PRODUCT CATALOGUE

2 0 1 9

FOOD INDUSTRY

RETAIL

IOT

WIRELESS MONITORING SOLUTIONS

DATA CENTERS

INDUSTRY 4.0

COLD CHAIN

TRANSMITTERS

WIRELESS SENSORS

WIRED TRANSMITTERS

SOFTWARE

PLUS

ONE

DUOS

INHEAD

DINRAIL

IOT

TRANSMITTERS

TWP4AI

TWPH-1UT

THW401

TEMP

HYGROTEMP

CO2

DI + TEMP

THP101

THT201

THP102-I

THT202-I

THU1102

THM501

TDU1219

IOT PLATFORM

4-20 mA

4-20 mA

4-20 mA / USB

4-20 mA / USB

4-20 mA

RS-485
MODBUS RTU

4-20 mA

REPEATERS

WRP001

REPEATER

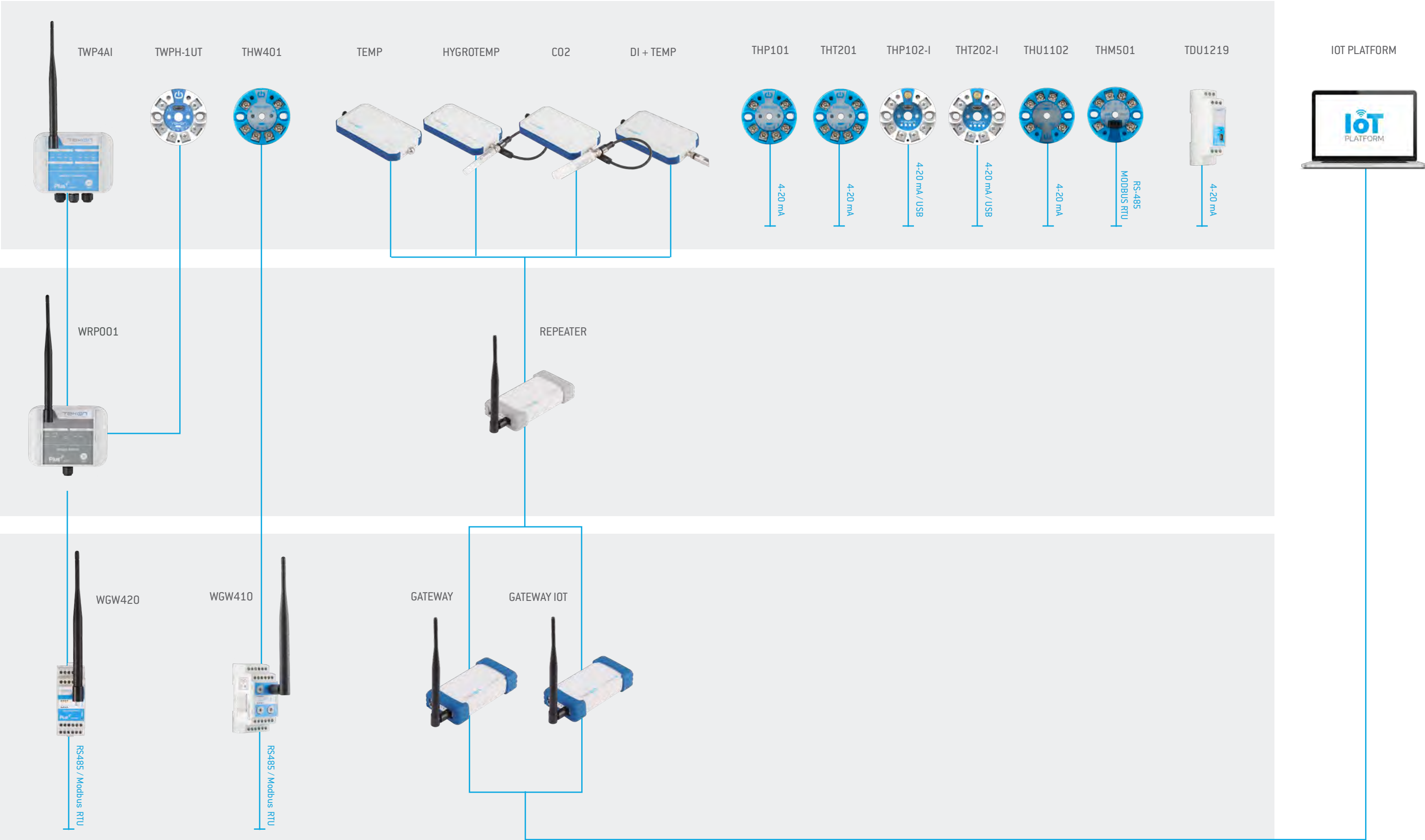GATEWAYS

WGW420

WGW410

GATEWAY

GATEWAY IOT

RS-485 / Modbus RTU

RS-485 / Modbus RTU

Tekon Electronics is a European brand based in Portugal, specialized in development and manufacture of innovative wireless sensors technology. It is a business unit of Bresimar Automação, S.A., a company with 35 years of experience in automation, industrial control solutions, and engineering.

Bresimar Automação began its activity in 1982 focusing in distribution of equipment and systems for industrial automation. Throughout the years, Bresimar Automação leveraged the knowledge by providing high-quality products and automation solutions, representing several valued brands. Specialized teams and dedicated professionals provide services in several fields of industrial automation and engineering projects.

Tekon Electronics develops and manufactures wireless solutions for measurement and monitoring applications, focusing in trending topics as Internet of Things and Industry 4.0. A skilled R&D team and a planned manufacture process are cornerstones of a full product development strategy, comprising several stages:

Tekon Electronics is a global, customer-oriented partner for reliable monitoring solutions.
Our product range covers Wireless Sensors, Wireless Transmitters, Wired Transmitters, Software, Probes and Accessories.
We are committed with the development of innovative solutions, delivering products of the highest quality, fulfilling the needs of each customer.

