WPTR

Wireless Pulse Transmitter and Receiver System

Ideal for slumpstand wireless metering application

DATASHEET

FEATURES

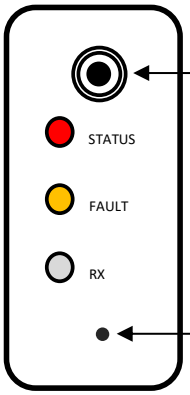
- 1-channel wireless pulse transmission.
- Ideal for slumpstands where wiring back to batch room to receive data is not possible or cost prohibitive.
- Compact design. Includes antennas.
- 150 metre maximum transmission distance. Long range option: 5 km line of sight.
- Receiver status indicators.
- SETUP Paired ready for pulse transmissions

Transmitter

Receiver

Whether for short or long range, temporary or permanent monitoring installations - the WPTR system provides real time wireless transmission of flowmeter pulses.

The system is the ideal solution for cost sensitive applications in flow monitoring at remote locations or where a cable connection is impractical e.g. between a slumpstand flowmeter and a Batch Room.



Receiver Status LEDs

Antenna

STATUS: Receiver is operating (double flash).

FAULT: Link fail fault. ON if no signal received.

RX: Indicates radio signal detected.

Learn button

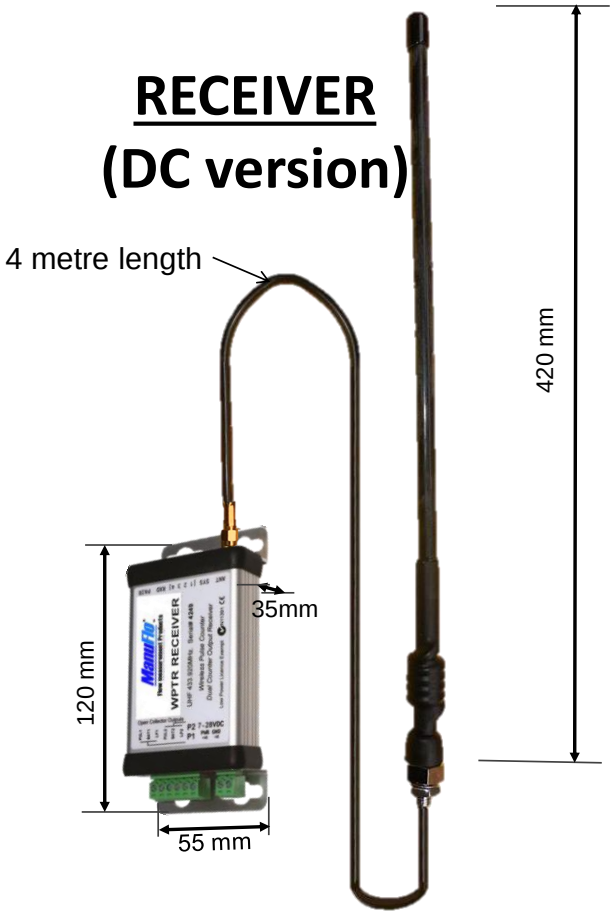
Order Code	Description
WPTR	Wireless pulse transmitter/receiver system, comprising WPTR-T and WPTR-R
WPTR-T	Wireless pulse transmitter only. To IP65 outdoors. • **5 Hz maximum input**. 150 metre range. UHF 433.920 MHz. 10 mW. IP65. • Voltage free digital input. Suitable for Open Collector or Contact Closure. Internal 100 KΩ pull up resistor. • 1 pulse/Litre output when used with MRPU5-P-GAL25M slumpstand flowmeter. • SMA RF Antenna. Gold plated right hand thread. • 12-24VDC powered. 16mA current consumption during transmission.
WPTR-R	Wireless pulse receiver only. • 1 channel. (Indoor use only). Pulse count output - Open Collector. • 12-24 VDC powered. 30 mA. Operating temperature: -10°C to 70°C • Antenna: ○ SMA RF Antenna. 434 MHz, 2.1 dBi gain. 50 ohms impedence. ○ Delrin, copper, nylon, chromed brass. Gold plated right hand thread. ○ 420mm tall, with 4 metres RG58 cable with SMA male connector end.
Optional	
-LR	Wireless pulse transmitter long range option: 5 km line of sight. 433.920 MHz. 25mW.
-T.AC	Transmitter 240 vac powered option. (IP65)
-R-AC	Receiver 240 vac powered option. (IP65)

Due to continuous product improvement, specifications may change without notice.

