Pulse Frequency Converter v1 PFC750

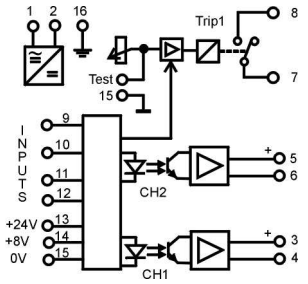
The Pulse Frequency Converter PFC750 is designed to accommodate a variety of pulse signals / sensors in the one unit by connecting to the appropriate input terminals. Two independent isolated analogue outputs are available. These are coding plug selectable for all common process signals, with individual Span and Zero adjustments. The input frequency range is also coding plug selectable, with a potentiometer for for final input calibration. The frequency input range spans from 0.2Hz up to 180kHz. For monitoring and alarming applications, a 10A rated relay contact is available. The alarm point is set using the adjacent test socket.

Typical applications for pulse to analogue conversion include:

- Flow measurement
- Speed measurement
- Isolation and conversion of pulse signals
- Signal splitting (one pulse input, 2 analogue outputs)

A variety of sensors can be used with the standard connections of the PFC750:

- NPN and PNP Proximity sensors
- NAMUR Proximity sensors
- Pulsing Contacts
- Any other 2-wire Proximity sensors
- Inductive sensors (coil type pick-up)
- Shaft encoders with pulse output
- Any shape signal



General Specifications

Mounting:	35mm DIN-Rail.
Termination	Plug-in screw terminals.
Weight:	0.300 kg.
Protection class:	IP40
Size:	60W x 70H x 110D (mm).
Housing material:	ABS, aluminium.
Calibration accuracy:	<0.2% of range.
Input range:	0.2Hz to 180kHz
Input trigger hysteresis:	50mV
Trigger adjustment range;	
Input terminal 9:	0 to 2.2V, 7k2 internal load
Input terminal 10:	0 to 2.4V, 1k4 internal load
Auxiliary Supplies:	24Vdc and 8Vdc
Operating temperature range:	0…+60℃.
Storage temperature range:	-20...+70℃.
Temperature effect:	0.02% per ℃.
Output drive:	0 to 22mA (20V drive). 0 to 20V (100 kΩ min)
Response;	
Frequencies < 2Hz	One input cycle time
Frequencies > 2Hz	500msec typical
Zero/Span adjust:	Typically ±20%
Contact rating:	10A/250Vac resistive.
Relay trip repeatability:	<0.5% of range.
Relay trip response time:	<100ms.
Relay switching hysteresis:	1% of input range.
Power requirements:	4VA.
4-way Isolation:	2kV r.m.s.
Electromagnetic compatibility:	AS/NZS 4251.1 EN50081.1

Type No. **PFC750 – X X X X X X**

Supply:

1 = 80-300Vdc / 80 – 280Vac.
2 = 10-60Vdc / 16 – 42Vac

Input:

1 = 0.2Hz span to 180kHz span
*) 9 = Other specify
Always specify calibration e.g. 0-100Hz

Output 1:

1 = Link selectable.
*) 9 = Other specify
Specify calibration - default is 4-20mA

Output 2:

1 = Link selectable.
*) 9 = Other specify
Specify calibration - default is 4-20mA

Alarm:

1 = Direct
2 = Reverse.

Option:

0 = None.
*) 2 = Customised response time.
*) 9 = Other specify

*) = Price Extra.

Adjust Relay Trip Point

The relay trip-point can be measured from terminal 15 to the red 'Set' socket on the top. This is a 0 to 4.75 volts level that represents 0-100% of the input range. Adjust the 'Set' potentiometer to the desired level.

To Change Ranges

1) Disconnect power to unit.
2) Unscrew right-side cover and withdraw PCB assembly.
3) Set the coding plugs as required on both input and output, “X” means insert header plug.
4) If the input range plug JP1 is changed then the unit must be powered and adjusted while not assembled in the case. Do not attempt this unless qualified.
5) Reassemble unit and connect power.
6) Adjust “span” and “zero” pots to recalibrate outputs as required.
7) Change the label information to the new input/output values.

Input Range Selection

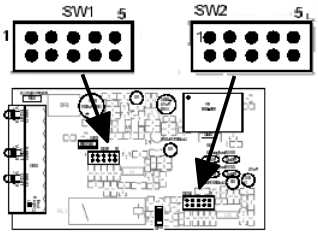
Input selections are on the C205 PCB.

1) Disconnect power to unit.
2) Unscrew right-side cover and withdraw PCB assembly.
3) Set required range using JP1. With maximum input frequency, adjust P1 for near to maximum output.
4) Continue to adjust P1 to determine two positions where the output jumps, then set P1 to half way between the two points.

Frequency Range	JP1								
	1	2	3	4	5	6	7	8	9
64 – 180 kHz			X	X	X		X	X	X
24 – 64 kHz			X	X	X		X	X	
8 – 24 kHz		X		X	X		X	X	X
3 – 8 kHz		X		X	X		X	X	
1 – 3 kHz	X			X	X		X	X	X
300 – 1000 Hz	X			X	X		X	X	
100 – 300 Hz	X			X	X		X		X
30 – 100 Hz	X			X			X		
10 – 30 Hz	X			X				X	X
3 – 10 Hz	X				X			X	
1 – 3 Hz	X								X
0.2 – 1 Hz	X								

Output Range Selection

Output selections are on the C204 PCB
SW1 is for channel 1
SW2 is for channel 2.



Output Selection C204 PCB

Output	1	2	3	4	5
4-20mA	X		X		
0-20mA		X			
0-5V		X			X
1-5V	X		X		X
0-10V		X		X	

Input Trigger Adjustment

The FPC750 can directly interface to a range of sensors with no hardware changes. However the trigger level may need adjustment to suit the input signal. The input LED above terminal 9 will pulse on and off with the input signal.

Sensor	Typical Level	TRIG % / Turns
NPN/PNP Prix	2.4V	100%/15
NAMUR Prix	2.4V	100%/15
Contact	2.4V	100%/15
2-wire Prix	2.2V	100%/15
Inductive sensors (coil type pick-up)	0mV	0%/0
Shaft encoders with pulse output	5V	100%/15
Any shape signal	200mV 24V	8%/1.2 100%/15

The information given is a guideline only. In most cases the trigger level can be adjusted while injecting input signal until correct operation is achieved.

Connections