

# **Shimpo Instruments Digital Panel Counter Model DT-6CL**

## **Instruction Manual**



### **Features**

The Shimpo model DT-6CL panel mount counter is a 6-digit LED microprocessor-controlled unit that counts in ascending or descending order rapidly and accurately. Here are some of its outstanding features:

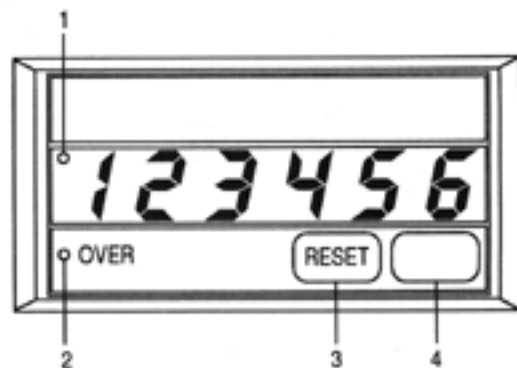
- Mounts easily — no brackets, screws or any other hardware required.
- Accepts voltages from 85 to 265VAC.
- Large 6-digit LED display.
- 10-year EEPROM memory back up.

### **Operational Precautions**

- If the unit is used in a caustic environment, we suggest you use an NEMA 4X enclosure.
- Keep unit free of vibration and shock.
- When installing unit, keep power and sensor wires separate. Tie cable shield to terminal E (earth ground).
- After inserting wires, tighten terminal screws securely.

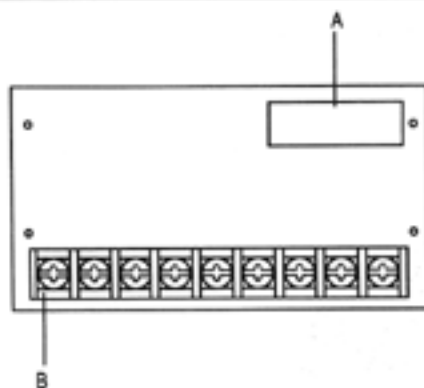
### **Parts and Functions**

#### **Front Panel**

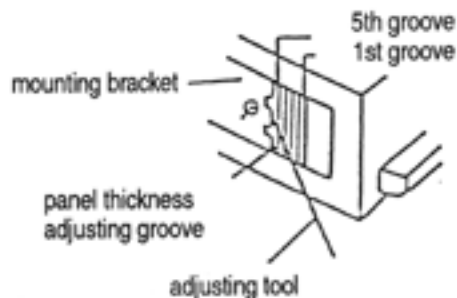


- 1 Minus display lamp
- 2 Over lamp
- 3 Reset key
- 4 Decal space

## Back Panel



- A DIP switch  
B Terminal strip



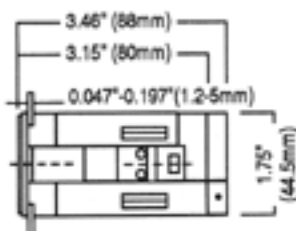
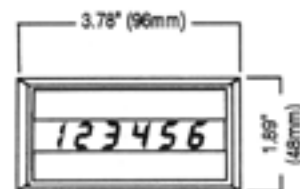
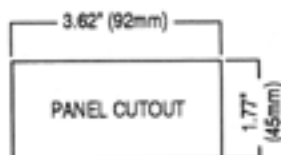
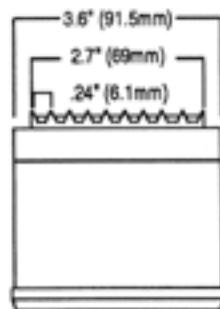
## Mounting Bracket Thickness

- 1.2 – 1.6 mm  
1.8 – 2.5 mm  
2.8 – 3.6 mm  
4.0 – 4.5 mm  
5.0 mm

## Adjustment Groove

- 5th groove  
4th groove  
3rd groove  
2nd groove  
1st groove

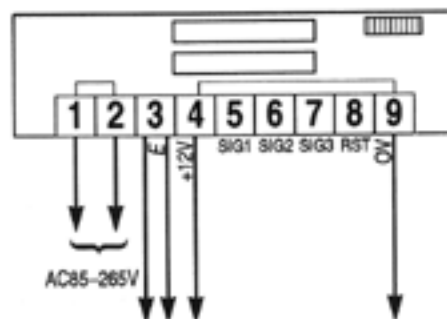
## Dimensions



## Removing Unit

From the rear of the counter, alternately push the unit from the left to right. This will free it for easy removal.

## Connections



## Mounting Unit

Our 1/8 DIN case design eliminates the need for brackets and screws for installation. With the counter in a level position, insert it into the panel cutout. Gently push the face of the unit until the front bezel locks into place. If the counter case is loose, adjust the integral bracket with the enclosed tool.

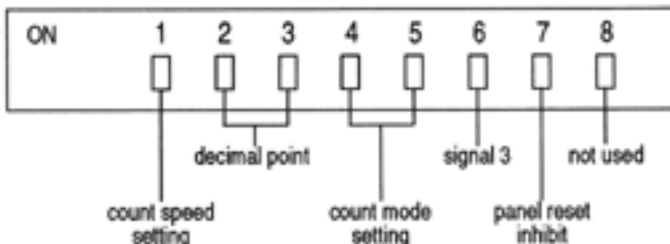
- 1&2 Line voltage input. AC voltage must be between 85 and 265V.
- 3 Earth ground. Connect all cable shielding to this terminal.
- 4 12VDC 100mA max. This sensor power supply is for any sensor that requires external power.
- 5 Signal 1: pulse input.
- 6 Signal 2: pulse or command input.
- 7 Signal 3: count inhibit or display hold.
- 8 External reset input.
- 9 OV signal ground.

