

PLUS TWP-1AI WIRELESS TRANSMITTER



PLUS TWP-1AI Wireless Transmitter System is a solution to easily gather the data needed to identify production issues and implement measures to increase efficiency and prevent future disruptions.

PLUS TWP-1AI Wireless Transmitter was designed to monitor 4..20 mA / 0..10V signals, providing a secure communication, without cable requirements of a complex wired solution.

Conductivity, vibration, humidity, flow, level, pressure and temperature are some examples of industrial process variables, possible to be monitored and controlled.

Dimensions: 120 x 90 x 50 mm

Weight: 314 g

Material: ASA+PC-FR (UL 94 V-0) / Polycarbonate

Protection Index: IP65

KEY FEATURES

1 CONFIGURABLE ANALOG INPUT

1 REMOTE SWITCH OUTPUT

UP TO 4 KM COMMUNICATION DISTANCE (LOS)

MULTI-HOP MESH NETWORK

WITH SELF-FORMING, SELF-HEALING AND SELF-OPTIMIZING FEATURES

OPERATING MODE

AS END DEVICE / AS REPEATER

SITE SURVEY FEATURE

SIMPLE AND INTUITIVE USB CONFIGURATION

TEKON CONFIGURATOR SOFTWARE

DS_PLUS_TWP-1AI_E01A

TECHNICAL SPECIFICATIONS

RADIO SPECIFICATIONS	868MHZ	915MHZ
Range ¹	Up to 4Km LoS	
Frequency Band	868 to 869MHz	902 to 928MHz ⁴
Radio channels	16	50 ⁵
Radio receiver sensitivity ²	-97 to -110 dBm	
Power ²	25 to 27 dBm	8 to 27 dBm
Radio transmission rate ²	19 to 76,8kbit/s	
Encryption method	AES 128 (Advanced Encryption Standard)	
Modulation	GFSK	
Connection	SMA	
Antenna	Articulated dipole antenna	
Antenna impedance	50Ω	

WIRELESS NETWORK

Maximum devices	55
Maximum hops	13
Communication period	1 to 43200 seconds (configurable)

INTERNAL TEMPERATURE

Range	-30 to 80°C
Resolution	0,01°C
Accuracy	± 0,50°C
Sensor type	NTC

ANALOG INPUT	CURRENT	VOLTAGE
Range	0 to 24mA	0 to 12V DC
Resolution	0,96uA (15bit)	0,38mV (15bit)
Accuracy	<100uA (<0,5% FS)	<5mV (<0,05% FS)
Input impedance	100Ω	>100kΩ

DIGITAL OUTPUT - REMOTE OUTPUT

Range	5 to 24V DC
Type	Sinking / NPN
Maximum current protection	90mA
Start state	ON / OFF / last state ³
Communication loss state	ON / OFF / last state ³
Event number activation	N/A
Activation period before communication	N/A

POWER SUPPLY

Supply voltage	5 to 24V DC ± 5% / USB ⁶
Maximum current	500mA DC @ 5V DC / 100mA DC @ 24V DC
Protection against reverse polarity	

INTERFACE	
Indication	Frontal Panel LED
Switches	External - Site Survey activation Internal - Load Default Factory Settings
Configuration	Internal micro USB connector

MECHANICAL INTERFACE
Push-in spring terminal blocks (internal)
Bucins PG-7
1.5mm ² (0.0591in ²)
Micro USB internal connector

OPERATING ENVIRONMENT	ENVIRONMENTAL CONDITIONS	STORAGE CONDITIONS
Temperature		-30 to 80°C
Relative humidity	N/A	≤ 95% (non- condensing)

CASING	
Dimensions	120 x 90 x 50 mm
Weight	314 g
Material	ASA+PC-FR (UL 94 V-0) / Polycarbonate
Protection index	IP65

FACTORY DEFAULT SETTINGS	868MHZ	915MHZ
Frequency	869,525MHz	915,000MHz
Radio transmit power		27dBm
Radio transmission rate		76,8kbit/s
Wireless channel	13	26
Wireless network ID		13042017
Communication period		10 seconds
Gateway modbus index		1
Analog inputs		OFF
Digital Output - Remote output		OFF
Operating mode		End Device

CERTIFICATIONS AND APPROVALS
EN 61326-1 - Class B - Industrial Requirements
EN 300 220-2 V3.1.1
EN 301 489-1 V2.2.1
EN 301 489-3 V2.1.1
EN 60950-1:2006
EN 61326-1:2013
ETSI EN 301 489-1 V1.9.2

¹ Range depends on the RF propagation environment and Line of Sight (LoS). Always verify your wireless network's range by performing a Site Survey