Along with our quality products and solutions, our brand is one of our most valuable assets. We also work with customized products and application solutions, frequently in close collaboration with our customers.

Our passion is to work together with our customers to capture the opportunities of tomorrow.

CONCEPT
DEVELOPMENT
TESTING
MANUFACTURE
AFTER SALES SUPPORT

WIRELESS TRANSMITTERS

PLUS
system overview

> **Up to 55 transmitters**

> **Up to 12 repeaters**

> **8 configurable analog outputs**

Wireless systems PLUS is an easy-to-use system that allows wireless reception and transmission of any process variables that could be transformed into an analogue signal.

This system is composed by a transmitter and gateway, which is connected via MODBUS RTU to a PLC, SCADA, PC, HMI or by the replication of 8 analogue outputs, through a direct controller connection. PLUS wireless system was designed to monitor 4..20 mA / 0..10V signals, providing a secure communication, without cable requirements of a complex wired solution. Conductivity, PH, vibration, humidity, flow, level, pressure and temperature are some examples of industrial process variables, possible to be monitored and controlled.

1 Transmitter
TWP4AI / TWPH-1UT

Featuring wireless mesh network technology performing up to 4 Km encrypted communication range.

2 Repeater
WRP001

PLUS Wireless Repeater provides extra communication range by supporting up to 13 hops (12 repeaters in series). It also increases network redundancy and reliability with unlimited number of devices, taking advantage of mesh network topology and permanently providing the best wireless link.

3 Gateway
WGW420

PLUS Wireless Gateway is the mesh network central device by collecting information from up to 55 devices simultaneously. It communicates via Modbus RTU with HMI/PLC for industrial applications, as well as 8 configurable analog outputs for direct cable replacement.

