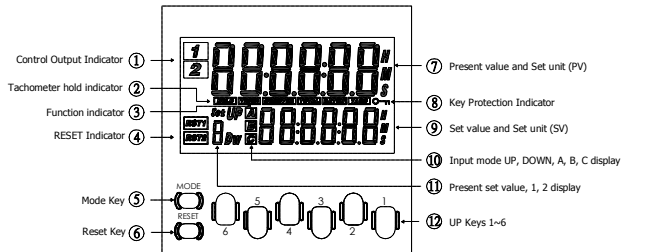


TC-Pro483 Multi-function digital LCD Timer/Counter/Tachometer

- Highly visible display with backlight negative transmissive LCD
  - Visual alert when output status changes
  - Timer function can settable with Timer, Twin Timer, 2-Stage Timer
- Counter function can settable with 1-Stage Counter, 2-Stage Counter, Total Counter, Batch Counter, Dual Counter, Twin Counter
- Tachometer Function can settable with 1 Input, 2 Independent measurements, 2 Error Inputs, 2 Absolute Ratio, 2 Error Ratio Inputs
- Multi-Status function in Timer and 1-Stage Counter
- PNP/NPN switchable DC-voltage input
  - New function: Setting parameter limit mode, Output times count mode
  - Applied to connect PC/HMI