² Dependent on radio channel selection

³ Configurable

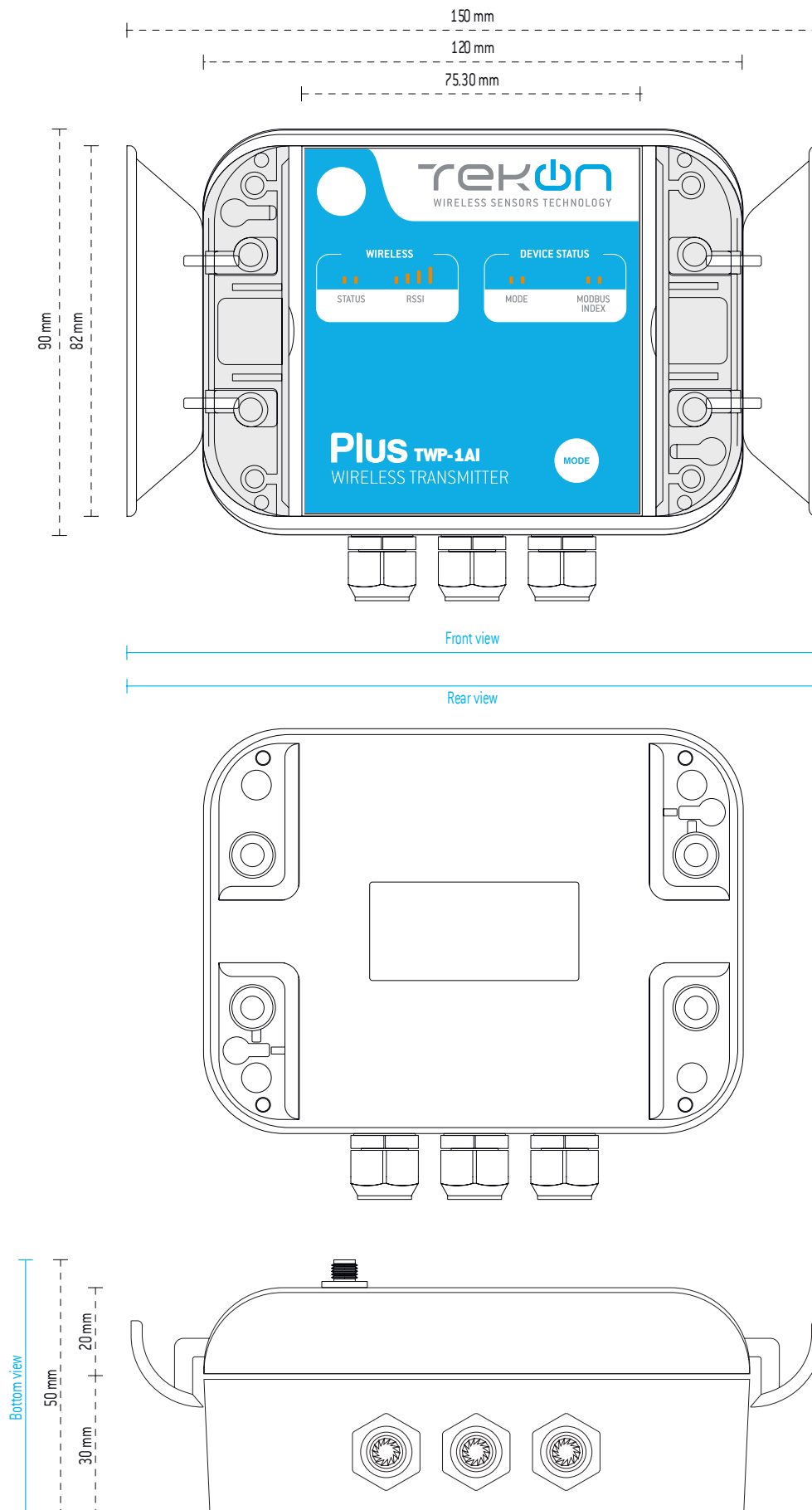
⁴ In some countries, the frequency band admitted is not so extended as the default range.

⁵ The radio frequencies admitted in Australia are available from channel 26 to channel 50.