MESH NETWORKS

Mesh networks are a very compact, multi-hop, mesh protocol for bi-directional wireless communication. Mesh networks are designed for data acquisition applications that need to transport short messages, such as control commands, instructions, conditional responses, metered data, measurements, and other types of information. Mesh networks excel in applications that have most data traffic up to the gateway and limited non time critical data down from the gateway and/or between nodes.
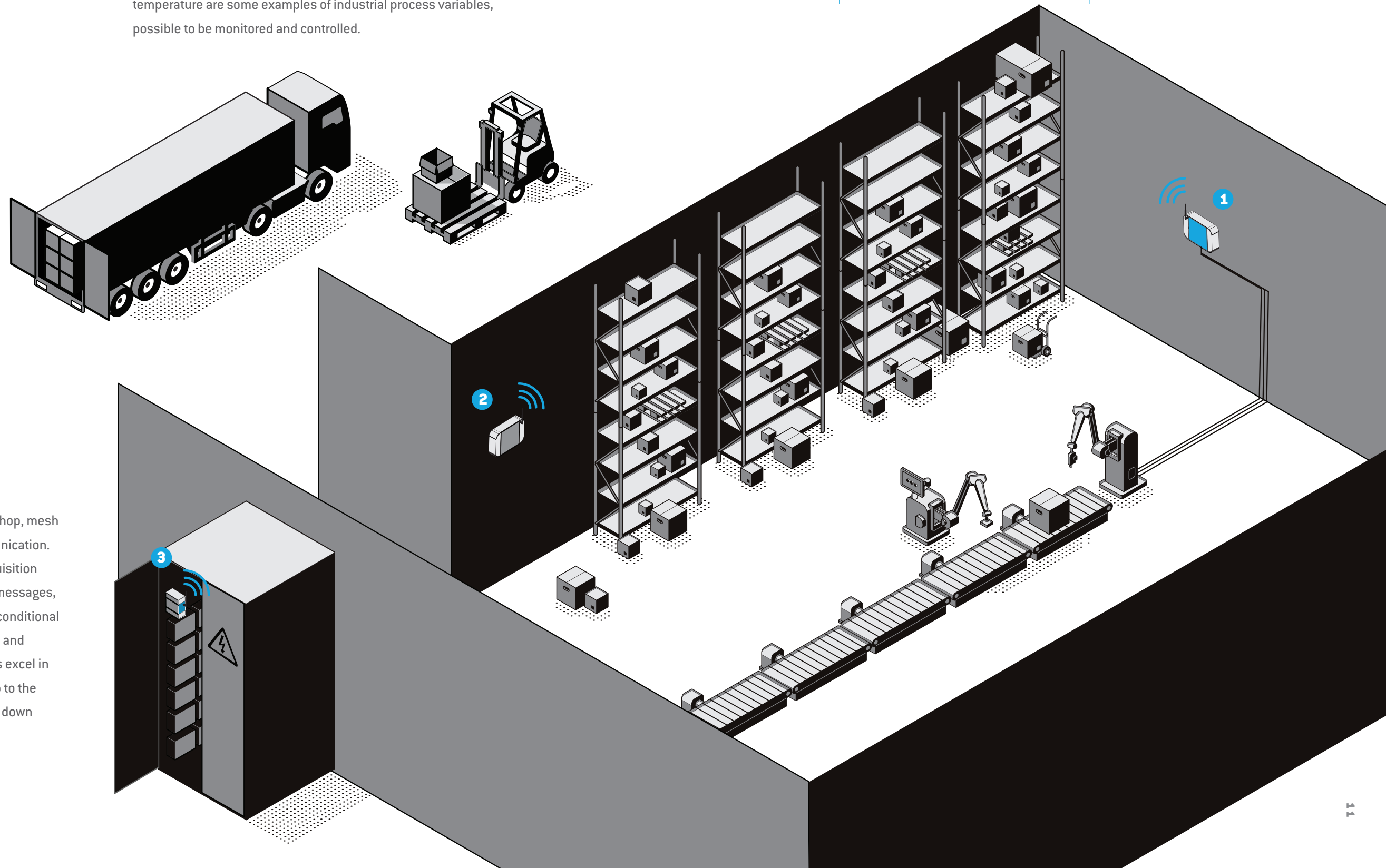
PLUS

TWP4AI
WIRELESS TRANSMITTER

868 MHz

915 MHz

COMING SOON

KEY FEATURES

4 CONFIGURABLE ANALOG INPUTS
(0..20 MA OR 0..10 V) PROVIDING CABLE REPLACEMENT FEATURES

2 CONFIGURABLE DIGITAL OUTPUTS
RF LINK LOST INDICATION AND EXTERNAL POWER CONTROL

1 DIGITAL REMOTE OUTPUT

UP TO 4 KM COMMUNICATION DISTANCE (LOS)