# Sensors

Shimpo offers a large selection of sensors that can be used with the DT-6CL. The chart below shows the sensor that will meet your application needs. Please call us for more information.

Sensor	Type	Frequency of RPM Range	Terminal Connections	Temperature Range
BI2-S12	Proximity switch	0-2kHz	4,5,9 (up count) 4,6,9 (down count)	-13 to +158F
SE-G	Proximity gear sensor	0-8kHz	4,5,9 (up count) 4,6,9 (down count)	-4 to +158F
RS-220H	Retro-reflective	0-500Hz	4,5,9 (up count) 4,6,9 (down count)	+14 to +140F
MCS-625	Retro-reflective	0-250Hz	4,5,9 (up count) 4,6,9 (down count)	-22 to +120F
RE1B-60C	Rotary pulse generator	0-5000rpm	4,5,9 (up count) 4,6,9 (down count)	+14 to +122F
RE2B-30C	Rotary pulse Generator	0-5000rpm	4,5,9 (up count) 4,6,9 (down count)	+14 to +122F
Switch Closure	Relay or solenoid	<20Hz	5,9 (up count) 6,9 (down count)	

## DIP Switch Settings



When DIP switch settings have been completed, press the reset button while the power is on and the unit is not counting. This will enable the new settings.

### Setting 1: Count Speed Setting

Set switch to:

- OFF: If input is >20Hz.
- ON: If input is ≤20Hz.

### Settings 2 and 3: Decimal Point Setting

Set switches 2 and 3 in the following combinations for the desired decimal position:

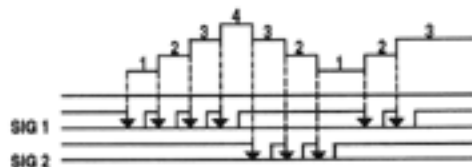
Switch 2	Switch 3	Decimal point
OFF	OFF	0
ON	OFF	0.0
OFF	ON	0.00
ON	ON	0.000

### Settings 4 and 5: Count Mode Setting

Set switches 4 and 5 in the following combinations for these modes:

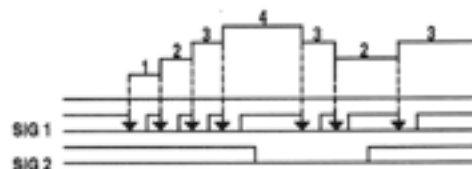
Mode	Switch 4	Switch 5
1 - Up/down counting	OFF	OFF

Ex: If pulses are inputted into SIG1, up count.  
If pulses are inputted into SIG2, down count.



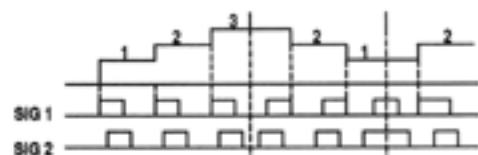
Mode	Switch 4	Switch 5
2 - Command mode	ON	OFF

Ex: If SIG2 is high and SIG1 is active, up count.  
If SIG2 is low and SIG1 is active, down count.



**Mode**                      **Switch 4**   **Switch 5**3 – 90 degree phase  
difference mode

OFF                      ON

Ex: If SIG1 leads SIG2 by 90 degrees, up count.  
If SIG1 lags SIG2 by 90 degrees, down count.**Setting 6: SIG3 Mode Setting**

When set to:

- OFF: SIG3 works as a count inhibit.
- ON: SIG3 works as a display hold signal.

**Setting 7: Panel Reset Prohibit**

When set to:

- OFF: Reset key on front panel is operational.
- ON: Reset key operation on front panel is inhibited.

**Reset Key**

Pressing the reset key will make the counting value zero.

**External Reset**

This enables the counter to be reset from a remote location using the terminals in the rear of the counter.

**Overscale**When the measuring value passes **999,999** the over lamp will turn on. If the measuring value passes **1,999,999** error message **E-10** will be displayed.**Minus Display**

This LED acts as a minus sign when all six digits are used on the display.

**Error Codes**

Display	Type of Error	What to Do
EE-10	Count has exceeded $\pm 1,999,999$	Press reset
EE-12	Memory readout error	Press reset

**Specifications**

Function	
Counter type	Bidirectional (up/down)
Display range	-999,999 to +999,999
Measuring range	-1,999,999 to +1,999,999
Display	6-digit, 7-segment LED, 0.56" high (14.2mm)
Frequency (input)	10kHz square wave, 20Hz switching contacts
Decimal point	Selectable (0, 0.0, 0.00, 0.000)
Memory	EEPROM, 10-year back-up
Voltage output	12VDC $\pm 5\%$ (100mA max.) to power sensors
Applicable sensors	Rotary pulse generator, magnetic pick-up, proximity switch, retro-reflective
Ambient temperature	32°–113°F (0–45°C)
Power consumption	2W
Voltage requirement	85–265VAC (60/50Hz)
Dimensions	3.46"L x 1.88"H x 3.78"W; (88L x 48H x 96W) mm; 1/8 DIN cut out
Input signal: amplitude	High: 4.5–30VDC, Low: 0–1VDC, 10ma (sink)
Weight	0.55 lbs. (250g)