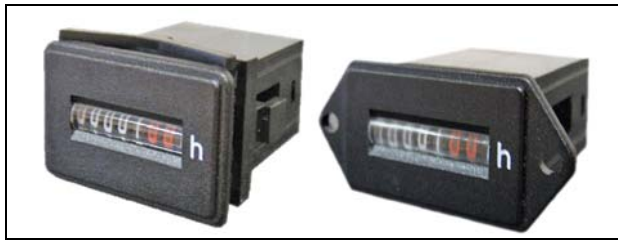


# HK-30 DC Series



## FEATURES:

- Low Cost
- DC or **NEW Multifunction 12-240V AC/DC** Input Voltage
- CE mark, UL recognized (DC only) & RoHS
- Rugged Design
- Long Life
- Non-reset

## DESCRIPTION:

Hour meters are designed for the determination and monitoring of operating time, warranty period and maintenance intervals on electrically driven machines and devices. Typical applications are in mechanical processing and woodworking, in the textile and paper industry, on central heating boilers, electrical furnaces, power drives and rectifiers, etc. The HK-30's small size makes it ideal when space is limited. When connected in parallel to a control circuit the hour meter will only work during the operation of a machine or device.

## SPECIFICATIONS:

**Supply voltage:** 6-12V, 12-36V, 36-80V or 110V ( $\pm 10\%$ )  
**NEW 12-240V (12-240 AC/DC)**

**Mounting:** **R** panel fork clamp, **S** panel screws **D** DIN rail

**Connection:** **S** flat pins 6.3x0.8 mm with screw terminal, **P** flat pins 6.3x 0.8 mm or screw terminals (mounting **D** Only)

