

# TWI-FF

# TWN-FF

Isolating Frequency Input Divided to Open Collector Frequency Output.

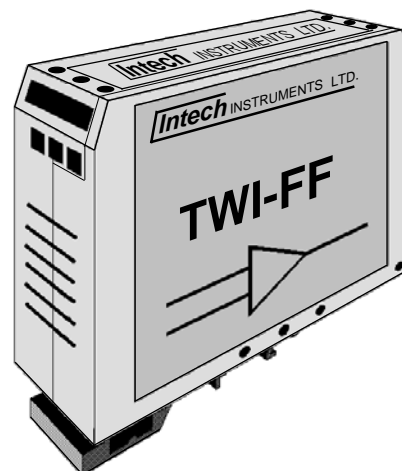
Non-Isolating Frequency Input Divided to 3-wire Frequency Output.

## Features.

- Trimec DP490 to PLC Interface.
- Frequency I/P Divided to a Frequency Output.
- LED Indication of Frequency Output.
- Isolated Input to Output 1.6kV for TWI-FF.
- Low Cost.
- Easy to Install.
- Compact DIN Rail Mount Enclosure.
- Reverse Polarity Protection.
- Externally Accessible Span & Zero Adjustments.



Z495



## Description.

The TWI-FF & TWN-FF are designed as an interface between a Trimec DP490 Flow Transducer and a PLC. The TWI-FF & TWN-FF divide the frequency of the pulses from a DP490 to an output frequency a PLC can register without missing counts. For example if a DP490 is measuring flow that results in an output frequency of 40Hz, and the maximum PLC input frequency is 10Hz, the TWI-FF & TWN-FF would be ordered with a division factor of four.

The TWI-FF & TWN-FF can be powered by the PLCs 24Vdc power supply. The output is a 50:50 mark space ratio, and can be directly connected into most PLC digital inputs.

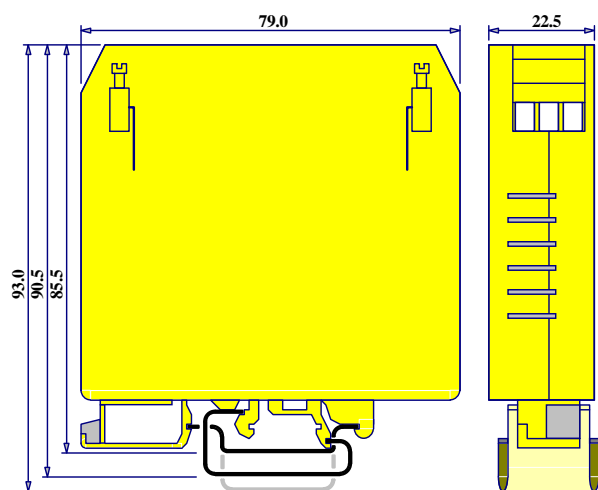
## Ordering Information.

TWI-FF -  - Isolating open collector output.  
 TWN-FF -  - Non-isolating sink / source output.  
 ↑ Division Factor - Select one of the following:  
 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096.

## Ordering Examples.

TWI-FF-8 Isolating open collector output. Divides the input frequency by 8.  
 TWN-FF-4 Non-isolating sink / source output. Divides the input frequency by 4.

## Enclosure Dimensions



## Connections.

Input	TWI-FF or TWN-FF	Output
1 P/S1		COM2 6
2 F/I		F/O 5
3 COM1		P/S2 4

## Terminations.

Input	1	Power Supply 1 (P/S1)
	2	Frequency Input (F/I)
	3	Common 1 (COM1)
Output	4	Power Supply 2 (P/S2)
	5	Frequency Output (F/O)
	6	Common 2 (COM2)

Note: For TWN-FF: P/S1 & P/S2 and COM1 & COM2 are internally connected.

## Quality Assurance Programme.

The modern technology and strict procedures of the ISO9001 Quality Assurance Programme applied during design, development, production and final inspection grant the long term reliability of the instrument.