WIRELESS SITE SURVEY FUNCTION
FOR EASY INSTALLATION AND FAST DEPLOYMENT

MULTI-HOP MESH NETWORK
WITH SELF-FORMING, SELF-HEALING AND SELF-OPTIMIZING FEATURES

OPERATING MODE
AS END DEVICE / AS REPEATER

IP65 PROTECTION

Dimensions 120 x 90 x 50 mm

Weight 314 g

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

Protection Index IP65

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS

Range[1]	4Km LoS (2.5mi)
Frequency Band	868.050 to 869.950MHz[2]
Number of Channels	16 (configurable)
Reception Sensitivity	-97 to -110 dBm[2]
Transmit Power	25 to 27 dBm[2]
Encryption method	AES 128 (Advanced Encryption Standard)
Antenna gain	+3dBi

WIRELESS NETWORK

Maximum Devices	55
Maximum Hops	13
Communication Period	1 to 43200 seconds (configurable)

ANALOG INPUT

ANALOG INPUT	VOLTAGE	CURRENT
Range	0 to 12V DC	0 to 24mA
Resolution	0.38mV (15bit)	0.96uA (15bit)
Accuracy	<5mV (<0.05% FS)	<100uA (<0.5% FS)

DIGITAL INPUT - TRIGGER

Range	0V DC to Supply Voltage
Type	Sinking
Activation Detection	Falling Edge / Rising Edge / Both

DIGITAL OUTPUTS

Communication Loss
Remote Output
External Supply

SUPPLY VOLTAGE

Range	5 to 24V DC
Accuracy	±100mV

OPERATING CONDITIONS

Operating Temperature	-30 to 80ºC

CERTIFICATIONS AND COMPLIANCE

RED - Directive 2014/53/EU
EN 300 220-2 V3.1.1 - Short range equipment (SRD)
EN 301 489-1 V2.2.0 - Electromagnetic compatibility and Radio spectrum Matters (ERM)
EN 301 489-3 V2.1.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM)

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] According to the radio channel selection.

PLUS

TWPH-1UT
WIRELESS TRANSMITTER

868 MHz

915 MHz
COMING SOON

KEY FEATURES

UNIVERSAL SENSOR INPUT
PT100, J, K N, R, S, T HIGH MEASUREMENT ACCURACY

UP TO 4 KM COMMUNICATION DISTANCE (LOS)

WIRELESS SITE SURVEY FUNCTION
FOR EASY INSTALLATION AND FAST DEPLOYMENT

6 STATUS LEDS

ULTRA LOW POWER MODE
LONG BATTERY LIFE

MULTI-HOP MESH NETWORK
WITH SELF-FORMING, SELF-HEALING AND SELF-OPTIMIZING FEATURES

OPERATING MODE
AS END DEVICE / AS REPEATER

COMPACT DESIGN
DIN FORM B CONNECTION HEAD MOUNTING

NEW

Dimensions	45Ø x 23 mm
Weight	50 g (aprox.)
Material	Nylon 66
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS

Range[1]	4Km LoS (2.5mi)
Frequency Band	868.050 to 869.950MHz[2]
Number of Channels	16 (configurable)
Reception Sensitivity	-97 to -110 dBm[2]
Transmit Power	25 to 27 dBm[2]
Encryption method	AES 128 (Advanced Encryption Standard)
Antenna gain	+3dBi

INPUT	RESISTANCE THERMOMETER (RTD)	THERMOCOUPLES (TC)
Sensor type	PT100	J, K, N, R, S, T
Open-circuit monitoring	Always active (cannot be disabled)	
Short-circuit monitoring	Always active (cannot be disabled)	Not available

WIRELESS NETWORK

Maximum Devices	55
Maximum Hops	13
Communication Period	1 to 43200 seconds (configurable)

SUPPLY VOLTAGE	Range	Accuracy
Range	5 to 24V DC	±100mV

OPERATING ENVIRONMENT

Operating Temperature	-20 to 80ºC (-4 to 176ºF)

DIGITAL MEASURING ACCURACY

RESISTANCE THERMOMETER (RTD)

Sensor	Range ºC (ºF)	Digital Accuracy ºC (ºF)
PT100	-200 to 850 (-328 to 1562)	0,1 (0,18)

ACCURACY (ACCORDING TO IEC 61298-2)

Inaccuracy	-0,093%; 0,317%
Max. Error	0,292%
Hysteresis	-0,051%
Non-Repeatability	0,054%

THERMOCOUPLES (TC)

