

FOTEK

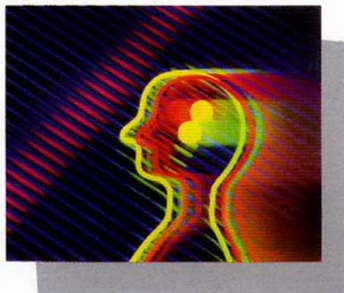
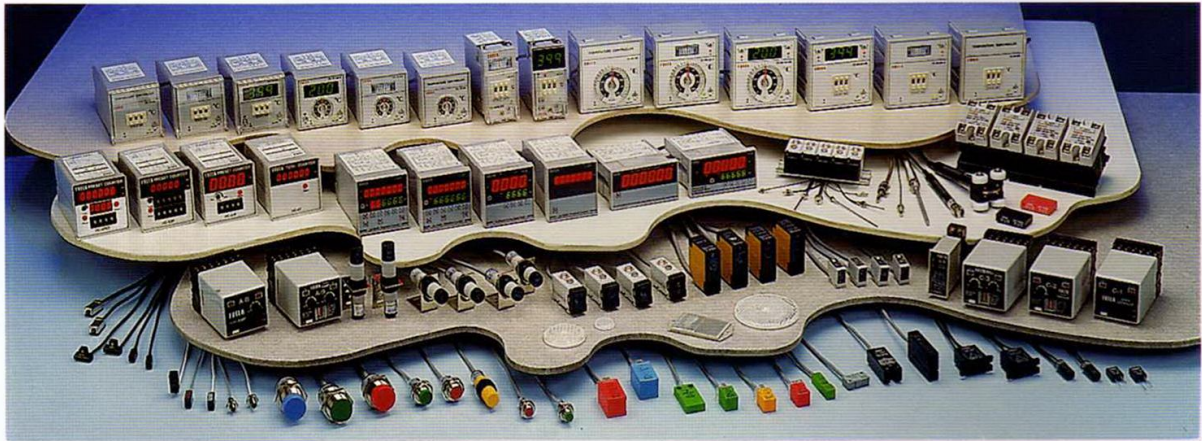
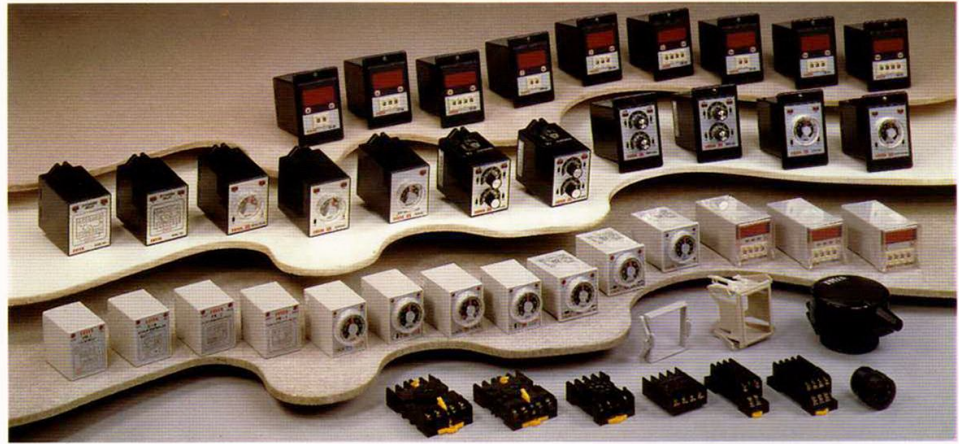
Counter & Meter 計數器 & 數位表

- | | |
|--------------------------------------|---------------|
| Digital counter | ● 數字式計數器 |
| Specific counter | ● 特殊功能計數器 |
| Multi-function counter | ● 多功能計數器 |
| Wheel type Length encoder | ● 輪式長度解碼器 |
| Tachometer & Line speed meter | ● 轉速表 & 線速表 |
| Voltage meter & Current meter | ● 電壓 & 電流表 |
| Preset Voltage meter / Current meter | ● 設定型電壓 & 電流表 |



陽明電機股份有限公司
FOTEK CONTROLS CO., LTD.

FOTEK CONTROLS



陽明電機股份有限公司 FOTEK CONTROLS CO.,LTD.

成立1985年

Established 1985

主要產品

Main product

經營理念：

- 追求永續經營
- 客戶是永遠的朋友
- 堅持品質、追求至善
- 不斷研發生產
物超所值的產品
- 責任、務實、創新、
邁向未來

- | | |
|----------|--------------------------|
| ● 計時器 | ● Timer |
| ● 計數器 | ● Counter |
| ● 轉速表 | ● Tachometer |
| ● 線速表 | ● Line Speed Meter |
| ● 電壓表 | ● Voltage Meter |
| ● 電流表 | ● Current Meter |
| ● 光電開關 | ● Photo Sensor |
| ● 近接開關 | ● Proximity Sensor |
| ● 磁簧開關 | ● Reed Sensor |
| ● 固態繼電器 | ● Solid State Relay |
| ● 溫度控制器 | ● Temperature Controller |
| ● 液位控制器 | ● Floatless Level Relay |
| ● 欠逆相保護器 | ● Phase Relay |
| ● 馬達起動器 | ● Y-△Starter |

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SC-3X DIN 72 X 72 series MULTI - FUNCTION COUNTER



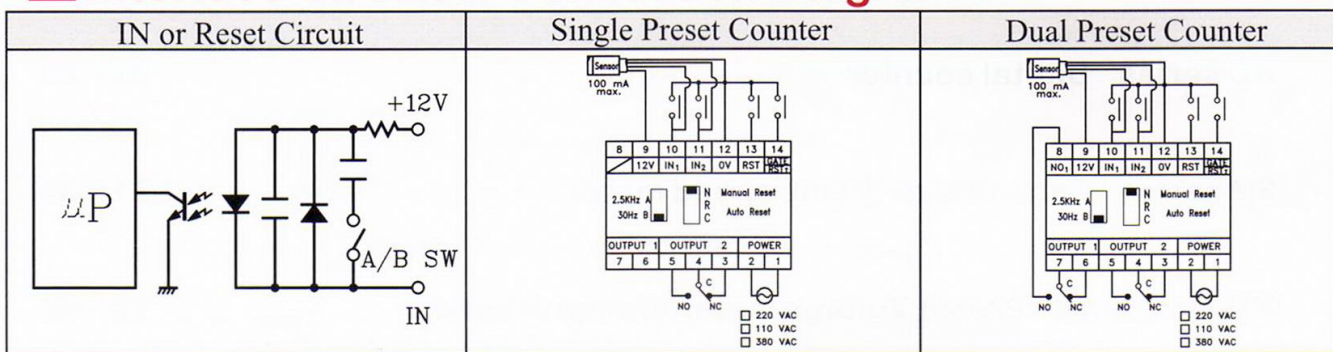
- ☆ Multi-Function
 - Single or Two Phase Input Selectable.
 - Incrementation or Decrease Counting Selectable.
 - Decimal Point Selectable.
 - Preset Value < SV2 > Settable.
 - Divisor Range : 1~9999
 - Multiplier Range : 0.001~9.999
 - Output Delay Timer Range : 0.01~99.99S
- ☆ Comply With CE Certificate
 - EMC / EMI / ESD / LVD



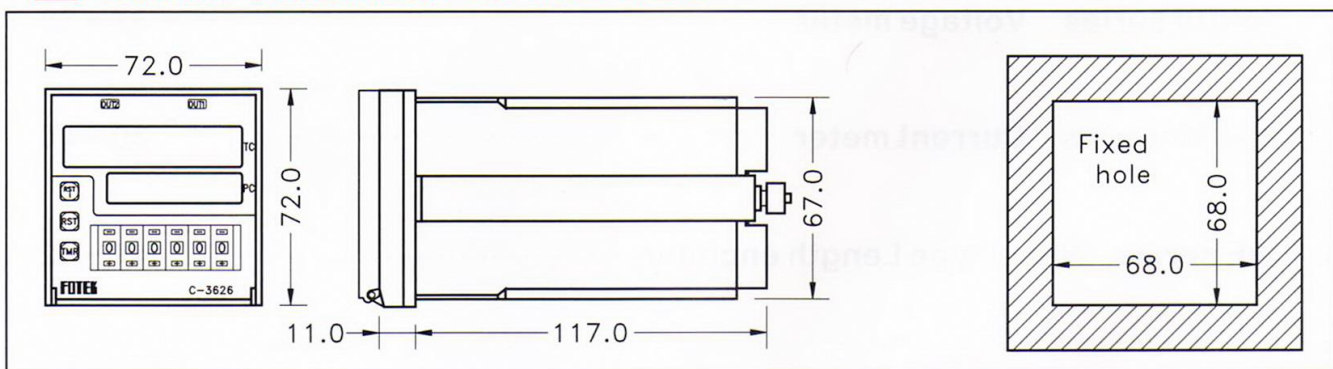
General Specification

Item	Data
Power Supply	110V or 220VAC $\pm 20\%$, 50/60 Hz , 5VA max. Selectable
DC Power Output	60mA / 12VDC Max.
Response Frequency	Speed <A> < 2.5K CPS , Low Speed < 60 CPS
Memory Method	EEPROM
Output Control	N / R / C Selectable
Contact Rated	5A / 250 VAC Max.
Output Delay Timer	Auto Reset Timer Range : 0.01S~99.99S
Divisor	Range : 1~9999
Multiplier	Range : 0.001~9.999
ESD Strength	Over 8 KV
Dielectric Strength	Over 2.5 KV / 1min , Between Power And Each Terminal
Isolation Strength	Over 100M Ω /500VDC , Between Power And Each Terminal
Operating Temp./Hum.	-20 $^{\circ}$ C ~ +80 $^{\circ}$ C ; 35% ~ 85% RH

Interface Circuit & Connection Diagram



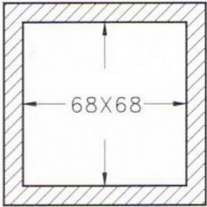



Outline Dimension & Fixed Hole



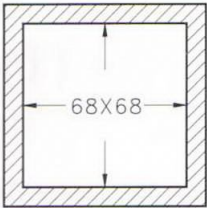


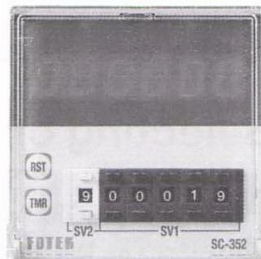


SC-3X
series

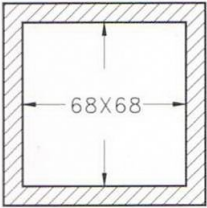



Single Preset Counter / Preset & Total Counter

Model	SC-341	SC-361	SC-3616
Fixed Hole 			
Input Method	Single Phase or Two Phase		Selectable
Counting Method	Increase or Decrease Counting		Increase
Output Method	One Relay		

Dual Preset Counter

Model	SC-342	SC-362	SC-352
Fixed Hole 			
Input Method	Single Phase or Two Phase		Selectable
Counting Method	Increase or Decrease Counting		Selectable
Output Method	Two Relay		

Dual Preset & Total Counter / Twin Counter

Model	SC-3526	SC-3626	SC-326
Fixed Hole 			
Input Method	Single Phase or Two Phase		Selectable
Counting Method	Increase Counting		
Output Method	Two Relay		

☆SC-326 : Counter #1 Output Auto Reset (C) Standard.
Counter #2 is Batch Counter Available.

■ Inner DIP Switch

Preset Counter

Nr.	Function
1	ON : Two Phase Input
	OFF : Single Phase Input
2	ON : Decreasement Counter
	OFF : Increasement Counter
3	ON : Multiplier
	OFF : Divisor
4	ON : Setting of Divisor or Multiplier
	OFF : Counting Status



Preset & Total Counter.

Nr.	Function
1	ON : Two Phase Input
	OFF : Single Phase Input
2	ON : Total Counter is Batch Counter
	OFF : Total Counter is Synchronous Counter
3	ON : Multiplier
	OFF : Divisor
4	ON : Setting of Divisor or Multiplier
	OFF : Counting Status




■ A/B Slide Switch

Counting	Hi → Lo , L<2V , 6V<Hi<30V
A	2.5K CPS Max.
B	60 CPS Max.

■ Selecting of Decimal Point

Push The  &  Key Meamwhile
To Select The Decimal Point

■ Setting of Delay Time (t)


Push The  Key To Set Timer.
Push The  Key To Increase The Delay Time
Push The  Key To Decrease The Delay Time


■ Selecting of Divisor or Multiplier

Divisor : The Inner DIP Switch #3 Set At "OFF" Position < Range : 1~9999 >

Multiplier : The Inner DIP Switch #3 Set At "ON" Position < Range : 0.001~9.999 >


Set The Inner DIP Switch #4 To "ON" Position,


Push The  Key To Increase The Value of Divisor or Multiplier.


Push The  Key To Decrease The Value of Divisor or Multiplier.

After Finishing Setting, Please Set The Inner DIP Switch #4 To "OFF" Position.

■ Setting of The Preset Value <SV₁>

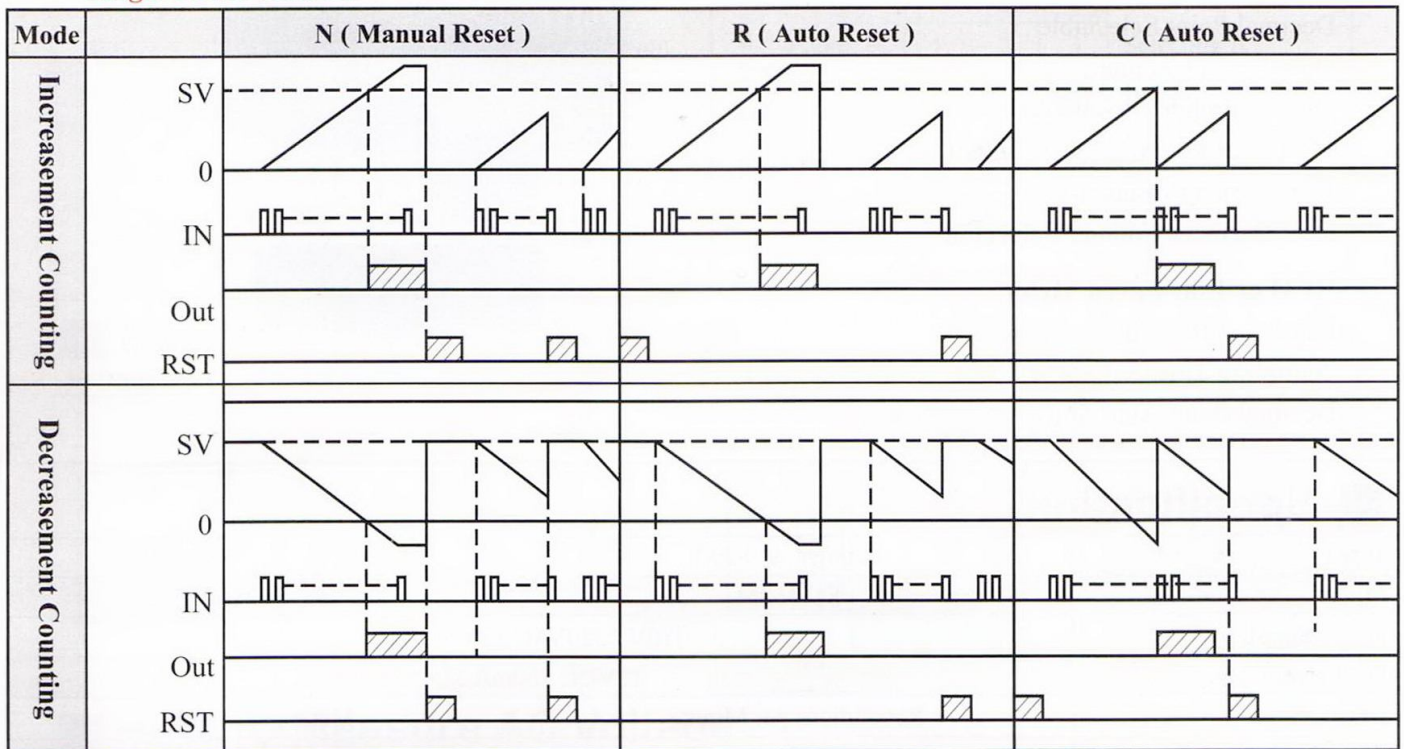
Push The  Key To Set The SV₁.

Push The  Key To Increase The Preset Value of SV₁

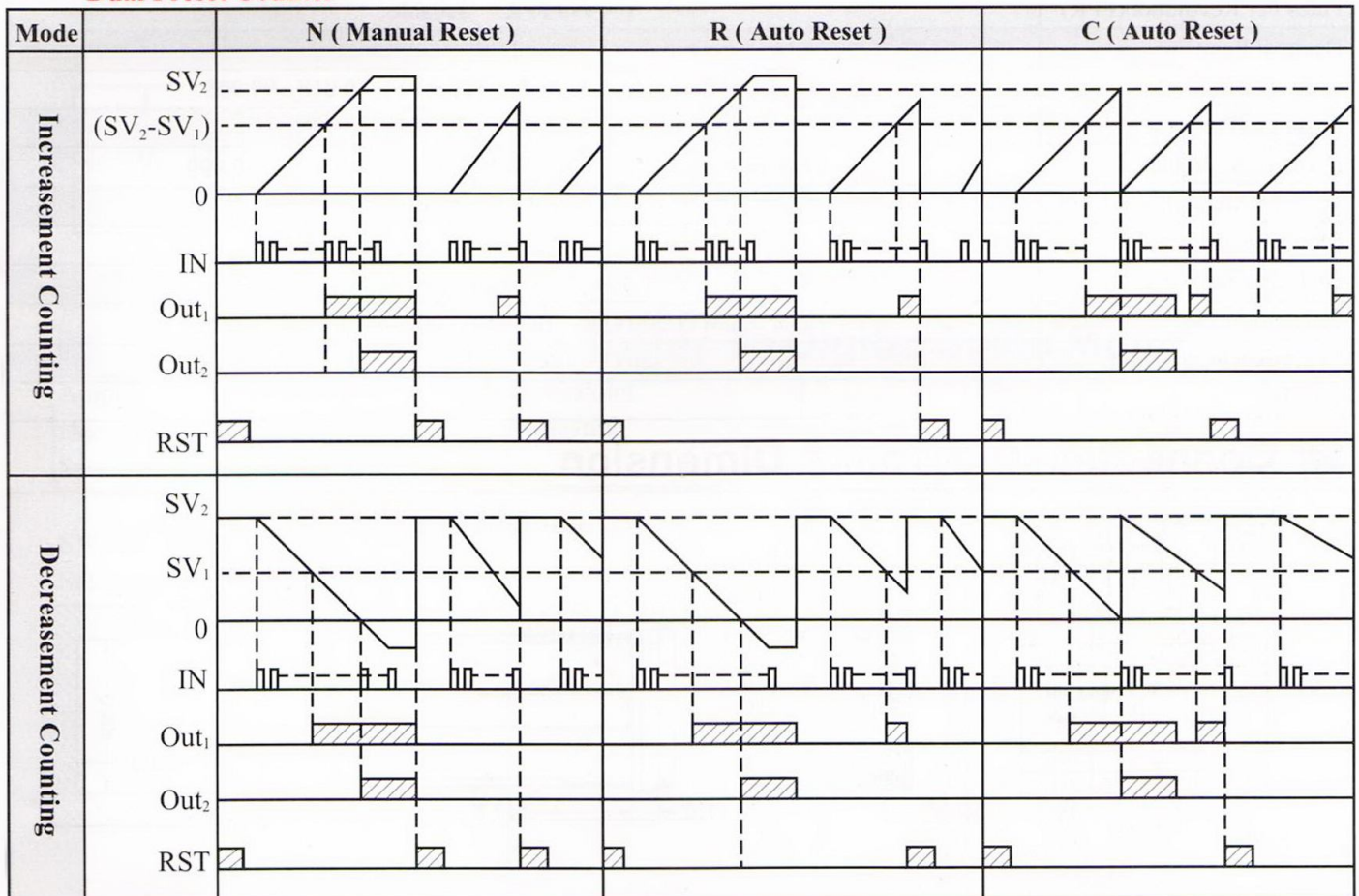
Push The  Key To Decrease The Preset Value of SV₁

Output Timing Chart < N / R Control >

Single Preset Counter



Dual Preset Counter



Remarks : SV or SV₂ Are Main Preset Value.

