WIRELESS SENSORS TECHNOLOGY

PLUS TWP-1DI WIRELESS TRANSMITTER

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

PLUS TWP-1DI Wireless Transmitter was designed to monitor digital signals and pulses, working as a pulse counter, providing a secure communication, without cable requirements of a complex wired solution.

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 DIGITAL INPUT

1 REMOTE SWITCH OUTPUT

ABSOLUTE PULSE COUNTER

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-1DI_E01B

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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 80ºC
Resolution	0,01ºC
Accuracy	± 0,50ºC
Sensor type	NTC

DIGITAL INPUTS	
Range	0 to 24V DC
ON detection level	3,0V
OFF detection level	2,5V
Detection level tolerance	± 0,100mV
Type	Sinking
Impedance	> 500Ω
Input current	10mA
Galvanic Isolation	Yes
Detection type	State change
Activation detection (if enabled)	Falling Edge / Rising Edge / Both [3]

PULSE COUNTER	
Type	PNP or NPN (see diagram of connections)
On detection level	± 100mV
Frequency range	10 kHz
Minimum Pulse Width	15 µs
Absolute Counter	
Square Wave Signal compatible	
Reset over Modbus coil	

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
1.5mm2 (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	
Reconnection period	30 minutes	
Gateway modbus index	1	
Digital inputs	Disable	

