



# IWR-1

## Single Channel

### Industrial Wireless Pressure Receiver



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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.

### 1.2 Hardware Features

The IWR range of Wireless Pressure Receivers has been designed to receive the pressure values from IWPT Wireless Pressure Transmitters and output the measured pressure value as 4-20mA or 1-5Vdc analogue output signals.

The IWR-1 has a single output and the IWR-5 has up to five outputs, each of which can be linked to an IWPT transmitter.

The IWR range of receiver units operate on the licence-free 2.4 GHz band.

Ranges of up to 500m are possible using the standard transmitter and receiver units with the supplied antennas.

The receiver is powered by a DC voltage of between 12-32Vdc.

## 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.

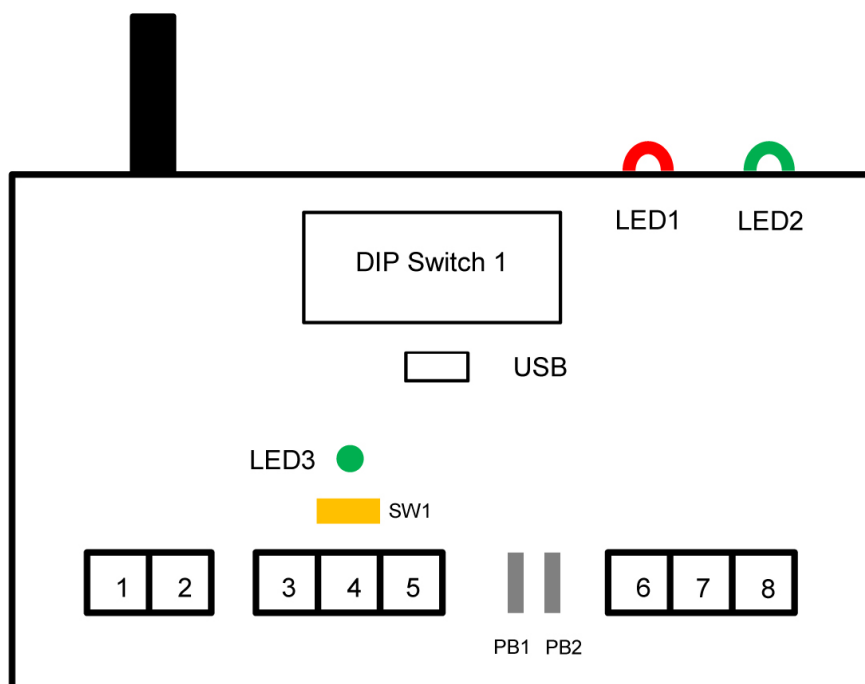
## 3. IWR-1 RECEIVER SET-UP PROCEDURE

The IWR-1 receives data from an IWPT wireless pressure transmitter and produces a 4-20mA or 1-5Vdc analogue source output representing 0 - 100% of the pressure range of the IWPT transmitter connected.

It also has an alarm output that can be used as a pressure high/low, loss of signal or low battery alarm.

As delivered the IWR-1 is configured to receive transmissions from an IWPT wireless pressure transmitter configured to channel 1.

### Connections and Configuration Switches



Terminal Number	Connection
1	Power 0V
2	Power +ve
3	Output 0V
4	mA Output +ve
5	1-5Vdc Output +ve
6	Relay Common
7	Relay N.C
8	Relay N.O

### Dipswitch Configuration

The 8 way Dip Switch 1 is used to configure the basic functionality of the IWR-1

The RF Network code must be the same as the IWPT to be used with the Receiver unit.

Switches 1, 2, 3 & 4 select the network code as below

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 and 6 select the number of transmissions which are missed before the Alarm relay output switches to the alarm condition.

Missed Transmissions	5	6
4	0	0
2	0	1
6	1	0
No Alarm	1	1

Switches 7 and 8 configure the action of the Alarm Relay output. This can also be configured to the exact alarm values required using the USB port and the IWR-set software

<b>Relay Action</b>	<b>7</b>	<b>8</b>
Relay 1 switches OFF above 50%	0	0
Relay 1 switches OFF above 75%	0	1
Relay 1 switches OFF above 25%	1	0
Relay 1 Configured via USB & IWR-Set software	1	1

## **LED Indication**

External LED 1 is used to indicate the status of the alarm relay. This is lit if the pressure value transmitted is outside the alarm limit, the receiver has missed the number of transmissions configured above or will flash if the IWPT pressure transmitter has a low battery capacity.

External LED 2 flashes when a valid transmission is received from a connected IWPT transmitter.

The internal indicator LED3 is used to indicate the following alarm conditions:

LED flashes 2 times: This indicates that the number of transmissions missed has exceeded the number set up by switches 5&6 above.

