

Apollo Flow Measurement Ltd  
FC7 Manual  
Issue 1  
February 2000

Installation & Operation  
of the  
FC7 Frequency to Current  
Converter

**Note**

Read this manual prior to installation

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## 1 INTRODUCTION

The FC7 instrument converts a pulsed frequency input into a 4-20mA analogue output. It comprises a PCB assembly housed in a robust aluminium enclosure.



## **2 CALIBRATION**

The unit is factory calibrated so requires no user adjustment.

### 2.1 Calibration Method

The FC7 is programmed with up to 10 points, taken from the Flowmeter Calibration Certificate. Using this information it corrects for deviations in the flowmeter performance curve to give a linearised output.

## **3 INSTALLATION**

### 3.1 Mounting

The enclosure can be wall or panel mounted via fixing screws inserted through holes in the base corners. Alternatively, the unit can be supplied with a mounting stem for fitting directly onto a Turbine Flowmeter.

### 3.2 Electrical Connections

The instrument is loop powered from a 12-28 VDC supply.

Signal cables should be screened to reduce the pick up of electrical noise.

The screen should be grounded at one end only.

### 3.3 Signal Connections

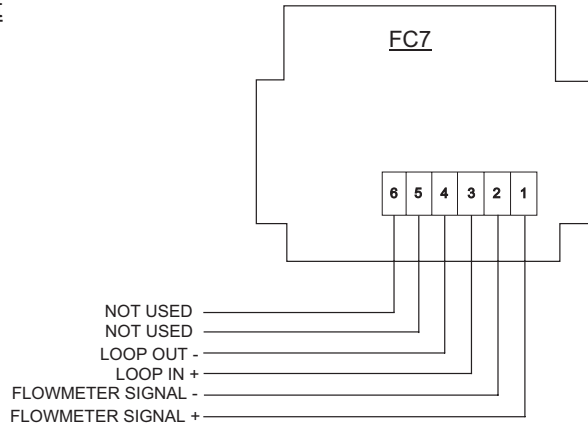
<u>Signal Input Types</u>	<u>Switch Settings 'on'</u>	<u>Notes</u>
Turbine Coil	1,4	
Reed Switch	3,5,7,8	
Open Collector	5,8	
Voltage Pulse	5,7	(1)
Current Pulse P5	N/A	(2)
Namur	N/A	(2)

#### NOTES

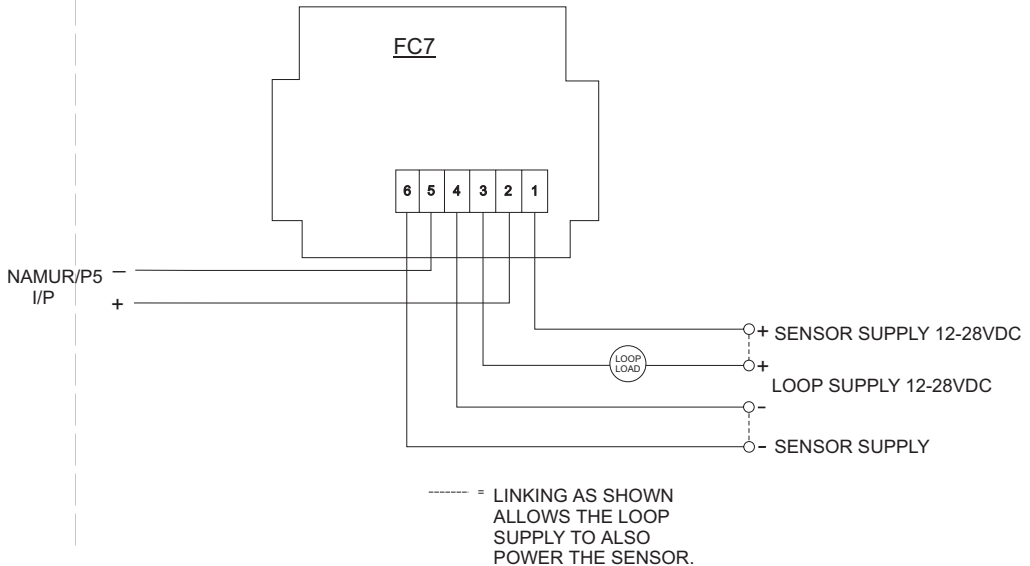
- (1) For a TTL input the signal supply must be isolated from the loop supply.
- (2) For these inputs all switches should be in the off position.