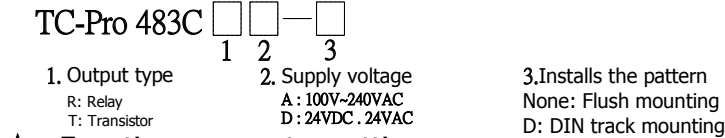
Nomenclature



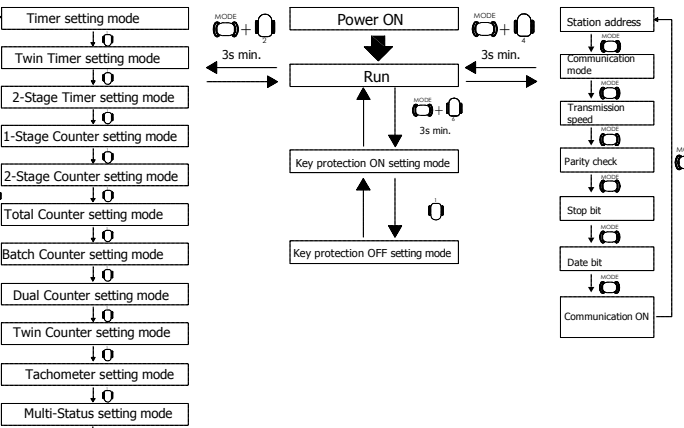
Specifications

Rated	Supply voltage	100~240VAC(50/60HZ), 24VAC(50/60HZ), 24VDC(permissible ripple: 20%(p-p)max.)
	Operating voltage range	85% to 110% rated supply voltage(24VDC; 90% to 110%)
Mounting method	Power consumption	Approx. 6.2VA at 264VAC, Approx. 5.1VA at 26.4VAC, Approx. 2.4W at 24VDC
	Mounting method	Flush mounting, DIN track mounting
External connections	Terminal screw tightening torque	0.5 Nm Max.
	Display	7-segment, LCD display Present value: 9-mm-high characters, white Set value: 6.2-mm-high characters, white
Timer mode	Digits	6 digits ( at counter mode PV range: -99999~99999, SV range: -99999~99999)
	Time range	999.999 S ( 0.001-sec unit ) · 9999.99 S ( 0.01-sec unit ) · 99999.9 S ( 0.1-sec unit ) · 999999 S ( 1-sec unit ) · 9999 M 59 S ( 0.01-sec unit ) · 99999.9 M ( 0.1-min unit ) · 999999 M ( 1-min unit ) · 9999 H 59 M ( 1-min unit ) · 99999.9 H ( 0.1-hr unit ) · 999999 H ( 1-hr unit )
Counter mode	Timer mode	Elapsed time (UP), Remaining time (down) (selectable)
	Input signals	SKINAL · RST · GATE
Dual Counter	Output modes	Timer A · A-1 · A-2 · A-3 · b · b-1 · d · B · F · Z · S · Twin Timer ton · toff · ton · toff and 2-Stage Timer A & B-1
	One-shot output time	0000.01 ~ 9999.99 sec
Tachometer mode	Reset system	Power reset (exceptA-3, b-1, F, ton-1 and toff-1 mode), external and manual reset
	Power reset	Minimum power-opening time: 0.5 s (exceptA-3, b-1, F, ton-1 and toff-1 mode)
Input method	Decimal point adjustment	Yes (rightmost 3 digits)
	Input mode	Increment, decrement, command, individual, and quadrature
Reset system	Input method	CP1 · CP2 · RST1 · RST2
	Output modes	N · P · C · R · K-1 · P · Q · A · K-2 · D · L · H
Control output	One-shot output time	000.001 ~ 999.999 sec
	Counting speed	30 Hz, 1KHz, 5KHz or 10KHz (selectable, ON/OFF ratio 1:1), common setting for CP1 and CP2
External power supply	Prescaling function	Yes (000.001~999.999 sec)
	Reset system	External, manual, and automatic reset (internal according to C,R,P and Q mode operation)
Key protection	Input method	No-voltage input/voltage input (switchable) No-voltage input ON impedance: 1kΩ max. (leakage current: 5~20 mA when 50V) ON residual voltage: 3V max. OFF impedance: 100kΩ min.
	Reset input	Voltage Input High(logic) level: 4.5 to 30 VDC Low(logic) level: 0 to 2 VDC (Input resistance: approx. 4.7 kΩ)
Memory backup	Sensor waiting time	Minimum input signal width: 1 or 20 ms (selectable, same setting for all inputs)
	Output method	250 ms max. (Control output is turned OFF and no input is accepted during sensor waiting time.)
Ambient temperature	Control output	Relay / Transistor output
	Ambient humidity	SPDT contact output: 5A at 250 VAC, resistive load (cos Φ=1) Minimum applied load: 10 mA at 5 VDC (failure level: P, reference value) Transistor output: NPN open collector, max. 100mA at 30 VDC Residual voltage: 1.5 VDC max. (approx. 1V) Output category according to EN60947-5-1 for timers with Contact outputs (AC-15; 250V 3A / AC-13; 250V 5A / DC-13; 30V 0.5A) Output category according to EN60947-5-2 for timers with Transistor outputs (DC-13; 30V 100 mA) NEMA B300 Pilot Duty, 1/4 HP 5-A resistive load at 120 VAC, 1/3 HP 5-A resistive load at 240 VAC
Attachments	Case color	12 VDC ( ±15% ), 80 mA
	Waterproof packing, flush mounting adapter	Operating: -10 to 55°C (with no icing or condensation) Storage: -25 to 65°C (with no icing or condensation)

Model number legend



Function parameter setting



List of Settings

Parameter symbol	Parameter name	Default value	Set value
FUNC	Timer (TIM)/ Twin Timer (TWIN)/ 2-Stage Timer (PST)/ 1-Stage Counter (1CNT)/ 2-Stage Counter (2CNT)/ Total Counter (TCNT)/ Batch Counter (BCNT)/ Dual Counter (DCNT)/ Twin Counter (TWN)/ Tachometer (TACO)/ Multi-Status (MIW)	TIM	

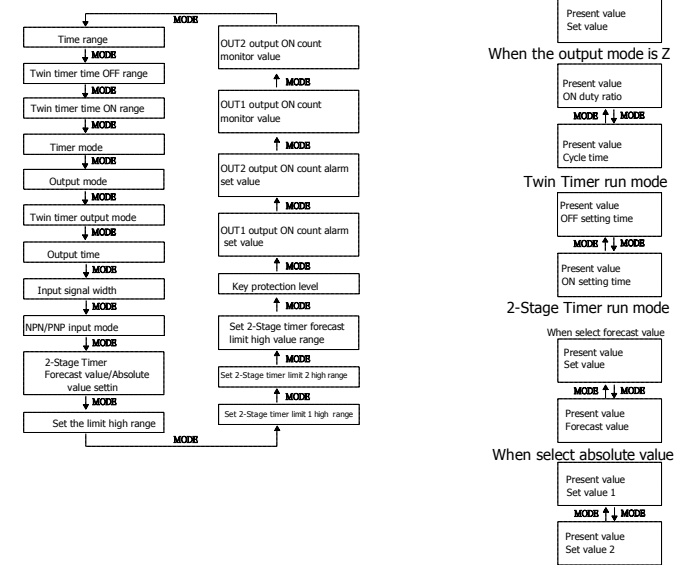
Communication setting mode

Parameter name	Parameter symbol	Unit	Setting range	Default value	Set value
Station address (Hex)	ADDR	---	01 至 FF	01	
Communication mode	MODE	---	RTU / ASCII	RTU	
Transmission speed	BAUD	Bps	1200 / 2400 / 4800 / 9600 / 14400 / 19200 / 28800 / 38400 / 57600 / 115200	9600	
Parity Check	PARI	---	NONE / ODD / EVEN	NONE	
Stop bit	STOP	bit	1bit / 2bit	1bit	
Date bit	DATA	bits	8bit / 7bit	8bit	
Communication OFF	COSH	---	ON / OFF	ON	