Digital output - Remote output	OFF
Operating mode	End Device

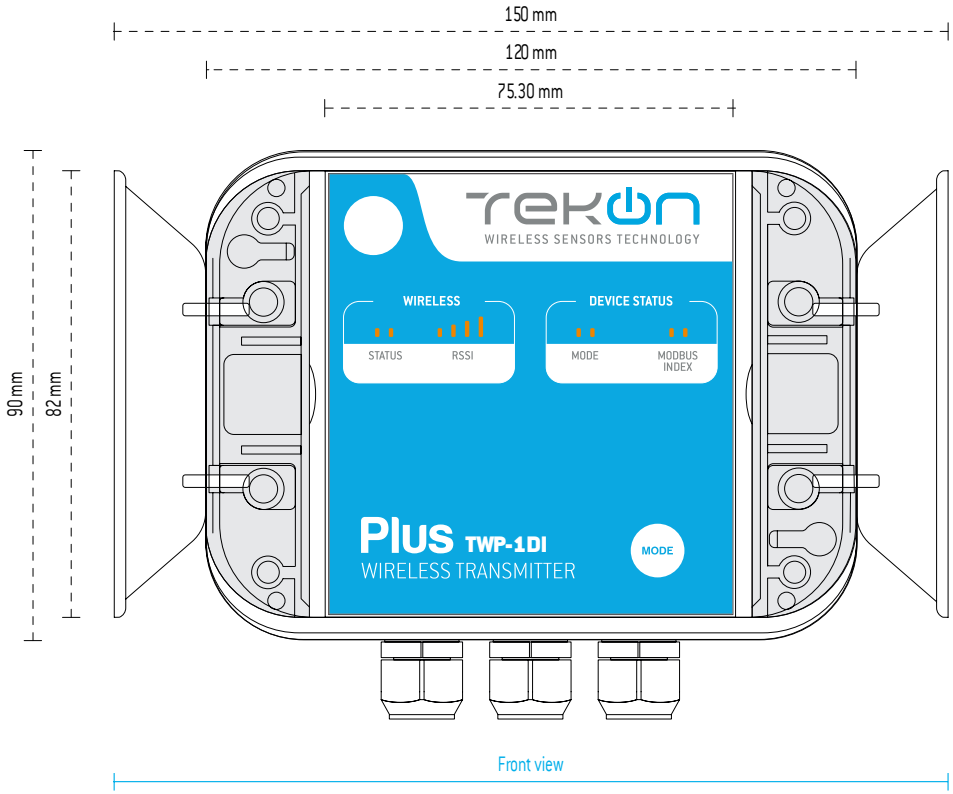
CERTIFICATIONS AND APPROVALS

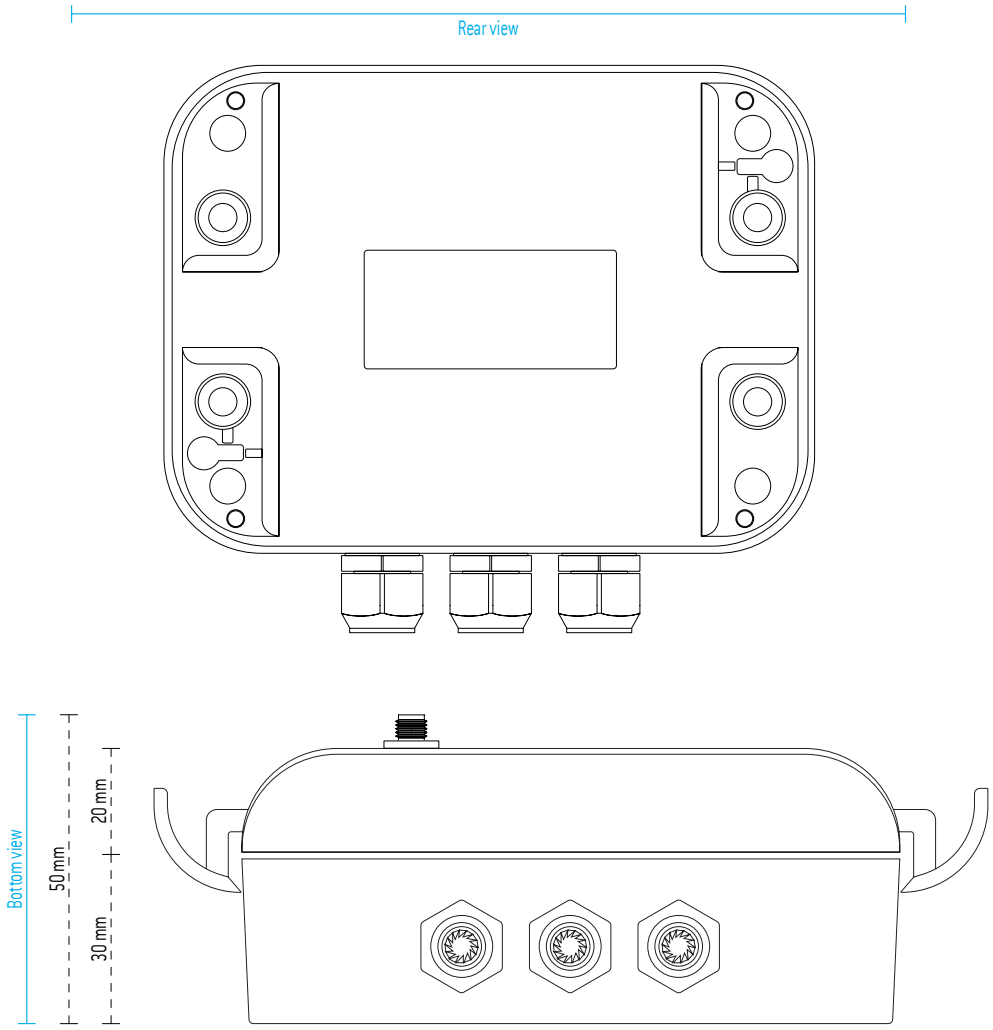
EN 61326-1 - Class B - Industrial Requirements
EN 300 220-2 V3.1.1
EN 301 489-1 V2.2.1
EN 301 489-3 V2.1.1
EN 60950-1:206
EN 61326-1:2013
ETSI EN 301 489-1 V1.9.2

[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.

