

EcoWell Wireless Pressure Transmitter (WLP) – 900MHz

FEATURES

- Customizable configuration for diverse applications: selectable sensor accuracy level, diaphragm material, enclosure material, and pressure range.
- Integrated superior pressure sensor with corrosion, shock, and vibration resistance.
- Extensive telemetry range.
- Simple communication setup between transmitters and gateway.
- User-defined data update rates
- Digital LCD display: real-time pressure, battery power, wireless signal strength etc.
- Configuration for various measuring mediums: gas, vapor, liquid
- Anti-electromagnetic and radio frequency interference technology
- Signal full isolation technology
- Zero-point self-stabilization technology

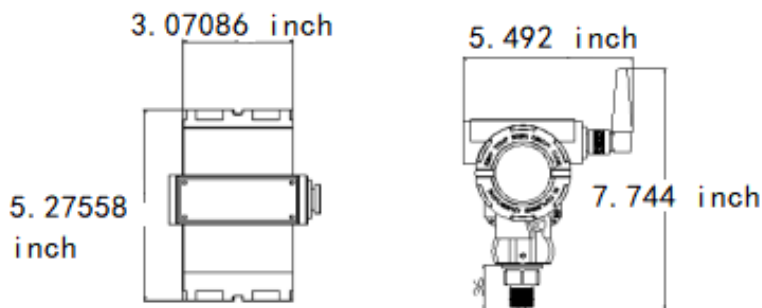


TECHNICAL SPECIFICATIONS

Parameter	Specifications
Accuracy level	Selectable: 0.5%, 0.1%, 0.075%
Pressure Ranges	Standard: 0 ~ 100psi; 0 ~ 150psi; 0 ~ 300psi; 0 ~ 500psi; 0 ~ 1000; 0 ~ 1500psi; 0 ~ 3000psi; 0 ~ 5000psi; 0 ~ 10,000psi
	High: 0 ~ 17,500 psi; 17,500psi above
	Low: -14~0psi; 0 ~ 1psi; 0 ~ 3psi; 0 ~ 5psi; 0 ~ 10psi; 0 ~ 15psi; 0 ~ 30psi; 0 ~ 50psi
Power Source	3.6V Lithium Battery, 38Ah
Operating Medium Temperature	-40 °F ~ 176 °F
Ambient temperature	-40 °F ~ 140 °F
Relative humidity	10% RH ~ 90% RH
Wireless Communication	Range 902-928MHz
Data Interface	Modbus Register at Gateway w/ optional AO and DO
Telemetry Distance	~ 1 mile (line of sight)

Transient overvoltage	150%FS (150% full scale)
Long-term stability	0.3%FS/ year
Overload capacity	1.5 times the maximum range
Vibration	≤ 0.022 lbs, $f \leq 55$ Hz, amplitude ≤ 0.02 inch
Enclosure Rating	IP66
Atmospheric pressure	12-15 psi

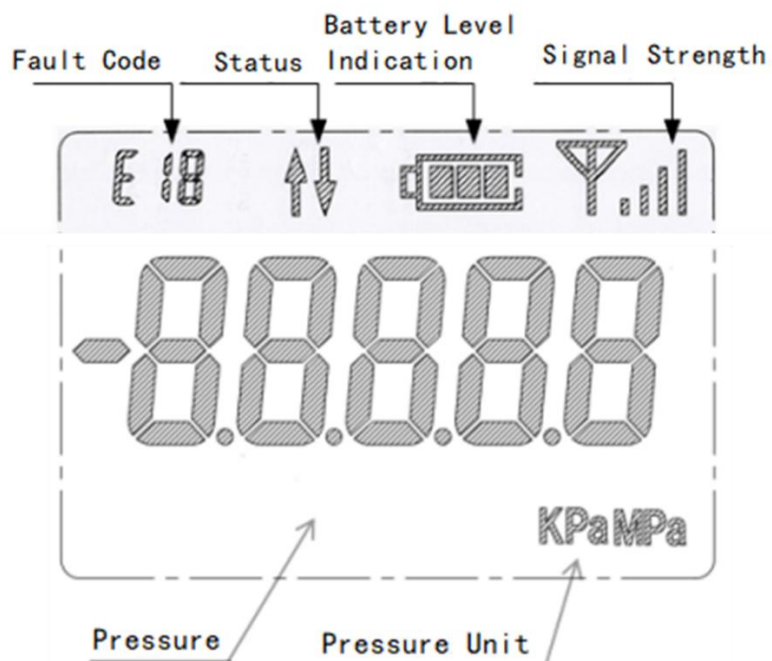
STRUCTURAL DIMENSIONS



INSTALLATION GUIDE

I. Display and key menu

The main page of the display is shown as follows:



Display area	Description
Fault code	No display - no fault; E01 - memory fault; E02 - communication fault; E03 - instrument parameter fault; E04 - pressure transmitter fault.
Data Status	“↓” when sending data, displays “↑” when receiving data, and does not display when there is no data exchange.
Battery level indication	3 bars - 100%; 2 bars - 75%; 1 bar - 50%; 0 bar - 25%; when it is 0 bar, the battery needs to be replaced.
Pressure	Display pressure value, such as 500psi, it will be displayed as 500.000psi
Signal Strength	When signal icon “Ψ” is always on, the wireless communication is good. If the signal icon “Ψ” is not on, the wireless communication is not built.
Pressure Unit	The unit can be set to psi, Kpa, MPa.

