![trumeter innovation by design]

Self Powered, Preset Counter
Replaces Electro-Mech. Counters

Features

- Internal Battery Powered (8 years)

- Programmable N.O. or N.C. Relay Output

- Replaces Electro-Mechanical Units

- 6 Digit LCD Display

- Main & Lower LCD Displays Indicate Counter and Preset Values without External Power

- Add or Subtract Count Control

- Optically Isolated Count and Reset Inputs

Applications:
Batch counting and control, coil winding and wire cutting, length measurement, packing-line control, stop/start control and numerical position control.

Specifications:

Display: 2 lines of 6 digits, black on silver background. Main display .275" (7mm); indicates count value. Bottom display .157" (4mm); shows preset set point, "output on" and "low battery" indicators.

Preset Point: Single preset, user selectable: count up with output at preset (add), or count down with output at 0 (sub).

Reset: Manual, electrical and automatic. User selectable for reset to zero (add) or reset to the preset value (sub).

Inputs: (Count & Reset)
Count Speed: Max. 35 Hz (min. 14 mSec On/Off)
Reset: Edge Triggered, Minimum pulse 50 mSec
Optocoupled (STD) KAT-SP:
        Low: Open or 0 to 2V
        High: 12-250 VAC/VDC
        Input Impedance: 100 kΩ
Switch Closure (Option S) KAT-SPS:
        Low: 0 to 0.8V
        High: Open or 2 to 5 VDC
        Sink Current 5 mA, (DO NOT EXCEED 5 VDC)

Programming: Via six front-panel digit keys (one key assigned to each digit) and one front-panel reset key.

Output: Relay (N.O. or N.C.) self latching, contacts rated at 2A @ 30VDC, 0.5A @ 240VAC resistive load. In the manual reset mode (loop off), the output will remain latched until reset. In the auto-reset (loop on) mode the output will remain "on" for a user selectable time delay (100 to 500 msec.).

Batteries: Two internal, customer replaceable 3V lithium batteries provide power and data retention for up to 8 years (calculated at 5×10^6 power operations @ 25°C).

Battery Monitor: Subsidiary display shows LO-BAT when batteries require replacement.

Noise Immunity: To VDE 843, Part 4, Severity 3

Temperature Range:
Operating: +14°F to +122°F (-10°C to +50°C)
Storage: -4°F to +140°F (-20°C to +60°C)

Protection: Front Panel is NEMA 4/IP65 sealed

Weight: Approx. 80 g

Approvals: CE Approved

Operating The Counter:

Setting or Resetting
Press the red SET button or apply a pulse to the reset input to set the counter to zero (add) or the preset (sub).

Presetting
The preset is displayed on the lower line of the display. To set the preset, use the 6 keys assigned to the 6 digits. The unit must be reset to accept the new preset value.

Overflow and Underflow
In the adding mode the overflow is 999999 to 0; In the subtracting mode it is 0 to 999999. The output signal remains unaffected.

Lo-Bat Indicator
When the battery charge is too low, "Lo-bat" will appear on the lower line of the display and flash in 2 second intervals. When "Lo-bat" is indicated, the batteries should be replaced as soon as possible.
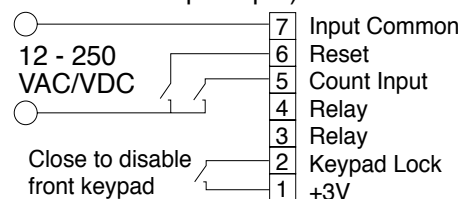
Changing the Batteries
Push the battery cover back and remove the batteries. Insert the replacement batteries making certain that the polarity is correct (observe "-" terminal on PCB).

Note: If the battery replacement takes longer than 7 minutes, the count, preset and program parameters will be lost. If this occurs, the unit will automatically enter the programming mode upon battery installation.
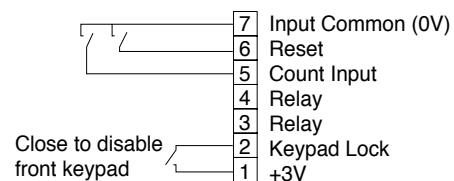
KAT-SP Wiring Connections:
(Standard KAT-SP Opto Input)

	7 Input Common
12 - 250	6 Reset
VAC/VDC	5 Count Input
	4 Relay
	3 Relay
Close to disable	2 Keypad Lock
front keypad	1 +3V

KAT-SPS Wiring Connections:
(Optional KAT-SPS Switch Closure Input)

|	
	7 Input Common (0V)
	6 Reset
	5 Count Input
	4 Relay
	3 Relay
Close to disable	2 Keypad Lock
front keypad	1 +3V

Entering Programming Mode:

Press the reset key together with the keys of decade 5 and 6 to enter the programming mode. On the lower line of the display the message "INIT" appears together with a down counter subtracting from 5 to 0 seconds. If the keys are released when the counter equals 5, the display will enter an LCD test. Releasing the keys at any time when the counter is greater than one, the display will return to the operating mode. If the keys are released after reaching zero, the programming mode will become active.