SC-362M series

DIN 72 x72 COUNTER & METER

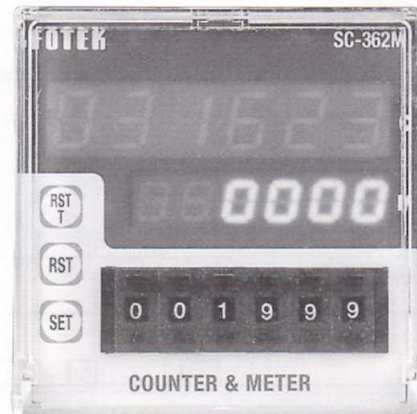


☆ Counter

- Single phase Input .
- Decimal Point Selectable .
- Dual Preset Counter .
- Divisor Range : 1 ~ 9999
- Multiplier Range : 0.001 ~9.999
- Increase Counter or Decrease Counter Selectable .

☆ RPM or Line Speed Meter

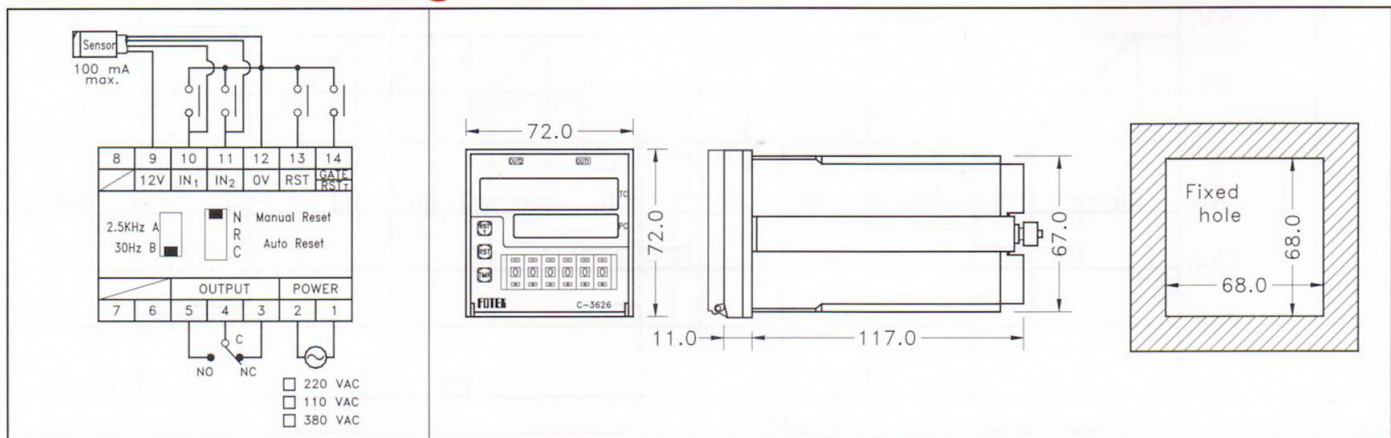
- Pulses per Revolution Settable .
- Sampling Time Settable .
- Decimal Point Auto Shift .



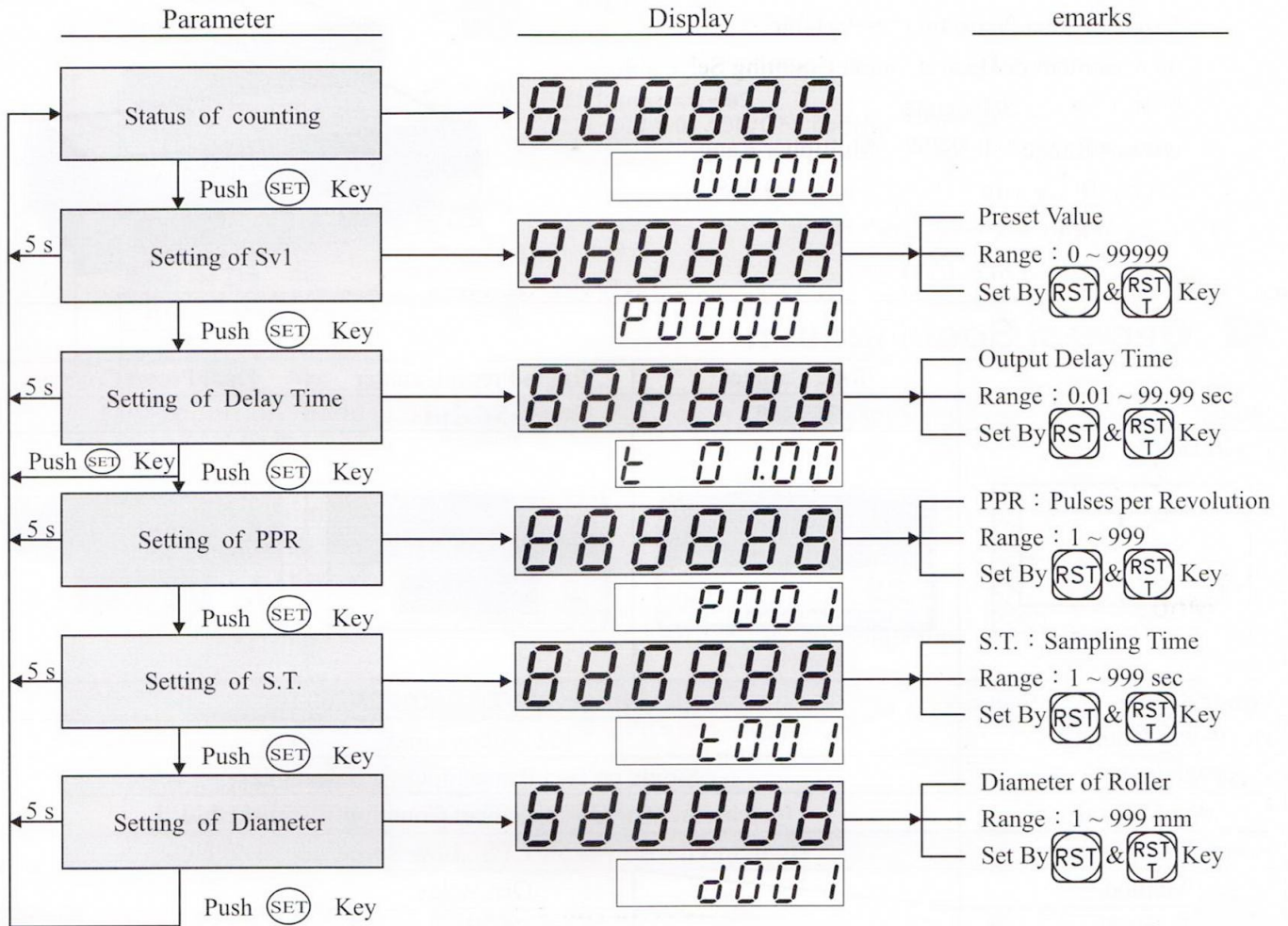
■ Specification

Type	Counter & RPM	Counter & Line Speed Meter
Model	SC-362M	SC-362Ma
Power Supply	110V / 220VAC ±20% , 50Hz	
DC Power Output	12VDC / 60mA Max.	
Unit	Revolutions per Minute	Meter per Minute
Sampling Time(S.T.)	1 ~ 99 Sec Settable	
Pulses Per Revolution(PPR)	1 ~ 999 PPR Settable	
Decimal Point	Auto Shift	
Output Control	N / R / C Selectable , Range of Timer (t) : 0.01S ~99.99S	
Response Frequency	High Speed < 2.5K Hz ; Low Speed < 30Hz	
Divisor / Multiplier	Divisor Range : 1 ~ 9999 / Multiplier Range : 0.001 ~ 9.999	
Memory Method	EEP ROM	
ESD Resistance	Over 8KV	
Dielectric Strength	Over 2.5 KV / 1 min , Between Power And Each Terminal	
Isolation Strength	Over 500MΩ/500VDC , Between Power And Each Terminal	
Operating Temp./Hum.	-20°C ~ +80°C ; 35 ~ 85% RH	
Weight		

■ Connection Diagram & Dimension

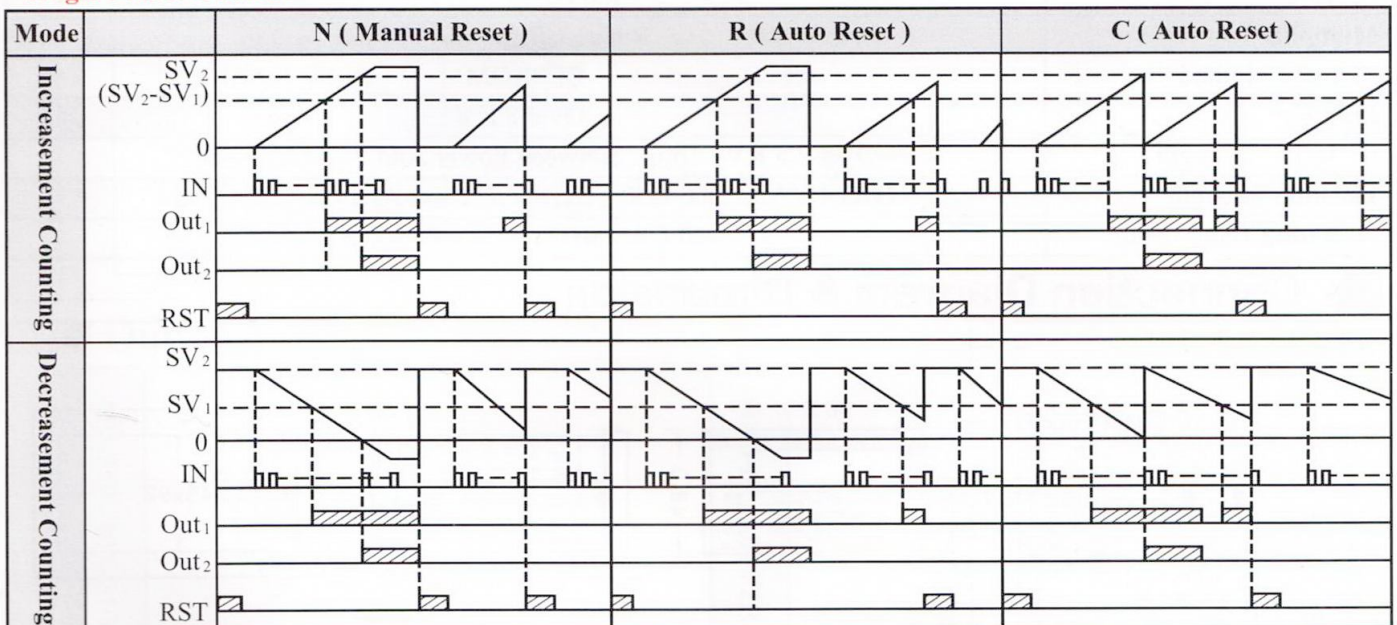


Setting of Parameter



N / R / C Output Control

Single Preset Counter



Remarks : SV₂ is Main Preset Value.

SC-26X series

DIN 96x48 MULTI - FUNCTION COUNTER



☆Multi-Function

- Single or Two Phase Input Selectable.
- Increase or Decrease Counting Selectable.
- Decimal Point Selectable.
- Divisor Range : 1~9999 — Multiplier Rang
- Output Delay Timer Range : 0.01~99.99S

☆Comply With CE Certificate

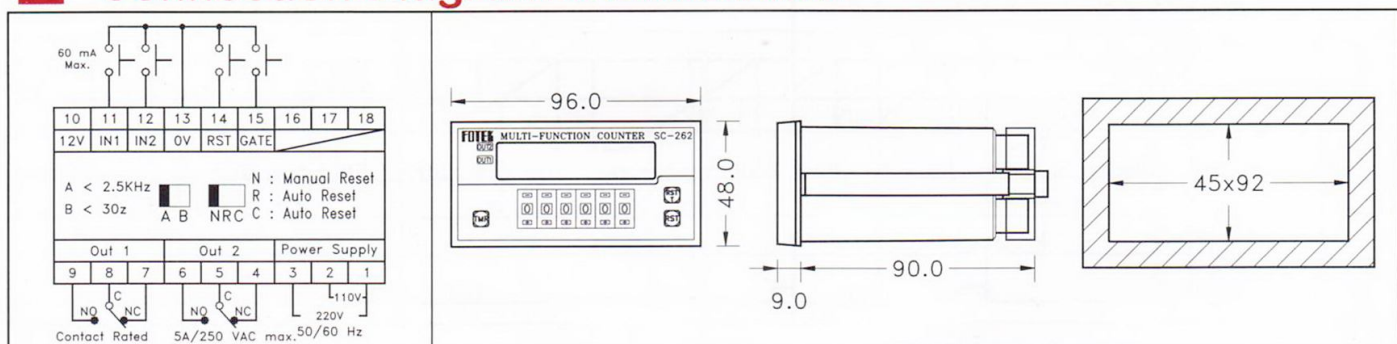
- EMC / EMI / ESD / LVD



General Specification

Type	Total Counter	Single Preset Counter	Dual Preset Counter
Model	SC-260	SC-261	SC-262
Fixed Hole			
Power Supply	110V / 220VAC ± 20% , 50/60 Hz		
DC Power Output	12V / 60mA max.		
Input Method	Single or Two Phase Input Selectable		
Counting Method	Increase or Decrease Counting Selectable		
Response Frequency	High Speed <A> < 2.5K CPS , Low Speed < 60 CPS		
Output Method	One Relay		Two Relay
Output Control	N / R / C		Selectable
Contact Rated	5A / 250 VAC Max.		
Output Delay Timer	0.01S~99.99S		
Divisor	Range : 1~9999		
Multiplier	Range : 0.001~9.999		
Memory Method	EEPROM		
ESD Strength	Over 8 KV		
Dielectric Strength	Over 2.5 KV / 1min , Between Power And Each Terminal		
Isolation Strength	Over 100MΩ/500VDC , Between Power And Each Terminal		
Operating Temp./Hum.	-20°C ~ +80°C ; 35% ~ 85% RH		

Connection Diagram & Dimansion



■ Inner DIP Switch

Nr.	Function
1	ON : Two Phase Input
	OFF : Single Phase Input
2	ON : Decreasement Counter
	OFF : Increasement Counter
3	ON : Multiplier
	OFF : Divisor
4	ON : Setting of Divisor or Multiplier
	OFF : Counting Status

■ A/B Slide Switch

Counting	Hi → Lo , L<2V , 6V<Hi<30V
A	2.5K CPS Max.
B	60 CPS Max.

■ Selecting of Decimal Point

Push The & Key
 To Select The Decimal Point

■ Setting of Delay Time (t)

Push The Key 2 Secretary,
 Push The Key To Increase The Delay Time
 Push The Key To Decrease The Delay Time

■ Selecting of Divisor or Multiplier

Divisor : The Inner DIP Switch #3 Set At "OFF" Position < Range : 1~9999 >

Multiplier : The Inner DIP Switch #3 Set At "ON" Position < Range : 0.001~9.999 >

Set The Inner DIP Switch #4 To "ON" Position,

Push The Key To Increase The Value of Divisor or Multiplier.

Push The Key To Decrease The Value of Divisor or Multiplier.

After Finishing Setting, Please Set The Inner DIP Switch #4 To "OFF" Position.

■ Setting of The Preset Value(SV₁)

Push The Key To Set The SV₁.

Push The Key To Increase The Preset Value of SV₁

Push The Key To Decrease The Preset Value of SV₁

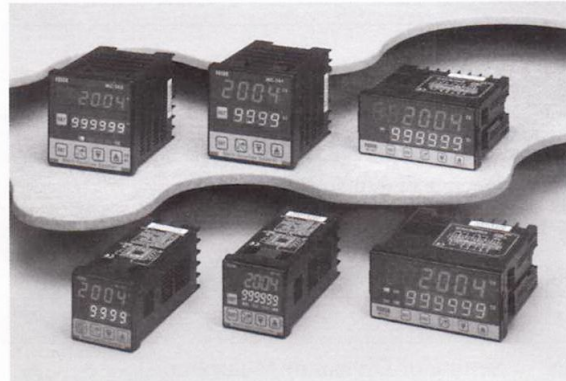
MC 多功能計數器

Series Multi-function UP/Down counter



※ Multi-function

- Counting method : Two phases UP / Down or Single phase UP or Down
- Decimal point settable
- Multiplier range : 0.001 ~ 99.999
- Response time settable : 0.2ms ~ 999.9ms
- Response frequency : 0.1Hz ~ 5kHz
- Output control settable : N / R / C / A
- Output reset time settable : 0.01 ~ 99.99 sec



※ Comply with CE certificate

- EMC / EMI / ESD / LVD

■ General data

Outline	外型	DIN 48 x 48				DIN 72 x 72				DIN 96 x 48		
Model	型號	MC-441	MC-461	MC-442	MC-462	MC-341	MC-342	MC-361	MC-362	MC-260	MC-261	MC-262
Digits	位數	4	6	4	6	4	4	6	6	6	6	6
Preset	設定	Single		Duet		Single	Duet	Single	Duet	Non	Single	Duet
Output method	輸出方式	One relay		Two relay		One relay	Two relay	One relay	Two relay	Non	One relay	Two relay
Contact rated	額定電流	3 A / 250VAC										
Power supply	工作電壓	90 ~ 265 VAC 50/60 Hz										
Current consumption	耗電流	5VA max.										
DC output	直流輸出	12 V / 100 mA max.										
Input method	輸入方式	NPN single phase or two phase selectable										
Counting method	計數方式	Increasing or decreasing counting selectable										
Response time	應答時間	0.1 ms ~ 999.9 ms settable										
Output contro	輸出控制	N / R / C / A selectable										
Output reset time	輸出復歸時間	0.01 ~ 99.99 sec settable										
Multiplier	乘法器	0.001 ~ 9.999 settable										
Memory method	記憶方式	EEPROM										
ESD strength	耐靜電	Over 8 KV										
Dielectric strength	電介強度	Over 2.5 KV / 1 min., Between power and each other terminal										
Isolation strength	絕緣強度	Over 100M Ω / 500 VDC, Between power and each other terminal										
Operating Circum.	工作環境	- 20 °C ~ + 80 °C ; 35% ~ 85% RH										

■ Outline dimension

MC-46X	MC-36X	MC-26X
Fixed Hole : 45.0 x 45.0 Panel Thickness : 1.0 ~ 8.0 Unit : mm	Fixed Hole : 68.0 x 68.0 Panel Thickness : 1.0 ~ 8.0 Unit : mm	Fixed Hole : 45.0 x 91.0 Panel Thickness : 1.0 ~ 8.0 Unit : mm

