

# 可程式脈波比率隔離傳送器 (PROGRAMMABLE PULSE SCALER ISOLATED TRANSMITTER)

MODEL  
TFP



## ■特點(FEATURES)

- 最高輸入頻率10KHz(Accept rates up to 10KHz)
- 多種輸入與輸出選擇(Wide selection of input/output range)
- 寬範圍脈波輸入預乘(0.1至1.0)與預除(1至165000)功能  
(Wide input pulse multiplier scale (0.1 to 1.0)and divide scale(1 to 165000))
- 輸入與輸出絕緣耐壓2千伏特/分鐘(Dielectric strength 2KVac/1min.(input/output/power))
- 寬範圍交直流兩用電源設計(Wide input range for auxiliary power)
- 尺寸小、穩定性高(Dimension small and High stability)

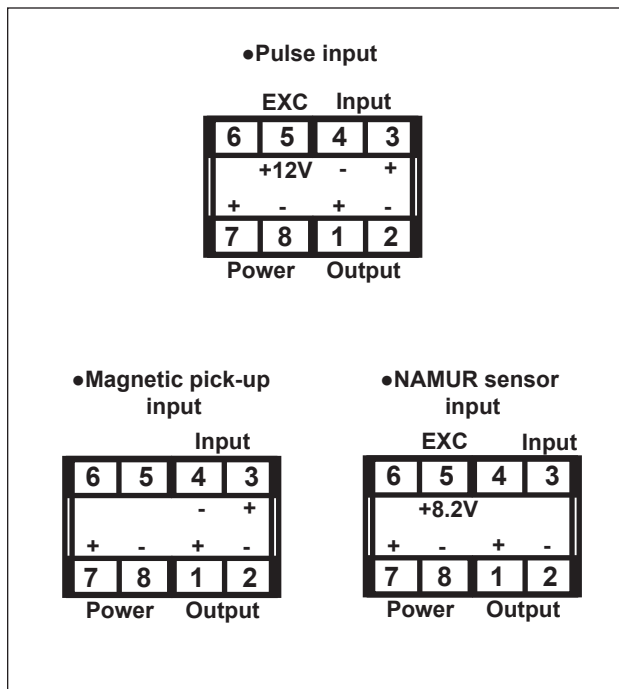
## 1.MODEL:TFP- (選購型號)

NO	Input Type	NO	Sensor Power	NO	Output Model	NO	Aux.Power
A	Pulse (NPN/PNP/Switch contac)	1	DC5.6V(<50mA)	O	Open-collector(<30V/40mA)	A	AC/DC18~60V
B	Magnetic pick-up (AC30mV~30V)	2	DC8.2V(<50mA)	T	5V(Voltage pulse<10mA)	B	AC/DC90~260V
N	NAMUR sensor(ON<1mA,OFF>2.2mA)	3	DC12V(<50mA)	C	12V(Voltage pulse<10mA)		•Less 3VA for AC/DC input
O	SPECIFIED	4	DC24V(<50mA)	H	24V(Voltage pulse<10mA)		
		9	SPECIFIED	R	Relay contact(AC250V-1A,DC30V-2A)		

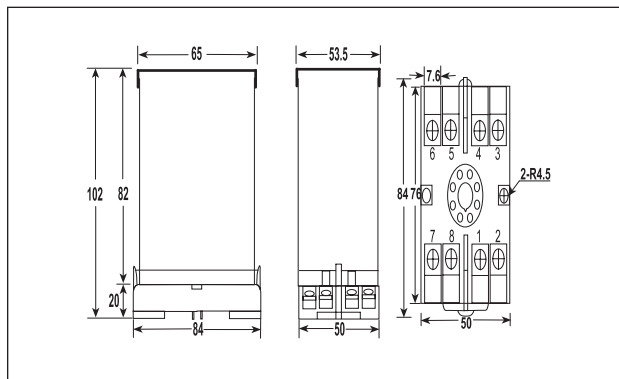
## 2.SPECIFICATION(主要規格)

