WiEPOut T1

Wireless EPO user terminal

The WiEPOut T1 is a sub-GHz wireless I/O bridge that extends dry-contact signals and relay control across distances where wired connections are impractical. Operating in the 902–928 MHz ISM band using LoRa modulation, the system delivers reliable, low-latency wireless I/O expansion for industrial, commercial, and infrastructure applications.

Each deployment consists of a paired Tx and Rx module with automatic encrypted pairing, authenticated wireless communication, and normally-open relays. Two dry-contact relay channels and three optically-isolated GPIO channels provide versatile I/O expansion with no software configuration required.

Key Features

Plug-and-play wireless I/O — no software programming required
AES-256 encrypted wireless link
Sub-GHz LoRa (902–928 MHz) for superior range vs. 2.4 GHz
16 preset channels, DIP switch selectable
(2) dry-contact solid-state relay channels N.O.
(3) optically-isolated GPIO (5–48 V VSS-referenced)
9V battery backup (~1 hr emergency runtime)
USB serial console for monitoring and configuration

Applications

- Temporary or mobile equipment
- Power inhibit (EPO) relay extension
- Gate and barrier control systems
- Conveyor and process line interlocks
- Infrastructure monitoring
- Equipment automation (HVAC, lighting)
- Pump control and watchdog monitoring

Specifications

Parameter	Value
Frequency	902–928 MHz ISM (FCC Part 15.247)
Modulation	LoRa (SF7–SF12), 125-500 kHz BW
Channels	16 selectable channels, programmable freq.
TX Power	14–22 dBm
Rx Sensitivity	–137 dBm (SF12, BW125)
Antenna	2.0 dBi fixed
Primary Power	12 V DC (10.8–13.2 V), barrel
Backup Power	9 V battery, est. 1 hr runtime
Switch Ch.	2× dry-contact N.O. relay pairs
GPIO Ch.	3× isolated, VSS-ref (0–48 V)
+12V Aux Out	11.5–12.5 V, 100 mA max
Security	AES-256 encryption
Console	USB-B, 115200 baud 8N1
Enclosure	110×105×35 mm, 203 g [1]
Operating Temp	–20 to +70 °C
Regulatory	Complies with FCC Part 15

[1] *Enclosure only. With antenna: 138×105×95 mm (antenna extends 60 mm above lid).*

Absolute Maximum Ratings

Parameter	Min	Max
Supply Voltage	–0.3 V	15 V
Reference Voltage	0 V	48 V
Switching Current		1 A
Operating Temp	–20 °C	+70 °C

Stresses beyond Absolute Maximum Ratings may cause permanent damage. Functional operation at maximum ratings is not implied.

Physical Interfaces

Front Panel *Rear Panel*

DIP Switch Configuration

Position	Function
1	Mode: UP = Tx, DOWN = Rx
2	GPIO direction: UP = Input, DOWN = Output
3	
4	
5–8	Channel (4-bit binary). Pos 8 = LSB, Pos 5 = MSB

System Connector Pinout

10-position, 3.5 mm pluggable terminal block • Mating plug: Phoenix Contact 1790328

Pin	Signal	Description	Electrical	Notes
1	SW1_A	Switch 1, Contact A	Dry contact (N.O.)	Relay pair with Pin 6
2	IO_1	GPIO 1 (DIP switch 4)	Isolated, VSS-ref [2]	See note below
3	IO_2	GPIO 2 (DIP switch 3)	Isolated, VSS-ref [2]	See note below
4	IO_3	GPIO 3 (DIP switch 2)	Isolated, VSS-ref [2]	See note below
5	SW2_A	Switch 2, Contact A	Dry contact (N.O.)	Relay pair with Pin 10
6	SW1_B	Switch 1, Contact B	Dry contact (N.O.)	Relay pair with Pin 1
7	+12V	Auxiliary power output	11.5–12.5 V	250 mA max
8	GND	Ground	0 V	DC ground reference
9	VSS	External DC reference input	0–48 V DC	GPIO isolation domain reference
10	SW2_B	Switch 2, Contact B	Dry contact (N.O.)	Relay pair with Pin 5

[2] GPIO pins are galvanically isolated and referenced to VSS (Pin 9). Each GPIO has a 47 kΩ pull-up to VSS. Direction is set per-channel via DIP switches 2–4.

Ordering

Part Number	Description
WIEPOUT-T1-KIT	2x WiEPOut T1 units, 2x mating connector plugs, 2x 12V adapters, 2x USB cables
WIEPOUT-T1-UNIT	1x WiEPOut T1 units and 12V Power Adaptor. Mating connector plugs not included.

Compatible Components

Item	Mfg & Part Number
Mating Connector Plug	Phoenix Contact 1790328
Wire Ferrule (24 AWG)	Weidmüller 9021020000

Software

System monitoring and control software is available for Windows, macOS, and Linux, providing real-time visibility into link status, signal quality, device configuration, and firmware update capability. For several deployments, a server-based fleet management platform enables centralized monitoring and administration of multiple WiEPOut systems from a single interface.