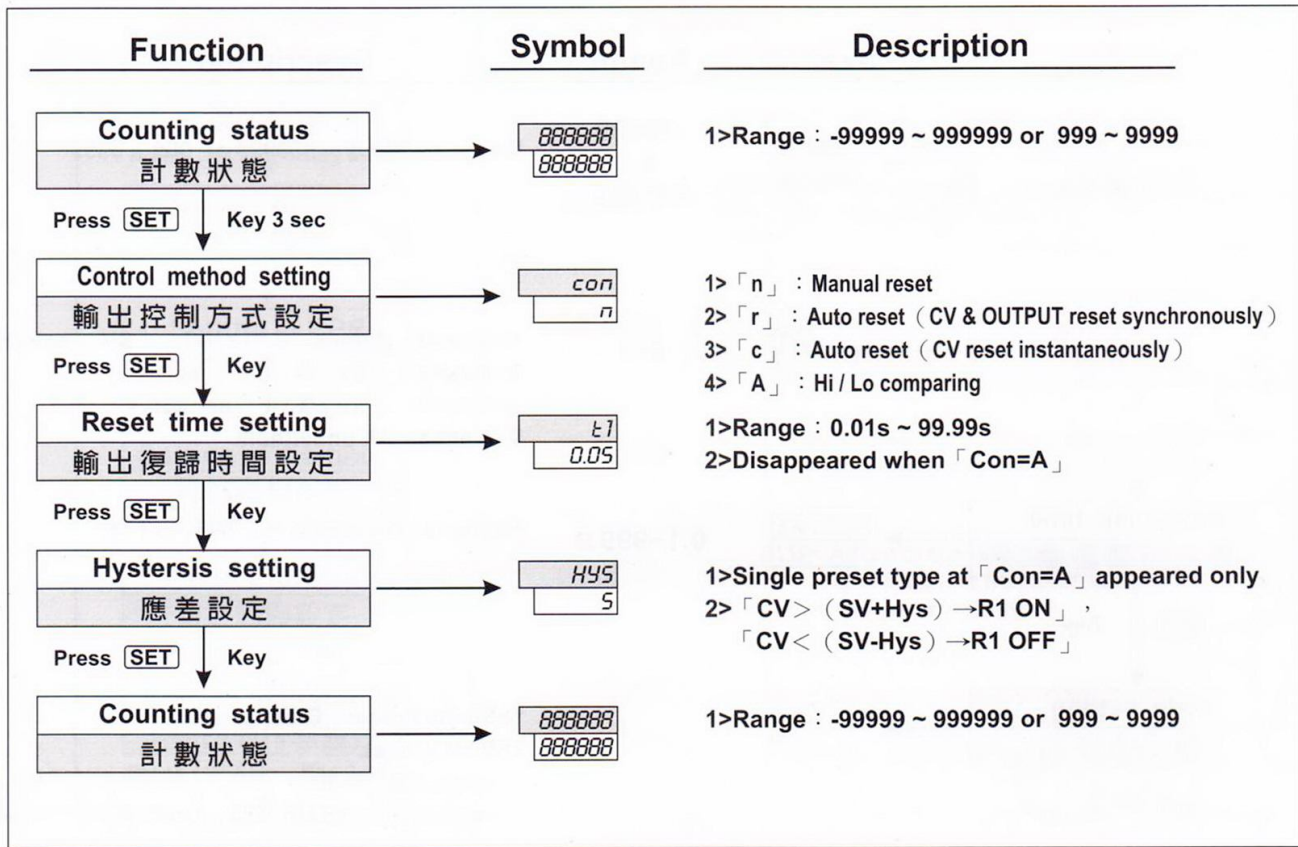
■ Setting of function / 功能設定

Function	Symbol	Range	Description
Counting status 計數狀態		-99999 to 999999	Range : - 99999 ~ 999999 or 999 ~ 9999
Press [F] Key 3 sec			
Lock setting 鎖住設定		0~4	1>Lck=0 : Unlock ; 2>Lck=1 : 「SV」 settable 3>Lck=2 : 「SV」 & 「SET」 settable 4>Lck=3 : 「SV」 & 「F」 settable 5>Lck=4 : All unsettable
Press [SET] Key			
Response time 應答時間設定		0.1~999.9	Response frequency = [500 / rt] Hz
Press [SET] Key			
Mode setting 模式設定		0~1	1>Single preset : Disappeared 2>Duet preset : nod=0 : High limit (H.L.)= 「SV2」 , Low limit (L.L.)= 「SV1」 nod=1 : High limit (H.L.)= 「SV2」 , Low limit (L.L.)= 「SV2-SV1」
Press [SET] Key			
Counting status 計數方式設定		0~1	1>cnt=0 : Single phase 「IN1 adding」 ; 「IN2 decreasing」 2>cnt=1 : Two phase 「IN1/IN2 phase difference 90°」
Press [SET] Key			
UP/Down setting 上數 / 下數設定		U or d	1>ud=u : Reset counter CV=0 2>ud=d : Reset counter CV=SV or SV2
Press [SET] Key			
Decimal point 小數點設定		0~3	1>dp=0 : Non decimal point 2>dp=1 : 1st decimal point 3>dp=2 : 2nd decimal point 4>dp=3 : 3rd decimal point
Press [SET] Key			
Multiplier 乘法器		0.001 to 99.999	CV=Input × 「nuL」
Press [SET] Key			
Counting status 計數狀態		-99999 to 999999	

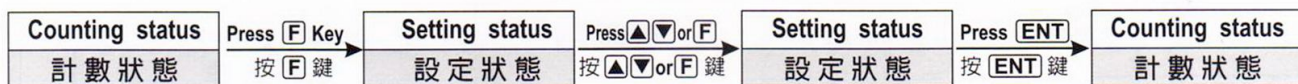
MC series Multi-function UP/Down counter



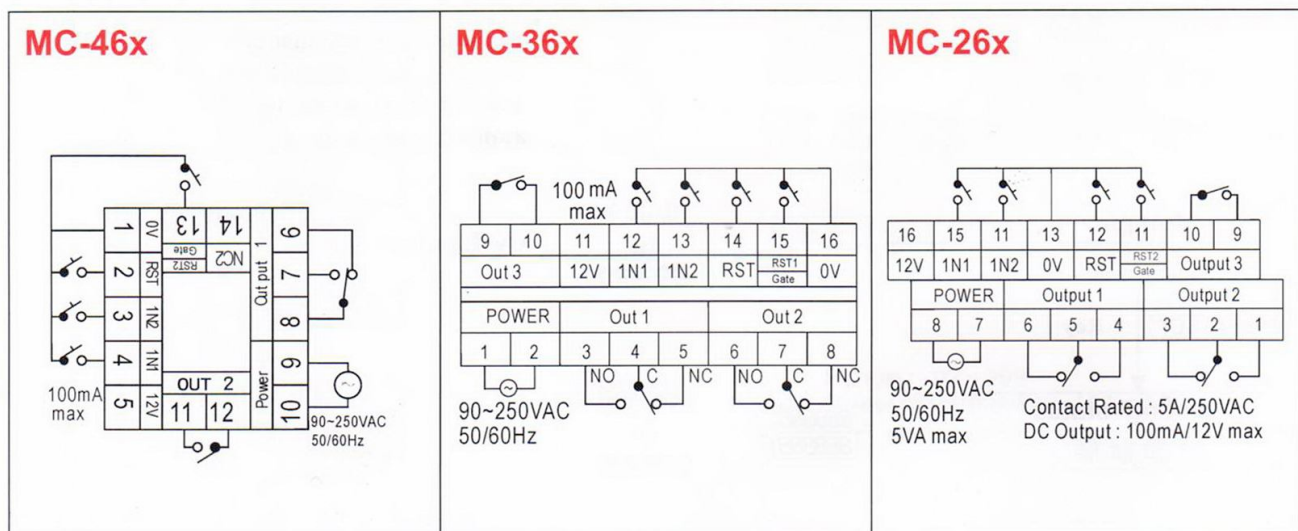
Setting of output control method / 輸出控制方式設定



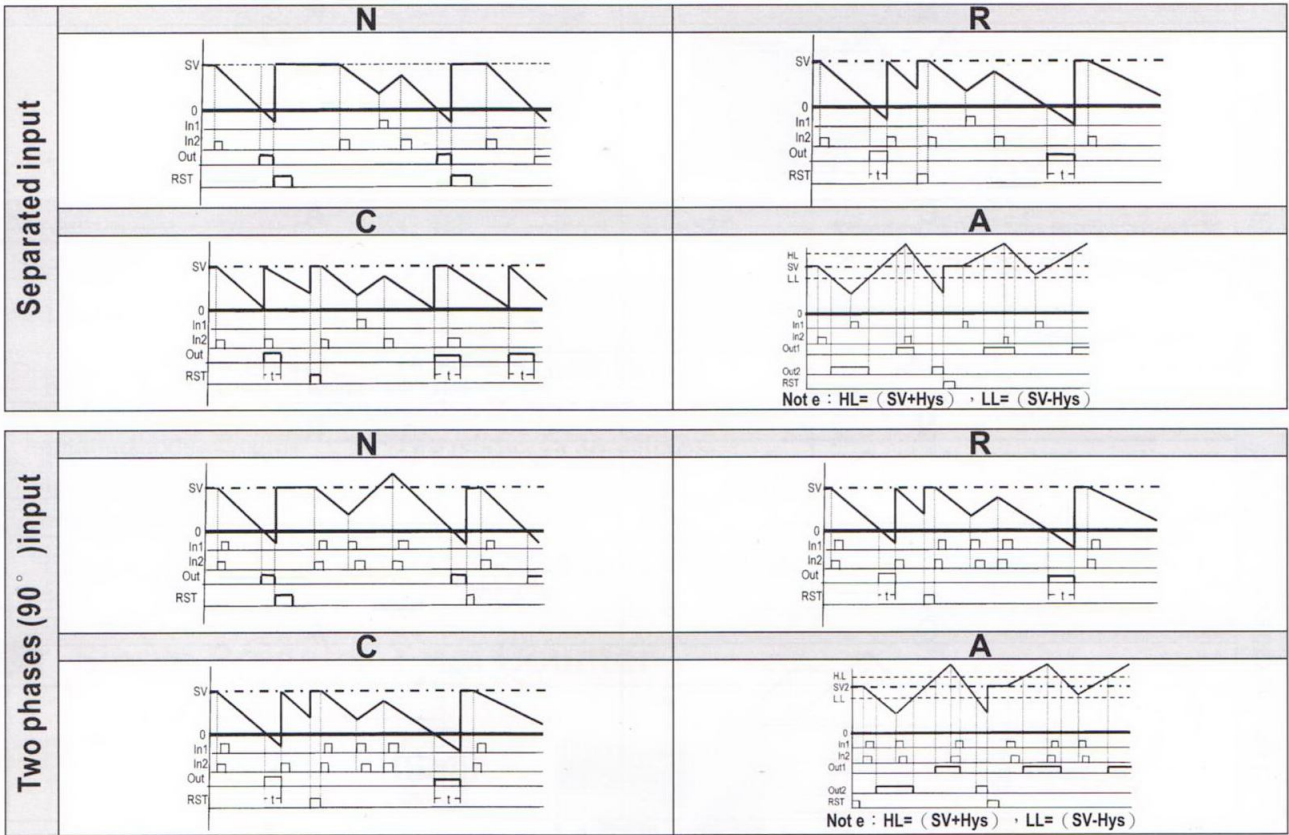
How to set the 「SV」 / 如何改變「設定值」



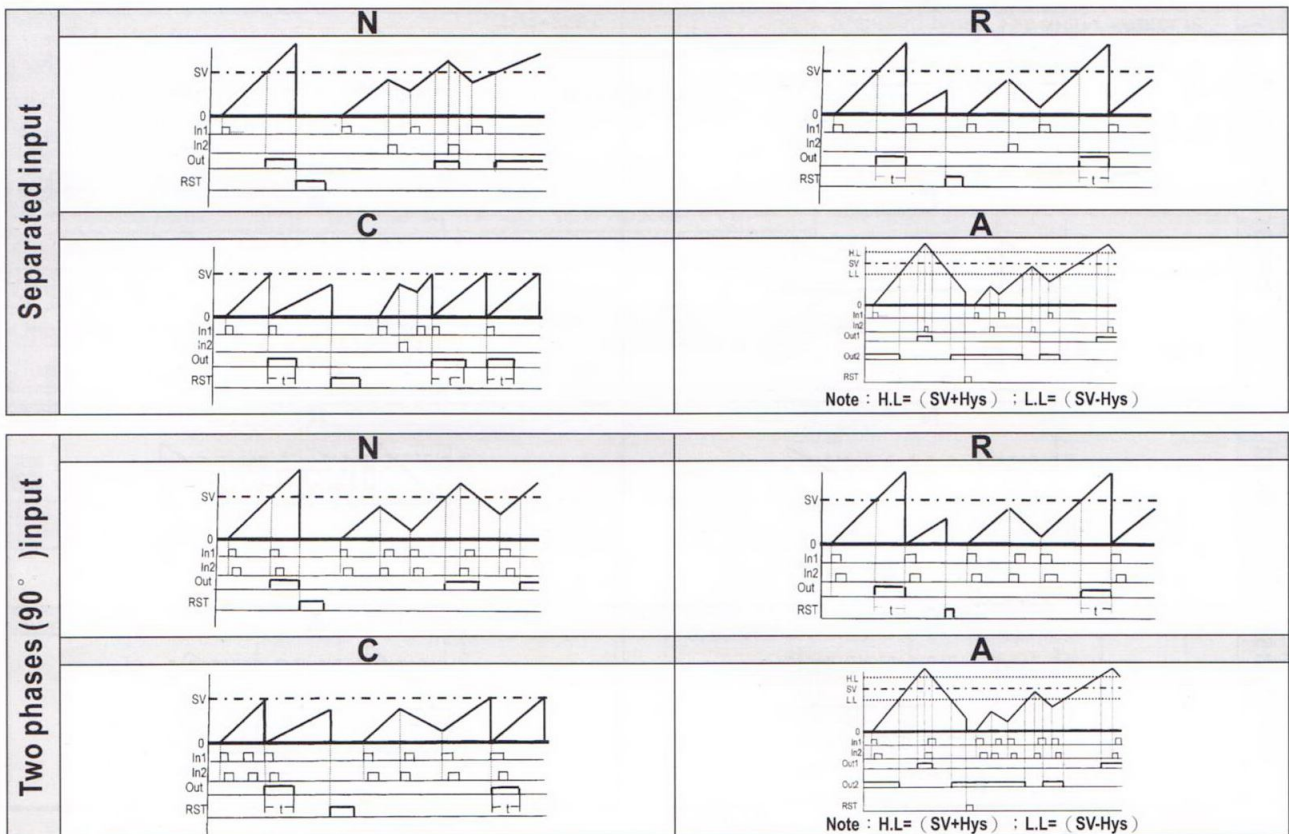
Connectino diagram / 接線圖



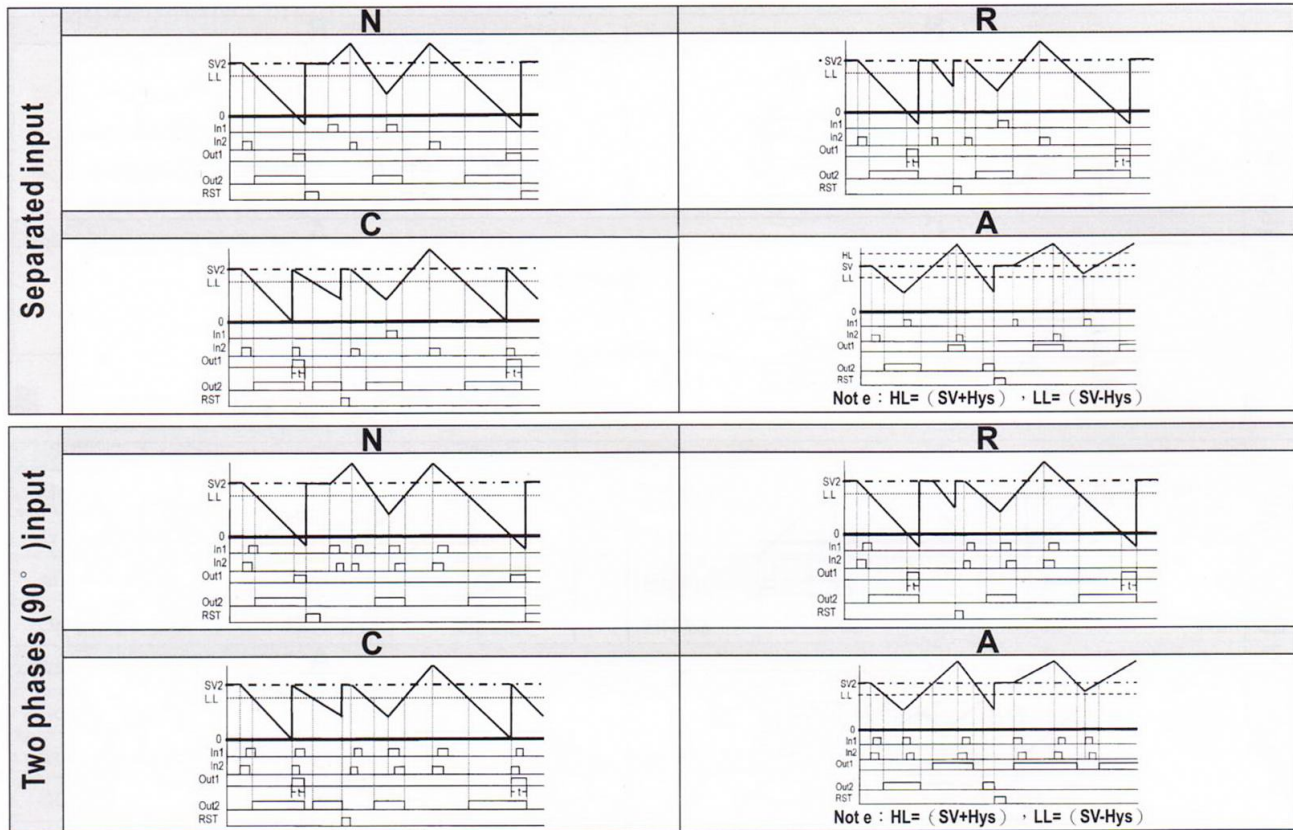
■ Output control 【Single preset/Decreasing counting (CV reset to 「SV」)】



■ Output control 【Single preset/Increasing counting (CV reset 「0」)】

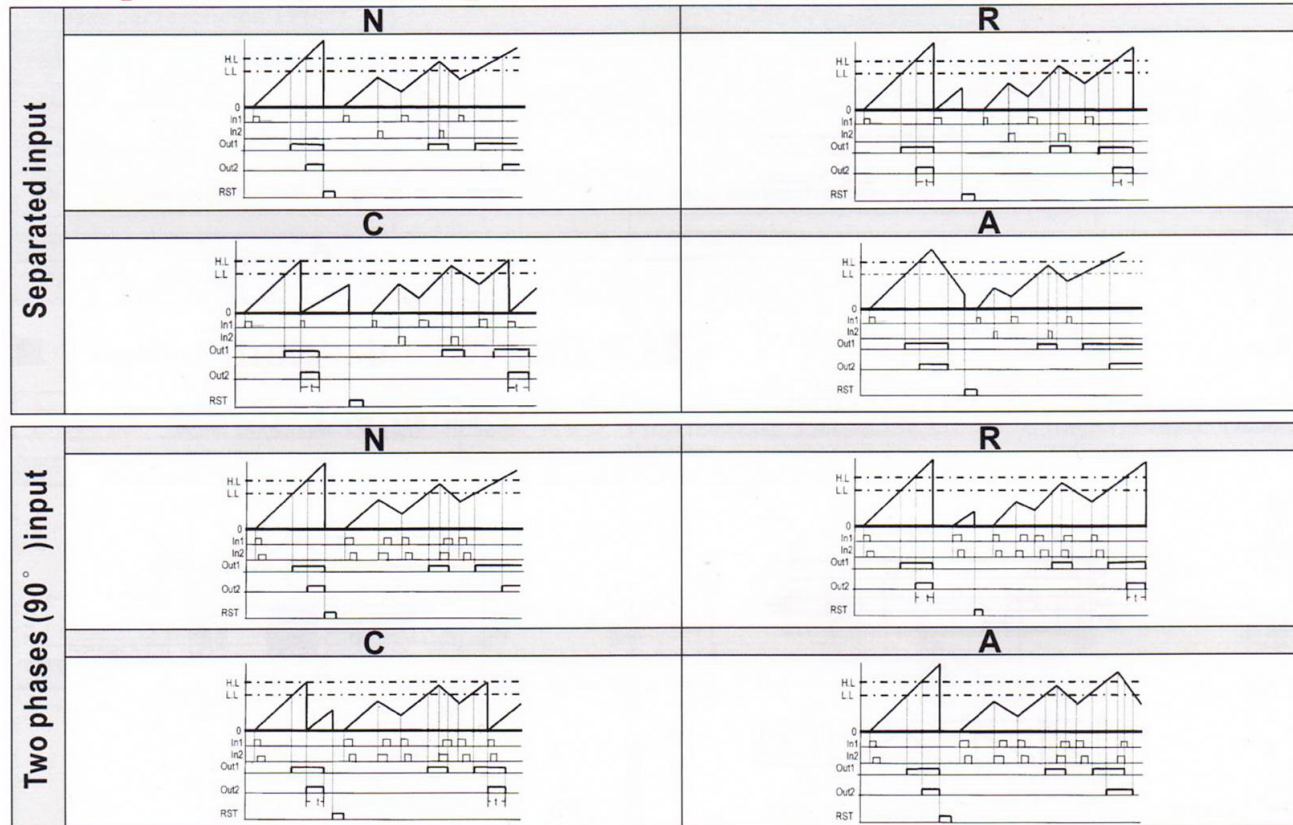


Output control 【Duet preset / Decreasing counting (CV reset to 「SV」)】



Note : 「nod=0 : HL=SV2 , LL=SV1 ; nod=1 : HL=SV2 , LL= (SV2-SV1) 」

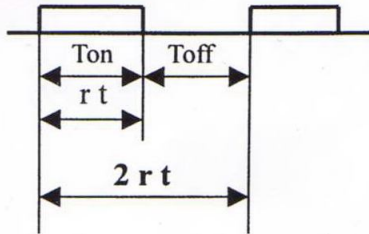
Output control 【Duet preset/Increasing counting (CV reset to 「0」)】



Note : 「nod=0 : HL=SV2 , LL=SV1 ; nod=1 : HL=SV2 , LL= (SV2-SV1) 」

■ Illustration / 說明

※ Response time [r t] : unit = ms



Ton / Toff = 1 (Duty ratio)

Response frequency (反應頻率) = 1 / (Ton + Toff) = 1 / (2 r t)

Ex. : r t = 0.1ms ; Response frequency = 1 / (0.2ms) = 5kHz

r t = 999.9ms ; Response frequency = 1 / (1999.8ms) = 0.5Hz

※ Counting method (計數方式) :

Single phase : 「 IN1 」 = Adding counting ; 「 IN2 」 = Reducing counting

單相輸入 : 「 IN1 」 = 加算 ; 「 IN2 」 = 減算。

Two phases : 「 IN1/IN2 」 = Adding counting ; 「 IN2/IN1 」 = Reducing counting

兩相輸入 : 「 IN1/IN2 」 = 加算 ; 「 IN2/IN1 」 = 減算。

(IN1 & IN2 phase difference = 90° / IN1&IN2 相位差 = 90°)

※ External reset (外部復歸) :

Increasing counting (u) : The counting value (CV) is reset to 「 0 」。

加算型 : 「 計數值 」 歸 「 零 」。

Decreasing counting (d) : The counting value (CV) is reset to 「 SV 」。

減算型 : 「 計數值 」 復歸成 「 設定值 」。

※ External gate (外部暫停) :

To inhibit the counter to count but doesn't reset the counting value。

暫停計數但不會將 「 計數值 」 歸零。

※ Preset method (設定方式) :

Duet preset type : In counting status, please press 「 ▲ 」 key to select the 「 SV1 (P1) or SV2 (P2) 」 preset value.

