

Digital Counter / Timer  
Model **GX4** Free Ticom



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MAIN PRODUCTS

DIGITAL: Temperature Controller,  
Counter/Timer,  
Tachometer/Panel Meter

SENSOR: Proximity Switch/Photo Electric Sensor,  
Rotary Encoder/Optical Fiber Sensor,  
R.T.D/Thermo Couple

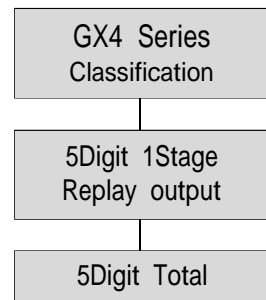
ANALOG: Timer/Temperature Controller



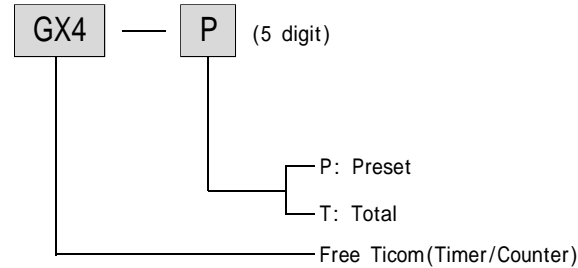
INSTRUCTION MANUAL

This manual primarily describes precautions required in installing and wiring the Free Time controller. When using the controller, please refer to the pertinent catalog for detailed information.

Classification



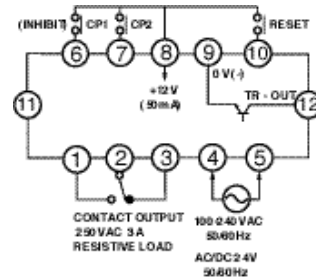
Suffix code



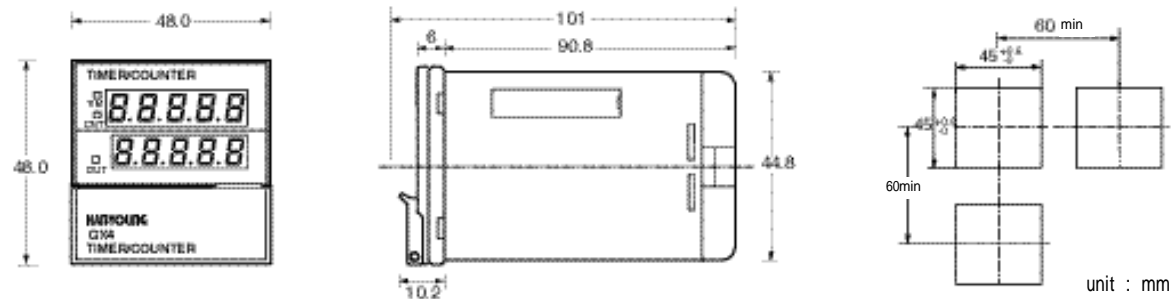
Features

- Operates all functions by switches at front (Mult-range input/Free scale)
- Counting speed 30 cps/1Kcps/2Kcps/5Kcps selectable
- ON-DELAY/OFF-DELAY selectable
- Position of a decimal point is movable
- Wide range of power supply(AC 100 ~ 240V)
- Semi-permanent backup power for memory protection
- 10 input/24 output mode
- Replay output

Connections



Dimensions



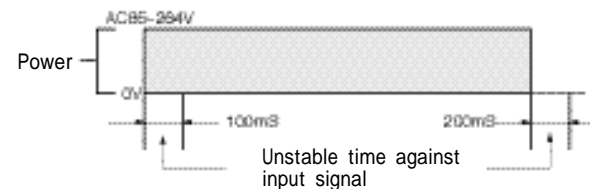
Ratings

Item	Code	GX4
Supply voltage		100 ~ 240V AC 50 ~ 60 Hz, 0.1A
Power consumption		Approx 5 VA (at 220VAC, 60 Hz)
Reset/Inhibit		Reset by power OFF: Min. power OFF time: 0.5 sec. External reset or inhibit: Min. reset input signal width: 0.02 sec.
Control output		SPDT: 250VAC 2A cos φ = 1 (resistive load) Open collector: 30VDC max 100 mA max.
Ambient temperature		Operating: -10 to 55
Humidity		35 to 85 % RH