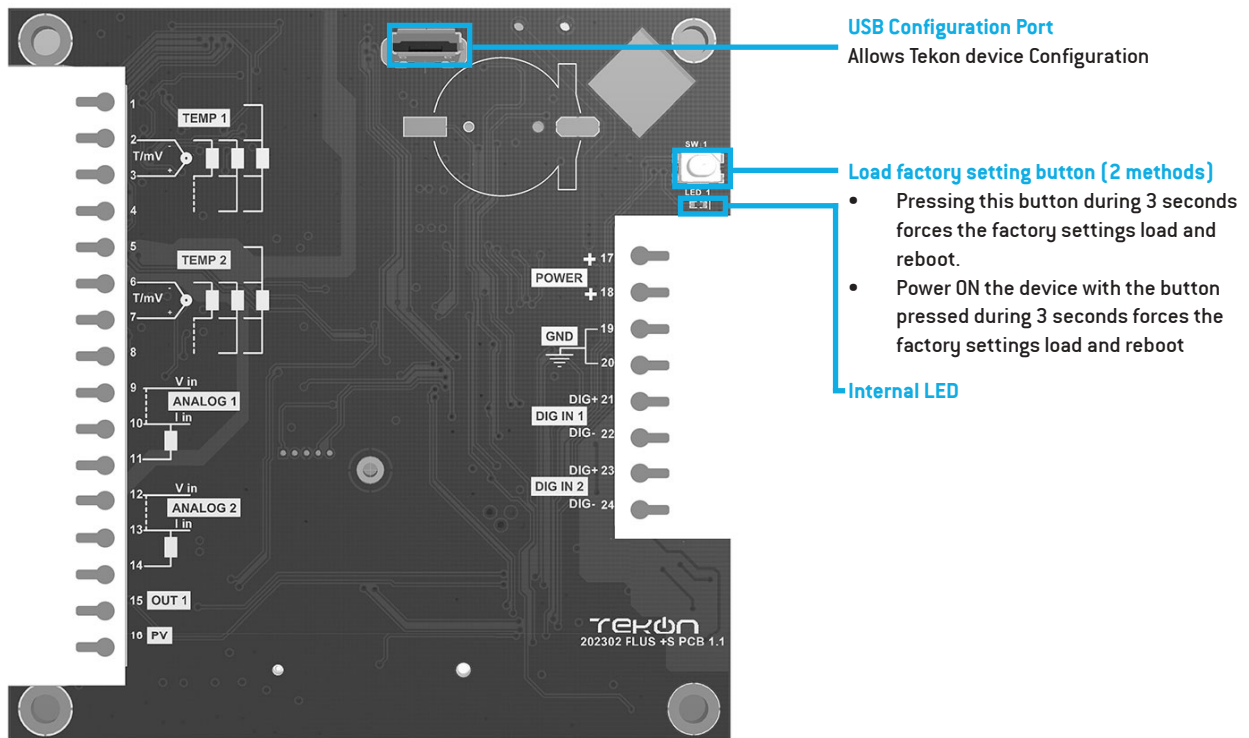
⁶ It is recommended to use a power supply with short-circuit current protection or equipped with a fuse.

TECHNICAL DRAWINGS

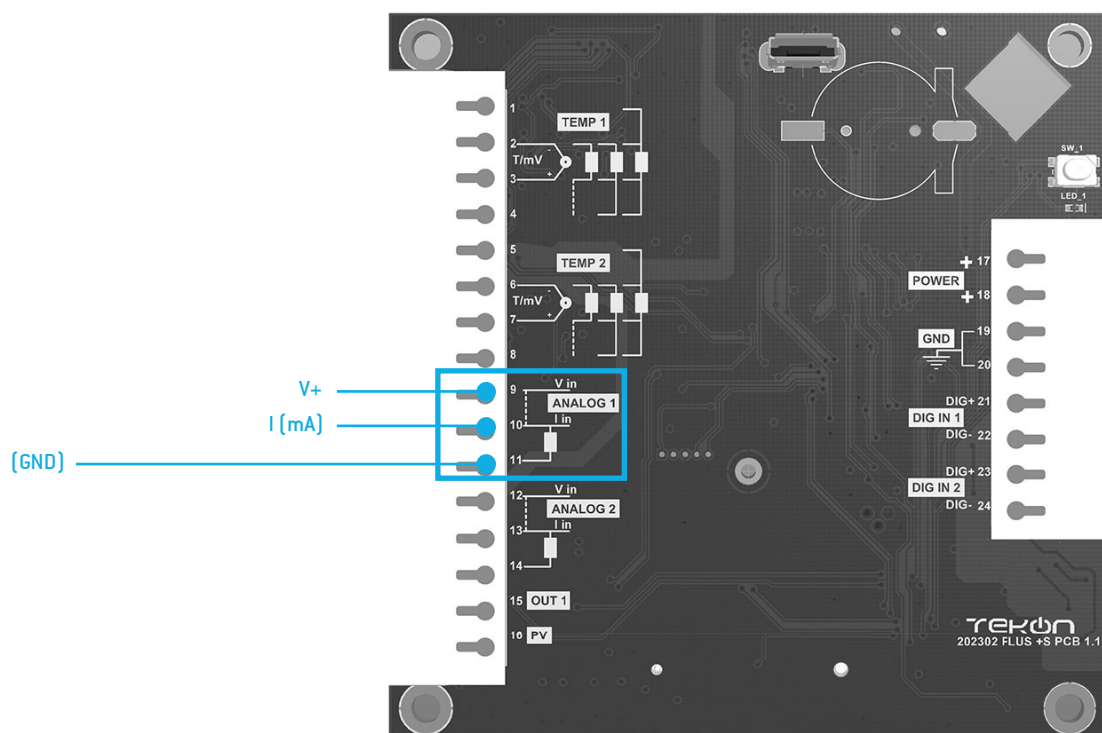
DIMENSIONAL DRAWINGS AND INTERFACE DESIGN