**Protection class:** IP 40 and IP 20 (mounting **D**) front; IP 00 – connection. Optional IP 67 front

**Power consumption:** DC 9mA, AC/DC 10mA

**Operating temp. range:** -10°C to +55°C DC, -10°C to +70°C AC/DC

**Reading:** 1/10 hour (6 min.)

**Counting range:** 999,999.9 hours

**Dimensions:** mm, 1 mm = .03937"

**Number of digits:** 6 integers, 1 decimal

**Digit height:** 4 mm

**Digit color:** - integers: white - decimals: red

**Housing color:** black

**Approval:** UL recognized (DC only), CE mark & RoHS

## Ordering Information:

HK3012-36VDCRS P40

HK3012-36VDCDIP20

HK3012-240VRSIP40

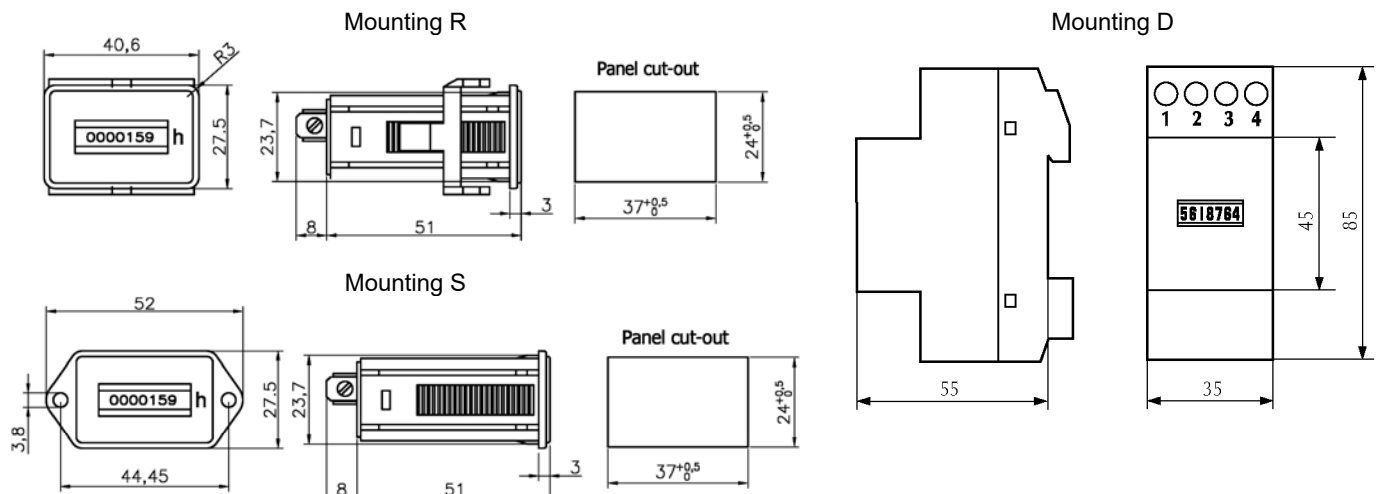
HK3012-240VSSIP40

Other models available upon request

MODEL	<b>HK30</b>	<b>12-36VDC</b>	<b>S</b>	<b>S</b>	<b>IP40</b>
CODE	1	2	3	4	5

## CODE

1. Series: HK30
2. Voltage: 6 - 12, **12-36**, 36 - 80 or 110VDC  
**NEW 12-240V (12-240 AC/DC)**
3. Mounting: R, S or D
4. Connection: **S**, **P** (Blank if Mounting **D**)
5. Protection: **IP40** front, IP 20 (mounting **D**), optional IP67 front (transparent housing)



# RS-84-5 Ratchet Counter



## FEATURES:

- Highly visible 5 digits
- Long mechanical life
- Reset Knob
- Great price
- High speed

## DESCRIPTION:

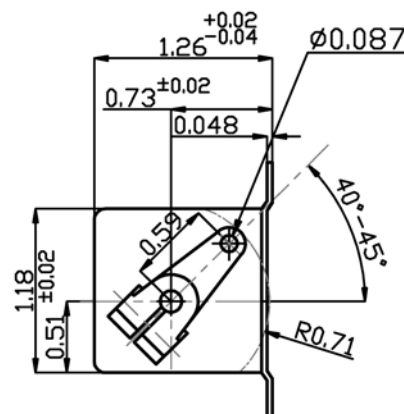
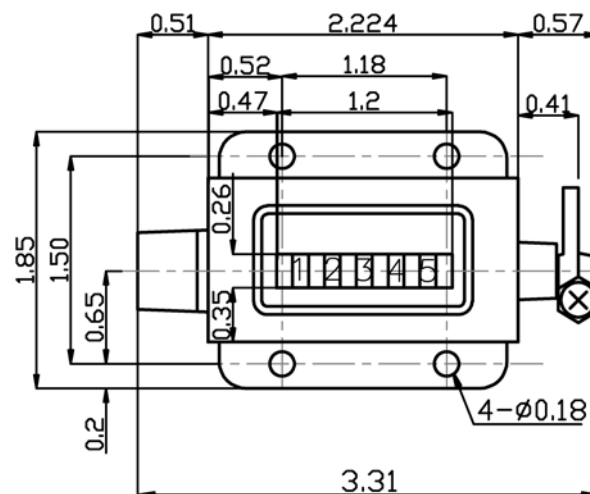
The RS-84-5 offers highly visible 5 digits, small footprint and long mechanical life. Its price and features make it well suited for OEM equipment. This ratchet counter adds 1 count for every 40°~45° stroke of lever.

Typical applications include tool machines, winding machines, automatic machines, presses, shearing machines, printing machines, measuring of tape, rope, extruded material, etc...

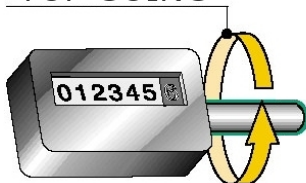
## SPECIFICATIONS:

Model	RS-84-5
Function	Ratchet: Adds 1 count for every 40°~45° stroke of lever.
Digits	5, high contrast white on black
Figure Size	0.2" x 0.1"
Shaft Diameter	.157"
Shaft Position	Right side
Direction	Top going
Reset	Knob: rotating of knob
Max. Speed	400 cpm
Housing	Metal base; Plastic cover, lens and reset knob
Weight	2.5 oz

## DIMENSIONS: inches



TOP GOING



SHAFT OUTPUT  
RIGHT

## Mechanical Counter

# 136 Series

### FEATURES:

- Heavy duty design
- Push button reset
- Double sided shaft
- Revolution or rotary direct drive versions
- Long mechanical life
- High speed