Characteristics

Item	Code	GX4
Repeat accuracy		± 0.01 % ± 0.05 % second max.
Variation due to voltage change		(Power supply start) ± 0.005 % ± 0.03 % second max. (Reset start)
Variation due to temperature change		(Ratio to set value)
Insulation resistance		100 MΩ Min. (at 500 VDC) (between current-carrying terminal and exposed noncurrent-carrying metal part, between power supply circuit and control output circuit)
In Pulse voltage		6 KV (between operating power supply terminal)
Dielectric strength		2,000 VAC, 50/60 Hz for 1 minute (between current-carrying terminal and exposed noncurrent-carrying metal parts, between power supply circuit and control output circuit)
Noise immunity		Square wave noise by simulator AC: ± 1KV (inbetween power supply terminal board) ± 500V (inbetween input terminal)
Vibration		Mechanical durability: 10 to 55 Hz; 0.75 mm double amplitude Malfunction durability: 10 to 55 Hz; 0.5 mm double amplitude
Shock		Mechanical durability: 300 m/s² (approx. 30G) Malfunction durability: 100 m/s² (approx. 30G)
Life expectancy		Mechanical: 10,000,000 operations min. Electrical: 100,000 operations min (AC 250V 2A)
Weight		Approx. 138 gms (with adaptor)

Power supply



Please note that voltage of inside circuit is increasing or decreasing in time between 100 ms after power on and 200 ms after power off.

Range of Timer mode

Range Signal	Range	
	Decimal system	Sexagesimal system
0.1S	9999.9 s	59 m 59.9 s
0.01S	999.99 s	9 m 59.99 s
0.1H	99999 s	9 h 59 m 59 s
0.1D	99999 m	999 h 59 m

\* "0.1S" is up count mode and "0.1D" is down count mode

Key functions

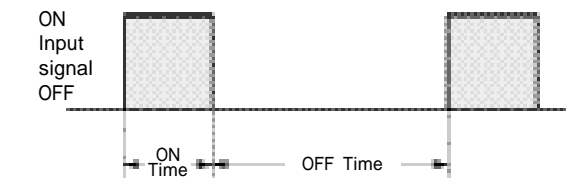
- RST RESET KEY
- MODE MODE PROGRAM KEY (Push 2.5 sec)
- SHIFT KEY of digit
- INCREASEMENT KEY of set value (MODE shift key in MODE PROGRAM)

\* Initial setting

	Function	Mode
Timer	Progressing	Sexagesimal
	Time mode	Up count 0.1 S
	Output mode	N
	Output method	ON DELAY
Counter	Input mode	U-A
	Output mode	F
	Output time	500 mS
	Max. count speed	30 CPS
	Memory protection	Built-in
	Scale	1:1

Maximum counting speed

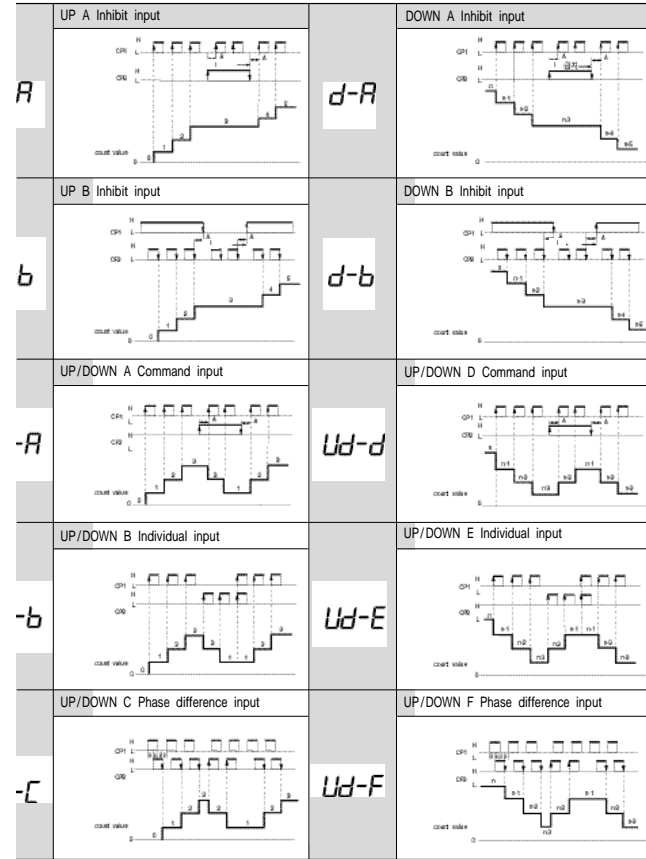
- Rating of maximum counting speed (MCS) is response speed in case of input for 1:1 duty ratio.
- Though input signal is in the MCS, if ON/OFF time is lower than the rating of minimum input signal width, counting is not operated.
- Minimum signal time
  - 30 CPS mode: 16 ms min.
  - 1 KCPS mode: 0.5 ms min.
  - 2 KCPS mode: 0.25 ms min.
  - 5 KCPS mode: 0.1 ms min.