二段設定型 : 在計數狀態, 請按 「 ▲ 」 鍵可選擇 「 第一段 (P1) 或第二段 (P2) 」 設定值。

Note : Please don't set 「 SV1 」 larger than 「 SV2 」。

「 SV1 」 設定值請勿大於 「 SV2 」 設定值, 否則輸出動作可能異常。

■ Notice / 注意事項

- ① Please rate the power supply voltage within the specified range, If not, it may result in malfunction or burned.
工作電壓請限制在規格內, 否則可能造成計數器異常或燒毀。
- ② Please do not let the metal or wires cuttings drop into the inside of counter,
If do, It may result in malfunction, burning out or fired.
請勿讓鐵屑或銅絲掉入計數器內, 以免造成計數器失效, 燒毀甚至起火。
- ③ Please do not let water drop into counter, It may result in malfunction or burned.
請勿讓水滴入計數器內, 以免造成計數器失效, 燒毀甚至起火。
- ④ Please make sure to wire the counter correctly before power on,
If not, it may result in malfunction or burning out.
送電前請確認配線是否正確, 否則可能造成計數器異常或燒毀。
- ⑤ Please do not modify or repair the counter, to avoid resulting in malfunction or burning out.
請勿修改或修理計數器, 以免造成計數器失效或燒毀。

MC series 特殊用途計數器 Specific Counter



※ Tri meter / 多功能表

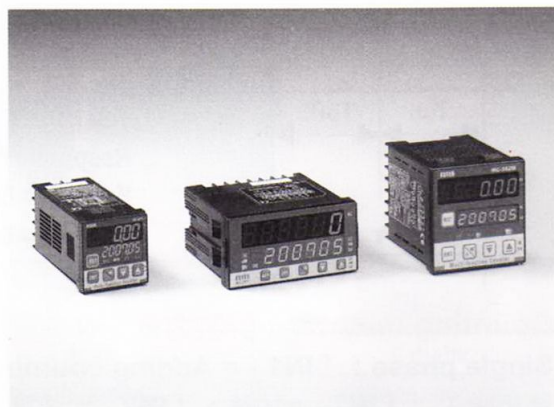
Single preset counter + RPM + Length meter

※ Twin preset counter / 可設定雙計數器

Twin single preset counters with synchronous counting
Single preset counter + Batch preset counter
twin single preset counters with separated counting

※ Counter + RPM / LSM / 可設定雙計數器 + 轉速表

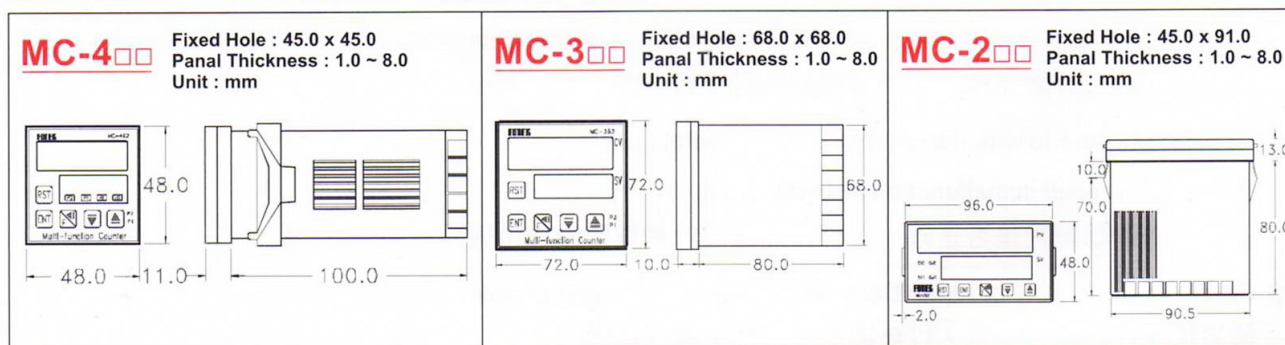
Dual preset counter + RPM (Tachometer)
Dual preset counter + LSM (Line speed meter)



■ General data / 共同規格

Type	型式	Twin counter			Counter + RPM / LSM			Tri - meter		
Outline (DIN)	外型	72x72	96x48	48x48	72x72	96x48	48x48	72x72	96x48	48x48
Model	型號	MC-326	MC-226	MC-426	MC-362M	MC-262M	MC-462M	MC-361T	MC-261T	MC-461T
Digits	位數	6 digits			6 digits			6 digits		
Preset	設定	Dual preset			Dual preset			Single preset		
Output method	輸出方式	Two relay			Two relay			One relay		
Contact rated	額定電流	5 A / 250VAC								
Power supply	工作電壓	90 ~ 265 VAC 50/60 Hz								
Current consumption	耗電流	5VA max.								
DC output	直流輸出	12 V / 100 mA max.								
Input method	輸入方式	NPN								
Response time	應答時間	T _{on} = 0.1 ms ~ 999.9 ms settable								
Output control	輸出控制	N / R / C selectable								
Output reset time	輸出復歸	0.01 ~ 99.99 sec settable								
Multiplier	乘法器	0.001 ~ 9.999 settable								
Memory method	記憶方式	EEPROM								
ESD strength	耐靜電	Over 8 KV								
Dielectric strength	電介強度	Over 2.5 KV / 1 min., Between power and each other terminal								
Isolation strength	絕緣強度	Over 100 MΩ / 500 VDC, Between power and each other terminal								
Operating Circums.	工作環境	- 20 °C ~ + 80°C ; 35% ~ 85% RH								

■ Outline dimension / 外形尺寸圖



Setting of function / 功能設定 [Twin counter]

Function	Symbol	Range	Description
Counting status 計數狀態 Press F Key 3 sec		0 ~ 999999	Range : 0 ~ 999999
Lock setting 鎖住設定 Press SET Key		0 ~ 4	1>Lck=0 : Unlock ; 2>Lck=1 : 「SV」 settable 3>Lck=2 : 「SV」 & 「SET」 settable 4>Lck=3 : 「SV」 & 「F」 settable 5>Lck=4 : All unsettable
Response time 反應時間設定 Press SET Key		0.1 ~ 999.9	Response frequency = [500 / rt] Hz
Mode setting 模式選擇 Press SET Key		0 ~ 2	1>nod=0 : Twin single preset counter (Syn.) 2>nod=1 : Twin single preset counter (Batch.) 3>nod=2 : Twin single preset counter (Input independent)
Up/Down selection 上下數選擇 Press SET Key		u or d	1>ud=u : Reset counter CV=0 2>ud=d : Reset counter CV=SV1 or SV2
Decimal point 小數點選擇 Press SET Key		0 ~ 3	1>dp=0 : Non decimal point 2>dp=1 : 1st decimal point 3>dp=2 : 2nd decimal point 4>dp=3 : 3rd decimal point
Multiplier 乘法器 Press SET Key		0.0001 to 99.9999	1> CV= Input X 「nuL」

Setting of output control method / 輸出控制方式設定

Function	Symbol	Range	Description
Counting status 計數狀態 Press ENT 3 sec		0 ~ 999999	1> Range : 0 ~ 999999
Control method setting 輸出控制方式設定 Press ENT		n / r / c	1> 1 st Single preset counter 2> 「n」 : Manual reset 3> 「r」 : Auto reset (CV & Output reset synchronously) 4> 「c」 : Auto reset (CV reset instantaneously)
Control method setting 輸出控制方式設定 Press ENT		n / r / c	1> 2 nd Single preset counter 2> 「n」 : Manual reset 3> 「r」 : Auto reset (CV & OUTPUT reset synchronously) 4> 「c」 : Auto reset (CV reset instantaneously)
Reset time setting 輸出復歸時間設定 Press ENT		0.01 ~ 99.99	1> Range : 0.01s ~ 99.99s 2> Disappeared when 「Cn = n」 3> 1 st Single preset counter
Reset time setting 輸出復歸時間設定 Press ENT		0.01 ~ 99.99	1> Range : 0.01s ~ 99.99s 2> Disappeared when 「Cn = n」 3> 2 nd Single preset counter

■ Setting of function / 功能設定 【Counter & RPM / LSM】

Function	Symbol	Range	Description
<p>Counting status 計數狀態</p> <p>Press (F) Key 3 sec</p>	<p>888888 888888</p>	0 ~ 999999	Range : 0 ~ 999999
<p>Lock setting 鎖定設定</p> <p>Press (SET) Key</p>	<p>LcL 0</p>	0 ~ 4	<p>1> Lck=0 : Unlock ; 2> Lck=1 : 「SV」 settable 3> Lck=2 : 「SV」 & 「SET」 settable 4> Lck=3 : 「SV」 & 「F」 settable 5> Lck=4 : All unsettable</p>
<p>Response time 反應時間設定</p> <p>Press (SET) Key</p>	<p>rt 0.1</p>	0.1 ~ 999.9	1> Response frequency = [500 / rt] Hz
<p>Mode setting 模式選擇</p> <p>Press (SET) Key</p>	<p>nod 0</p>	0 ~ 1	<p>1> nod = 0 : Single preset counter & RPM 2> nod = 1 : Single preset counter & LSM</p>
<p>Up/Down selection 上/下數選擇</p> <p>Press (SET) Key</p>	<p>ud U</p>	u or d	<p>1> ud=u : Reset counter CV=0 2> ud=d : Reset counter CV=SV1 or SV2</p>
<p>Decimal point 小數點選擇</p> <p>Press (SET) Key</p>	<p>dp 0</p>	0 ~ 3	<p>1> dp=0 : Non decimal point 2> dp=1 : 1st decimal point 3> dp=2 : 2nd decimal point 4> dp=3 : 3rd decimal point</p>
<p>Multiplier 乘法器</p> <p>Press (SET) Key 3 sec</p>	<p>nuL 1.0000</p>	0.0001 to 99.9999	1> CV= Input X 「nuL」
<p>PPR setting 每轉訊號數</p> <p>Press (SET) Key</p>	<p>PPr 1</p>	1 ~ 9999	<p>1> Pulse per revolution 2> Range : 1 ~ 9999</p>
<p>Diameter setting 直徑設定</p> <p>Press (SET) Key</p>	<p>dir 100.0</p>	0.1 ~ 9999.9	<p>1> LSM (M/min) = 「RPM」 x 「π」 x 「dir」 2> Unit : mm 3> Range : 0.1 ~ 9999.9</p>

■ Setting of output control method / 輸出控制方式設定

Function	Symbol	Range	Description
<p>Counting status 計數狀態</p> <p>Press (ENT) 3 sec</p>	<p>888888 888888</p>	0 ~ 999999	1> Range : 0 ~ 999999
<p>Control method setting 輸出控制方式設定</p> <p>Press (ENT)</p>	<p>Con r</p>	n / r / c	<p>1> 「n」 : Manual reset 2> 「r」 : Auto reset (CV & Output reset synchronously) 3> 「c」 : Auto reset (CV reset instantaneously)</p>
<p>Reset time setting 輸出復歸時間設定</p> <p>Press (ENT)</p>	<p>t1 0.50</p>	0.01 ~ 99.99	<p>1> Range : 0.01s ~ 99.99s 2> Disappeared when 「Cn = n」</p>

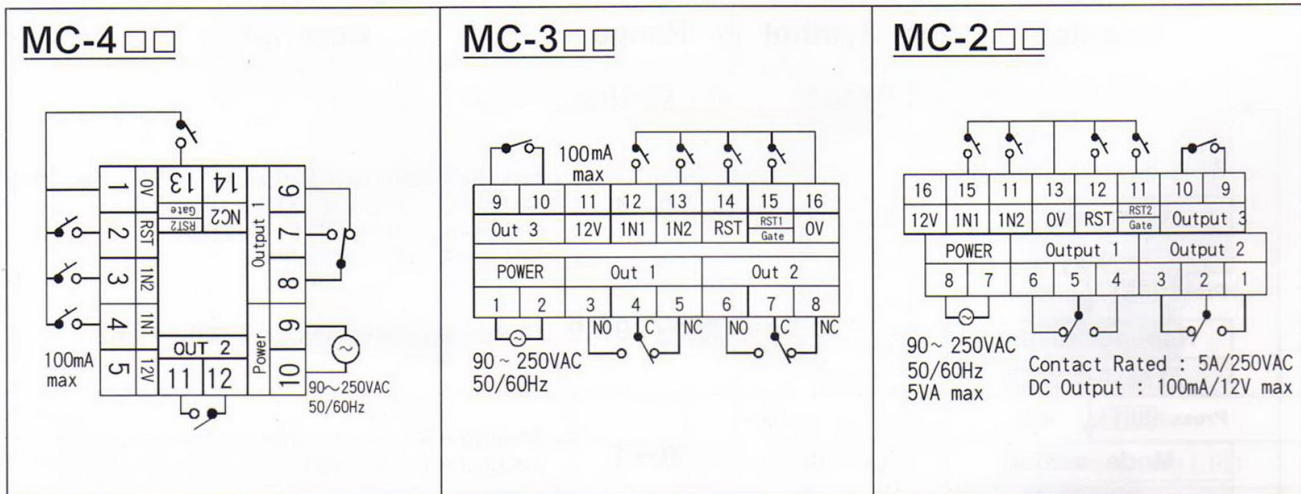
■ Setting of function / 功能設定 【Counter+RPM+Length Meter】

Function	Symbol	Range	Description
Counting status 計數狀態 Press F Key 3 sec	888888 888888	0 ~ 999999	Range : 0 ~ 999999
Lock setting 鎖定設定 Press SET Key	Lck 0	0 ~ 4	1> Lck=0 : Unlock ; 2> Lck=1 : 「SV」 settable 3> Lck=2 : 「SV」 & 「SET」 settable 4> Lck=3 : 「SV」 & 「F」 settable 5> Lck=4 : All unsettable
Response time 反應時間設定 Press SET Key	rt 0.1	0.1 ~ 999.9	1> Response frequency = [500 / rt] Hz
Mode setting 模式選擇 Press SET Key	nod 0	0 ~ 1	1> nod = 0 : Single preset counter & RPM 2> nod = 1 : Single preset counter & LSM
Up/Down selection 上/下數選擇 Press SET Key	ud U	u or d	1> ud=u : Reset counter CV=0 2> ud=d : Reset counter CV=SV or SV2
Decimal point 小數點選擇 Press SET Key	dp 0	0 ~ 3	1> dp=0 : Non decimal point 2> dp=1 : 1st decimal point 3> dp=2 : 2nd decimal point 4> dp=3 : 3rd decimal point
Multiplier 乘法器 Press SET Key 3 sec	nuL 1.0000	0.0001 to 99.9999	1> CV = Input counts X 「nuL」
PPR setting 每轉訊號數 Press SET Key	PPr 1	1 ~ 9999	1> Pulse per revolution 2> Range : 1 ~ 9999
Diameter setting 直徑設定 Press SET Key	dir 100.0	0.1 ~ 9999.9	1> LSM (M/min) = 「RPM」 x 「π」 x 「dir」 2> Unit : mm 3> Range : 0.1 ~ 9999.9

■ Setting of output control method / 輸出控制方式設定

Function	Symbol	Range	Description
Counting status 計數狀態 Press ENT 3 sec	888888 888888	0 ~ 999999	1> Range : 0 ~ 999999
Control method setting 輸出控制方式設定 Press ENT	Con r	n / r / c	1> 「n」 : Manual reset 2> 「r」 : Auto reset (CV & Output reset synchronously) 3> 「c」 : Auto reset (CV reset instantaneously)
Reset time setting 輸出復歸時間設定 Press ENT	t1 0.50	0.01 ~ 99.99	1> Range : 0.01s ~ 99.99s 2> Disappeared when 「Cn = n」

■ Connection diagram / 接線圖



■ Illustration / 說明

* Twin counter

◆ Selection of mode / 模式選擇

- 1> 「nod=0」 : Twin single preset counter (Synchronous counting) ; 雙計數器 (同步計數)
 「IN1」 → Adding counting input to twin single preset counter synchronously./雙計數器加算計數輸入。
 「IN2」 → Reducing counting input to twin single preset counter synchronously./雙計數器減算計數輸入
- 2> 「nod=1」 : Single preset counter + Batch preset counter ; 單量計數器+批量計數器
 「IN1」 → Adding counting input to single preset counter (SC) / 單量計數器加算計數輸入
 「IN2」 → Reducing counting input to the single counter (SC) / 單量計數器減算計數輸入
 The batch preset counter (TC) is 「Batch counter」 of the single preset counter (SC)
 批量計數器 (TC) 是單量計數器 (SC) 的批量計數器
- 3> 「nod=2」 : Twin single preset counter with separated counting input ; 雙計數器 (個別輸入計數)
 「IN1」 → Input of the 1st single preset counter (SC) / 第一設定計數器 (SC) 輸入
 「IN2」 → Input of the 2nd single preset counter (TC) / 第二設定計數器 (TC) 輸入

◆ Selection of display / 顯示選擇

- 1> 「TC」 = Counting display of 2nd Single preset counter on 「TC」 (Upper display)
 第二計數器計數值 (上排顯示器) ; 按 「RST」 & 「SET」 鍵可歸零計數值
- 2> 「SV2」 = Setting value of 2nd Single preset counter on 「SV」 & 「LED of SV2」 ; Out=Relay II & 「Out 2」
 第二計數器設定值 (下排顯示器 「SV」 / SV2的LED) ; 輸出 = Relay II & 「Out 2」
- 3> 「SC」 = Counting display of 1st Single preset counter on 「SV」 & 「LED of SC」
 第一計數器計數值 (下排顯示器 「SV」 / SC的LED) ; 按 「RST」 鍵可歸零計數值
- 4> 「SV1」 = Setting value of 1st Single preset counter on 「SV」 & 「LED of SV1」 ; Out=Relay I & 「Out 1」
 第一計數器設定值 (下排顯示器 「SV」 / SV1的LED) ; 輸出 = Relay I & 「Out 1」
- 5> Press 「Δ」 key to select the 「SV1」 or 「SV2」 or 「SC」 on the lower display
 按 「Δ」 鍵可選擇下排顯示器顯示 「SV1」 、 「SV2」 或 「SC」

■ Illustration / 說明

* Counter + RPM / LSM

◆ Selection of display / 顯示選擇

- 1> 「CV」 = Counting display of Dual preset counter (Upper display)
顯示計數器計數值 (上排顯示器)
- 2> 「SV1」 = Preset value of Dual preset counter (Lower display) 「LED SV1」
顯示計數器預報設定值 (下排顯示器)
「SV2」 = Main preset value of Dual preset counter (Lower display) 「LED SV2」
顯示計數器主設定值 (下排顯示器)
「M」 = Measuring value of RPM or LSM (Lower display) 「LED 4」
顯示「RPM」或「LSM」實際值 (下排顯示器)
- 3> Press 「Δ」 key to select the 「SV1」、 「SV2」 or 「M」
按「Δ」可選擇顯示「SV1」、 「SV2」 or 「M」

◆ Control output / 輸出控制

- 「CV」 ≙ (SV2 SV1) → Out 1 ON
「CV」 ≙ (SV2) → Out 2 ON [N/R/C control]
(SV2) ≙ (SV1)

