IWPT Series

Industrial Wireless Pressure Transmitter

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Cynergy3 Components Ltd
7 Cobham Road, Ferndown Ind Estate, Wimborne
Dorset BH21 7PE, United Kingdom
Tel: +44(0)1202 897969, email: sales@cynergy3.com

www.cynergy3.com

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1. INTRODUCTION

1.1 Safety Information

This manual contains information that must be observed in the interest of your own safety and to avoid damage to assets. Please read this manual before installing and commissioning the device and keep the manual in an accessible location for all users.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance operation at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

1.2 Hardware Features

The IWPT range of Wireless Pressure Transmitters has been designed to measure the Pressure of the medium connected and transmit the value to one of the IWR range of receivers where the value can be outputted as either a 4-20mA or 1-5Vdc signal.

The IWR-1 has a single output and the IWR-5 has five outputs, each of which can be linked to an IWPT transmitter. The IWPT pressure transmitter works on the licence-free 2.4 GHz band.

Ranges of up to 500m are possible using the standard transmitter and receiver unit with the optional 3dBi antenna giving a range of up to 750m. The transmitter is powered by a 3.6V lithium cell and care must be taken to insert the battery in the correct polarity.

2. UNPACKING

The instrument should be carefully inspected for signs of damage which may have occurred in transit. In the unlikely case that damage has been sustained, DO NOT use the instrument, but please retain all packaging for our inspection and contact your supplier immediately.

3. PRODUCT IDENTIFICATION LABEL

The unit delivered should be carefully inspected to ensure it is suitable for the application required. Detailed information on the product is included in the identification label and the user manual.

Please ensure in particular, that the pressure range of the IWPT is suitable for the intended application and that the IWPT unit will not be subjected to pressures and/or temperatures greater than those specified in this manual.

4. INSTALLING/CHANGING THE BATTERY

A Lithium 3.6V battery is included inside the IWPT transmitter. The battery may be changed at any time but the correct polarity must be observed at all times! After the battery has been changed, the pushbutton SW1 should be pushed for 5s at the same time as the unit is switched on using SW3. This is to ensure the battery life count is set correctly when a new battery is installed.

The internal LED will flash 5 times to indicate this procedure has been carried out successfully.

The battery life is determined by the rate the transmitter sends the Pressure value to the receiver, this update rate can be selected using Dip Switch 1 and the default value is 10s.
Please dispose of all batteries as specified by the legislator according to the Closed Substance Cycle and Waste Management Act or country regulations.

! WARNING !
MAKE SURE THE CORRECT
BATTERY POLARITY IS OBSERVED!

! WARNING !
INCORRECT BATTERIES MAY DAMAGE THE UNIT
USE ONLY 3.6V LITHIUM C CELL BATTERIES

5.1 Mounting Instructions

Ensure that:-

- The instrument is used on a pressure medium that is compatible with the wetted parts
- The correct seal is used and that the maximum torque (see below) is not exceeded
- Fluid is not allowed to freeze in the pressure port as the diaphragm may be ruptured

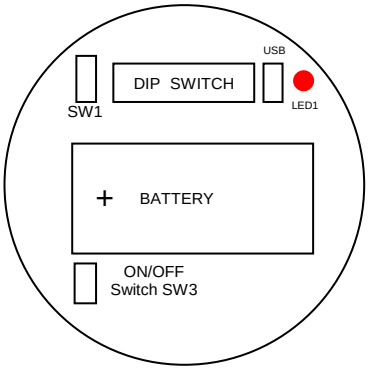
- No sharp objects are inserted into the pressure port as the diaphragm may be damaged

Tighten the unit in place using a wrench on the 18mm A/F hexagon provided on the unit. Ensure that no more than 15Nm is applied, that the system is de-pressurised and that a suitable pressure seal is used.

5.2 SETTING UP THE IWPT WIRELESS PRESSURE TRANSMITTER

The IWPT instrument is shipped in a default configuration which allows the unit to connect with any default IWR receiver unit and transmit the measured pressure every 10s simply by switching the unit on using SW3 on the internal circuit board.

If a different update rate is required, or a different network frequency channel is required these parameters can be selected using DIP Switch 1 as detailed below:



Switches 1, 2, 3 & 4 select the RF Network the IWPT will transmit on. The default network for both the IWPT transmitter and IWR receiver is network 1.

RF NETWORK	1	2	3	4
1	0	0	0	0
2	0	0	0	1
3	0	0	1	0
4	0	0	1	1
5	0	1	0	0
6	0	1	0	1
7	0	1	1	0
8	0	1	1	1
9	1	0	0	0
10	1	0	0	1
11	1	0	1	0
12	1	0	1	1
13	1	1	0	0
14	1	1	0	1
15	1	1	1	0
16	1	1	1	1

Switches 5, 6 & 7 select the Transmission rate of the unit. This effectively sets how often the pressure value is sent to the receiver.

Transmit time	5	6	7
10 seconds	0	0	0
20 seconds	0	0	1
30 seconds	0	1	0
60 seconds	0	1	1
120 seconds	1	0	0
600 seconds	1	0	1
1 second	1	1	0
5 seconds	1	1	1

Switches 8, 9 and 10 set the Channel Number of the transmitter. This is used with the 5 channel receiver unit (IWR-5) to select which Pressure transmitter is linked to which 4-20mA or 1-5Vdc output channel.

Tx Channel Number	8	9	10
1	0	0	0
2	0	0	1
3	0	1	0
4	0	1	1
5	1	0	0

The IWPT transmitter is now set up and ready to be used. Install the unit into the pipework as required and switch the unit ON using SW3. Pushbutton switch SW1 can be pushed to force the unit to transmit its current pressure and LED 1 will flash twice if the transmission has been received and acknowledged by an IWR receiver unit.