Sensor	Range ºC (ºF)	Digital Accuracy ºC (ºF)
J	-210 to 1200 (-346 to 2192)	0,5 (0,9)
K	-230 to 1370 (-382 to 2498)	0,5 (0,9)
N	-200 to 1300 (-328 to 2372)	0,5 (0,9)
R	-50 to 1760 (-58 to 3200)	0,5 (0,9)
S	-50 to 1760 (-58 to 3200)	0,5 (0,9)
T	-200 to 400 (-328 to 752)	0,5 (0,9)

CERTIFICATIONS AND COMPLIANCE

RED - Directive 2014/53/EU

EN 300 220-2 V3.1.1 - Short range equipment (SRD) Essential requirements article 3.2

EN 301 489-1 V2.2.0 - Electromagnetic compatibility and Radio spectrum Matters (ERM) Common technical requirements

EN 301 489-3 V2.1.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM) Specific conditions

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] According to the radio channel selection.

PLUS

WGW420
WIRELESS GATEWAY

868 MHz

915 MHz
COMING SOON

KEY FEATURES

SCALABLE NETWORK
UP TO 55 PLUS TRANSMITTERS AND 12 REPEATERS

UP TO 4 KM COMMUNICATION DISTANCE (LOS)
128-BIT AES ENCRYPTION

MULTI-HOP MESH NETWORK
WITH SELF-FORMING, SELF-HEALING AND SELF-OPTIMIZING FEATURES

MODBUS RTU COMMUNICATION PROTOCOL
THROUGH RS-485 INTERFACE

8 ANALOG OUTPUTS
4..20 MA CURRENT LOOP

Dimensions	36 x 90 x 56 mm
Weight	135 g
Material	PA (UL 94 V-0) / Polycarbonate
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS

Range[1]	4Km LoS (2.5mi)
Frequency Band	868.050 to 869.950MHz [2]
Number of Channels	16 (configurable)
Receiver Sensitivity	-97 to -110 dBm[2]
Transmit Power	25 to 27 dBm[2]
Transmission Rate	19 to 76.8kbit/s[2]
Encryption method	128-bit AES
Modulation	GFSK
Antenna	Articulated dipole antenna
Antenna gain	+3dBi
Antenna impedance	50Ω

WIRELESS NETWORK

Maximum Devices	55
Maximum Hops	13

RS-485 COMMUNICATION

Protocol	MODBUS RTU (Slave)
Isolation	1kV galvanic

ANALOG OUTPUT - CURRENT

Output Range	4 to 20mA
Out of range indication	[3.2;4.0]mA and [20.0;20.2]mA
Error indication	3.1mA and 20.4mA

POWER SUPPLY

External	12 to 24V DC ± 5%

OPERATING CONDITIONS

Operating Temperature	0 to 80ºC

CERTIFICATIONS

RED - Directive 2014/53/EU
EN 300 220-2 V3.1.1 - Short range equipment (SRD)
EN 301 489-1 V2.2.0 - Electromagnetic compatibility and Radio spectrum Matters (ERM)
EN 301 489-3 V2.1.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM)

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] According to the radio channel selection.

PLUS

WRP001
WIRELESS REPEATER

868 MHz

915 MHz
COMING SOON

KEY FEATURES

UP TO 12 REPEATERS IN SERIES
FOR EXTRA-LONG RANGE

WIRELESS SITE SURVEY FUNCTION
FOR EASY INSTALLATION AND FAST DEPLOYMENT

UP TO 4 KM COMMUNICATION DISTANCE (LOS)
WITH 128-BIT AES ENCRYPTION FOR DATA SECURITY

MULTI-HOP MESH NETWORK
WITH SELF-FORMING, SELF-HEALING AND SELF-OPTIMIZING FEATURES

SIMPLE AND INTUITIVE USB CONFIGURATION
VIA TEKON CONFIGURATOR (FREE SOFTWARE)

Dimensions 120 x 90 x 50 mm

Weight 312 g (11 oz)

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

Protection Index IP65

TECHNICAL SPECIFICATIONS   Data applicable at 25ºC

RADIO SPECIFICATIONS	
Range[1]	4Km LoS (2.5mi)
Frequency Band	868.050 to 869.950MHz [2]
Number of Channels	16 (configurable)
Receiver Sensitivity	-99 to -104 dBm[2]
Transmit Power	0 to 27 dBm[2]
Transmission Rate	19 to 76.8kbit/s[2]
Encryption method	128-bit AES
Modulation	GFSK
Antenna	Articulated dipole antenna
Antenna gain	+3dBi
RF circuit impedance	50Ω