Specific operation example: long press K1, the interface displays code, then short press K1 to enter the password setting, enter 2 and short press K1 to confirm, then conv will be displayed, and other menus will be switched through K2 and K3. If you continue to short press K1 to enter the conv setting, adjust the value through K2 and K3, short press K1 to confirm, and long press K1 to exit the menu setting. Other menu operations are the same.

Key menu operation instructions	
K1 short press	Enter settings, confirm and return
K1 long press	Enter the menu, return to the main interface
K2 short press	Decrease, Page Up, Shift
K2 long press	none
K3 short press	Add, Page down, Manual send
K3 long press	none

Menu Password	Menu Contents	Adjustment function	illustrate
code=1	Network ID: P-ID	Shift, increase	The default value is 1, and the range is 0-9999. (The network number is used to distinguish different wireless networks. Only devices on the same channel and using the same network number can communicate with each other.)
	Carrier frequency: --CH	Increase, decrease	Range 902-928MHz
	Device ID: n-ID	Shift, increase	Default is 1, range is 0-9999
	Target ID: S-ID	Shift, increase	The default value is 0, and the range is 0-9999, which is the destination address in the API format.

	Transmit power: --PL	Increase, decrease	Default is 16, range is 5-20 dBm, the larger the value, the longer the communication distance and the greater the power consumption. If it is less than 100m, it is recommended to adjust it to 5
	Air speed: --AH	Increase, decrease	The default value is 3, and the range is 1-6. The data transmission rate in the air can be divided into 6 levels. The higher the level, the higher the rate. Under the same conditions, the higher the rate, the closer the transmission distance. Therefore, this value needs to be adjusted according to the actual application environment. (Note: Once the rate is determined, all devices must be at the same rate, otherwise they cannot communicate.) 1 = 0.3 Kbps, 2 = 0.6 Kbps, 3 = 1.0 Kbps, 4 = 1.8 Kbps, 5 = 3.1 Kbps, 6 = 5.5 Kbps
code=2	Collection interval: conv	Shift, increase	Default: 5 seconds
	Send interval: send	Shift, increase	Default 120s
	Maximum sending interval: H end	Shift, increase	Need not
	Group No.: Hsnr	Shift, increase	Default 0, range 0 -255
	Serial number: snr	Shift, increase	Default 0, range 0 -255

Status Description

- **Instrument configuration parameter status:** "E 1" and "E 2" are displayed in the upper left corner, indicating that the instrument is setting Lora parameters.
- **Status code when Lora parameter setting fails:** Displays "E 7". If there are multiple faults, the status codes will be displayed in a superimposed manner. The instrument fault status codes are as follows: E 2-No communication, E 3 Uncalibrated, E 4-Overrange, E 7- Lora parameter setting failed. (Note: E 3 and E 4 will not appear at the same time)
- **The status display of whether the instrument Lora is online:** the signal icon "Ψ" is always on, indicating that the instrument Lora is online; the signal icon "Ψ" is not on, indicating that the instrument Lora is not online.
- **Normal wireless communication of the instrument:** When the instrument displays the pressure value normally, short press K3 to manually send normal data. The LED flashes once, indicating that the instrument executes the sending. The LED flashes for the second time and the instrument will flash "↓", indicating that the instrument has sent successfully. The instrument will display "↑" when it receives the response from gateway, indicating communication built with gateway. The online status is that the signal icon "Ψ" is always on and there is no E 2 prompt. If the instrument does not receive a response from the gateway, it will prompt "E 2", indicating no communication.

II. Battery replacement and installation instructions

a. Transmitter battery replacement steps:

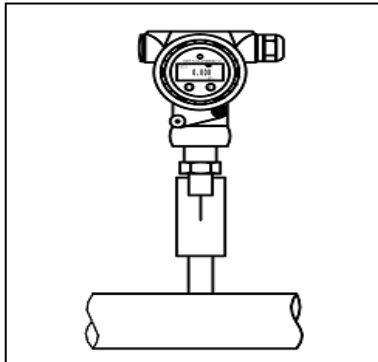
- Unscrew the back cover and unplug the battery.
- Take out the old battery, put in the new battery and plug in the power plug.
- After replacing the battery, tighten the back cover.