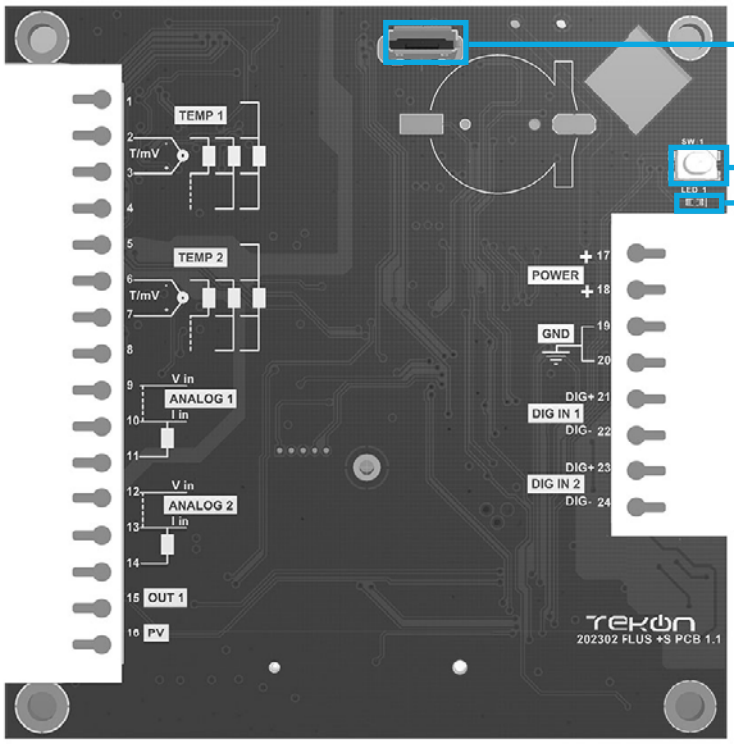
TECHNICAL DRAWINGS

DIMENSIONAL DRAWINGS AND INTERFACE DESIGN





WIRING DIAGRAM



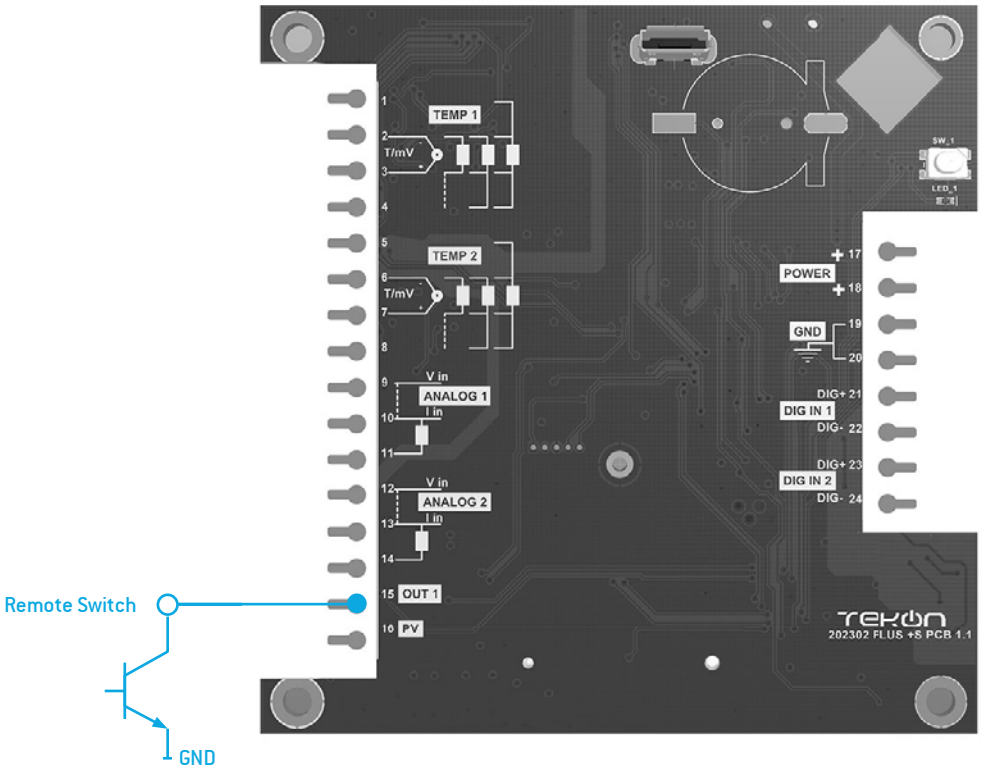
USB Configuration Port
Allows Tekon device Configuration

Load factory setting button (2 methods)