### DESCRIPTION:

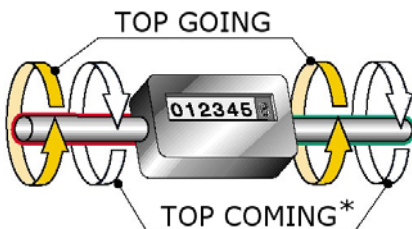
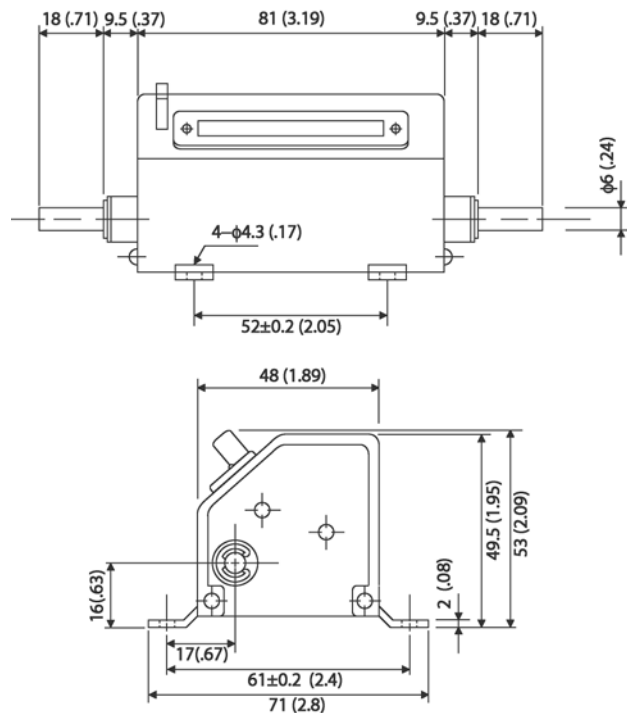
The larger 136 Series offers high visibility and durability. Its push button reset, rugged design, high-speed operation and double sided shaft make them ideal for many industrial applications.

Typical applications include tool machines, winding machines, automatic machines, presses, shearing machines, printing machines, measuring of tape, rope, extruded material, etc...

### SPECIFICATIONS:

Series	LB-136-5	RL-136-5
Function	Revolution 1:1, 1 count per revolution, bi-directional	Direct drive 10:1, 10 counts per revolution bi-directional
Digits	5	
Figure Size	6 x 4mm (.24 x .16")	
Shaft Diameter	6 mm (.24")	
Shaft Position	Double sided	
Direction	Top Going (Top Coming available upon request)	
Reset	Push button (do not reset while in motion)	
Max. Speed	3000 rpm	300 rpm
Max. Torque	10 mN-m max	20 mN-m max
Housing	Metal	
Weight	311g (11oz)	311g (11oz)

### DIMENSIONS: mm (inches),



\* available upon request

### Ordering Information:

Model	Description
LB-136-5	1:1, Top Going
LB-136-5(II)	1:1, Top Coming (special order)
RL-136-5	10:1, Top Going
RL-136-5(II)	10:1, Top Coming (special order)

# TC-48 Series



## FEATURES:

- Highly visible backlit LCD display
- Visual alerts when output status changes
- 2 output relays
- PNP/NPN selectable DC-voltage inputs
- Up/down, add/subtract and quadrature inputs
- 12VDC supply for powering sensor and encoders
- Keypad lock out functions
- Communications for connecting to PC/HMI
- Free Software to connect to a PC
- Low cost

## DESCRIPTION:

This series is a 6-digit multifunction programmable preset Timer/Counter/Tachometer with a communication interface. This series can be connected to a PC for programming and logging of data. It has RS-232, RS-485, RS-422 Serial Communications and supports Modbus protocol.

The Timer has 10 output modes and 10 timing ranges in 3 configurations.

The Counter has 12 output and 5 input modes in 6 configurations and scaling for displaying of specific units or lengths.

The Tachometer displays rate per second (Hz) in 4 output modes.