DIMENSIONS

TRANSMITTER (AC or DC version)

RECEIVER (DC version)



ANTENNA

The ANT-434D-GIS mobile antenna is a ground independent design ideally suited for use where no metal ground plane exists, or where the ground plane is not of sufficient area to allow a normal quarter wave whip to be mounted.
Factory tuned for 434 MHz with 2.1 dBi gain, this highly flexible whip stands 420 mm tall.
The delrin, copper, nylon and chromed brass construction provides an extremely robust and durable antenna capable of surviving the harshest of conditions and treatment. 4 metres of RG58 stranded cable bottom exits through the antenna base. An SMA male connector is fitted to the cable.

Mounting is to any bracket with a 10 mm minimum diameter hole using the stainless steel nut and washer on the base ferrule. Typical mounting positions are to a truck mirror, vehicle gutter, guard or boot.
It is important to have the antenna as far away from other antennas or metallic objects as possible to avoid distortion of the omnidirectional pattern and interference. At least 350 mm side clearance is desirable, preferably more. The antenna must be vertical for best performance, not mounted at an angle.
Route the cable carefully via the shortest possible route. Ensure that the cable is not stretched excessively and there are no sharp kinks. Use cable ties, but do not pull so tight as to crush the cable. A damaged feeder cable is a cause of high VSWR and reduced performance.

WPTR – RECEIVER

Pairing Transmitter to Receivers:

All transmitters are factory programmed with a unique serial number. This serial number is transmitted as a unique transmission code with every update of the pulse count. This serial number is used to pair a Pulse Count transmitter to a Pulse Count receiver. The same transmitter can be paired with any number of receivers if the pulse count is required at multiple locations. Each receiver can be paired with two transmitters.

Creating New Pairings

1. Using a paperclip press the Learn button on the *receiver*. The status LED will light.
2. The Link Fail LED for channel 1 will start to toggle on/off indicating channel 1 is ready for pairing. Pressing the LEARN button again will enter channel 2 into pairing mode. Pressing the learn button a third time will cancel the pairing procedure on the receiver.
3. Once the required channel on the receiver is selected for pairing, press and hold the LEARN button on the *transmitter*. Keep holding the button until a pairing packet is transmitted, indicated by the LED on the transmitter flashing on briefly. At the same time, the Status and Link Fail LED on the receiver will extinguish.
4. The transmitter is now paired to the receiver.

Erase Receiver Pairings

1. On the WPC-2RX (*receiver*), press and hold the LEARN button for 10 seconds.
2. The signal LED will flash after 10 seconds indicating all registered transmitters has been erased. The Link Fail outputs will also toggle for 2 seconds.

Note: Individual transmitter pairings cannot be erased.

Receiver LED Indicators

WPC-2RX Front LEDs		
Name/Colour	Function	Description
System / Red	Single flash	Unit is running but nothing has been received via the radio.
	Double flash	A packet has been received that corresponds to a paired output.
	Slow Flash	This slow flash occurs during the pairing process to indicate the receiver is ready to receive a pairing pack from a transmitter unit.
Fault / Yellow	OFF	The output represents the critical battery level on a remote transmitter unit. When off there is no fault.
	ON	When lit, this indicates either of the paired transmitters are in a critical low battery state and the battery should be changed.
Signal / Green	OFF	No radio signal detected
	Flash	A short flash indicates a packet of data has been received.