\* Minimum signal time means ON time.

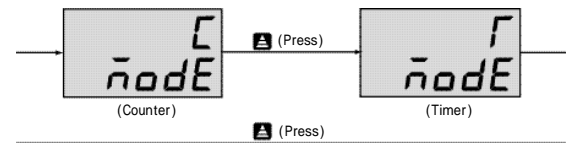
## Input mode

requires over minimum signal width and B requires over half of minimum signal width.



## Selection of Counter/Timer

Apply power supply to GX4  
Press MODE key over 2.5sec., then display will be as example  
After setting, press RESET key

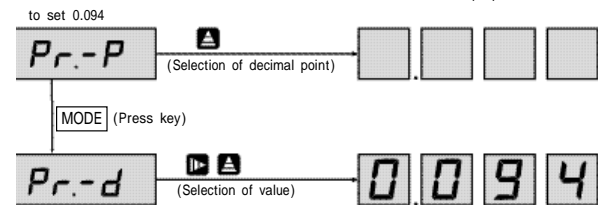
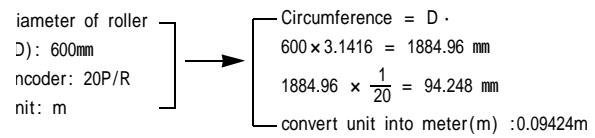


## What is Free Scale Function?

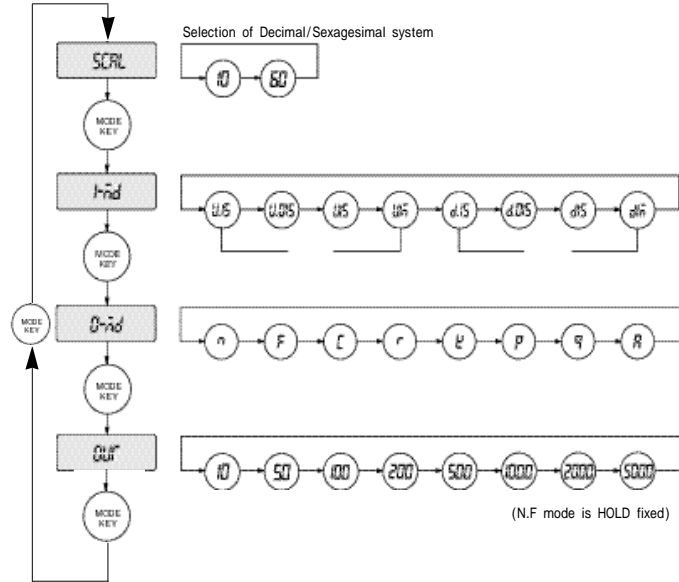
Imagines signal function to substitute actual scale for count value.

## Illustration of Free Scale Figure

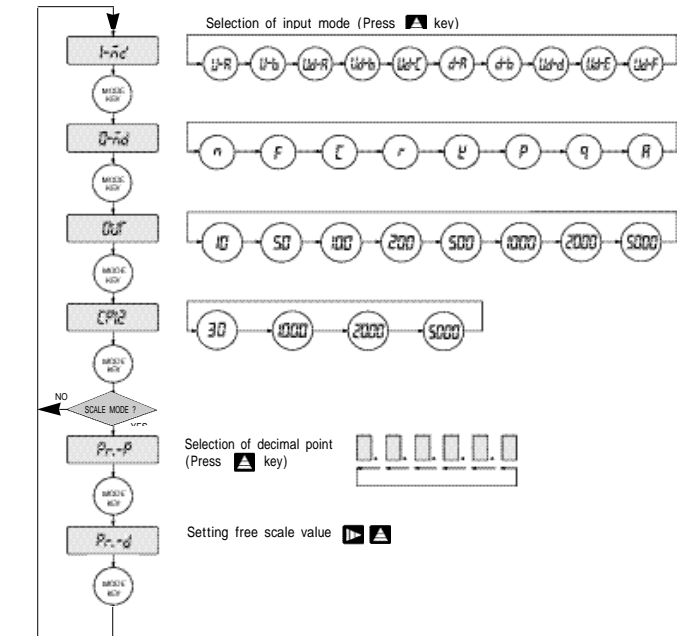
When measuring rope in a roller, it is possible to show length of winding or to output at the setting length.



## Routine of mode selection in timer



## Routine of mode selection in counter



## Output mode

In case of single [1 stage] counter, operating mode is same as 2nd. output