## SPECIFICATIONS:

General Specifications		
Model	TC-Pro482CRA or TC-Pro482CRA-D (din rail mount)	TC-Pro482CRD or TC-Pro482CRD-D (din rail mount)
Function	Digital timer/counter/tachometer	
Supply voltage	100-240VAC (50/60Hz) $\pm 10\%$ ,	24VDC $\pm 10\%$ (permissible ripple:20% (p-p) max.)
Power consumption	Approx. 6.2VA at 264VAC, Approx. 5.1VA at 26.4VAC, Approx. 2.4W at 24VDC	
Mounting method	Panel mounting (45 x 45mm cutout) / "D" din rail or surface mount	
External connections	Screw terminals, tightening torque 0.5 N•m Max.	
Display	6 Digit 7-segment, LCD display, Present value: 9-mm-high characters, white, Set value: 4-mm-high characters, white	
Input method	NPN No-voltage (contact closure) input ON impedance: 1k $\Omega$ max. (leakage current: 5-20 mA at 0 $\Omega$ ) ON residual voltage: 3V max. OFF impedance: 100k $\Omega$ min. PNP Voltage Input High (logic) level: 4.5 to 30 VDC Low (logic) level: 0 to 2 VDC (Input resistance: approx. 4.7 k $\Omega$ )	
Output method	Relay, (optional transistor output)	
Output	2 SPST NO (SPDT DIN rail mount version) contact output: 5A at 250 VAC, resistive load ( $\cos\Phi=1$ ). Minimum applied load: 10 mA at 5 VDC (failure level: P, reference value). Optional transistor output: NPN open collector, max. 100mA at 30 VDC Residual voltage: 1.5 VDC max. (approx. 1V)	
Output time	0000.01-9999.99s	
Output supply	12VDC (+15%), 80mA	
Keypad lockout	Yes, 5 key protection modes	
Sensor waiting time	250 ms max. (control output is turned OFF and no input is accepted during sensor waiting time)	
Memory backup	EEPROM (overwrites: 100,000 times min.) that can store data for 10 years min.	
Ambient temperature	Operating: -10 to 55°C, Storage: -25 to 65°C, (with no icing or condensation), 25% to 85% humidity	
Case	Black plastic	
Attachments	Waterproof gasket, flush mounting adapter ( panel mount version only)	
Life expectancy	Mechanical: 10,000,000 operations min. Electrical: 100,000 operations min. (5 A at 250 VAC, resistance load)	
Weight Approx.	168g	

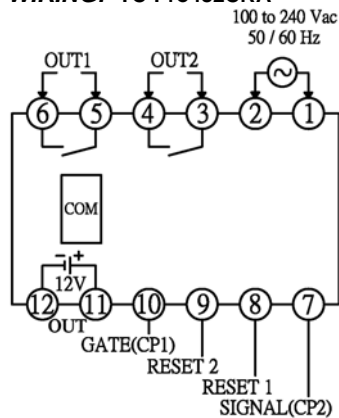
Timer Specifications	
Functions	Timer, Twin Timer or 2-Stage Timer
Time range	99.999s (0.001-s unit), 9999.99s (0.01-s unit), 99999.9s (0.1-s unit)999999s (1-s unit), 9999min59s (1-s unit), 99999.9min (0.1-min unit),999999min (1-min unit), 9999h59min (1-min unit), 99999.9h (0.1-h unit), 999999h (1-h unit)
Timer mode	Elapsed time (UP), Remaining time (down) (selectable)
Input signals	Signal, reset, gate
Signal, Reset, Gate	Minimum input signal width: 1 or 20 ms (selectable, same setting for all inputs)
Power reset	Minimum power-opening time: 0.5 s (exceptA-3, b-1 and F mode)
Reset system	Power reset (exceptA-3, b-1and F mode), external and manual reset
Output modes	A, A-1, A-2, A-3, b, b-1, d, E, F, Z, ton or toff