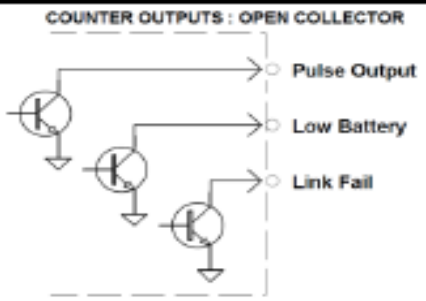
WPC-2PC Rear LEDs		
Name/Colour	Function	Description
Bottom P1/ Top P2 / Red	OFF	Link status OK. The remote transmitter is being received and the link is OK.
	ON	The link in not OK. Either there is no transmitter paired to this output, or the output has not been heard from for the link fail time period.
	FLASH	Flashes during pairing to indicate the count output is ready to receive a pairing packet from a transmitter.

WPTR – RECEIVER

Digital Outputs on WPC-2PC (Receiver)

WPC-2RX Open Collector Outputs

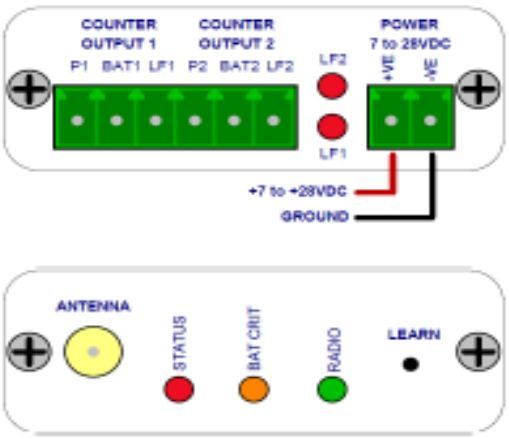
The receiver supports 3 high current open collector Darlington outputs per paired pulse counter. These outputs are capable of sinking upto 500mA at 50V. They are suitable for driving relays, LEDs or logic buffers. For technical details on the output drivers, please refer to the datasheet for the ULN2003 Darlington Array.



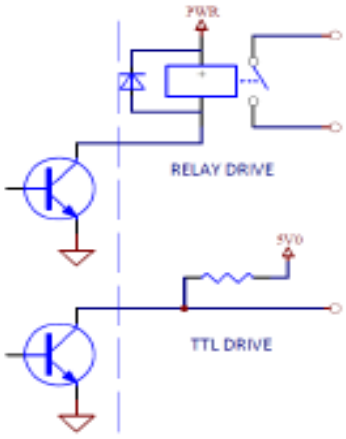
WPC-2RX Outputs Description	
Output Name	Description
Pulse Output	This is the main pulse output. The output will toggle for every count that is received and processed. The duration of the output is set by an internal link setting.
Low Battery	This output is turned on when the battery level on the transmitter is detected to be low indicating the batteries may be getting close to being flat.
Link Fail	This output indicates that the receiver has not heard from the transmitter for a period of 900 seconds (15 minutes). This link fail timeout can be changed at time of manufacture.