Key protection switch mode

Parameter name	Parameter symbol	Unit	Setting range	Default value	Set value
Key protection selection	KP	---	OFF · ON	OFF	

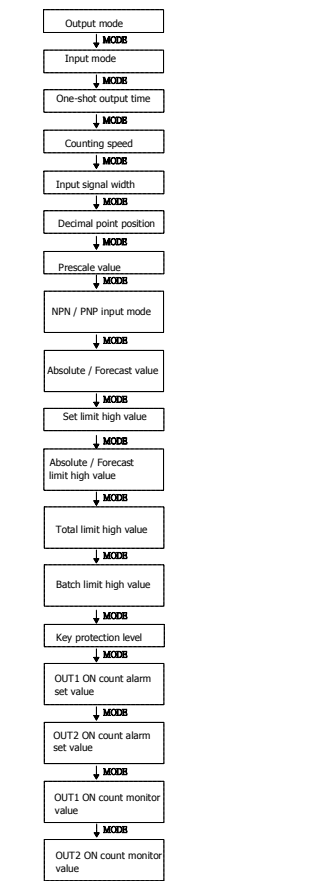
Timer operation



Timer, Twin Timer, 2-Stage Timer function setting mode

Parameter name	Parameter symbol	Setting range	Default value	Set value
Time range	TIMR	---s / ---s / ---s / ---min-s / ---min / ---min / ---h-min / ---h / ---h / ---s	---	
Twin Timer OFF time range	OFTR	same as the above	---	
Twin Timer ON time range	ONTR	same as the above	---	
Timer mode	TIMM	UP · DOWN	UP	
Output mode	OUTM	A · A-1 · A-2 · A-3 · B · B-1 · D · B · F · Z · S	A	
Twin Timer output mode	TOTM	TOFF · TON · TOPI · TONI	TOFF	
Output time	OTIM	HOLD / 0.001s ~ 999.999s	HOLD	
Input signal width	IFLT	20ms ~ 1ms	20ms	
NPN / PNP input mode	IMOD	NPN · PNP	NPN	
2-Stage Timer	SETM	ORST · ABS	ORST	
Set upper limit value	SL-H	1 ~ 999999 (999999)	999999	
Set Twin Timer upper limit value 1	SL1H	1 ~ 999999 (999999)	999999	
Set Twin Timer upper limit value 2	SL2H	1 ~ 999999 (999999)	999999	
Set 2-Stage Timer forecast upper limit value	PL-H	1 ~ 999999 (999999)	999999	
Key protection level	KYPT	KP-1 / KP-2 / KP-3 / KP-4 / KP-5 / KP-6 / KP-7	KP-1	
OUT1 ON count alarm set value	ON1A	0 ~ 999999	0	
OUT2 ON count alarm set value	ON2A	0 ~ 999999	0	
OUT1 ON count monitor set value	ON1C	0 ~ 999999		
OUT2 ON count monitor set value	ON2C	0 ~ 999999		