* Tri - meter

◆ Selection of display / 顯示選擇

- 1> 「CV」 = Counting value of Single preset counter
顯示計量計數器計數值 (IN1)
- 2> Press 「Δ」 key to select the 「SV」、 「RM」 or 「LC」
按「Δ」可選擇顯示「SV」、 「RM」 or 「LC」
- 3> 「SV」 = Setting value of Single preset counter / 顯示計量計數器設定值
「RM」 = Measuring value of RPM or LSM / 顯示「RPM」或「LSM」速度值
「LC」 = Counting value of Length counter / 顯示長度計數器計數值 (IN2)

◆ Input / 輸入

- 1> 「IN 1」 → Input of Single preset counter & RPM / LSM
計量計數器及RPM / LSM訊號輸入
- 2> 「IN 2」 → Input of Length counter
長度計數器訊號輸入

- ※Multiplier settable
- ※Response time settable
反應速度可設定
- ※Memory function settable
記憶功能可選擇
- ※Output status changeable
輸出狀態可選擇
- ※Control output changeable
輸出控制模式可選擇
- ※Counting method UP / Down selectable
上下數計數方式可選擇



■ General data / 共同規格

Outline	外形	50x60	60x50	48x48
Model	型號	MC50-4D	MC60-4D	MC48-4D
Display digits	顯示位數	4	4	4
Power supply	工作電壓	24VDC/AC or 90 ~ 265VAC 50/60Hz		
Current consumption	耗電流	5VA max.		
DC power output	直流輸出	60mA / 12VDC max.		
Input method	輸入方式	NPN single phase		
Counting method	計數方式	Increasing or decreasing counting selectable		
Response time	應答時間	Ton = 0.1 ms ~ 999.9 ms settable		
Decimal point	小數點位數	0 ~ 3 selectable		
Multiplier	乘法器	0.001 ~ 9.999 settable		
Output method	輸出方式	Relay 1a ; 3A/250VAC		
Output control	輸出控制	N / R / C selectable		
Output reset time	輸出復歸時間	0.01 ~ 99.99 sec settable		
Output status	輸出狀態	NO or NC selectable		
Memory method	記憶方式	EEPROM		
Insulation strength	絕緣強度	100MΩ / 500VDC		
Dielectric strength	耐壓強度	2.5kV / 1min.		
Circumstance	工作環境	- 20°C ~ +60°C , 35 ~ 85%RH		
Life of relay	繼電器壽命	20x10 ⁶ times		

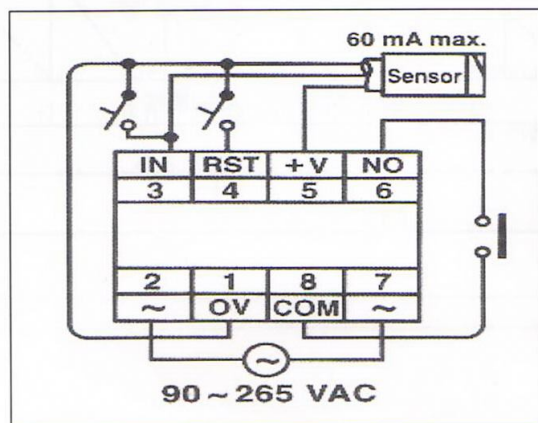
■ Outline dimension / 外形尺寸



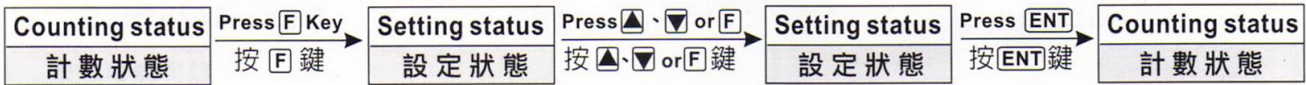
■ Setting of function / 功能設定

Function	Symbol	Range	Description
Counting status 計數狀態		0~9999	
Press [F] Key 3 sec			
Lock setting 鎖住設定		0~3	1>Lck=0 : Unlock 2>Lck=1 : 「SV」 & 「RST」 enable 3>Lck=2 : 「SV」 enable 4>Lck=3 : All lock
Press [SET] Key			
Response time 應答時間設定		0.1~999.9	1>Response frequency = [500/rt] Hz
Press [SET] Key			
Decimal point 小數點設定		0~3	1>dp=0 : Non decimal point 2>dp=1 : 1st decimal point 3>dp=2 : 2nd decimal point 4>dp=3 : 3rd decimal point
Press [SET] Key			
UP/Down setting 上數/下數設定		u or d	1>ud=u : Increasing counting 2>d=d : Decreasing counting
Press [SET] Key			
Multiplier 乘法器		0.001~9.999	CV = Pulse of input x 「nuL」
Press [SET] Key			
Output status 輸出狀態選擇		o or c	1>cn=o : CV ≥ SV → Relay ON 2>cn=c : CV ≥ SV → Relay OFF
Press [SET] Key			
Memory setting 記憶設定		E or n	1>nE=E : With memory 2>nE=n : Without memory
Press [SET] Key			

■ Connection diagram / 接線圖



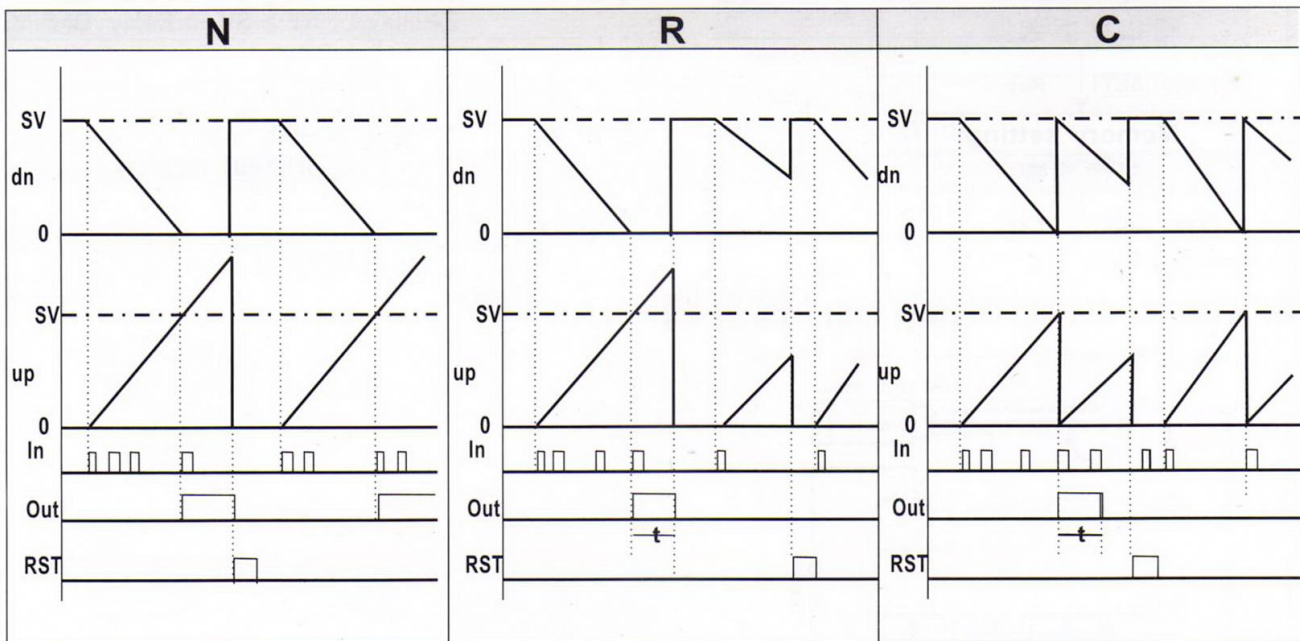
■ How to set the 「SV」 / 如何改變「設定值」



■ Setting of output control method / 輸出控制方式設定

Function	Symbol	Description
<p>Counting status 計數狀態</p> <p>Press SET 3 sec</p> <p>Output method setting 輸出控制設定</p> <p>Press SET</p> <p>Reset time setting 輸出復歸時間設定</p> <p>Press SET</p> <p>Counting status 計數狀態</p>	<p>8888 8888</p> <p>cn 8888</p> <p>dt 0.50</p> <p>8888 8888</p>	<p>1> Range : 0 ~ 9999</p> <p>1> 「n」 : Manual reset 2> 「r」 : Auto reset (CV & OUTPUT reset synchronously) 3> 「c」 : Auto reset (CV reset instantaneously)</p> <p>1> Range : 0.01s ~ 99.99s 2> Disappeared when 「Con=n」</p> <p>1> Range : 0 ~ 9999</p>

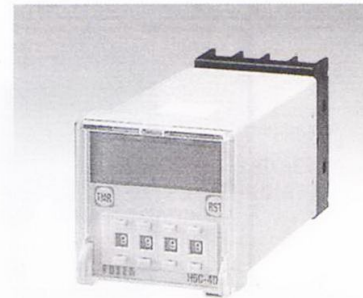
■ Timing chart of output control / 輸出控制時序圖



H5C series

DIN 48X48 PRESET DIGITAL COUNTER

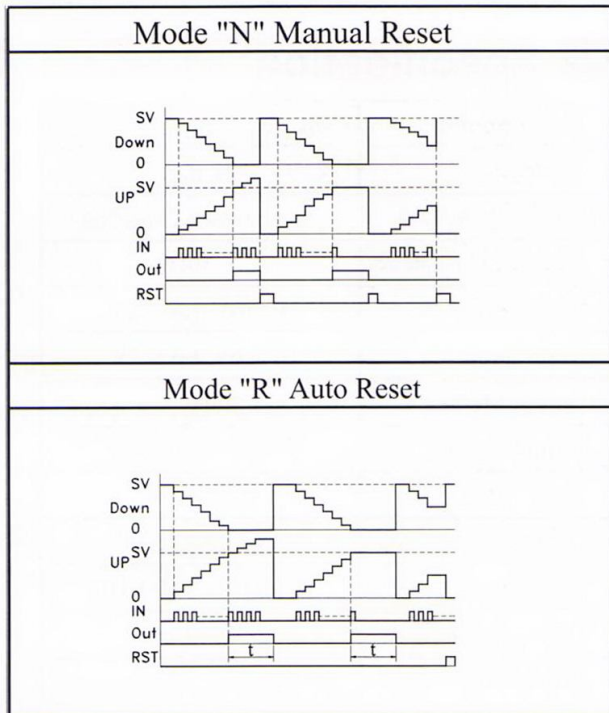
- ☆ DIN 48X48
- ☆ Up Counter or Down Counter Selectable.
- ☆ Decimal Point Selectable.
- ☆ Response Frequency : Hi < 1K Hz , Lo < 30 Hz Selectable.
- ☆ Output Control : Manual Reset or Auto Reset Selectable.
- ☆ Output Delay Time : 0.1S ~ 9.9 S
- ☆ DC Output : 60 mA / 12 VDC
- ☆ Switching Power Supply : 90 ~ 250 VAC , 50 / 60 Hz



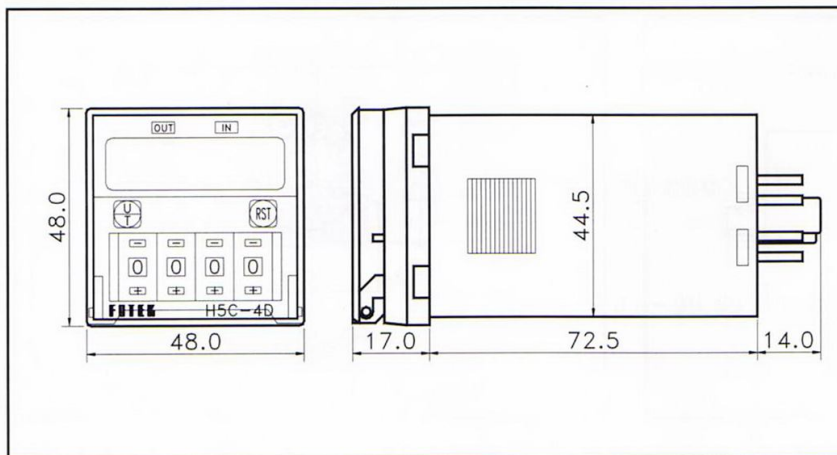
Specification

Model	H5C - 4D
Power Supply	90~250 VAC 50/60 Hz
Wattage	5VA max.
DC Output	60 mA / 12 VDC
Memory Method	EEPROM or Non-Memory
Counting Method	UP or Down Counting
Response Freq.	Hi < 1 KHz, Lo < 30 Hz
Count Input	Hi > 6V, Lo < 2V
Reset Input	Hi > 6V, Lo < 2V
Output Method	Relay, 1a / 10A
Output Control	N or R Selectable
Decimal Point	0, 1 or 2 Selectable
Delay Timer	0.1~9.9 Sec
Insulation Strength	100 M Ω / 500 VDC
Dielectric Strength	2.5K / 1 min.
Circumstance	-20° ~ +60°C, 35 ~ 85% RH

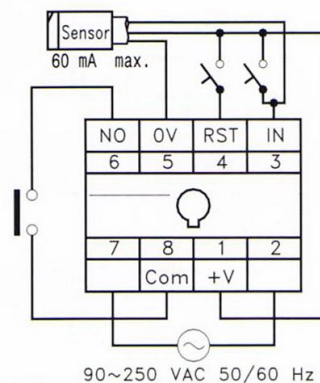
Output Timing Chart






Dimension



Connection Diagram

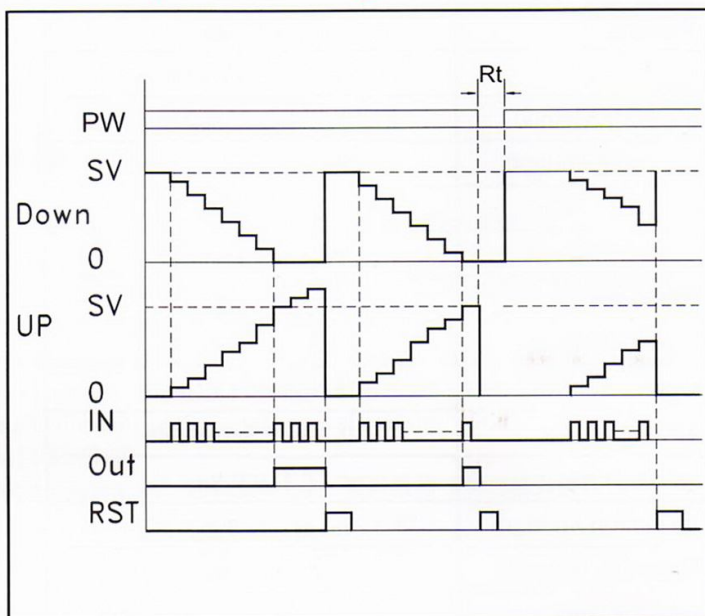


Digits	2 Digits	3 Digits	4 Digits
Model	SK-2D	SK-3D	SK-4D
Figure			
Range	0~99	0~999	0~9999
Display	0.56" 7-Segment LED	0.56" 7-Segment LED	0.4" 7-Segment LED
Weight	150g	155g	160g

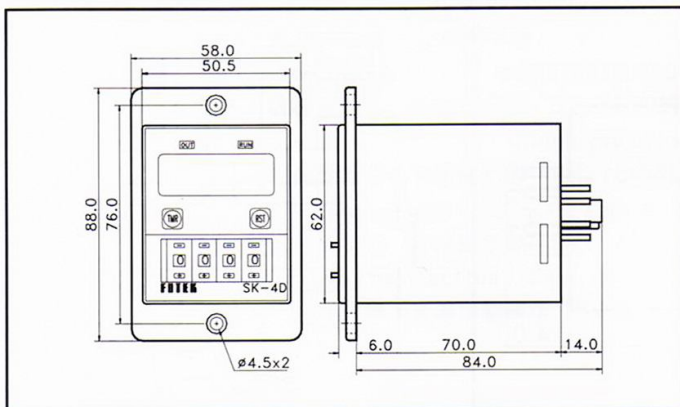
Specification

Power Supply	90~250 VAC 50/60 Hz
Wattage	5VA max.
Counting Method	UP or Down Counting
Response Frequency	30Hz
Count Input	Hi > 6V, Lo < 2V
Reset Input	Hi > 6V, Lo < 2V
Output Method	Relay
Output Control	Power ON Reset
Reset Time	0.1S max
Decimal Point	0, 1 or 2 Selectable
Insulation Strength	100 M Ω / 500 VDC
Dielectric Strength	2.5K / 1 min.
Circumstance	-20° ~ +60°C, 35 ~ 85% RH

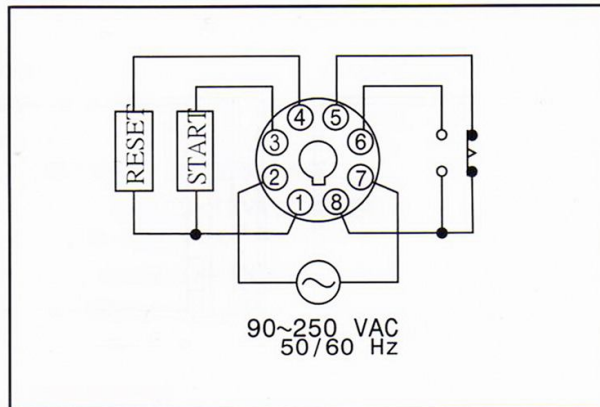
Output Timing Chart



Dimension



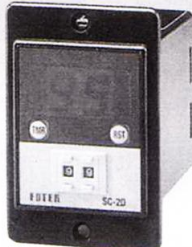

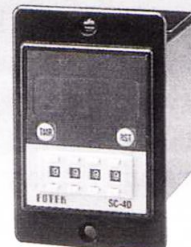
Connection Diagram



Ps.N Type Available Also

PRESET DIGITAL COUNTER

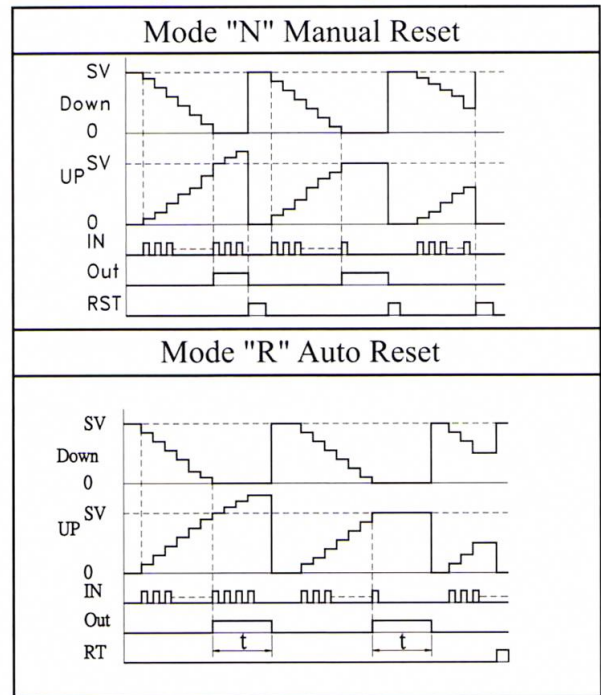
SC
series

Digits	2 Digits	3 Digits	4 Digits
Model	SC-2D	SC-3D	SC-4D
Figure			
Range	0~99	0~999	0~9999
Display	0.56" 7-Segment LED	0.56" 7-Segment LED	0.4" 7-Segment LED
Weight	155g	160g	165g

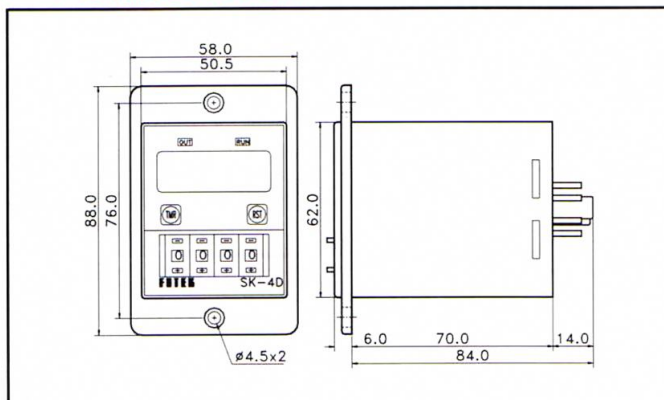
Specification

Power Supply	90~250 VAC 50/60 Hz
Wattage	5VA max.
DC Output	60 mV / 12 VDC
Memory Method	EEPROM or Non-Memory
Counting Method	UP or Down Counting
Response Freq.	Hi > 1 KHz, Lo < 30 Hz
Count Input	Hi > 6V, Lo < 2V
Reset Input	Hi > 6V, Lo < 2V
Output Method	Relay, 1a / 10A
Output Control	N or R Selectable
Decimal Point	0, 1 or 2 Selectable
Delay Timer	0.1~9.9 Sec
Insulation Strength	100 M Ω / 500 VDC
Dielectric Strength	2.5K / 1 min.
Circumstance	-20° ~ +60°C, 35 ~ 85% RH

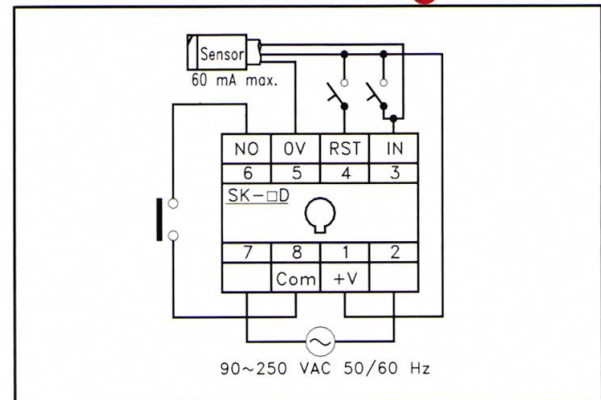
Output Timing Chart



Dimension



Connection Diagram

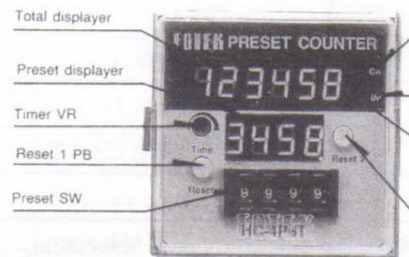
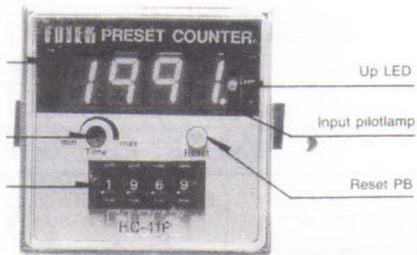


PS.N Type Available Also

- * Hi-power supply : 100mA/12VDC
- * Hi-speed response time : 0.2ms
- * Hi-reliability with hi-anti-noise circuit.
- * Easy to test with input pilotlamp.
- * Easy to longer distance monitor with large size LED display.
- * Long time memory with Ni-Cd battery.