Receiver End Panel Layout and Connections

WPC-2RX : Receiver



Connecting to Open Collector Outputs

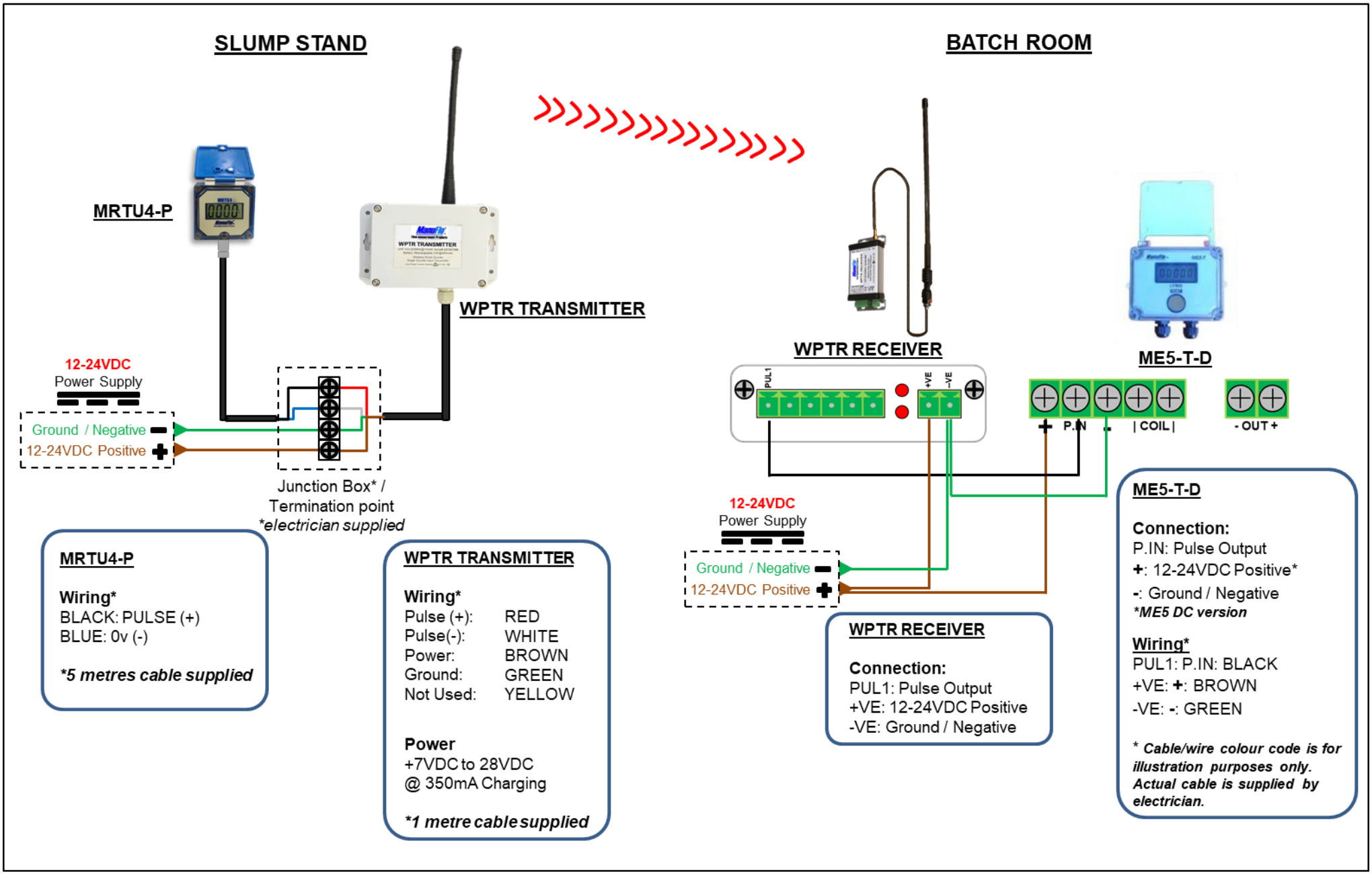


Linking Options (Internal option links – open case to access):

WPC-2RX : Receiver		
L1	L2	Description
-	-	Link 1 is Not used
-	Open	Link 2 removed sets the pulse output width to 100ms ON / 100ms OFF
-	Link	Link 2 installed sets the pulse output width to 500ms ON / 500ms OFF. This setting is suitable for driving an external low voltage coil relay.

➢ **It's strongly recommend to bench test the wireless link prior to installation to ensure your chosen links settings give the desired output results for all combinations of input states/transitions.**

MRTU4 Slumpstand to ME5-T-D Batchroom Wiring Diagram



MRTU4-P

Wiring*
BLACK: PULSE (+)
BLUE: 0v (-)