Setting the Operational Parameters:

Key 1 allows the user to choose requested functions within the parameters (i.e. add/subtract). Key 6 selects the displayed choice and advances to the next selection. After the last parameter "dp", the program jumps to the beginning. To exit the programming mode, the user must step through all the parameters (from beginning to end) with NO CHANGES at all.

NOTE: Whenever the programming mode is entered, the program jumps to the beginning, the previous parameters will be lost and the count and preset will be zeroed. If a battery change takes longer than 7 minutes, the display will automatically advance to the programming mode.
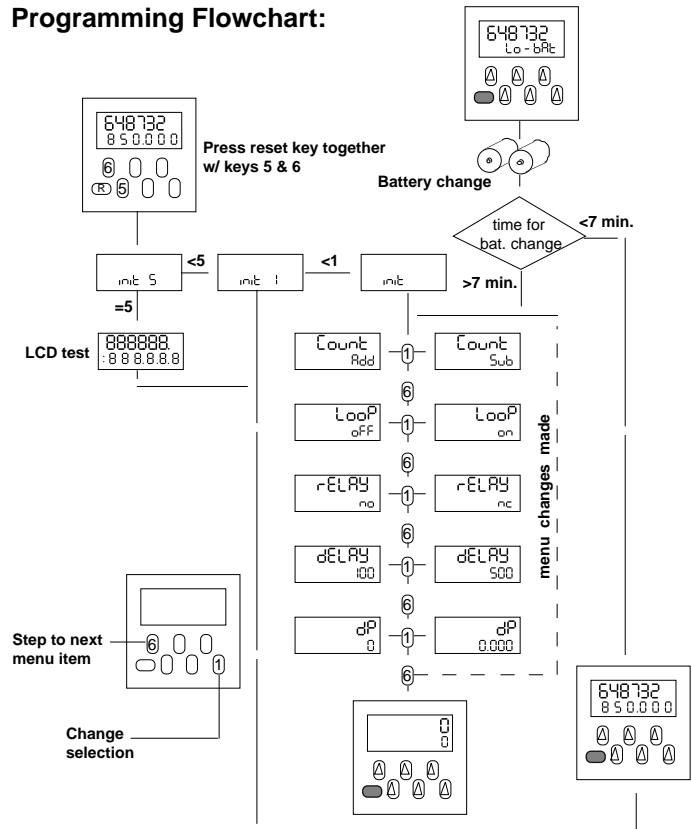
Dimensions:
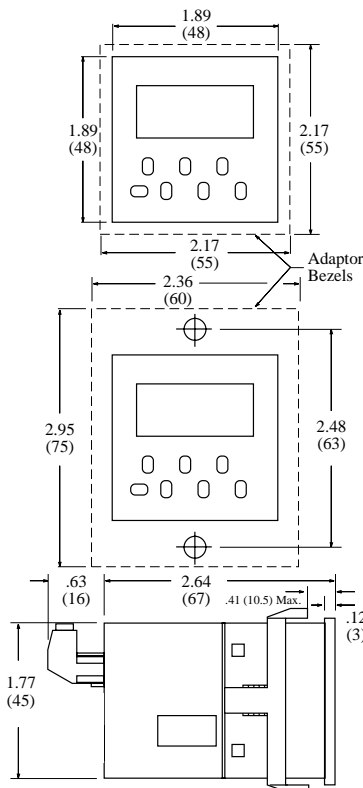
Panel Cutout:

Bezel Size	Cutout
1.89 x 1.89 (48 x 48)	1.77 x 1.77 (45 x 45)
2.17 x 2.17 (55 x 55)	1.97 x 1.97 (50 x 50)
2.95 x 2.36 (75 x 60)	1.77 x 1.77 (45 x 45)
	1.97 x 1.97 (50 x 50)
	w/ Screw Holes

Adaptor bezels supplied:
 2.17 x 2.17 (55 x 55) or 2.95 x 2.36 (75 x 60)

Programming Flowchart:

Menu Prompts:

Count Add	Counter will count up and output at preset
Count Sub	Counter will count down from preset and output at zero
LooP on	Counter will Auto-reset at preset (add); zero (sub).
LooP oFF	Counter will continue to count past preset (add); zero (sub).
rELAY nc	Relay is normally closed (opens at preset)
rELAY no	Relay is normally opened (closes at preset)
dELAY 100-500	The output delay (duration) in msec., ignore if LooP oFF.
dP	Decimal Point location 0 to 0.000

How To Order:

KAT-SP (opto input)
KAT-SPS (switch closure input)
N7 - Explosion proof housing (see accessories section)
KATSP-BAT Replacement Battery (2 required)