b. Pre-installation inspection

- Whether the pressure at the measured point exceeds the measuring range of the instrument.
- Whether there is a momentary impact on the pressure at the measured point.
- Whether the measured medium has a high temperature (less than 185 °F).
- Whether the measured medium is compatible with the instrument structural material.
- Whether the measured medium will block the pressure inlet of the instrument.
- Measure the level of the tank to see if it is sealed.

c. Installation Method

- In general, the instrument should be installed vertically upward to facilitate observation.
- The universal standard pressure interface is (M20x1.5) mm or ½ npt external thread. Copper or polytetrafluoroethylene gaskets should be installed to seal during installation.
- If the tank for measuring pressure is sealed, an air hole should be opened on the top of the tank to prevent the compressed gas in the tank from causing the instrument reading to be inconsistent with the actual pressure. If the air hole cannot be opened due to safety or other reasons, other pressure instruments should be selected.
- The instrument can be directly installed on the flange interface of the measuring pipeline. To facilitate installation and maintenance, a stop valve and a vent valve should be installed between the flange joint and the pipeline. (See the schematic diagram)



d. Notes

- Do not poke the pressure-inducing hole with sharp objects or hard objects, and do not press the diaphragm with your hands to avoid damaging the diaphragm or causing permanent deformation of the diaphragm.
- When the ambient temperature exceeds the product standard, on-site protective measures should be taken to prevent damage to the LCD display.
- When installing the instrument, the stop valve must be closed, and the vent valve must be opened at the same time to prevent the instrument's sensor from being damaged by excessive pressure caused by pressure buildup.
- If the medium temperature is between (185°F-248°F), a condenser should be installed.
- When installing the differential pressure gauge, please pay attention to check the high-pressure end and the low-pressure end to avoid damaging the sensor.

III. Common troubleshooting

Fault symptoms	Causes	Troubleshooting
The instrument display is not zero when the air is compressed	The pressure measuring hole is blocked by debris in the measuring medium	Clean with water or other organic solvents
	The measured medium and ambient temperature exceed the product measurement range	Prevent the instrument from operating outside the temperature range
	The measuring medium contains hard debris that damages the measuring diaphragm, or the measuring diaphragm is stabbed by humans.	Return to factory for repair
	Pressure build-up during installation causes deformation of the pressure diaphragm	
The pressure displayed on the instrument is incorrect	The pressure measuring hole is blocked by debris in the measuring medium	Clean with water or other organic solvents
	The measuring medium contains hard debris that damages the measuring diaphragm Or the measuring diaphragm is damaged by human intervention	Return to factory for repair
	The pressure source has a transient impact	Installing a pressure damper
	The pressure sensor is damaged due to the transient impact of the pressure source	Return to factory for repair
	The pressure exceeds the instrument range.	The pressure exceeds the instrument range or reselects an instrument with a suitable range.
	The pressure exceeds the maximum pressure of the instrument, causing damage to the sensor	Return to factory for repair
	The power supply voltage is too low or the interference is too large	Check the power supply
No communication or incorrect communication	Instrument communication parameters are inconsistent	Check the communication parameters and reset them.
	The wireless parameter settings are not correct	Reread configuration parameters
	The instrument communication module is damaged.	Factory repair

IV. How to Order

- When ordering, users need to provide detailed technical parameters, such as pressure measurement range, accuracy requirements, and special requirements, etc., to choose a digital instrument that better suits your requirements.
- For detailed configurations, please refer to the company's latest configuration table.

Name	Range or Level	Spec Code	Remark
Pressure Transmitter (WLP-900) Pressure	-14~0psi	L00	Choose one of the ranges
	0 ~ 1psi	L01	
	0 ~ 3psi	L02	
	0 ~ 5psi	L03	
	0 ~ 10psi	L04	
	0 ~ 15psi	L05	
	0 ~ 30psi	L06	
	0 ~ 50psi	L07	
	0 ~ 100psi	L08	
	0 ~ 150psi	L09	
	0 ~ 300psi	L10	
	0 ~ 500psi	L11	
	0 ~ 1000psi	L12	
	0 ~ 1500psi	L13	
	0 ~ 3000psi	L14	
	0 ~ 5000psi	L15	
	0 ~ 10,000psi	L16	
	0 ~ 17,500psi	L17	
	0 ~ 17,500psi above	L18	
Accuracy Level	0.5%	A0	Choose one of three
	0.1%	A1	
	0.075%	A2	
Diaphragm Material	316 Stainless Steel	SS	Choose one of three
	Hastelloy C276	HC	
	Gold-plated stainless steel	GS	
Display	LCD Segment display	XL	Choose one
	OLED (low temperature -40°C resist)	XO	
Process Connection	M20 × 1.5mm	M2	Choose one of three
	1/2" NPT Male	N2	
	Flange	FL	
Enclosure Material	Aluminum alloy material	S0	Choose one of three
	Stainless steel 304	S4	
	Stainless Steel 316	S6	
Mounting Bracket	304 stainless steel bracket	MB	Optional