If the unit has transmitted successfully the 4-20mA or 1-5Vdc output of the connected receiver unit will output a value reflecting the pressure level being measured.

6. TROUBLE-SHOOTING GUIDE

Problem encountered	Possible Causes
LED1 doesn't flash when pushbutton SW1 is pressed	Unit not switched on, switch on using SW3. Battery not installed correctly. Battery needs replacing.
LED1 only flashes once when SW1 is pressed	IWR receiver not switched on. IWR receiver not set up for the same RF network. IWR receiver not within range of transmitter. If IWR-1 receiver is used, ensure that the transmitter is set to Tx Channel 1

Output from IWR receiver isn't equivalent to the Pressure being monitored	IWR receiver set up incorrectly, see IWR user manual for further details. Check that the green external LED on the receiver is flashing when the transmitter pushbutton is pressed as receiver may be out of range.

7. SYSTEM PART NUMBERS

Part Number	Pressure Range	Receiver Output
IWPT-G1000-00	0-1 Bar g	4-20mA or 1-5Vdc
IWPT-G6000-00	0-6 Bar g	4-20mA or 1-5Vdc
IWPT-GM1P9-00	-1-+9 Bar g	4-20mA or 1-5Vdc
IWPT-G1002-00	0-10 Bar g	4-20mA or 1-5Vdc
IWPT-G1602-00	0-16 Bar g	4-20mA or 1-5Vdc
IWPT-CO184-00	-1-+24 Bar g	4-20mA or 1-5Vdc
IWPT-G2502-00	0-25 Bar g	4-20mA or 1-5Vdc
IWPT-G4002-00	0-40 Bar g	4-20mA or 1-5Vdc
IWPT-G1003-00	0-100 Bar g	4-20mA or 1-5Vdc
IWPT-G2503-00	0-250 Bar g	4-20mA or 1-5Vdc
IWPT-G4003-00	0-400 Bar g	4-20mA or 1-5Vdc
IWPTU-GP015-00	0-15 psi g	4-20mA or 1-5Vdc
IWPTU-GP030-00	0-30 psi g	4-20mA or 1-5Vdc
IWPTU-CO446-00	-14.5 to +150 psi g	4-20mA or 1-5Vdc
IWPTU-GP075-00	0-75 psi g	4-20mA or 1-5Vdc
IWPTU-GP100-00	0-100 psi g	4-20mA or 1-5Vdc
IWPTU-CO447-00	-14.5 to +350 psi g	4-20mA or 1-5Vdc
IWPTU-GP150-00	0-150 psi g	4-20mA or 1-5Vdc
IWPTU-GP300-00	0-300 psi g	4-20mA or 1-5Vdc
IWPTU-GP750-00	0-750 psi g	4-20mA or 1-5Vdc
IWPTU-GP1K5-00	0-1500 psi g	4-20mA or 1-5Vdc
IWPTU-GP3K6-00	0-3600 psi g	4-20mA or 1-5Vdc
IWPTU-GP5K8-00	0-5800 psi g	4-20mA or 1-5Vdc
IWPTL-G0050-00	0-50mbar g	4-20mA or 1-5Vdc
IWPTL-G0100-00	0-100mbar g	4-20mA or 1-5Vdc
IWPTL-G0250-00	0-250mbar g	4-20mA or 1-5Vdc
IWPTL-G0500-00	0-500mbar g	4-20mA or 1-5Vdc
IWPTL-G0750-00	0-750mbar g	4-20mA or 1-5Vdc
IWPTL-G1000-00	0-1000mbar g	4-20mA or 1-5Vdc
IWPTL-A0500-00	0-500mbar abs	4-20mA or 1-5Vdc
IWPTL-A0750-00	0-750mbar abs	4-20mA or 1-5Vdc
IWPTL-A1000-00	0-1000mbar abs	4-20mA or 1-5Vdc

Part Number	Pressure Range	Receiver Output
IWPTLU-GP001-00	0-1 psi g	4-20mA or 1-5Vdc
IWPTLU-GP002-00	0-2 psi g	4-20mA or 1-5Vdc
IWPTLU-GP005-00	0-5 psi g	4-20mA or 1-5Vdc
IWPTLU-GP008-00	0-8 psi g	4-20mA or 1-5Vdc
IWPTLU-GP010-00	0-10 psi g	4-20mA or 1-5Vdc
IWPTLU-GP015-00	0-15 psi g	4-20mA or 1-5Vdc
IWPTLU-AP005-00	0-5 psi abs	4-20mA or 1-5Vdc
IWPTLU-AP010-00	0-10 psi g	4-20mA or 1-5Vdc
IWPTLU-AP015-00	0-15 psi g	4-20mA or 1-5Vdc

Part Number	Number of Output Channels
IWR-1	One
IWR-5	Five
IANT-3	3 dBi Antenna
IWPT-SA	Swivel Adaptor (1/4” BSP)

8. SPECIFICATIONS

System Performance	
Accuracy (non-linearity & hysteresis	<±0.25% / FS (BFSL)
Setting Errors	Zero & Full Scale,<±0.5% / FS
Thermal Zero Shift	<±0.04% / FS / °C
Thermal Span Shift	<±0.02% / °C typical
Media Temperature	-20 to +135 °C
Ambient Temperature	-20 to +50 °C
Storage Temperature	-20 to +80 °C
Pressure Housing	303 Stainless Steel
O Ring Seals	Viton
Diaphragm	Ceramic
Enclosure Material	Acetal
Weight	310g
RF Transmitter	Contains FCC W70MRF24J40MDME
Power Requirements	Lithium Ion C 3.6V Cell
Battery Life	5 Years (10s transmission rate)
Dimensions	132 x 79 x 52mm (L x W x D)
Mounting	Any Orientation

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