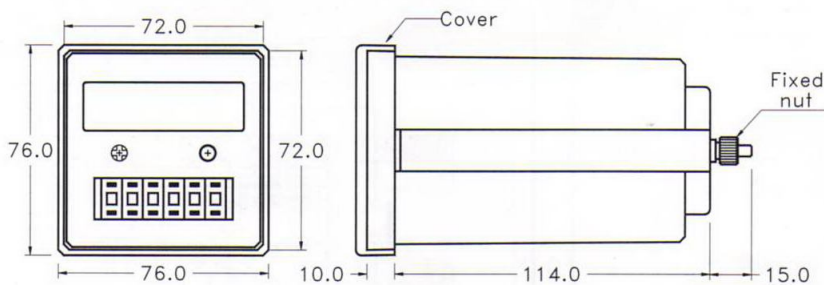


Illustration



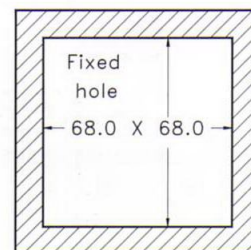
Outline & Fixed Hole

Outline



Fixed Hole

<Thickness 1~8mm>



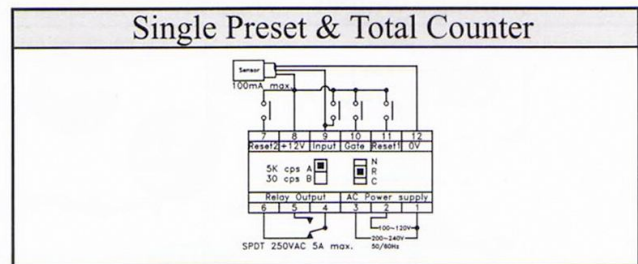
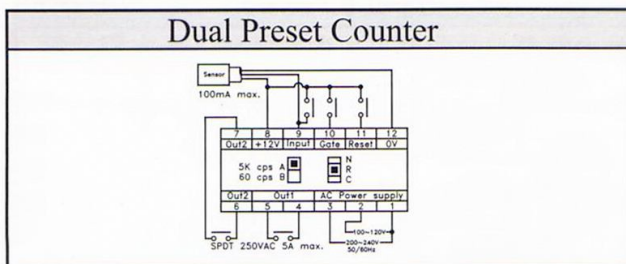
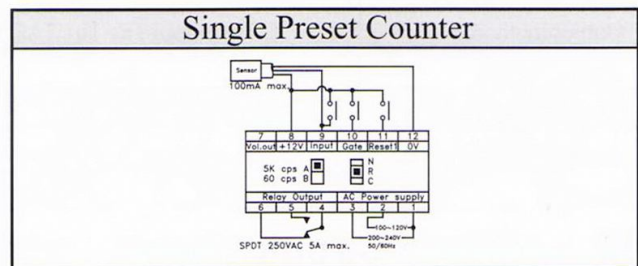
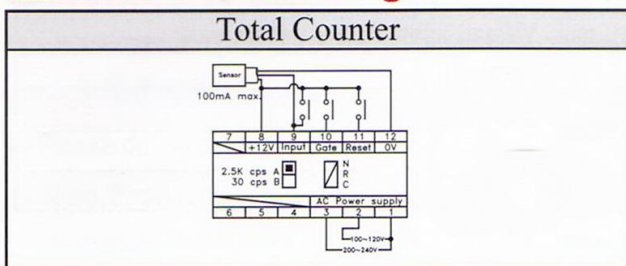
A/B Slide Switch < Response Time Selected >

Counting	L→H	$0V \leq L < 2V$, $6V \leq H < 30$ / Enabling Current $< I_e > < 3mA/12V$
Mode " A "	2.5K CPS	Cycle Duty Ratio 1:1 , Suited for Solid State Input Such As CMOS , TTL or Transister etc.
Mode " B "	60 CPS	Response Time $< 15ms$, Suited for Contact input Such As Limit Sw , Relay or Reed SW etc.

N/R/C Slide Switch < Output Control Selected >

Mode	Single Preset	Dual Preset
N		
R		
C		

Connection Diagram



Total Counter



Model	HC-4T	HC-5T	HC-6T
Nr. of displayer	4 digits	5 digits	6 digits
Display range	0000~9999	00000~99999	000000~999999
Display method	0.56" 7-segment red LED	0.36" 7-segment red LED	
Response frequency	Contact input < 60 cps ; Non-contact input < 2.5K cps		
Operating voltage	110/220VAC ±20% , 50/60Hz		
Current Consumption	5VA max.		
Weight	Approx.650g.		

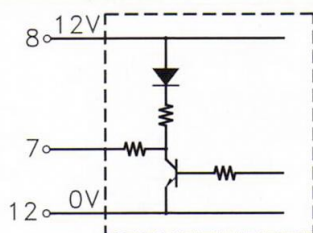
Single Preset Counter



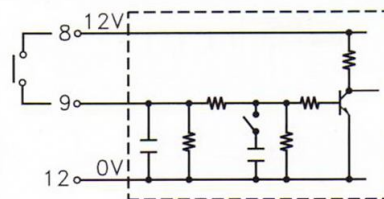
Model	HC-21P	HC-31P	HC-41P	HC-51P	HC-61P
Nr. of displayer	2 digits	3 digits	4 digits	5 digits	6 digits
Setting range	1~99	1~999	1~9999	1~99999	1~999999
Display method	0.56" 7-segment red LED	0.36" 7-segment red LED			
Response frequency	Contact input < 60 cps ; Non-contact input < 2.5K cps				
Output method	Relay output 1a / 1b , 5A/250VAC max. Voltage output NPN , 150mA max.				
Output control	N.R.C. control				
Operating voltage	110/220VAC ±20% , 50/60Hz				
Current Consumption	5VA max.				
Weight	Approx.650g.				

Interface Circuit

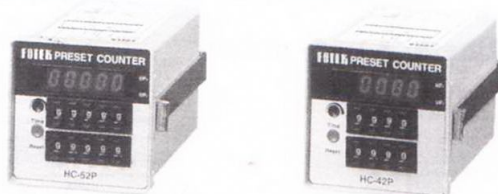
Voltage Output < 7th Pin >



Input < 9th Pin >



Dual Preset Counter



Model	HC-42P	HC-52P	Standard type : 1st preset output is controlled by 2nd preset output with N.R.C. Optional type : 1st preset output is controlled with one shot < 0.1s > , 2nd preset output is controlled with N.R.C.
Nr.of displayer	4 digits	5 digits	
Setting range	1 st 1~9999 2nd 1~9999	1st 1~99999 2nd 1~99999	
Display method	0.36" 7-segment red LED		
Response frequency	High Speed<2.5K cps ; Low Speed<60 cps		
Output method	Two relays , 1a 5A/250VAC		
Output control	N.R.C control		
Operating voltage	110/220VAC ± 20% , 50/60Hz		
Current consumption	5VA max.		
Weight	Approx. 700g.		

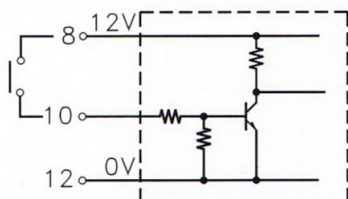
Single Preset & Total Counter



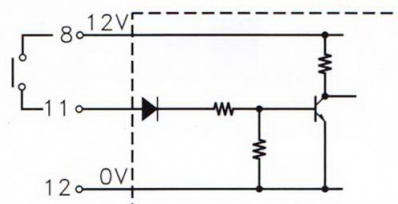
Model	HC-4P6T	Standard type : The total Counter is synchronously Counting with the preset counter. Optional type : The total Counter Counts when preset counter output.<HC-4P6TA>	
Nr.of displayer	Preset 4 digits , total 6 digits		
Display range	0000~9999 & 000000~999999		
Setting range	1~9999		
Display method	0.36" 7-segment red LED		
Response frequency	High Speed<1K cps ; Low Speed<60 cps		
Output method	Relays		
Output control	N.R.C control		
Operating voltage	110/220VAC ± 20% , 50/60Hz		
Current consumption	5VA max.		
Weight	Approx. 700g.		

Interface Circuit

Gate < 10th Pin >



Reset < 11th Pin >

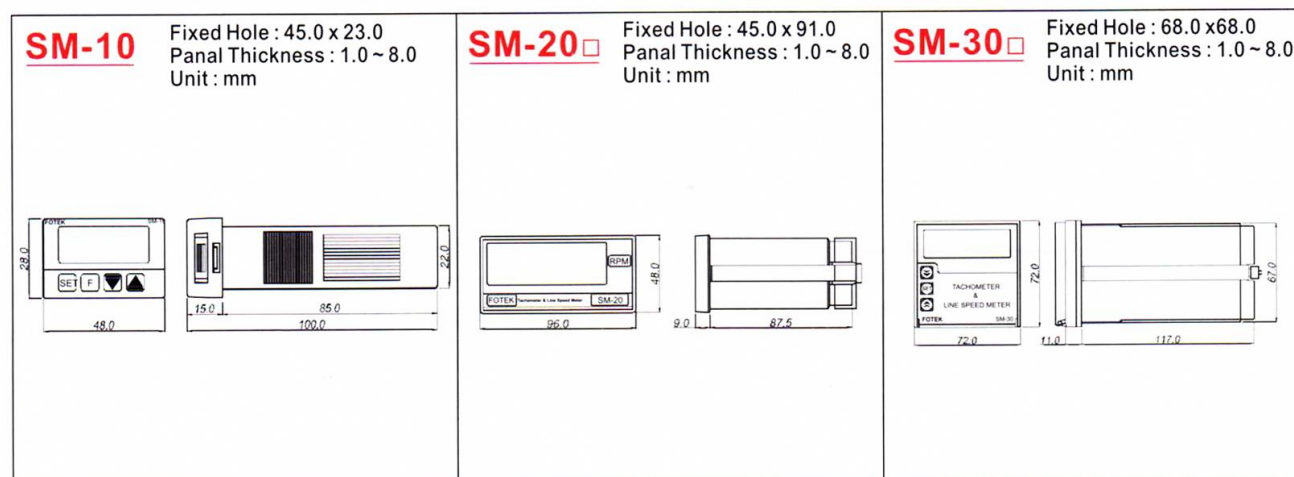


- ※ Multifunction meter
Tachometer、Line speed meter & Duty meter
- ※ Pulses per revolution settable
- ※ Sampling time auto tuning
- ※ Decimal point settable
- ※ Limit of alarm settable
- ※ Transmitter of multifunction meter is optional

General data / 共同規格

Outline	外型	24x48	96x48			72x72	
Model	型號	SM-10	SM-20	SM-20S	SM-30	SM-30S	
Transmitter	再傳送	Non	Non	4~20mA	Non	4~20mA	
Alarm output	警報輸出	Relay	Relay	Non	Relay	Non	
Output control	輸出控制	Hi / Lo	Hi / Lo	Non	Hi / Lo	Non	
Digits	位數	4 digits					
Power supply	工作電壓	90 ~ 265 VAC 50/60 Hz					
Current consumption	耗電流	5VA max.					
DC output	直流輸出	12 V / 100 mA max.					
Input method	輸入方式	NPN					
Response time	應答時間	Ton = 0.1 ms ~ 99.9 ms settable					
Pulses per revolution (PPR)		1~999 PPR settable					
Diameter	轉軸直徑設定	1 ~ 999mm settable (Line speed meter available only)					
Memory method	記憶方式	EEPROM					
ESD strength	耐靜電	Over 8 KV					
Dielectric strength	電介強度	Over 2.5 KV / 1 min., Between power and each other terminal					
Isolation strength	絕緣強度	Over 100 MΩ / 500 VDC, Between power and each other terminal					
Operating Circums.	工作環境	- 20 °C ~ + 80 °C ; 35% ~ 85% RH					

Outline dimension / 外形尺寸圖



Tachometer & Line speed meter

SM-□□ Series

■ Data setting / 參數設定

Status / 狀態	Symb. / 顯示符號	Description / 說明
<div style="border: 1px solid black; padding: 5px;"> Running status 運轉狀態 Press SET Key 3 sec </div>	100.0	1> Running status / 運轉狀態
<div style="border: 1px solid black; padding: 5px;"> Setting of lock 鎖住設定 Press SET Key </div>	Lck.0	1> 「Lck=0」 : Unlock / 可設定 2> 「Lck=1」 : All lock / 鎖定
<div style="border: 1px solid black; padding: 5px;"> Setting of PPR 每轉信號數設定 Press SET Key </div>	PPR.1	1> 「PPR」 : Pulses per revolution 2> Range : 1 ~ 999
<div style="border: 1px solid black; padding: 5px;"> Setting of diameter 輪軸直徑設定 Press SET Key </div>	d.100	1> 「d..100」 : Diameter of roller=100 mm (Range=1~999mm) 2> Disappeared at tachometer mode
<div style="border: 1px solid black; padding: 5px;"> Setting of Limit 警報值設定 Press SET Key </div>	1000	1> Range : 0 ~ 9999 2> Range : 0 ~ 9999
<div style="border: 1px solid black; padding: 5px;"> Setting of alarm status 警報輸出狀態設定 Press SET Key </div>	C.0	1> 「C.0」 : PV> 「Limit value」 → Relay ON 2> 「C.1」 : PV< 「Limit value」 → Relay ON
<div style="border: 1px solid black; padding: 5px;"> Power on delay time 送電延遲時間 Press SET Key 3 sec </div>	t.0	1> 「t」 : 0 ~ 999s 2> Delay time of power on alarm output
<div style="border: 1px solid black; padding: 5px;"> Setting of distance 通過行程設定 Press SET Key </div>	L.000	1> Distance of measuring : Unit = 1 Meter 2> Passing time T (sec) = 「L」 / Line speed 3> 「L」 appeared at 「nod.5」 only

■ Function setting / 功能設定

Status / 狀態	Symb. / 顯示符號	Description / 說明
<div style="border: 1px solid black; padding: 5px;"> Running status 運轉狀態 Press DN Key 3 sec </div>	100.0	1> Running status / 運轉狀態 2> SM-10/SM-30 : <input type="checkbox"/> key ; SM-20 : <input type="checkbox"/> key
<div style="border: 1px solid black; padding: 5px;"> Selection of meter 轉速表或線速表選擇 Press SET Key </div>	nod.0	1> 「nod.0」 = RPM ; 2> 「nod.1」 = RPS 3> 「nod.2」 = RPH ; 4> 「nod.3」 = M / min. 5> 「nod.4」 = Yd/min ; 6> 「nod.5」 = T sec
<div style="border: 1px solid black; padding: 5px;"> Setting of response time 反應時間設定 Press SET Key </div>	r.00.1	1> Response time(r) : Response frequency = (500 / r) Hz 2> Range : 0.1 ~ 99.9 ms
<div style="border: 1px solid black; padding: 5px;"> Setting of decimal point 小數點選擇 Press SET Key </div>	dP.A	1> 「dP.A」 = Decimal point auto shift 2> 「dP.n」 = Without decimal point 3> 「dP.1」 = One decimal point

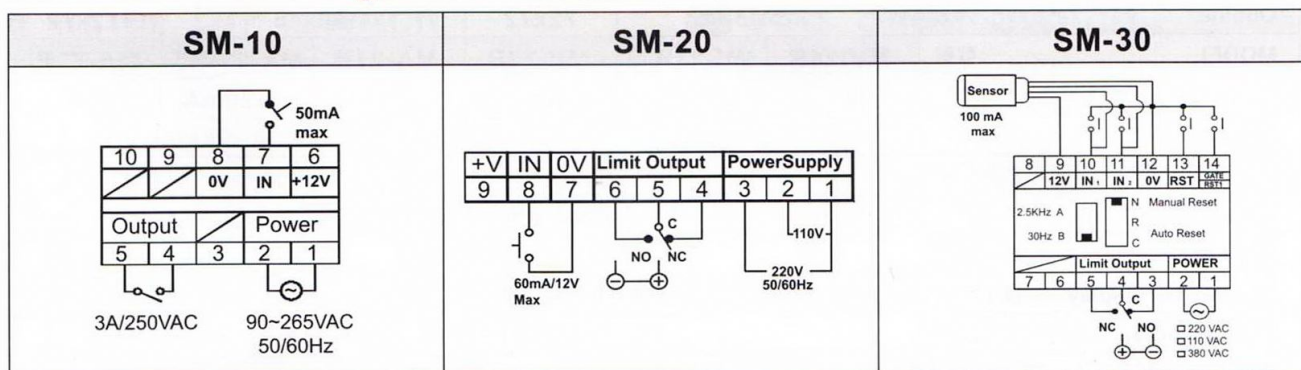
■ Data setting / 參數設定

Status / 狀態	Symb. / 顯示符號	Description / 說明
<div style="border: 1px solid black; padding: 5px;"> <p>Running status 運轉狀態</p> <p>Press SET ↓ Key 3 sec</p> <p>Setting of lock 鎖住設定</p> <p>Press SET ↓ Key</p> <p>Setting of PPR 每轉信號數設定</p> <p>Press SET ↓ Key</p> <p>Setting of diameter 輪軸直徑設定</p> <p>Press SET ↓ Key</p> <p>Limit of transmitter 傳送範圍設定</p> <p>Press SET ↓ Key</p> <p>Setting of distance 通過時間行程設定</p> <p>Press SET ↓ Key 3 sec</p> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center;">100.0</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Lck.0</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">P.001</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">d.100</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">1000</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">L.00.0</div>	<p>1> Running status / 運轉狀態</p> <p>1> 「Lck = 0」 : Unlock / 可設定 2> 「Lck = 1」 : All lock / 鎖定</p> <p>1> 「PPR」 : Pulses per revolution 2> Range : 1 ~ 999</p> <p>1> Diameter of roller : 1 ~ 999 mm 2> Disappeared at tachometer mode</p> <p>1> Angle of transmitter : 0 ~ 9999 「0 ~ 1000」 is transmitted to 「4 ~ 20 mA」 2> Range : 0 ~ 9999</p> <p>1> Distance of measuring : Unit = m 2> Passing time T (sec) = 「L」 / Line speed 3> 「L」 appeared at 「nod.5」 only</p>