### 3.4 Wiring Diagrams

#### 3.4.1 Standard Unit



#### 3.4.2 Namur/P5 Input



## 4 TECHNICAL SPECIFICATIONS

### Construction:

Protection: IP65  
Materials: Aluminium with rubber gasket  
Mounting: On to the flowmeter  
Or via screw holes in the base corners  
Temp.Range: 0-45°C

**Power Input:** 12-28VDC Loop powered

**Connections:** PCB mounted screw terminals via  
IP65 cable gland

**Input Signals:** Frequency range 0 to 3 kHz

#### 1. Preamplifier

Sensitivity: Low level < 8mA  
High level > 11mA

Input max: 3.0V 100mA

#### 2. Proximity Sensor (Namur DIN 19234)

Sensitivity: Low level < 1mA  
High level > 3mA

#### 3. Pickoff Coil

Input min: 10mV RMS @ 100Hz  
45mV RMS @ 3kHz

Input max: 5V RMS

#### 4. Switch Closure

Energising voltage: 5V  
Energising current: 10mA DC

#### 5. Voltage Pulse

Sensitivity: logic low < 1V  
logic high > 2.5V

Input max: 40V

### Output:

Max load: 4-20mA into 250 @ 12VDC  
or 4-20mA into 1k @ 28VDC

Response time: Approx. 400msec to 60%

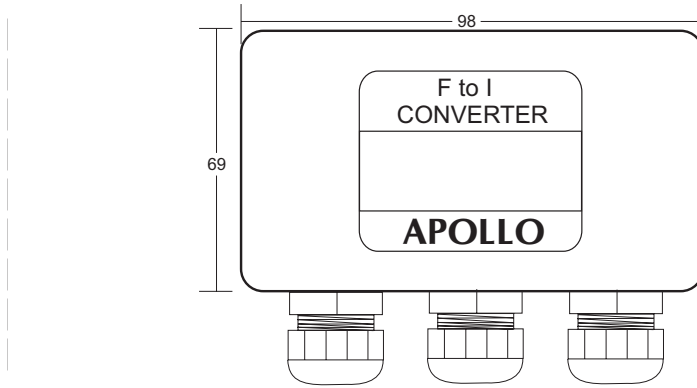
Linearity: 0.2% of span

D to A converter: 15 bit

Update time: 0.25 seconds

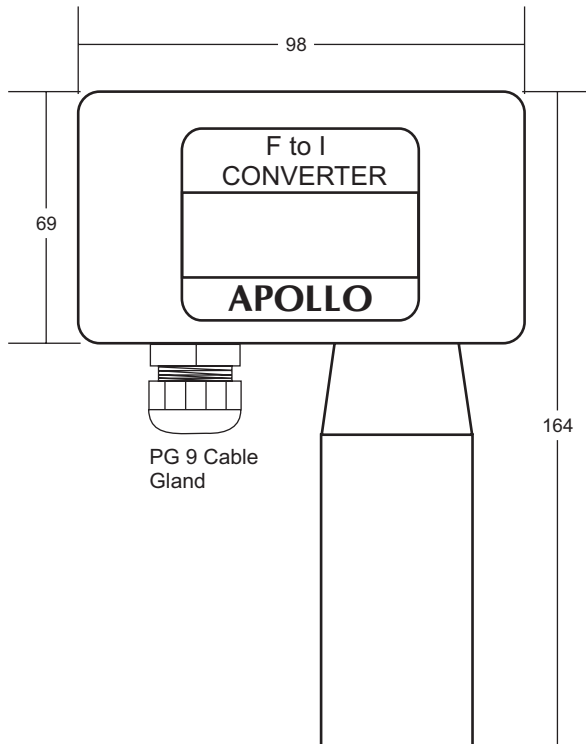
## 5 DIMENSIONS

### Remote mounting



PG 9 Cable Glands

### Turbine mounting



PG 9 Cable Gland