



# FREQUENCY SCALER

## TYPE 112-26

- \* **User selectable scaling factor**
- \* **Caters for a wide range of input types**
- \* **Isolated voltage pulse, relay or open collector outputs**
- \* **Transducer power supply**
- \* **Wall or DIN rail mounting**

The 112- 26 scales the frequency of the input signal by an adjustable non-integer number. The instrument caters for a wide range of input signal types including, voltage levels, mechanical switches, proximity switches and flow sensors. Outputs include voltage pulse, relay and open collector types.

The scaling factor is set by internal switches, four decades of division (0-9999) and four decades of rate multiplication (0-0.9999). Two further divisions of 10 and 100 are selected via jumper links.

NB: For integer divisions, see Frequency Divider Type 112-25

### TYPICAL APPLICATIONS

**Flow meter scaling:** The output signal from a pulsing meter, or turbine meter can be scaled by this unit to give one pulse per unit volume. The division will be selected to make this volume into the desired engineering unit. For flow applications involving turbine meters which have still to be calibrated, the module can be supplied set to a nominal scaling, and adjusted finally on site when the flow meter calibration is known.

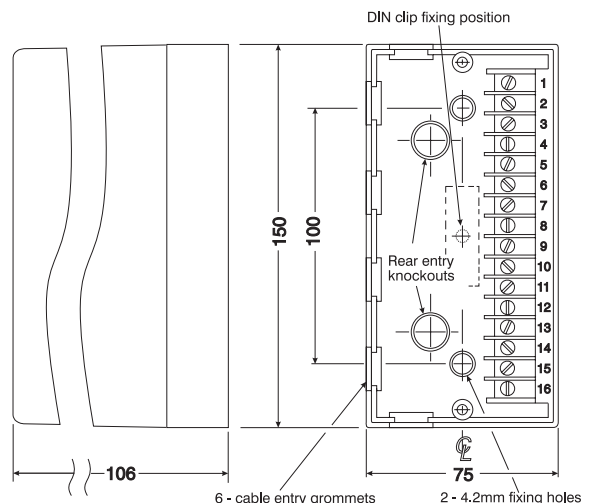
**Rotating shafts:** Inputs from speed sensors on shafts can be scaled by this unit, to provide linear speeds of belts, etc.



#### Information required when ordering

- Input Signal Type (see specification)
- Type of Output (see specification overleaf)
- Desired Pulse Width for open collector output option (if standard 60ms is not required).
- Transducer Power Supply
- Supply Voltage and Frequency
- Whether a DIN rail mounting clip is required

### DIMENSIONS



## SPECIFICATION

### TRANSFER FUNCTION

$$F_{out} = F_{in} \times R \div N \div D$$

R = 0.000 to 0.9999, N = any integer from 1 to 9999  
D = 1, 10, or 100.

*NB In some applications, as the rate multiplier circuit is four decades long, the expected division will not occur until 10,000 input pulses have been received. Circuit characteristics dictate that output pulses will not be equally spaced.*

### INPUT PULSE RATE

0 - 20kHz.

### INPUTS

*(the required type to be specified at the time of order)*

- Contact closure
- Change-over contacts (high bounce rejection)
- Voltage level change (10mV minimum, 50V maximum, sine, square or triangular)
- Open collector transistor
- Proximity switches, turbine meters, etc.

### INPUT IMPEDANCE

100k ohms *(voltage change signals)*.

### TRIGGER LEVEL

This is adjusted by a 15 turn potentiometer accessible through the front panel.

*NB not fitted for turbine meter inputs.*

When the trigger level is correct, the lower LED will flash at the input signal frequency.

### INPUT PROTECTION

Voltage change inputs, can withstand 250V RMS.

### TRANSDUCER POWER SUPPLY

Up to 12 Volts at 10mA max. available (Optional).

### OUTPUT OPTIONS

*The required type to be specified at the time of order.*

- Optically isolated open collector transistor,
- 24 Volt pulse of duration 60ms  
*(E.M. counter output NB the counter used must have an impedance  $\geq 80$  ohm)*
- Relay change-over contact (FSD = 10Hz max).  
Relay contacts are rated at:-  
5A @ 250V AC resistive or 2.5A @ 24V DC resistive
- Other pulse output voltages (e.g. 5V) and pulse widths available to order.

### TEMPERATURE RANGE

Operating: - 10 to + 60°C

Storage: - 20 to + 70°C

### ACCURACY

Error  $\pm 1$  output pulse.

### ISOLATION

Input and output are isolated from each other and from the power supply.

Maximum voltage 250 V RMS or 400 V DC.

Resistance  $\geq 50 \times 10^6$  ohms measured at 1000 V DC.

### POWER SUPPLY

LED indication of power on.

**Standard AC:** 110, 220 or 240V  $\pm 10\%$  50/60Hz; 5VA

Fuse (internal) 100mA quick-blow (20 x 5mm)

**Optional DC:** 12, 24 or 48V -10% to + 20%; 3.5W

Fuse (internal) 250mA anti-surge (20 x 5mm)

### WEIGHT

Approximately 750 grams.

### SAFETY & EMC

Safety: EN61010-1; Immunity: EN50082-1

Emissions: EN50081-1; CE certified

### TERMINAL CONNECTIONS

Inputs

- Transducer Supply (option)
- Input Signal (+)
- Input Signal Common (-)
- Normally Closed c/o Switch Contact
- Normally Open c/o Switch Contact
- (no connection)*

Outputs

- +V
- Output
- Output Com
- SPCO Normally Open
- SPCO Common
- SPCO Normally Closed
- (no connection)*

Supply

- Earth
- Neutral
- Line

AC  
Mains  
Supply

Earth  
Negative (-)  
Positive (+)

DC  
Supply  
Option

**Please Note:** Options are only available if specified at time of order.



**THIS UNIT CAN BE MAINS POWERED, AND ALL INPUTS TO IT MUST BE ISOLATED FROM DANGEROUS VOLTAGES BEFORE THE FRONT COVER IS REMOVED. LIVE TERMINALS WILL BE EXPOSED.**

Continuous development may necessitate changes in these details without notice

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