■ Function setting / 功能設定

Status / 狀態	Symb. / 顯示符號	Description / 說明
<div style="border: 1px solid black; padding: 5px;"> <p>Running status 運轉狀態</p> <p>Press DN ↓ Key 3 sec</p> <p>Selection of meter 轉速表或線速表選擇</p> <p>Press SET ↓ Key</p> <p>Setting of response time 反應時間設定</p> <p>Press SET ↓ Key</p> <p>Setting of decimal point 小數點選擇</p> <p>Press SET ↓ Key</p> <p>Offset of 4 mA 4 mA偏差值設定</p> <p>Press SET ↓ Key</p> <p>Offset of 20 mA 20 mA偏差值設定</p> <p>Press SET ↓ Key</p> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center;">100.0</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">nod.0</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">r.00.1</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">dP.A</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">□.000</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">□.000</div>	<p>1> Running status / 運轉狀態</p> <p>1> 「nod.0」 = RPM ; 2> 「nod.1」 = RPS 3> 「nod.2」 = RPH ; 4> 「nod.3」 = M / min. 5> 「nod.4」 = Yd/min ; 6> 「nod.5」 = T sec</p> <p>1> Response time(r) : Response frequency = (500 / r) Hz 2> Range : 0.1 ~ 99.9 ms</p> <p>1> 「dP.A」 = Decimal point auto shift 2> 「dP.n」 = Without decimal point 3> 「dP.1」 = One decimal point</p> <p>1> Range : -99 ~ 999 2> Offset of transmitter (4 mA)</p> <p>1> Range : -99 ~ 999 2> Offset of transmitter (20 mA)</p>

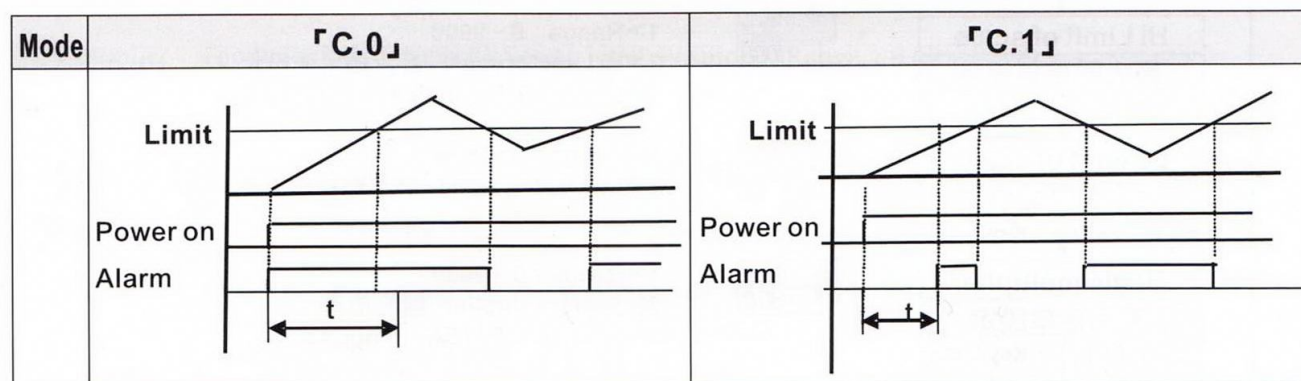
■ Connection diagram / 接線圖



■ Selection of meter / 轉速表或線速表選擇

nod	Type of meter	Method of measuring
「0」	Tachometer (RPM)	「RPM」: Revolutions per minute 每分鐘幾轉
「1」	Tachometer (RPS)	「RPS」: Revolutions per second 每秒幾轉
「2」	Tachometer (RPH)	「RPH」: Revolutions per hour 每小時幾轉
「3」	Line speed meter (M/min.)	「M/min.」: Meter per minute.
「4」	Line speed meter (Yd/min.)	「Yd/min.」: Meter per minute.
「5」	Duty meter (SEC)	「SEC」: Time of duty

■ Alarm output



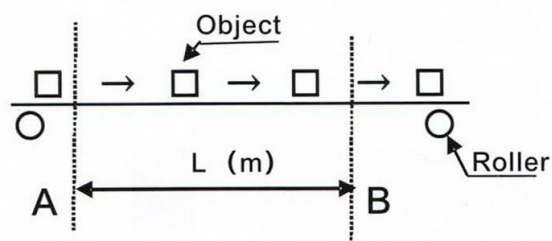
■ Duty meter : To measure the passing time (T) from "A" to B"

Passing time : 「T」 (sec)

$$「T」 \text{ (sec)} = 「L」 / \text{Line speed}$$

「d」 mm = Diameter of roller

「L」 m = Distance from "A" to B"

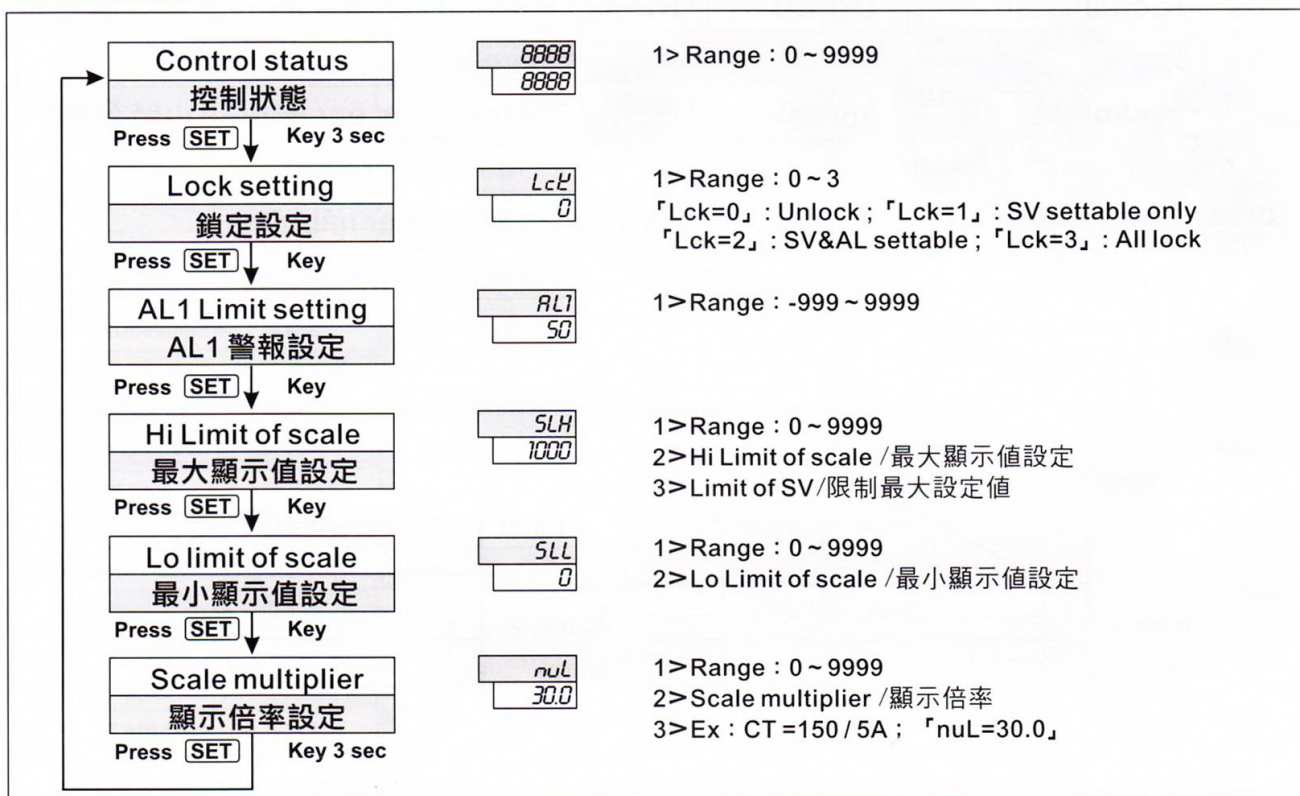


MV/MA Series

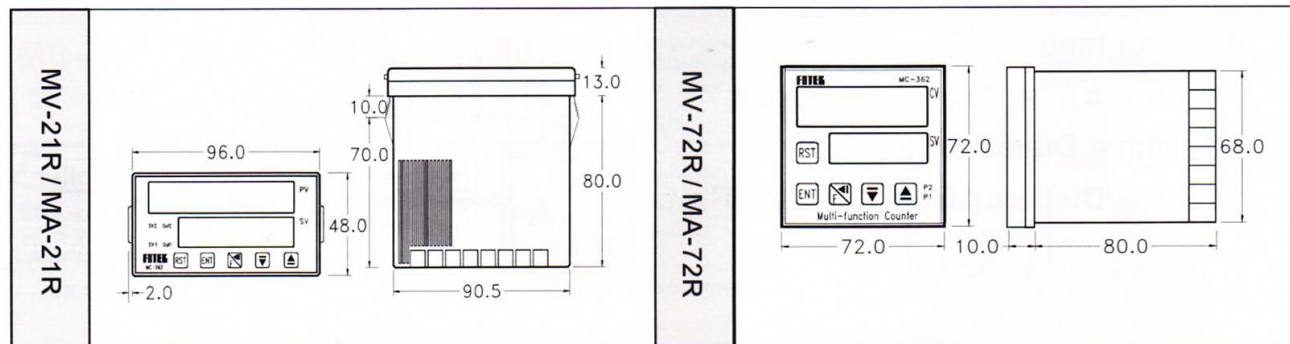
設定型電壓表 / 設定型電流表 Preset Voltage Meter / Preset Current meter

Product	產品	Voltage meter			Current meter		
Outline	外形	96x48		72x72	96x48		72x72
MODEL	型號	MV-21R	MV-21R-S	MV-72R	MA-21R	MA-21R-S	MA-72R
Transmitter	傳送	Non	4~20mA	Non	Non	4~20mA	Non
Input		0 ~ 400 VAC			0 ~ 5A (VAC)		
Power supply	工作電壓	90~265 VAC, 50/60 Hz / 5 VA MAX.					
Control output	控制輸出	RELAY 1c <5A/250VAC>					
Display range	顯示範圍	0 ~ 9999					
Accuracy of display	顯示精度	± < 0.1 % OF F.S. + 1 DIGIT >					
Setting range	設定範圍	0 ~ 9999					
Memory method	記憶方式	EEPROM					
Insulation resistance	絕緣強度	OVER 50MΩ / 500VDC					
Dielectric strength	耐壓強度	OVER 2.5 KV / 1 MINUTE					
Operating circum.	使用環境	-20°C ~ 75°C ; 35%~85% RH					

參數設定



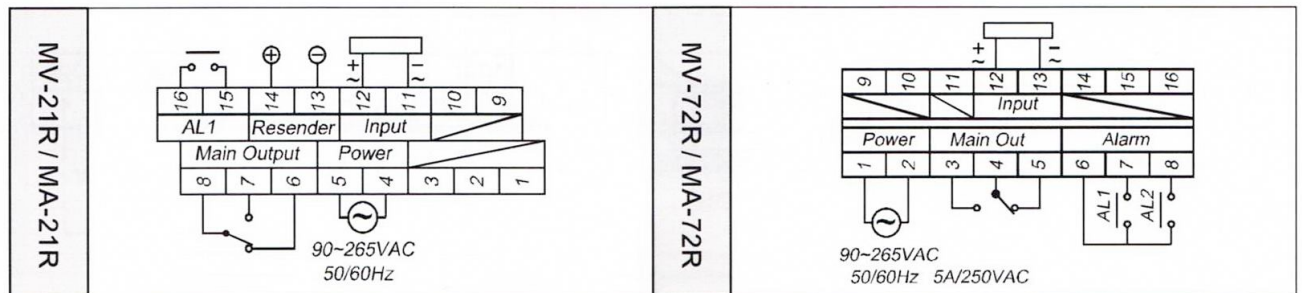
Outline



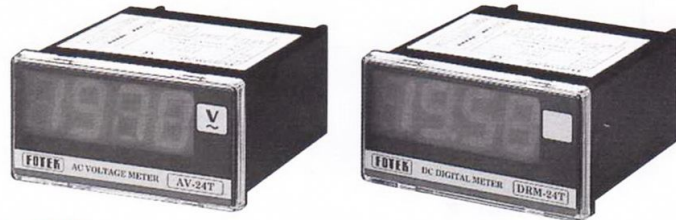
■ 參數設定

Control status 控制狀態	8888 8888	1> Range = 0 ~ 9999
Press [F] ↓ Key 3 sec		
Cycle time 動作週期	ct 15	1> Range = 0 ~ 99 2> 「CT=0」: ON/OFF control ; 「PV>SV」 → Relay 1 ON
Press [SET] ↓ Key		
Auto tunin 自動演算	At 0	1> 「At = 0」 : Control status 2> 「At = 1」 : Auto tuning status
Press [SET] ↓ Key		
Auto tuning bias 自動演算偏差值	tu 0	1> Auto tuning value = (SV - tu)
Press [SET] ↓ Key		
Proportion band 比例帶	P 25	1> Range = 0 ~ 3999 2> 「CT=0」 → 「P」 is disappeared
Press [SET] ↓ Key		
Integral time 積分時間	I 80	1> Range = 0 ~ 3999 2> 「CT=0」 → 「I」 is disappeared
Press [SET] ↓ Key		
Derivative time 微分時間	d 20	1> Range = 0 ~ 3999 2> 「CT=0」 → 「d」 is disappeared
Press [SET] ↓ Key		
Hysteresis 動作應差	Hys 2	1> 「CT=0」 → 「Hys」 is appeared only 2> (PV>SV) → Out1 ON; [PV< (SV-Hys)] → Out1 OFF
Press [SET] ↓ Key		
Input selecting 輸入選擇	int t	1> No use
Press [SET] ↓ Key		
Unit selecting 單位選擇	unt u	1> Display only
Press [SET] ↓ Key		
Decimal point selecting 小數點選擇	dp 0	1> 「dp = 0」 : Without decimal point 2> 「dp = 1」 : One decimal point
Press [SET] ↓ Key		
Input shift P 輸入修正	Sht 0	1> Range = -99 ~ +99 2> 「PV」 = (PV + Sht)
Press [SET] ↓ Key		
Alarm mode 警報模式	ALt 0	1> 「AL t=0」 : 「PV> (SV+AL1) 」 → Relay 2 ON
Press [SET] Key		

■ Outline



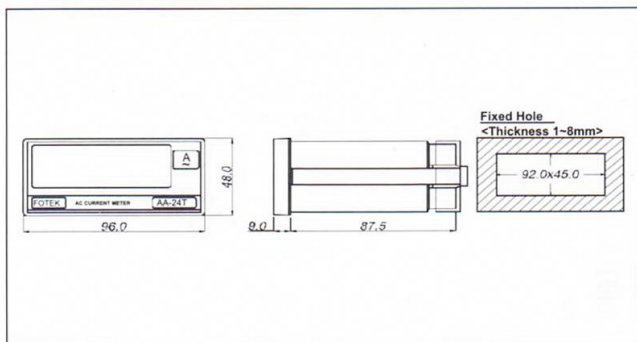
- ※ **Dual Slope A/D Converter,**
Accuracy Less Than 0.2% of F.S.
- ※ **Large Size LED Display,**
Easy To Monitor.
- ※ **Amplification, $10^0 \sim 10^4$,**
Selectable By DIP Switch.
- ※ **Digital Scale Meter, DRM-24T Suited To**
Display The RPM of Inverter or Generato



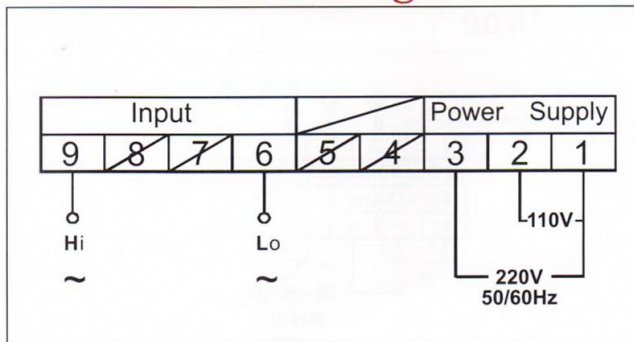
■ Specification / 規格

Type	AC Voltage Meter		DC Voltage Meter		Digital Scale Meter			
Model	AV-24T	AV-25T	DV-24T	DV-25T	ARM-24T	ARM-25T	DRM-24T	DRM-25T
Display Range	1999	9999	1999	9999	1999	9999	1999	9999
Measuring Voltage	A/C Voltage		DC Voltage		AC Voltage		DC Voltage	
Input voltage	600V max.				50V max.			
Power Supply	AC 110V/220V 50/60Hz 5VA max.							
Display Method	25.4 mm 7-Segment Red LED							
Converting Method	Dual Slope A/D Converter							
Accuracy	$\pm 0.2\%$ of F.S.							
Response Time	1 Sec							
Dielectric Strength	2.5KV/1 min.							
Insulation Strength	100M Ω /500VDC							
Circumstance	-20°C ~ +60°C, 35% ~ 85%RH							
Weight	310g							

■ Dimension



■ Connection Diagram



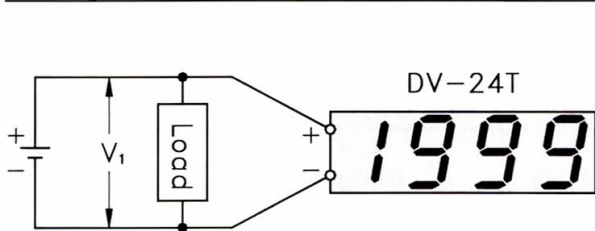
■ Illumination

Display Range	NO. of SW-I					Amplification
	1	2	3	4	5	
199.9mV	ON	×	×	×	×	10^4
1.999 V	×	ON	×	×	×	10^3
19.99 V	×	×	ON	×	×	10^2
199.9 V	×	×	×	ON	×	10^1
1999 V	×	×	×	×	ON	10^0

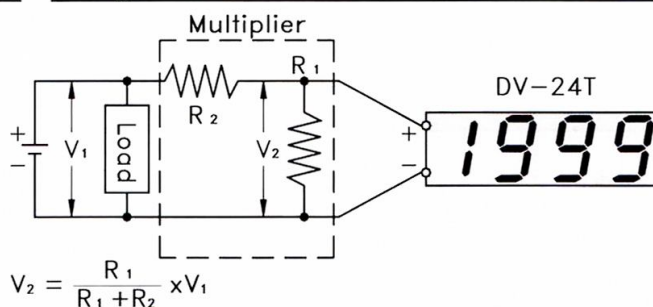
Decimal Point	NO. of SW-II			Decimal Point Selecting Is Independent On The Amplification.
	1	2	3	
1	×		ON	
2	×	ON	×	
3	ON		×	

■ How To Measure DC Voltage

Voltage $\langle V1 \rangle < 400\text{VDC}$

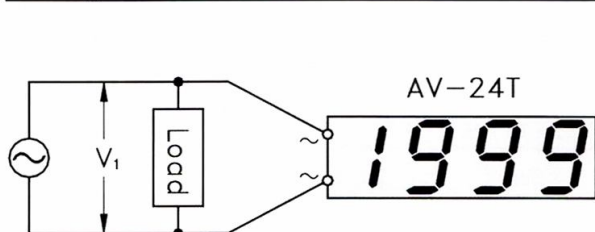


Voltage $\langle V1 \rangle < 400\text{VDC}$

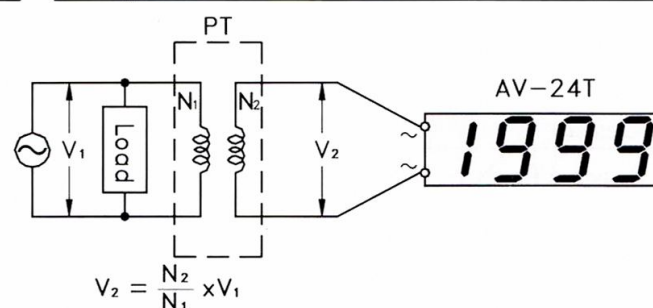


■ How To Measure AC Voltage

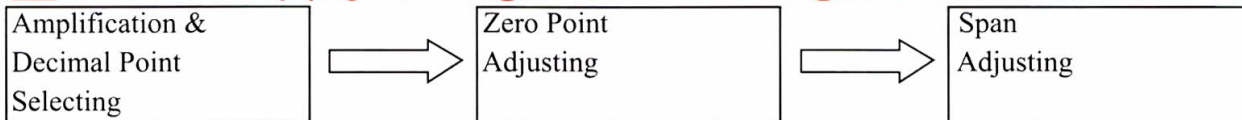
Voltage $\langle V1 \rangle < 400\text{V rms}$