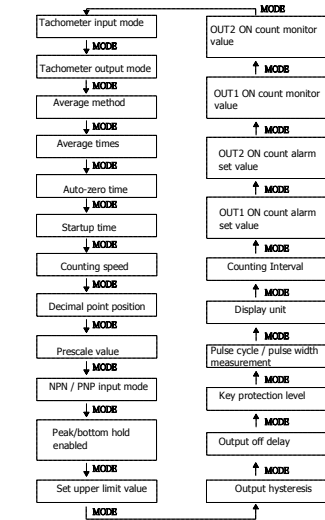
Counter operation



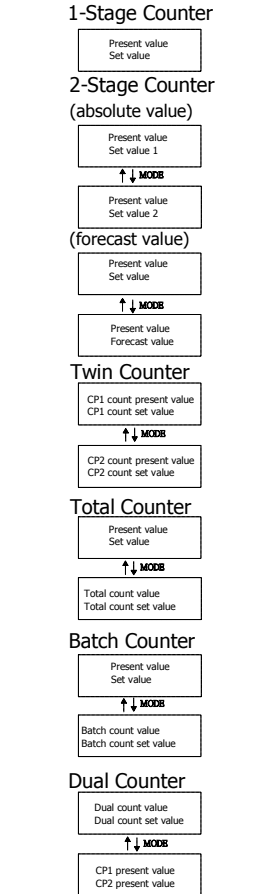
Counter function setting mode

Parameter name	Parameter symbol	Setting range	Default value	Set value
Output mode	OUTM	N/R/C/R/K-1/P/Q/A/K-2/D/L/H	N	
Input mode	CNTM	UP/DOWN/UD-A/UD-B/UD-C	UP	
One-shot output time	OTIM	000.001 ~ 999.999	000.500	
Counting speed	CNTS	30hz / 5KHz	30hz	
Input signal width	IFLT	20ms / 1ms	20ms	
Decimal point position	DP	— / --- / -- / --	---	
Prescale value	PSCL	000.001 ~ 999.999	001.000	
NPN / PNP input mode	IMOD	NPN / PNP	NPN	
Forecast / absolute value	SETM	ABS / ORST	ABS	
Set upper limit value	SL-H	1~999999	999999	
Forecast / absolute upper limit value	PL-H	1~999999	999999	
Set Total upper limit value	TL-H	1~999999		
Set Batch upper limit value	BL-H	1~999999		
Key protection level	KYPT	KP-1 / KP-2 / KP-3 / KP-4 / KP-5	KP-1	
OUT1 ON count alarm set value	ON1R	0~999999	0	
OUT2 ON count alarm set value	ON2R	0~999999	0	
OUT1 ON count monitor set value	ON1C	0~999999		
OUT2 ON count monitor set value	ON2C	0~999999		

Tachomete operation



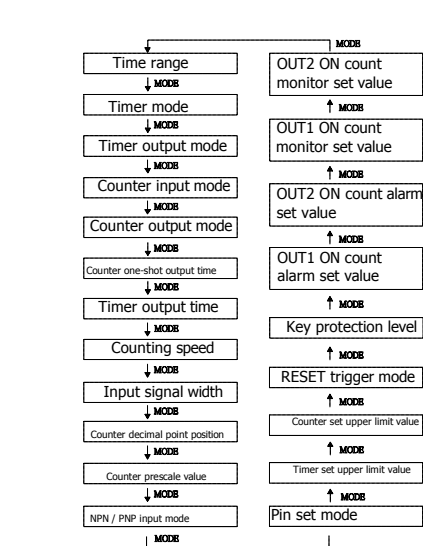
Counter run mode



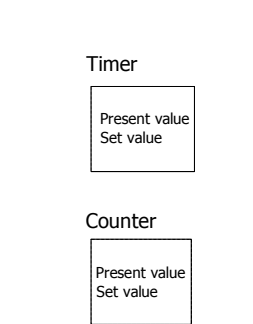
Tachometer function setting mode

Parameter name	Parameter symbol	Setting range	Default value	Set value
Tachometer input mode	TIMM	F1 / F2 / F3 / F4 / F5	F1	
Tachometer output mode	TOTM	HILD / AREA / HIHI / LOLO	HILO	
Tachometer output 1	TO1M	HI / LO	HI	
Tachometer output2	TO2M	HI / LO	HI	
Average method	AUGT	SMP / MV	SMP	
Average times	AUGN	OFF / 2 / 4 / 8 / 16	OFF	
Auto-zero time	AUTZ()	0.1s ~ 999.9s	999.9s	
Startup time	STMR	0.0s ~ 99.9s	0.1s	
Counting speed	CNTS	30Hz / 1KHz / 5KHz / 10KHz	30Hz	
Decimal point position	DP	----- / ---. / ---. / ---. / ---. / ---.	-----	
Prescale value	PSCL	0.001 ~ 999.999	001.000	
NPN / PNP input mode	IMOD	NPN / PNP	NPN	
Peak/bottom hold enabled	DHLD	OFF / ON	OFF	
Set upper limit value	SL-H	1 ~ 999999	1	
Output hysteresis	HYS	0 / 99999	0	
Output off delay	OFFD	0.00s ~ 19.99s	0.00s	
Key protection level	KYPT	KP-1 / KP-2 / KP-3 / KP-4 / KP-5 / KP-6 / KP-7	KP-1	
Pulse cycle / pulse width measurement	CALM	PHAS / WIDE	PHRS	
Display unit	UNIT	Hz / s	Hz	
Counting interval	INTV	200ms CONT	200ms	
OUT1 ON count alarm set value	ON1A	0~999999	0	
OUT2 ON count alarm set value	ON2A	0~999999	0	
OUT1 ON count monitor value	ON1C	0~999999		
OUT2 ON count monitor value	ON2C	0~999999		