5 metres cable supplied

WPTR TRANSMITTER

Wiring*

Pulse (+):	RED
Pulse(-):	WHITE
Power:	BROWN
Ground:	GREEN
Not Used:	YELLOW

Power
+7VDC to 28VDC
@ 350mA Charging

1 metre cable supplied

WPTR RECEIVER

Connection:
PUL1: Pulse Output
+VE: 12-24VDC Positive
-VE: Ground / Negative

ME5-T-D

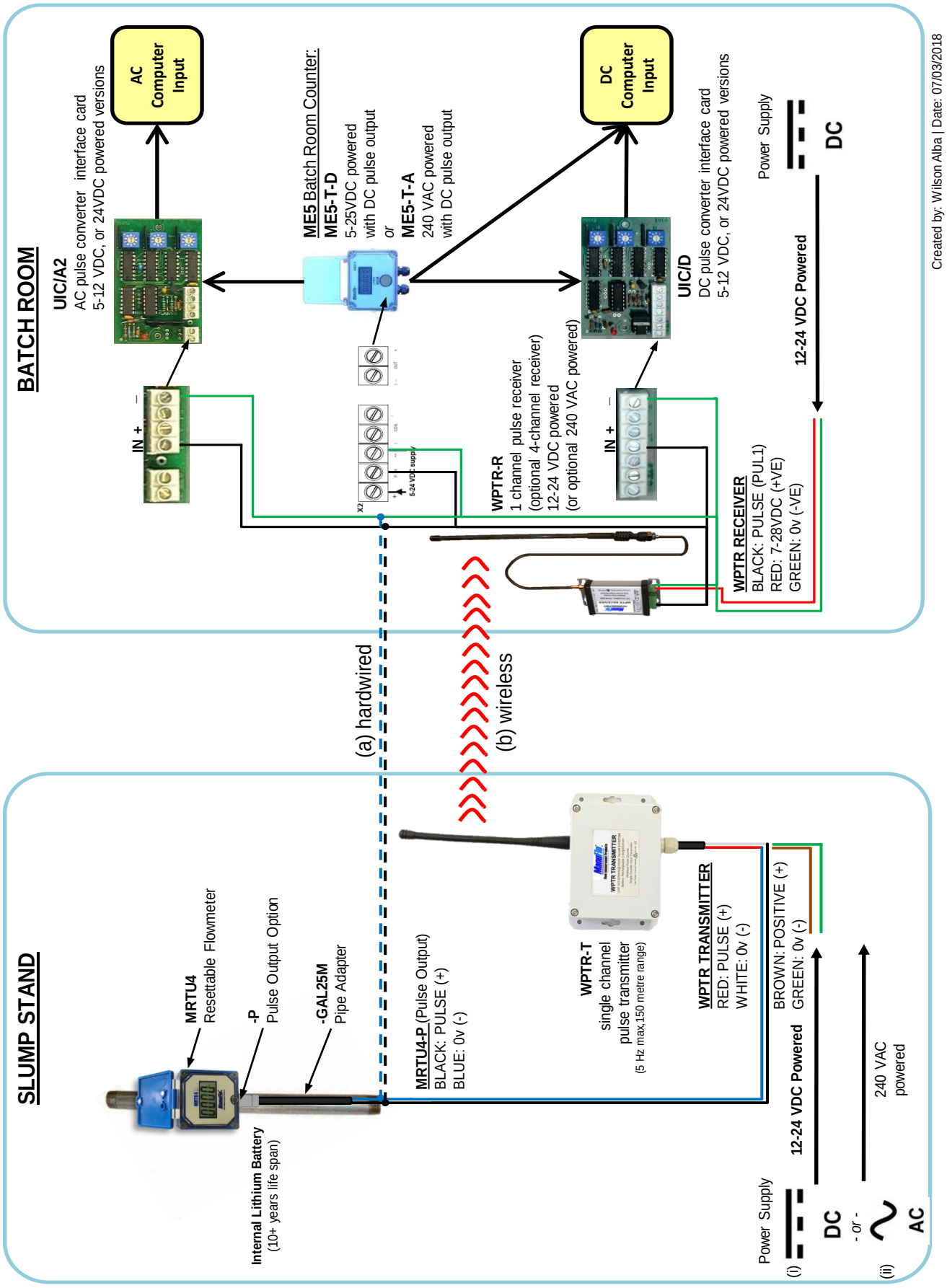
Connection:
P.IN: Pulse Output
+: 12-24VDC Positive*
-: Ground / Negative
ME5 DC version

Wiring*
PUL1: P.IN: BLACK
+VE: **+**: BROWN
-VE: **-**: GREEN

*** Cable/wire colour code is for illustration purposes only. Actual cable is supplied by electrician.***

Created by: Wilson Alba | Date: 08/03/2018

Slumpstand To Batchroom Options



Created by: Wilson Alba | Date: 07/03/2018