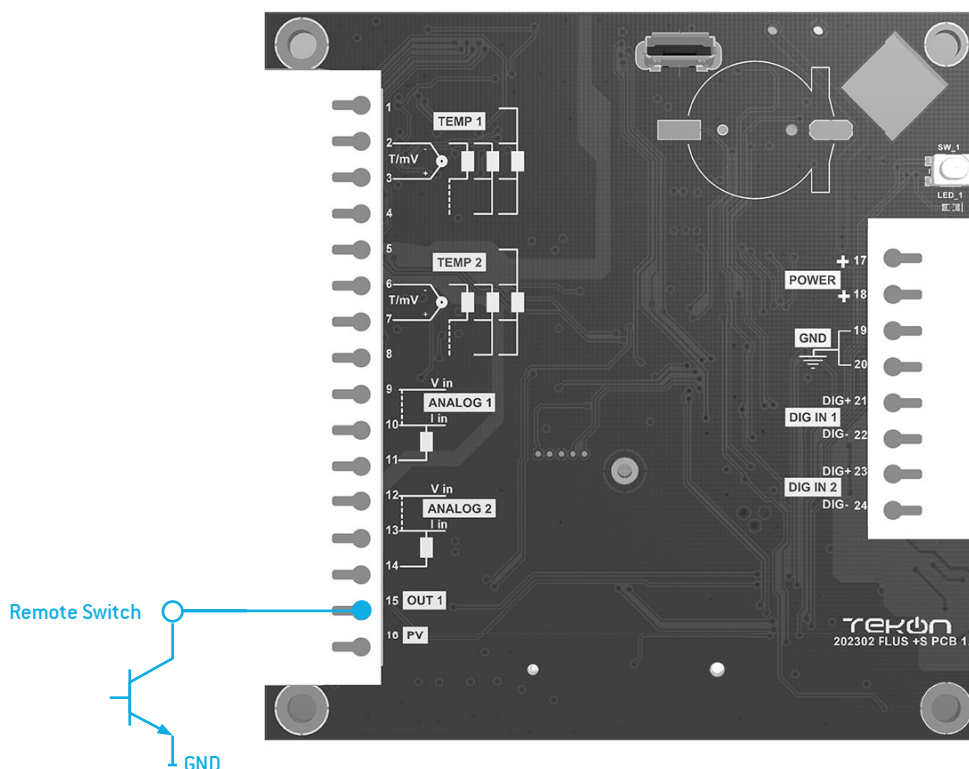
WIRING DIAGRAM



Analog Inputs



Digital Output - SINKING - NPN



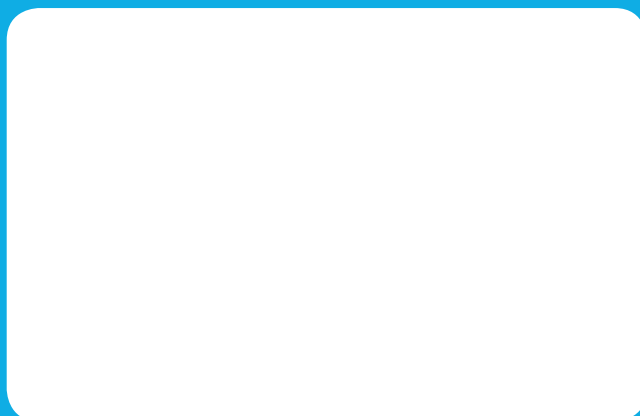
Transmitter			
PIN		Functionality	
		Current Mode	Voltage Mode
1	Not used		
2	Not used		
3	Not used		
4	Not used		
5	Not used		
6	Not used		
7	Not used		
8	Not used		
9	Analog Input 1	I (mA)	V+
10		I (mA)	NC
11		GND	GND
12	Not used		
13	Not used		
14	Not used		
15	Remote Switch Output		
16	Not used		
17	Power Supply (+)		
18	Power Supply (+)		
19	Power Supply (GND)		

20	Power Supply (GND)	
21	Not used	
22	Not used	
23	Not used	
24	Not used	

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