Multi-Status operation



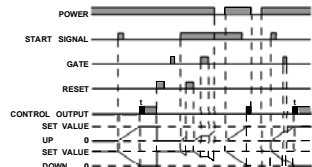
Multi-Status run mode



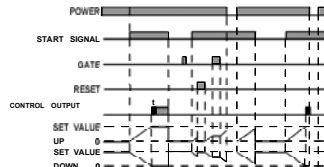
Multi-Status function setting mode

Parameter name	Parameter symbol	Setting range	Default value	Set value
Time range	TIMR	---s / ---s / ---s / ---min-s / ---min / ---min / ---h-min / ---h / ---h / ---s	---	
Timer mode	TIMM	UP / DOWN	UP	
Timer output mode	TOUTM	A / A-1 / A-2 / A-3 / B / B-1 / D / B / F / Z / S	A	
Counter input mode	CNTM	UP / DOWN / UD-A / UD-B / UD-C	UP	
Counter output mode	COUTM	N / F / C / R / K-1 / P / Q / A / K-2 / D / L / H	N	
Counter one-shot output time	OTIM	0.001 / 0.500 / 999.999	0.500	
Timer output time	OBIM	hold / 000001 / 999999	HOLD	
Counting speed	CNTS	1KHz / 5KHz / 10KHz	1KHz	
Input signal width	IFLT	20ms / 1ms	20ms	
Decimal point position	DP	--- / ---. / ---. / ---. / ---.	---	
Prescale value	PSCL	000.001 / 001.000 / 999.999	001.000	
NPN / PNP input mode	IMOD	NPN / PNP	NPN	
Pin set mode	PGFG	GATE / CP2 / RET2	GATE	
Timer set upper limit value	T SL-H	1 ~ 999999	999999	
Counter set upper limit value	C SL-H	1 ~ 999999	999999	
RESET trigger mode	RESET	ALONE / SHARE	ALONE	
Key protection level	KYPT	KP-1 / KP-2 / KP-3 / KP-4 / KP-5 / KP-6 / KP-7	KP-1	
OUT1 ON count alarm set value	ON1A	0 ~ 999999	0	
OUT2 ON count alarm set value	ON2A	0 ~ 999999	0	
OUT1 ON count monitor set value	ON1C	0 ~ 999999	0	
OUT2 ON count monitor set value	ON2C	0 ~ 999999	0	