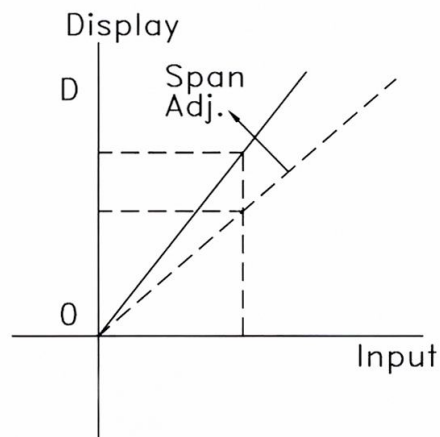
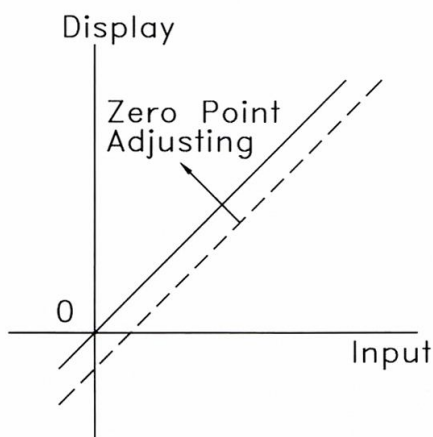
Voltage $\langle V1 \rangle < 400\text{V rms}$



■ How To Apply Voltage Meter To Digital Scale Meter



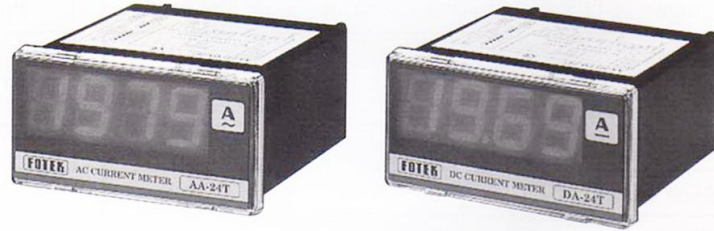
SW-I & SW-II Selecting



AA/DA series

DIN 48X96 AC / DC CURRENT METER

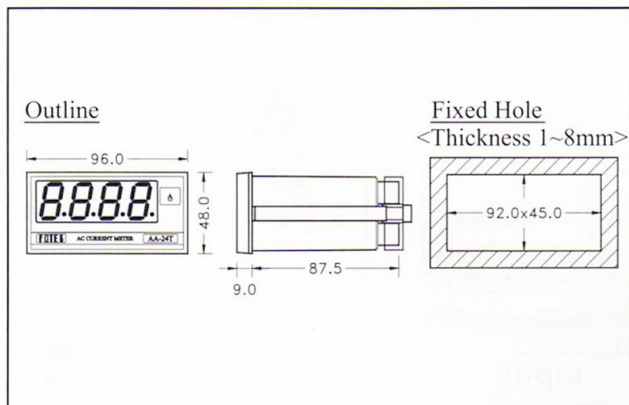
- ☆ Dual Slope A/D Converter,
Accuracy Less Than 0.2% of F.S.
- ☆ Large LED Display, 25.4 mm,
Easy To Monitor.
- ☆ Input 4 ~ 20 mA, To Measure
Moisture, Temperature or Pressure.
- ☆ Easy To Measure High Current
With CT.



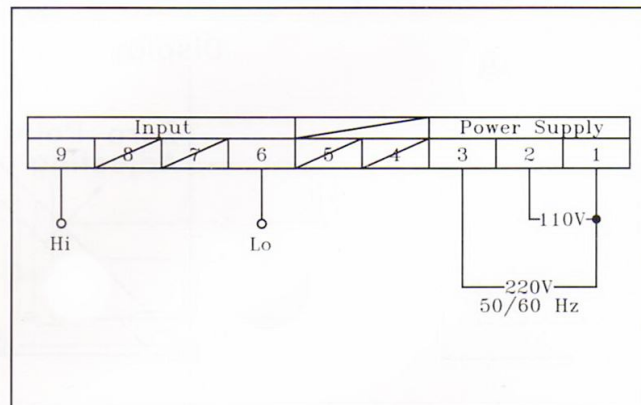
Specification

Type	AC Current Meter		DC Current Meter		
Model	AA-24T	AA-24T-1	DA-24T	DA-24T-1	DA-24T-2
Measuring Range	0~5A	0~200mA	0~5A	0~200mA	4~20mA
Input Voltage	AC Voltage		DC Voltage		
Power Supply	AC 110V/220V 50/60Hz 5VA max.				
Display Range	1999				
Display Method	25.4 mm 7-Segment Red LED				
Converting Method	Dual Slope A/D Converter				
Accuracy	± 0.2% of F.S.				
Response Time	2 Sec				
Dielectric Strength	2.5KV/1 min.				
Insulation Strength	100MΩ/500VDC				
Circumstance	-20°C ~+60°C, 35%~85%RH				
Weight	310g				

Dimension



Connection Diagram



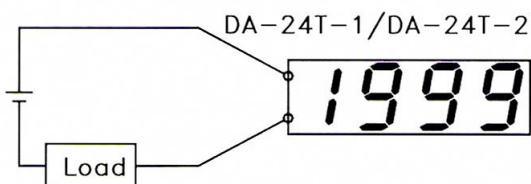
Illustration

Input Range Max.	NO. of SW-1					Input Impedance
	1	2	3	4	5	
1.999mA	ON	×	×	×	ON	100 Ω
19.99mA	×	ON	×	×	ON	10 Ω
199.9mA	×	×	ON	×	ON	1 Ω
5.0 A	×	×	×	△	△	0.1 Ω
Remarks	"△" Is Optioned, ON or OFF Is Dependent On The Amplification					

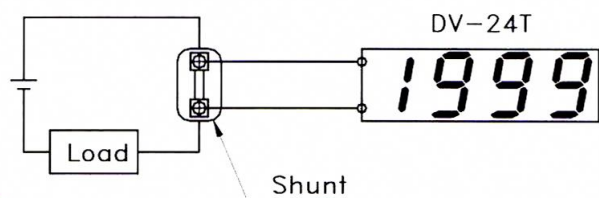
Decimal Point	NO. of SW-2			Decimal Point Selecting Is Independent ON The Amplification.
	1	2	3	
1	×	×	ON	
2	×	ON	×	
3	ON	×	×	

How To Measure DC Current

Current < 200mA

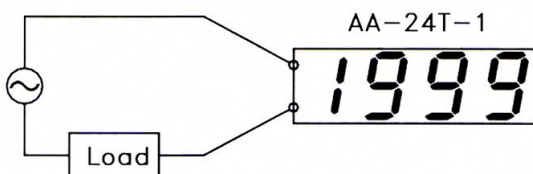


Current > 200mA

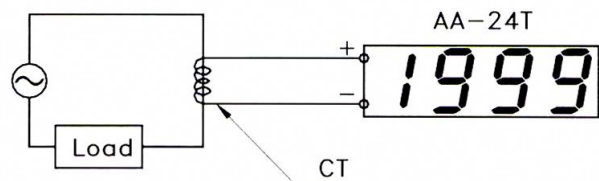


How To Measure AC Current

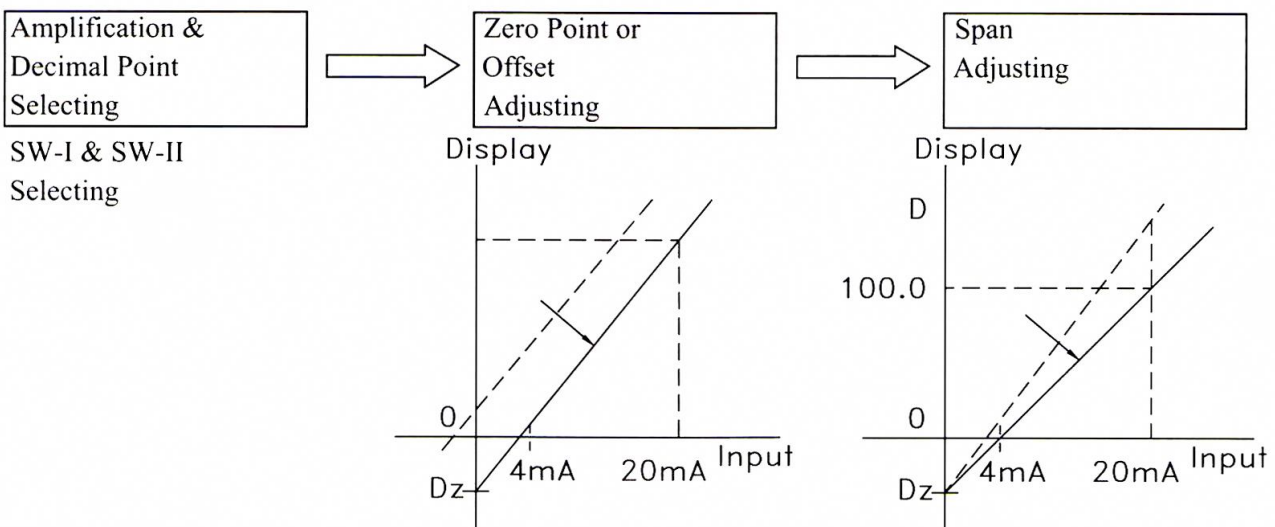
Current < 200mA



Current > 200mA



How To Apply Current Meter To Digital Scale Meter



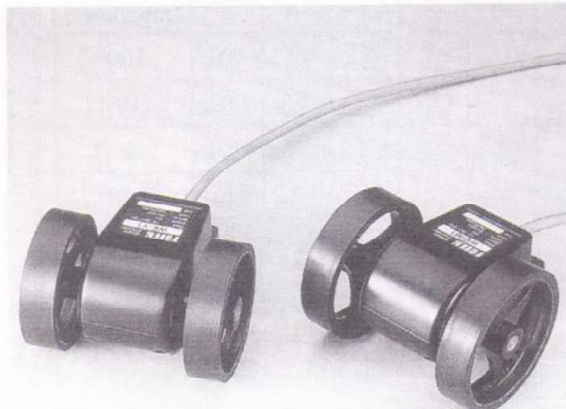
Ex. Input 4~20mA , Full Scale 100.0

$Dz = -4 \times 1000 / (20 - 4) = -250$ < After Opening The Input Circuit , To Adjust The Zero Trimmer >

$D = 100.0$ < When The Input Current = 20 mA , To Adjust The Span Trimmer >

WE series Wheel Type Length Encoder

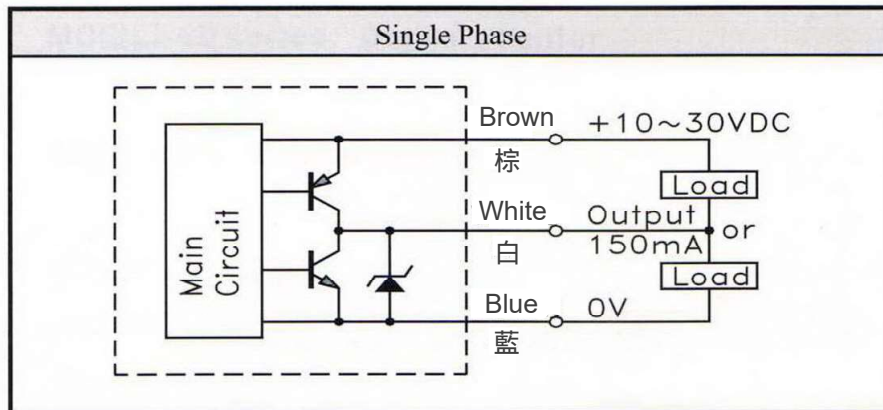
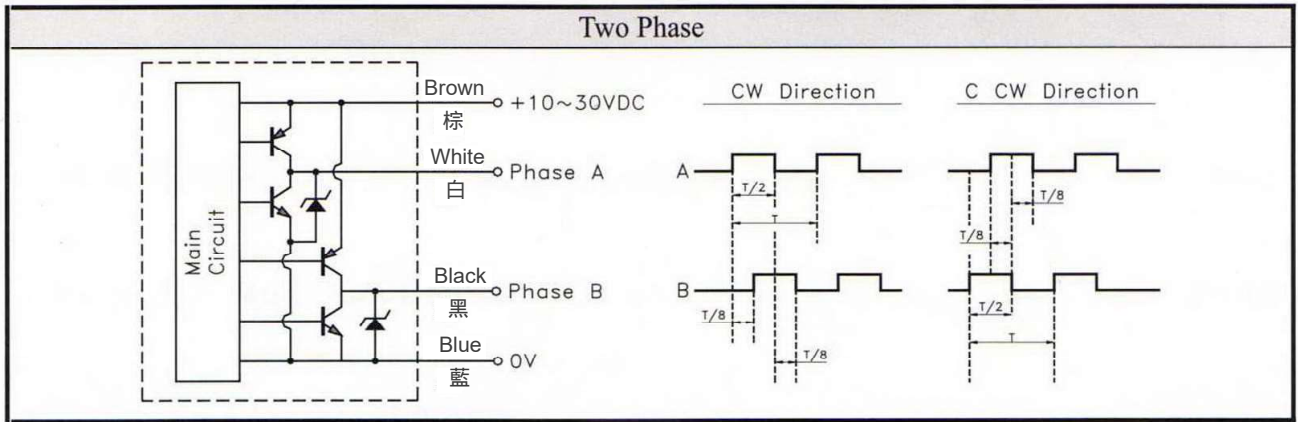
- ✘ High Response Frequency : 10K HZ
- ✘ High Speed of Revolution : 6K RPM
- ✘ Voltage & Current Output With NPN + PNP Output
- ✘ High Reliability With Anti-Noise Circuit
- ✘ Multi-Measuring Unit / Pulse
1.0mm , 0.01m , 0.1m , 1m ,
0.001yd , 0.01yd , 0.1yd & 1yd
- ✘ Model of Two Phase Output :
WE-M2T , WE-M3T , WE-M4T
WE-Y2T , WE-Y3T , WE-Y4T



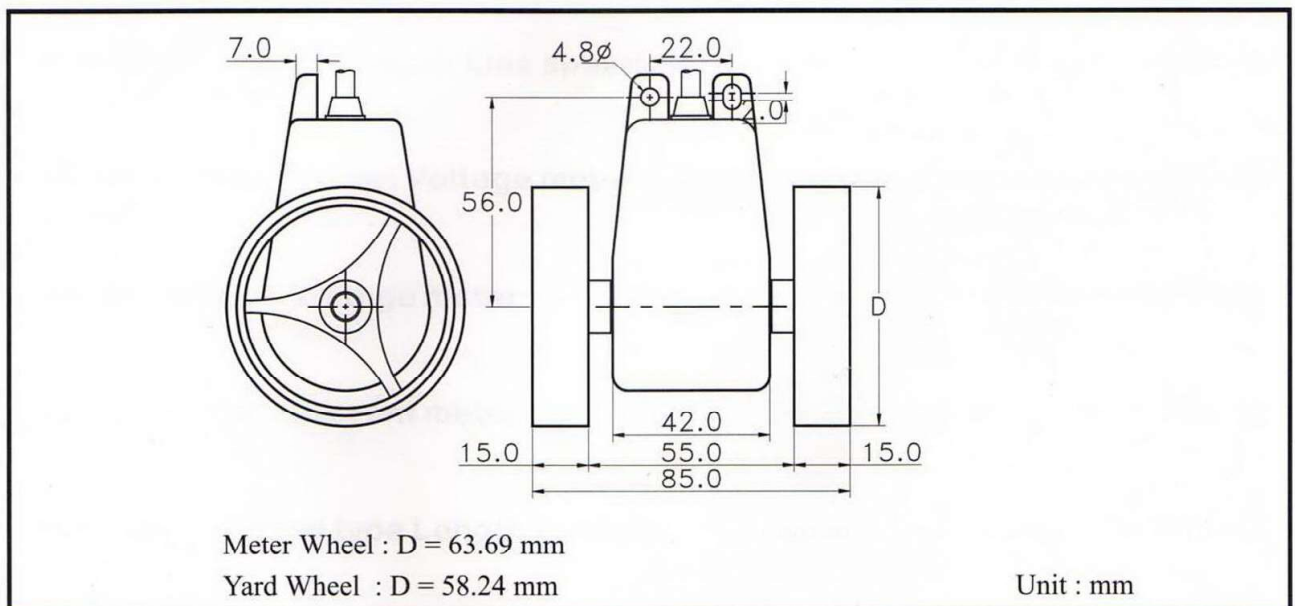
Specification

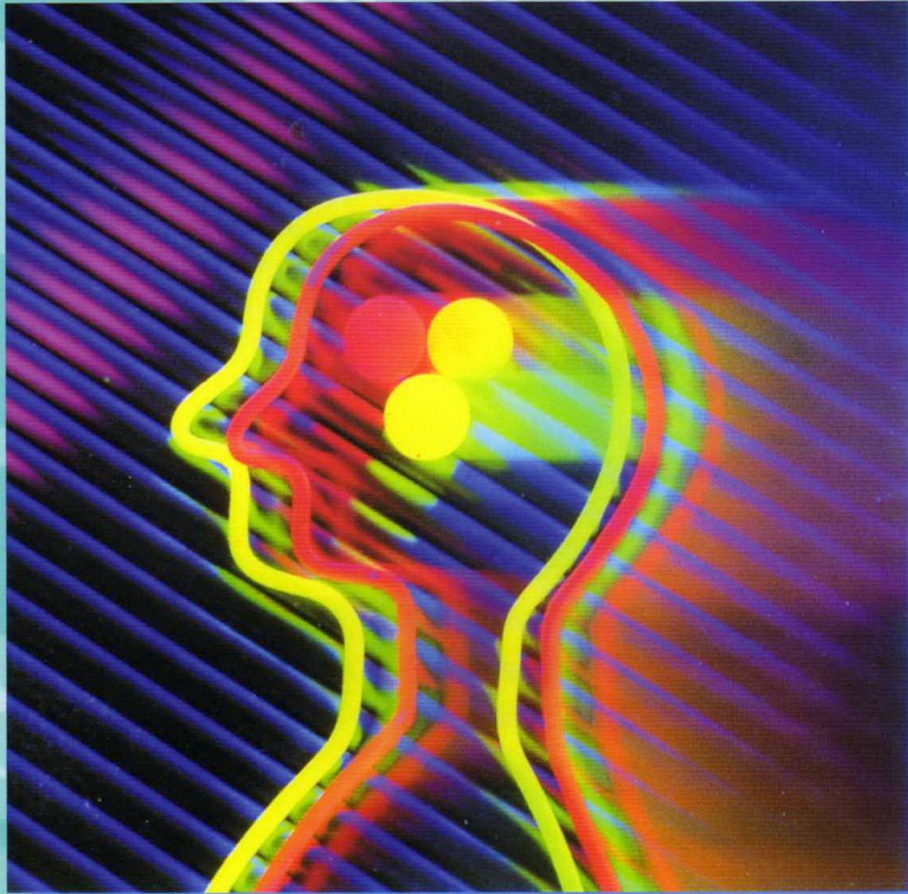
Type	Meter Wheel				Yard Wheel		
Model	WE-M1	WE-M2	WE-M3	WE-M4T	WE-Y1	WE-Y2	WE-Y3
Unit / Pulse	1m	0.1m	0.01m	1.0mm	1yd	0.1yd	0.01yd
PPR	0.2 PPR	2 PPR	20 PPR	200 PPR	0.2 PPR	2 PPR	20 PPR
Output Phase	Single or Two phase are Available						
Operating Voltage	10~30 VDC						
Current Consumption	30 mA max.						
Output Method	NPN + PNP						
Output Current	150mA max.						
Residual Voltage	0.1V max.						
Leakage Current	0.1 mA max.						
Rprotection Method	Polarity Reversed & Over Load Protection						
Connection Method	2m Cable						
Response Frequency	2K HZ			10K HZ	2K HZ		
RPM max.	6K RPM			3K RPM	6K RPM		
Insulation Resistance	Over 50M Ω /500VDC						
Dielectric Strength	Over 2.5KV						
Circumstance	-20 $^{\circ}$ C ~ +60 $^{\circ}$ C ; 35 $^{\circ}$ C ~ 85 $^{\circ}$ C						
Protection Class	IP-65						
Weight	Appr.525g				Appr.510g		

Output Circuit & Connection Diagram



Dimension





量產化、標準化、製造世界標準電控器材
先進技術、嚴格品管，提供最佳品質保證

To Manufacture The World-Standard Controls
By Mass-Producing & Standardizing

To Offer Excellent Quality Assurance
By Advanced Manufacture Technology &
Strict Total Quality Control