- Count input type (脈波輸入型式): DIP switch selectable current sourcing(NPN) or current sinking(PNP)
- Count input trigger levels (脈波觸發電位): High level:  $V_{IH}=DC4\sim30V$ (Pulse)  
 $V_{IH}=AC30mV\sim30V$ (Magnetic pick-up)  
 $V_{IH}=R_{max}<500\ ohm$ (Switch contact)  
 $V_{IH}>2.2mA$ (NAMUR sensor)  
Low level:  $V_{IL}=DC0\sim2V$ (Pulse)  
 $V_{IL}=AC0\sim20mV$ (Magnetic pick-up)  
 $V_{IL}=R_{max}>1Kohm$ (Switch contact)  
 $V_{IL}<1mA$ (NAMUR sensor)
- Max.count rates (最高輸入頻率): <10KHz(50% duty cycle(Pulse))  
<1KHz(Magnetic pick-up)  
<100Hz(Switch contact,NAMUR sensor)
- Count multiplier scale range (脈波預乘範圍): :0.1~1.0 can be selective
- Count divide scale range (脈波預除範圍): :1~165000 can be selective
- Output drive capability (輸出負載能力): <DC30V/40mA (Open collector output,Max.10KHz)  
<DC10mA (Voltage pulse output,Max.10KHz)  
AC250V-1A/DC30V-2A (Relay contact output,Max.100Hz)
- Sensor power supply (感應器電源): 5.6Vdc  $\pm 3\%$ (<50mA,Pulse sensor power)  
8.2Vdc  $\pm 3\%$ (<50mA,NAMUR sensor power)  
12Vdc  $\pm 3\%$ (<50mA,Pulse sensor power)
- Isolation (隔離特性): :Input/Output/Power/Case
- Insulation Resistance (絕緣阻抗): >100Mohm with 500Vdc
- Dielectric strength (絕緣耐壓能力): :2KVac/1 min. (input/output/power)  
1600Vdc (input/output)
- Operating condition (使用環境條件): :0~60°C (20 to 90% RH non-condensed)
- Storage condition (存放環境條件): :0~70°C (20 to 90% RH non-condensed)
- Construction (安裝方式): :Socket/plugin type with barrier terminals
- CE EMC Certification (CE 認證): :EN 55022:1998/A1:2000 Class A  
EN 61000-3-2:2000  
EN 61000-3-3:1995/A1:2001  
EN55024:1998/A1:2001

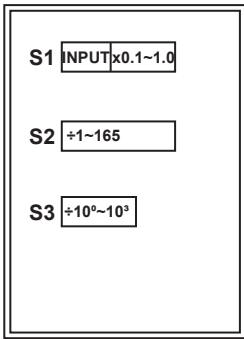
## 3.TERMINAL CONNECTION (接線圖)



## 4.DIMENSION(unit:mm) (外型尺寸)

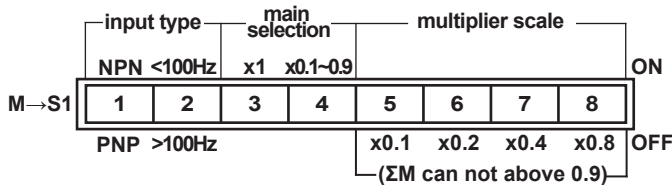


### 5.FUNCTION SWITCHES(S1,S2,S3)

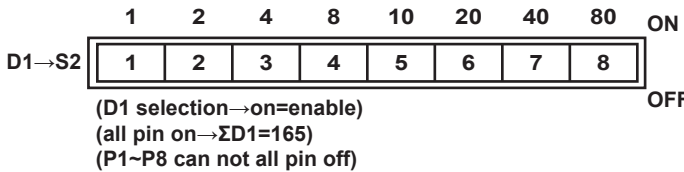


●S1→input type(P1-P2) and input pulse multiplier scale (P3~P8)selection

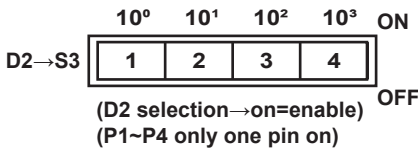
- P1:ON=current sinking input(NPN)  
OFF=current sourcing input(PNP)
- P2:ON=switch contact input  
OFF=pulse input(NPN/PNP)
- P3:ON=main selection input pulse multiplier scale 1.0  
OFF=selection P4 is ON (P3-P4 only one pin on)
- P4:ON=main selection input pulse multiplier scale 0.1 to 0.9  
OFF=selection P3 is ON (P3-P4 only one pin on)
- P5-P6-P7-P8:multiplicor scale 0.1 to 0.9 selection



●S2→input pulse divide scale(1~165) selection



●S3→input pulse divide scale(10^0~10^3) selection



### 6.OUTPUT FREQUENCY PROGRAMMABLE FORMULA

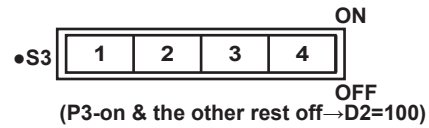
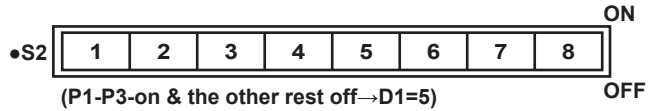
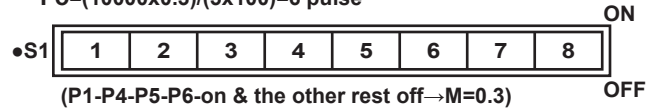
Fi=Input pulse number  
Fo=Output pulse number

$$Fo=(Fi \times M)/(D1 \times D2)$$

### 7.APPLICATION

◎Example 1:TFP-A30B  
Input pulse number→10000 pulse  
Input type→current sourcing input(NPN)  
Output pulse number→6 pulse  
Output model→open-collector(<30V/40mA)  
Aux.Power→AC/DC 90~260V

$$Fo=(10000 \times 0.3)/(5 \times 100)=6 \text{ pulse}$$



◎Example 2:TFP-A3RA  
Input pulse number→100 pulse  
Input type→switch contact  
Output pulse number→100 pulse  
Output model→relay contact  
Aux.Power→AC/DC 18~60V

$$Fo=(100 \times 1)/(1 \times 1)=100 \text{ pulse}$$

