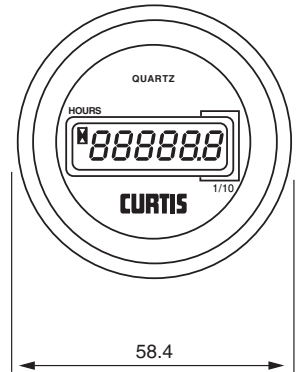
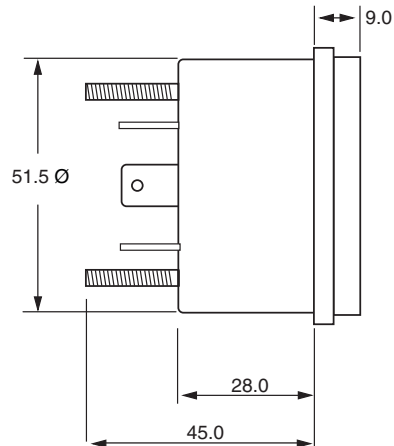
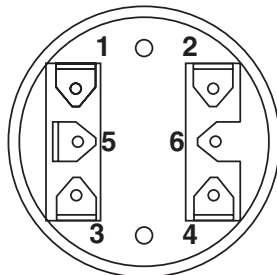
### Case Style Q



### Case Style R (5mm)



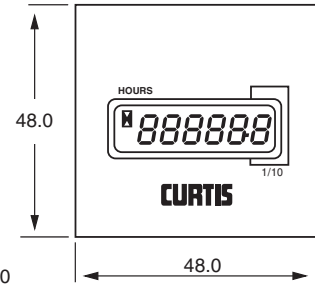
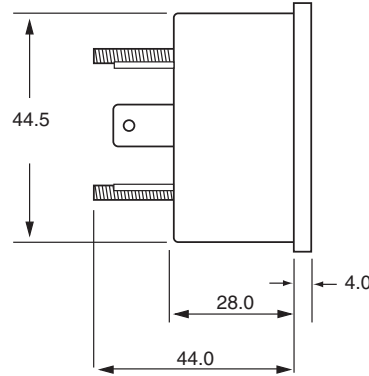
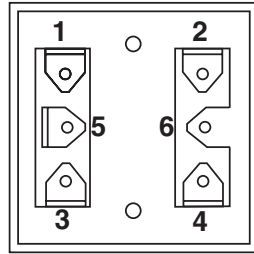
### Case Style R (7mm)



# 700 SERIES

## DIMENSIONS mm continued

### Case Style S



## 700 SERIES HARDWARE

Case Style	F,T		G,J		D,Q,R,S		Y		Z	
Shipping Style	Carton Bulk		Carton		BulkCarton		BulkCarton		BulkCarton	Bulk
Steel Slot Screws	2	2	2	2						
Steel Hex Nuts		2		2		2				
Plastic Thumb Nuts	2		2		2					
Lock Washers	2	2	2	2	2	2				
Faston Terminals	4				4				4	
Plastic Bracket							1	1	1	1
Metal U Bracket					1	1				

Note: L case does not require hardware.

## ACCESSORIES

Curtis P/N	Description
17607303	Plastic mounting bracket for F, T, G, J, Y & Z models
12237003	External Dash Mounting Bracket for 52mm round gauges
13210001	Meter Guard (1 box of 10 meter guards) R & Q models
13515801	3-Hole Mounting Kit, for Ø2.53" mounting holes
13515905	3-Hole Mounting Kit, for Ø2.44" mounting holes
15336002	Gasket for F, T, G and J cases
15336003	Gasket for R (5mm) case
15336005	Gasket for Q and R (7mm) cases

**WARRANTY** Two year replacement warranty.