## Preset Timer/Counter/Tachometer

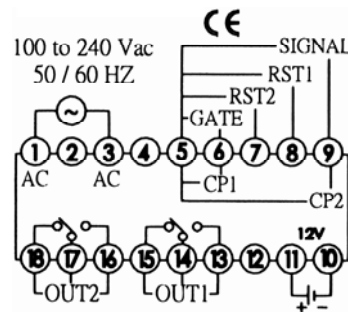
Counter Specifications	
Function	1-stage counter, 2-stage counter, total counter, batch counter, dual counter, and tachometer (selectable)
Digits	6 digits, PV/SV (-99,999~999,999)
Input signal	CP1, CP2, reset1, and reset 2
Max. counting speed	30 Hz or 5kHz (selectable, ON/OFF ratio 1:1), common setting for CP1 and CP2
Input mode	Increment, decrement, command, individual, and quadrature
Reset input	Minimum input signal width: 1/20 ms (selectable, same setting for all inputs)
Reset system	External, manual, and automatic reset (internal according to C,R,P and Q mode operation)
Output modes	N,F,C,R,K-1,P,Q,A,K-2,D,L,H
Prescaling function	Yes (000.001~999.999) multiplier
Decimal point	Yes (rightmost 3 digits)

Tachometer Specifications	
Function	Tachometer (Hz)
Digits	6 digits
Input signal	CP1, reset1, and reset 2
Max. counting speed	30 Hz or 5kHz (selectable, ON/OFF ratio 1:1), common setting for CP1 and CP2
Reset input	Minimum input signal width: 1/20 ms (selectable, same setting for all inputs)
Reset system	External, manual (Holds the displayed value and outputs)
Output modes	High-Low, Area, High-high, Low-Low
Average processing	none, average of 2,4 or 8 measurements
Auto zero	Programmable 00.01 - 99.99s
Startup time	Programmable 00.00 - 99.99s
Decimal point	Yes (rightmost 3 digits)

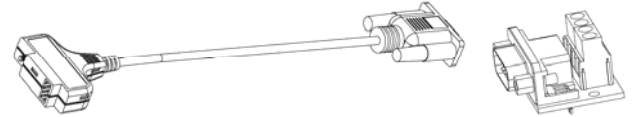
### WIRING: TC-Pro482CRA



### TC-Pro482CRA-D (DIN Rail)



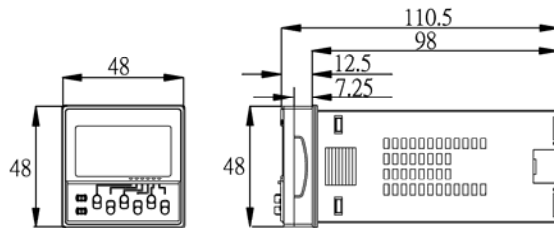
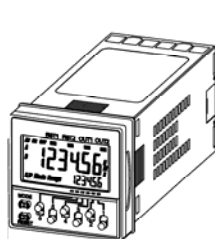
### ACCESSORIES:



Model	Description
Panel Mount Version Cables 1.5m	
<b>CAB-090A232</b>	9-pin Female D-sub cable for RS-232
<b>CAB-090A485</b>	9-pin Female D-sub cable for RS-485
<b>CAB-090A422</b>	9-pin Female D-sub cable for RS-422
<b>ADP-090401</b>	9-pin male D-sub adapter for CAB-...
Din Rail Mount Version Cables 1.5m	
<b>CAB-090B232</b>	9-pin Female D-sub cable for RS-232
<b>CAB-090B485</b>	9-pin Female D-sub cable for RS-485
<b>CAB-090B422</b>	9-pin Female D-sub cable for RS-422

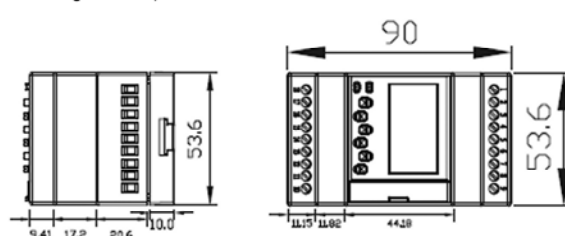
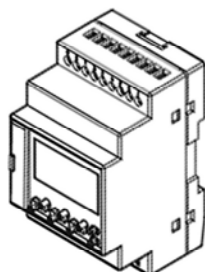
### DIMENSIONS: mm

#### Dimensions

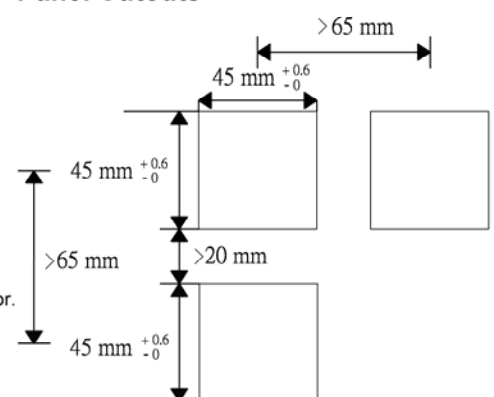


Note:

- The mounting panel thickness should be 1.5 mm.
- It is recommended that the gap between units is at least 20mm to allow for the mounting adaptor.
- M3 terminal screw (effective length: 8mm)



#### Panel Cutouts



# TH Series



## FEATURES:

- Low cost
- 7 Digit LCD display
- Battery powered Elapse Timer
- Screw terminal adaptor
- Accepts a wide range of inputs
- Small panel foot print

## DESCRIPTION:

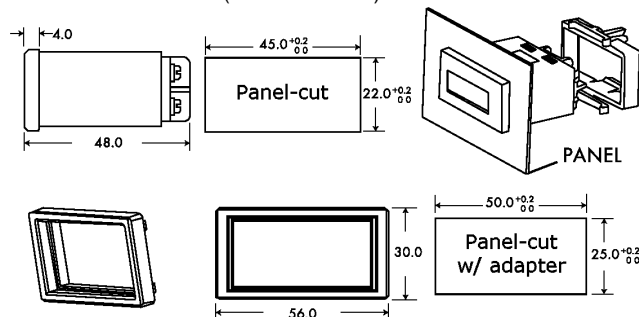
The TH Series are panel mount timers that are powered by a small, lithium battery. This series of elapse timers can time in minutes or hours. They accept a Non-voltage contact closure / NPN open collector, PNP 6-24VDC or 90-240V AC/DC. The unit times as long as it is receiving an input and stops when the input is stopped or removed. The front reset button can be disabled if desired.

## SPECIFICATIONS:

Model	TH-7NM	TH-7NH	TH-7PM*	TH-7PH	TH-7AM	TH-7AH
Function	Timer Min.	Timer Hour	Timer Min.	Timer Hour	Timer Min.	Timer Hour
Display	7 digit, LCD, 8mm (0.315") high characters Range 999999.9					
Power Supply	Internal lithium battery					
Input	Non-voltage contact closure / NPN open collector		PNP, Hi (6-24Vdc) Low (4-0 Vdc)		AC/DC 90-240V	
Input speed	10 Hz Max					
Reset	1) Non-voltage contact closure / NPN open collector 2) Front push button		1) PNP, Hi (6-24Vdc) Low (4-0 Vdc) 2) Front push button		1) Non-voltage contact closure / NPN open collector 2) Front push button	
Housing	Plastic					
Mounting	Panel mount					
Connection	Screw terminals					
Temperature	Operating: -32 to 122°F (-0 to 50°C) Storage: -4 to 140°F (-20 to 60°C)					
Humidity	35% to 85% RH					
Approval	CE					

\* Upon request

## DIMENSIONS: mm (1mm = .03937")

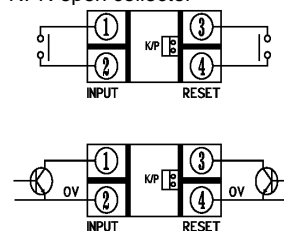


The included mounting adapter allows the counter to be fitted into existing 1" x 2" cutouts.

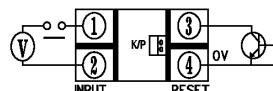
**WARNING:** THIS UNIT CONTAINS A LITHIUM BATTERY AND MUST NOT BE DISPOSED OF IN A FIRE OR EXPOSED TO TEMPERATURES OUTSIDE THE RANGE -20°C TO +70°C

## WIRING:

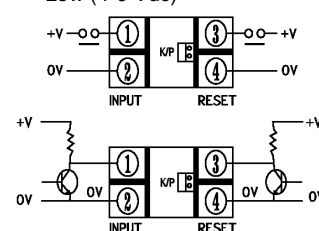
Non-voltage contact closure / NPN open collector



Input: Voltage, AC/DC 90-240V input  
Reset: Non-voltage contact closure / NPN open collector



PNP, Hi (6-24Vdc)  
Low (4-0 Vdc)



To disable the reset button, open the K/P jumper at the rear of the counter.