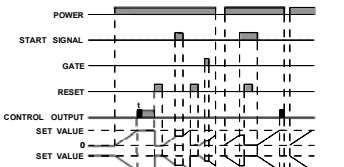
## ★Timer operation



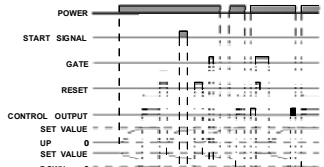
Output mode A: signal ON delay 1



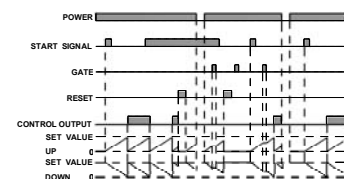
Output mode A-1: signal ON delay 2



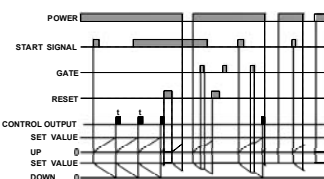
Output mode A-2: Power ON delay 1



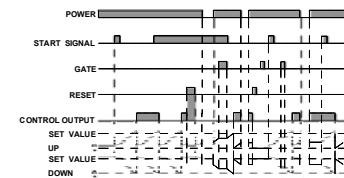
Output mode A-3: Power ON delay 2



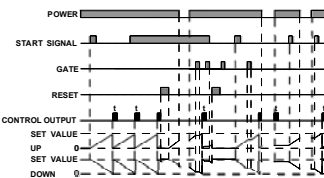
Output mode b: Repeat cycle 1



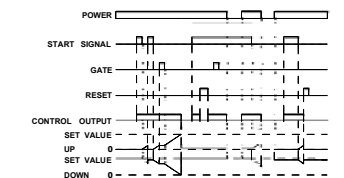
Output mode b-1: Repeat cycle 2



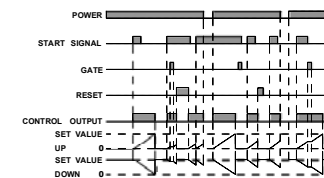
Output mode d: Signal OFF delay



Output mode E: Interval



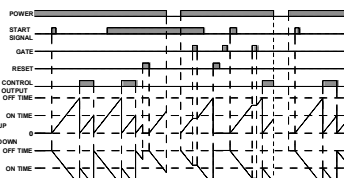
Output mode F: Cumulative



Z mode : ON/OFF - duty adjustable flicker

S Mode: Stopwatch (Timer resets when power comes ON.)

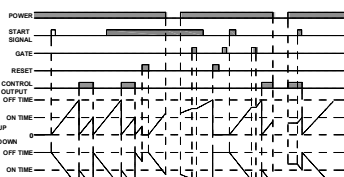
## ★ Twin Timer operation



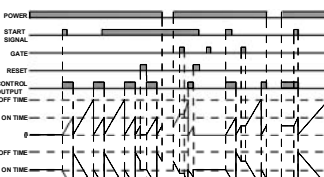
toff Mode: Flicker OFF start (I).



ton Mode: Flicker ON start (I)

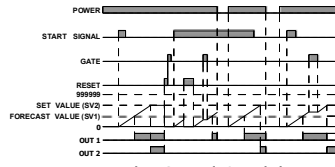


toff-1 Mode: Flicker OFF start (II)

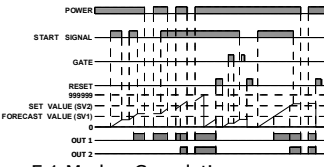


ton-1 Mode: Flicker ON start (II)

