

| **FREQCON-IPWM**

PWM OR FREQ OUTPUT SIGNAL CONVERTER



The FREQCON-IPWM Isolating Signal Converter can accept a wide range of inputs including 4-20mA, thermocouple, RTD and voltage signals. The units produce a Pulse Width Modulated (PWM) frequency output, available in a wide range of frequencies. A standard 0- x Hz frequency output is also possible.

Full 3 port isolation is standard as is an isolated transmitter supply which can be used to power any standard 2-wire 4-20mA transmitter.

The input type and range can be user selected using simple DIL switches inside the unit. All RTD and Thermocouple inputs can be fully linearised.

Typical applications include the conversion of analogue signals to PWM for input into small PLCs or HMIs which do not have an analogue input.

The unit is supplied with two power supply options, either wide ranging ac or dc. The ac version operates from any supply from 90 to 264 Vac and the dc version operates from 12 to 36 Vdc.

Features

- Universal configurable input- PWM output
- mA, voltage, thermocouple & RTD inputs
- Wide range of PWM / frequency outputs
- Wide range AC or DC supply
- Isolated transmitter supply
- Very high accuracy, low cost
- Only 12.5mm wide on DIN rail

Outputs

PWM or standard Frequency Output

Wide range of center frequencies, open collector output
Typical PMW output 485 Hz 5-90% variable
Typical Frequency output 0- 1000Hz

Inputs

Standard Ranges are shown below - contact Sensata for others.

DC/AC Current & Voltage

0-20mA, 4-20mA, 0-10mA into 15 Ω
0-1V, 0-10V, 1-5V into 1M Ω

Min & Max Full Scale Ranges are:

DC Current	0 - 1mA	0 - 5A
Bipolar DC Current	\pm 5mA	\pm 10mA
DC Voltage	0 - 1V	0 - 300V*
Bipolar DC Voltage	\pm 5V	\pm 10V
2 Wire Pot	0 - 125 Ω	0 - 1k Ω
3 Wire Pot	0 - 1k Ω	0 - 100k Ω

* Note: For input voltages greater than 60Vdc a Divider unit must be specified.

Thermocouples

Types E,J,K,N,R,S,T,B linearised or non-linearised
Ranges: Wide range of inputs
Cold junction compensation (can be turned off)
Upscale or downscale t/c burnout options

Resistance Thermometers

2, 3 or 4 wire PT100 or PT1000, linearised or non-linearised
Ranges: Wide range of inputs
Upscale or downscale RTD burnout options
For a dual output unit please see the DUALCON data sheet
Other input types are Strain gauge or load cell and Frequency, including PWM frequency inputs

SPECIFICATIONS

Technical

Parameter	Min	Typ	Max	Comments
Supply Voltage	12V	24V	36Vdc/32Vac	90 to 264 for ac input version
Supply Current (mA)		45	85	For 24 Vdc supply (260mA for 50mS on start-up)
Input Impedance (Volt)		1M Ω	100m Ω	Dependent on range (Typ+10V)
Input Impedance (mA)		15 Ω		Dependent on range (Typ=20mA)
Volt Drop (mA input)		0.3		At 20mA input
Output Linearity Error		\pm 0.01%	\pm 0.05%	
Temp Coefficient			\pm 50ppm/ $^{\circ}$ C	
Load Resistance Error			\pm 5ppm/ Ω	0 < R _L < 750 Ω
Time Constant (10-90%)	25mS (fast)	60mS (normal)		Selectable fast/normal response
Operating Ambient	0 $^{\circ}$ C		55 $^{\circ}$ C	
Relative Humidity	0%		90%	
Isolation Voltage*	1kV			
Surge Voltage	2.5kV for 50 μ S		Transient of 10kV/ μ S	

*Notes: Absolute maximum ratings indicate sustained limits beyond which damage to the device may occur. Accuracy figures based on 24Vdc supply, 4-20mA output with 250 Ω load and 20 $^{\circ}$ C ambient. Device is protected against reverse polarity connection. ISOCON does NOT provide safety isolation when the input is connected to the mains.

Installation Data

Mounting	DIN Rail TS35
Orientation	Any
Connections	Screw Clamp with pressure plate
Conductor Size	0.5-4.0mm
Insulation Stripping	12mm
Weight	Approx 95g

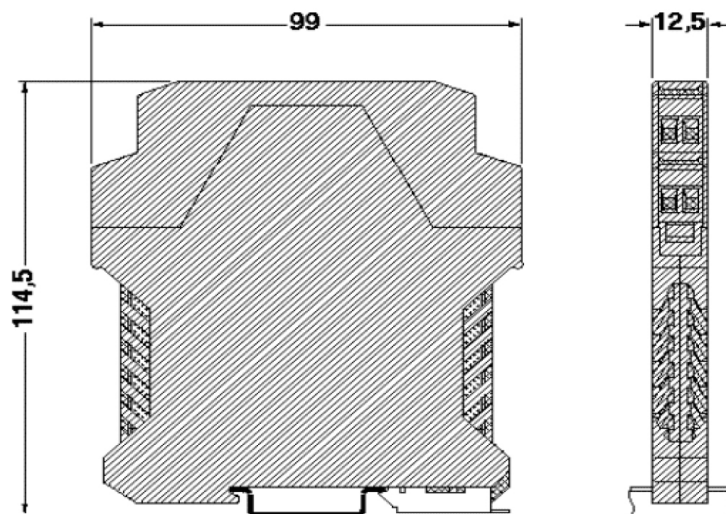
Connection Details

1. Power Input	-ve		
2. Power Input	+ve		
4. Process Input	-ve	T/C -ve	RTD -ve
5. Process Input	+ve	T/C +ve	RTD +ve
3. Trans supply	+ve		RTD 4 th Wire
6.		T/C Shield	RTD 3 rd Wire
10. Output -ve			
12. Output +ve			



DIMENSIONS

All dimensions are in millimeters.





ORDERING OPTIONS

Example : II-FREQ-IPWM-6-JJJJ-AA-000

Please supply

Part Number II-FREQ-IPWM-6-JJJJ-AA-000

Input Type e.g mA, Volt, T/C, RTD

Input Range e.g 4-20, 0-10, 0-500°C

Output Type PWM or Frequency

Output Range e.g 485 Hz PWM or 0-1000Hz

Power Supply -6 for 12-36 Vdc or 12-32 Vac
-3 for 90 -264 Vac

Isolation Full 3-Port

Options Please call if you require any special options

Made in the UK

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