LED flashes 3 times: This indicates that the pressure is outside the limits selected by switches 7&8 above.

LED flashes 4 times: This indicates the transmitter has a low battery level.

## **Output Calibration**

The IWR-1 is factory calibrated for 4-20mA and 1-5V source outputs so that if the IWPT transmits a zero or full scale output the IWR-1 output will be within its accuracy specifications.

The output selector switch is used to select either a 4-20mA or 1-5Vdc output.

Push the switch to the left to select 4-20mA and to the right to select 1-5Vdc.

It is possible to adjust the output to match the equipment used to monitor the output or compensate for any zero or span drift of the IWPT transmitter. This is achieved by using the pushbuttons PB1 (DOWN) and PB2 (UP) and the internal LED as outlined here:

- Push both buttons at same time then release to put the unit into zero tare mode.
- LED will go amber, and the output will change to the zero value.
- Ensure there is no pressure applied to the connected IWPT transmitter and then use the DOWN and UP buttons to adjust the output to be 4mA or 1V
- If the led flashes amber this indicates that the connected IWPT transmitter zero value is not valid
- Push both buttons at same time again and then release.

- LED will go red to indicate that the full scale output will be adjusted. Inject the full scale pressure range into the IWPT using a Pressure Calibrator. If no Pressure Calibrator is available press both buttons again to exit the calibration saving only the zero tare. The LED will go amber for 0.5 seconds as the zero tare value is learnt and saved to memory.
- If the full scale pressure can be applied use the DOWN and UP buttons to adjust the output to be 20mA or 5V. When the output is correct push both buttons at same time then release.
- If the LED flashes RED this indicates that the measured value is not close enough to the expected full scale value to allow successful calibration..
- If full scale calibration has been achieved the led will go amber for 0.5 seconds as calibration values are learnt and saved to memory.

The saved values will now be used to produce the calibrated analogue output.

#### 4. TROUBLE-SHOOTING GUIDE

<b>Problem encountered</b>	<b>Possible Causes</b>
LED2 doesn't flash	The IWR receiver is not connected to an IWPT transmitter or the IWPT transmitter is out of range.
mA Output reads zero	The IWR receiver output is not wired correctly, check wiring and try again
Output from IWR receiver isn't equivalent to the Pressure being monitored	Check that the IWR receiver is linked to the correct IWPT transmitter by pressing the pushbutton inside the transmitter and checking that LED2 on the receiver flashes when the transmitter button is pressed. If the output still doesn't agree with the pressure reading, re-calibrate the unit as described above.
LED1 is solid ON	This indicates that the reading from the Pressure transmitter is outside the limit selected or the receiver is out of range of the transmitter and transmissions are not being received.
LE D1 is flashing	This indicates that the battery inside the transmitter is running low. Change the battery inside the transmitter taking care to exactly follow the procedure outlined in the IWPT manual.

#### 5. SYSTEM PART NUMBERS

<b>Part Number</b>	<b>Number of Output Channels</b>
IWR-1	One
IWR-5	Five
IANT-3	3dBi Antenna
IWPT-SA	Swivel adaptor (1/4" BSP)

<b>Part Number</b>	<b>Pressure Range</b>	<b>Receiver Output</b>
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
<b>Part Number</b>	<b>Pressure Range</b>	<b>Receiver Output</b>
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-G0500-00	0-500mbar Abs	4-20mA or 1-5Vdc
IWPTL-G0750-00	0-750mbar Abs	4-20mA or 1-5Vdc
IWPTL-G1000-00	0-1000mbar Abs	4-20mA or 1-5Vdc
<b>Part Number</b>	<b>Pressure Range</b>	<b>Receiver Output</b>
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-GP005-00	0-5 psi Abs	4-20mA or 1-5Vdc
IWPTLU-GP010-00	0-10 psi Abs	4-20mA or 1-5Vdc
IWPTLU-GP015-00	0-15 psi Abs	4-20mA or 1-5Vdc

## 6. SPECIFICATIONS

<b>System Performance</b>	
Accuracy (non-linearity & hysteresis)	<±0.25% / FS (BFSL)
Setting Errors	Zero & Full Scale, <±0.5% / FS
Operating Temperature	-20 to +50 °C
Storage Temperature	-20 to +80 °C
Outputs	4-20mA current source 1-5 Vdc voltage source
Relay	5A rated changeover contact
Enclosure Material	Light Grey ABS (RAL 7035)
Weight	215g
Power Requirements	12 to 32 Vdc
Fuse	Built-in resettable fuse
Dimensions	120 x 80 x 57mm (L x W x D)
Mounting	Any Orientation

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