## ★ 2-Stage Timer operation

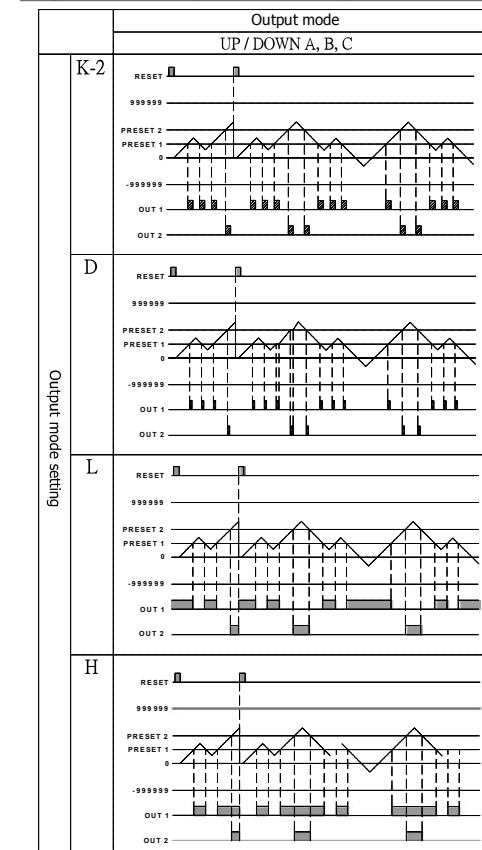
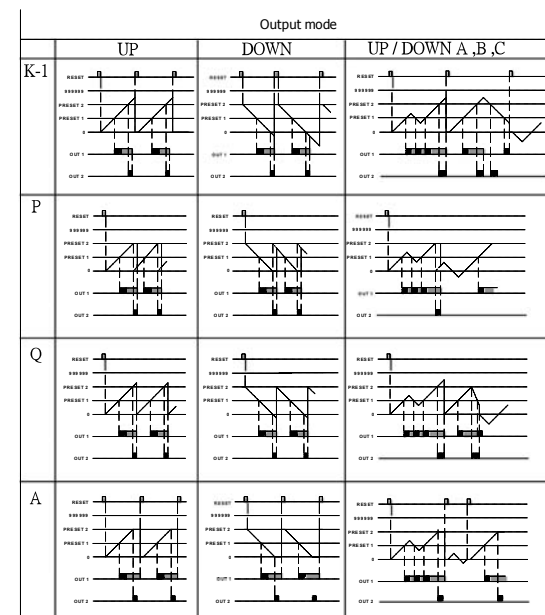
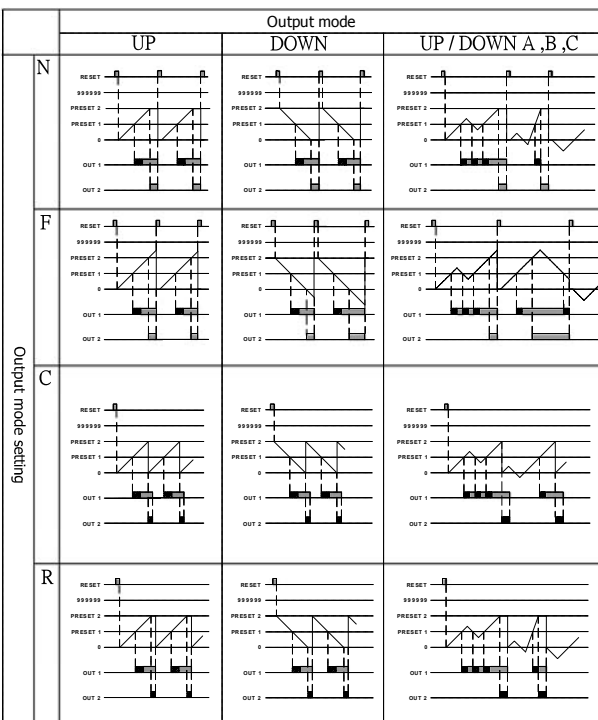
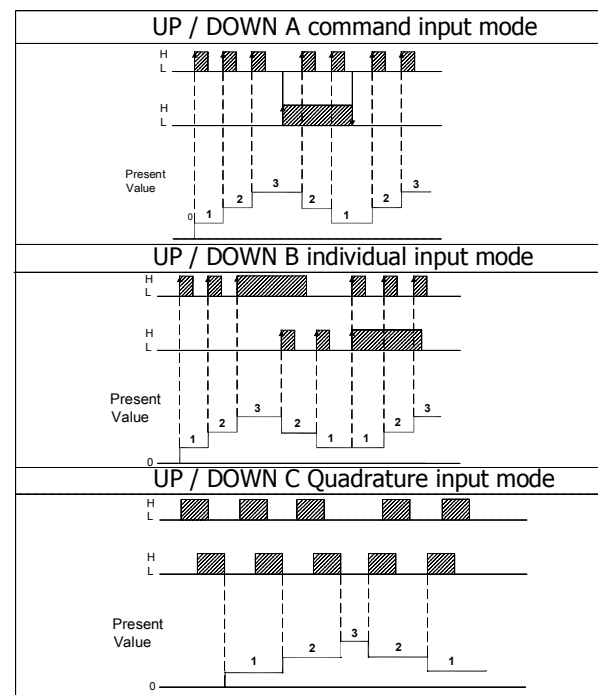
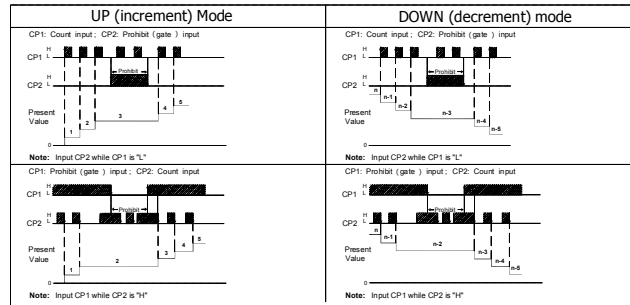


A Mode: Signal ON delay  
(Timer reset when power ON.)



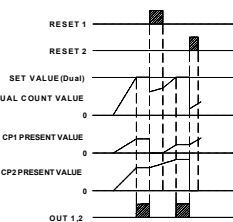
F-1 Mode : Cumulative  
(Timer doesn't reset when power ON.)