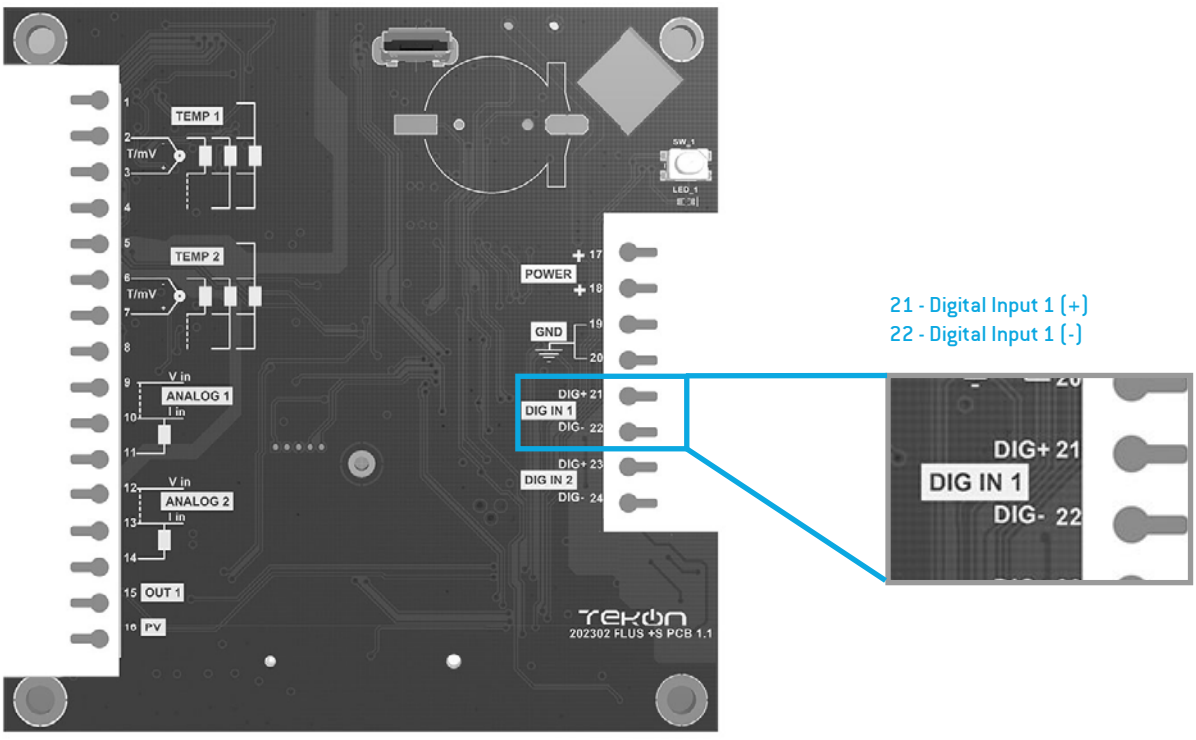
- Pressing this button during 3 seconds forces the factory settings load and reboot.
- Power ON the device with the button pressed during 3 seconds forces the factory settings load and reboot

Internal LED

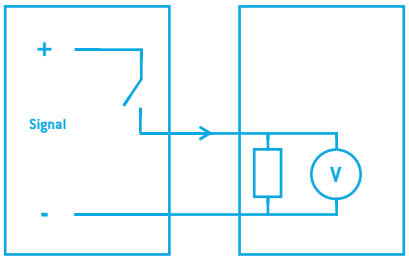
Digital Output - SINKING - NPN



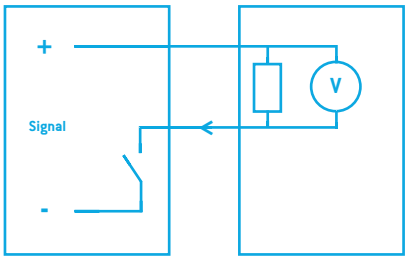
Digital Input - SINKING/NPN - SOURCING/PNP



SOURCING/PNP



SINKING/NPN



Transmitter		
PIN		Functionality
		Polarity
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	Not used	
10	Not used	
11	Not used	
12	Not used	
13	Not used	
14	Not used	
15	Remote Switch Output	
16	Battery Voltage	
17	Power Supply (+)	
18	Power Supply (+)	
19	Power Supply (GND)	
20	Power Supply (GND)	
21	Digital Input 1	(+)
22		(–)
23	Not used	
24	Not used	

REVISION HISTORY

VERSION	
E01B	Inclusion of Reconnection Period on “Factory Default Settings Table”.

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