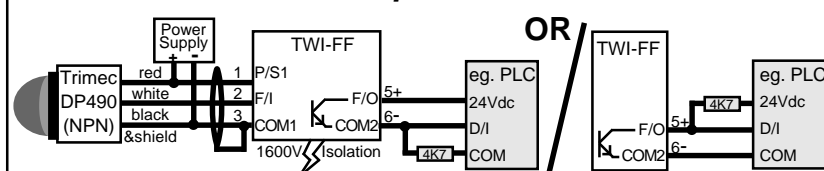
## TWI-FF & TWN-FF Specifications.

Input	-Maximum Range.	100kHz. (5V p-p input.)
	-Trigger level	2.5Vdc.
	-Amplitude	5~30Vdc Squarewave.
Output	-Maximum Range.	5kHz
	-Function	Squarewave Output; 50:50 Mark / Space Ratio.
-Sink/Source	-Amplitude	(Power Supply) - 2V. (No Load.)
	-Load	Limited to Sink / Source 100mA @ 24Vdc. (50mA @ 12Vdc.)
		Maximum load = 100mA @ 24Vdc.
		Suitable for most optocoupler inputs.
-Open Collector		30Vdc, 100mA Max.
		Other variations available on request.
Isolation Test Voltage (TWI-FF Only)		Input to Output 1600Vdc for 1 min
Power Supply		11~28Vdc.
Current Usage		15mA (No Output Load.)
EMC Compliances		Emissions EN 55022-A. Immunity EN 50082-1, <1% Effect FSO Typical.
Operating Temperature & Humidity		0~70C. (Storage Temp. -20~80C.) 5~85% RH Max. Non-Condensing.
Dimensions and Construction		L=79, W=22.5, H=85mm. Polyamide Thermoplastic Rail Mount.

**Product Liability.** This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units at 25C, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

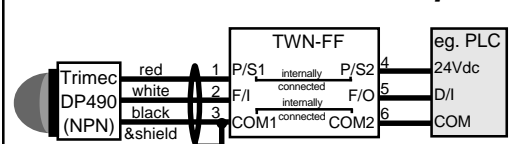
**Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.**

### TWI-FF Connection Example.



\* These drawings show NPN input devices. For PNP input put a 2k2 resistor across terminals 2 & 3.

### TWN-FF Connection Example.



## Ranging.

Use this table to select required division factor. Only one jumper may be inserted from J2 to J13. Calibration check all new ranges.

## The Proper Installation & Maintenance of TWI-FF & TWN-FF.

### MOUNTING.

- (1) Mount in a clean environment in an electrical cabinet on DIN or EN rail.
- (2) Do not subject to vibration or excess temperature or humidity variations.
- (3) Avoid mounting in cabinets with power control equipment.
- (4) To maintain compliance with the EMC Directives, the TWI-FF & TWN-FF must be mounted in a fully enclosed, metal, electrical cabinet. The cabinet must be properly earthed, with appropriate input / output entry points and cabling.

Jumper	Division Factor
J2	4096
J3	2028
J4	1024
J5	512
J6	256
J7	128
J8	64
J9	32
J10	16
J11	8
J12	4
J13	2

### WIRING.

All power and signals must be de-energised before connecting any wiring, or altering any Jumpers or Dip Switches

- (1) All cables should be good quality overall screened INSTRUMENTATION CABLE with the screen earthed at one end only.
- (2) Signal cables should be laid a minimum distance of 300mm from any power cables.
- (3) For 2 wire current loops and 2 wire voltage signals or 2 wire current signals, Austral Standard Cables B5102ES is recommended. For 3 wire transmitters Austral Standard Cables B5103ES is recommended.
- (4) It is recommended that you do not ground current loops and use power supplies with ungrounded outputs.
- (5) Lightning arrestors should be used when there is a danger from this source.
- (6) Refer to diagrams for connection information.

### COMMISSIONING.

- (1) Once all the above conditions have been carried out and the wiring checked apply power to the TWI-FF & TWN-FF loop.
- (2) Take a low (approx. 10%) and high (approx. 90%) reading of the variable being measured by the transducer supplying the signal to the TWI-FF & TWN-FF, and ensure that this agrees with the level being indicated by the PLC or indicator, etc., that the TWI-FF & TWN-FF is connected to.

### MAINTENANCE.

- (1) Repeat (2) of Commissioning.
- (2) Do it regularly - at least once every 12 months.

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