## ★ Counter Input Modes and Present Value

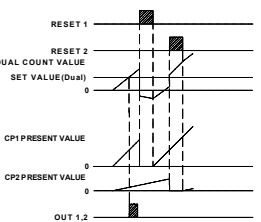


## ★ Dual Counter operation

Dual Count Calculating Mode = ADD  
Dual count value = CP1 PV + CP2 PV

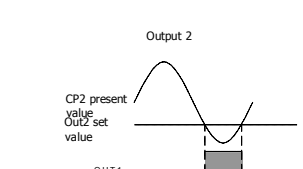
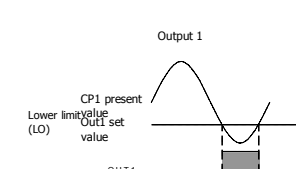
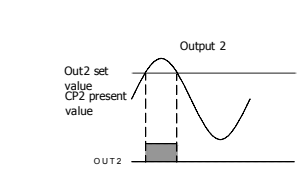
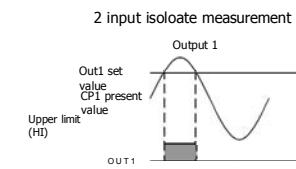
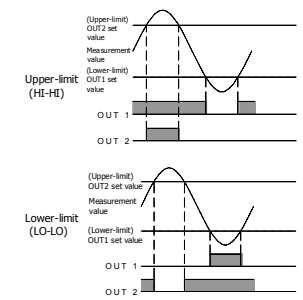
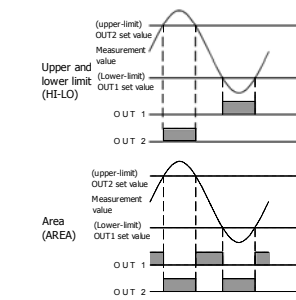


Dual Count Calculating Mode = SUB  
Dual count value = CP1 PV - CP2 PV



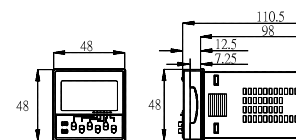
## ★ Tachometer output mode setting

1 input, 2 input error, 2 input absolute ratio, 2 input error ration

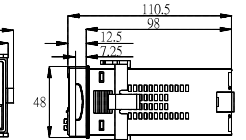


## ★ Dimensions

Dimensions without Flush Mounting Adapter

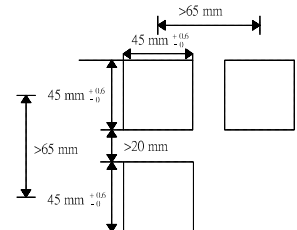


Dimensions with Flush Mounting Adapter

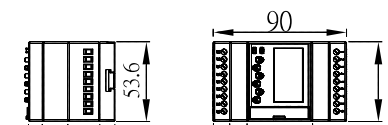
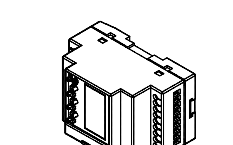


Note: M3 terminal screw (effective length: 8mm)

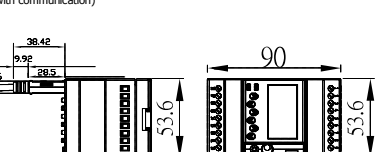
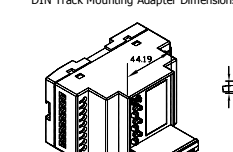
Panel Cutsouts



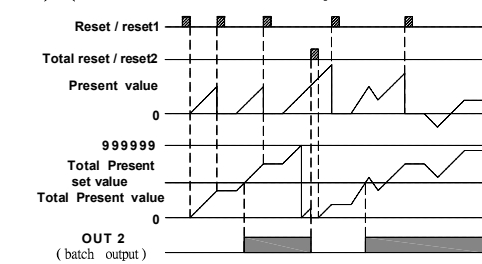
DIN Track Mounting Adapter Dimensions



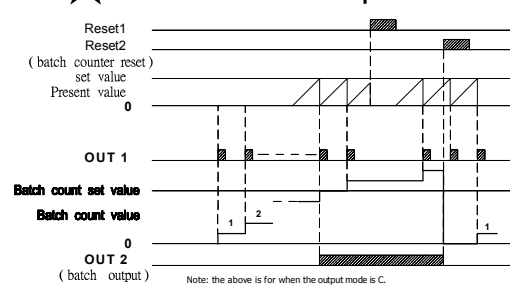
DIN Track Mounting Adapter Dimensions (with communication)



## ★ Total Counter operation



## ★ Batch Counter Operation



Note: the above is for when the output mode is C.