OPERATING ENVIRONMENT	
Operating Temperature	-30 to 80ºC

CERTIFICATIONS AND COMPLIANCE
RED - Directive 2014/53/EU
EN 300 220-2 V3.1.1 - Short range equipment (SRD)
EN 301 489-1 V2.2.0 - Electromagnetic compatibility and Radio spectrum Matters (ERM)
EN 301 489-3 V2.1.1 - Electromagnetic compatibility and Radio spectrum Matters (ERM)

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] According to the radio channel selection.

MACHINE COMMISSIONING

Equipment commissioning is the process of ensuring that all systems and components are designed, installed, tested, operated, and maintained according to the operational requirements of the owner and tenants.

DIGITALIZATION

Digitalization offers enormous opportunities for growth across all industries, sectors, regions and company sizes. The move away from sequential value chains towards flexible value networks in which the value chains of the customer and partner are connected will be the cooperation model of the future.

INDUSTRY 4.0

Industry 4.0 is the transformation that makes it possible to gather and analyse data across machines, enabling faster, more flexible, and more efficient processes to produce higher-quality goods at reduced costs.

APPLICATIONS

AGRO

Wide cultivation areas and long distances between measurement points and control rooms are key monitoring difficulties from Agro Industry. Soil or hydroponics, greenhouse or open-air cultivation farmers can benefit from wireless sensing technology.

MINING

The increasing need of automation in mining required a new generation of autonomous vehicles that need reliable and real-time data communication solutions between the vehicle and the control room.

ONE
THW401
WIRELESS TRANSMITTER

868 MHz

2.4 GHz

KEY FEATURES

EXTREME LOW POWER
OPERATION MODE FOR LONG BATTERY LIFE

UP TO 4KM OR 2KM DISTANCE (LoS)
TRANSMISSION UP TO 4KM DISTANCE (LoS) 868 MHZ
TRANSMISSION UP TO 2KM DISTANCE (LoS) 2.4 GHZ

REAL TIME TRANSMISSION
PROCESS AND AMBIENT TEMPERATURE, RF SIGNAL
STRENGTH AND BATTERY STATUS

WIDE RANGE SUPPLY VOLTAGE
5-24 VDC

UNIVERSAL SENSOR INPUT
RESISTANCE THERMOMETERS, THERMOCOUPLES,
RESISTANCE-BASED SENSORS AND DC VOLTAGE SOURCES

COMPACT DESIGN
DIN FORM B CONNECTION HEAD MOUNTING

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

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

INPUT RESISTANCE THERMOMETER (RTD) / THERMOCOUPLES (TC)	
Sensor type	PT100, PT500, PT1000/ E, J, K, N, R, S, T
Connection	1 Resistance thermometer (RTD) in 2-wire, 3-wire or 4-wire system Resistance compensation in 2-wire systems available through software / 1 Thermocouple (TC)
Open-circuit monitoring	Always active (cannot be disabled)
Short-circuit monitoring	Always active (cannot be disabled) / Not available
Cold junction compensation (CJC)	Integrated resistance thermometer

OPERATING ENVIRONMENT	
Ambient temperature range	-20 to 80ºC (-4 to 176ºF)

DIGITAL MEASUREMENT ACCURACY mV		
Sensor	Range (mV)	Accuracy (mV)
	-8 to 100 mV	<40 µV

DIGITAL MEASUREMENT ACCURACY [1] RESISTANCE THERMOMETER (RTD)		
Sensor	Range ºC (ºF)	Digital accuracy ºC (ºF)
PT100	-200 to 850 (-328 to +1562)	0,1 (0,18)
PT500	-200 to 850 (-328 to +1562)	0,2 (0,36)
PT1000	-200 to 350 (-328 to +662)	0,2 (0,36)

DIGITAL MEASUREMENT ACCURACY THERMOCOUPLES (TC)		
Sensor	Range ºC (ºF)	Digital accuracy ºC (ºF)
E	-200 to 1000 (-328 to 1832)	1 (1,8)
J	-210 to 1200 (-346 to 2192)	1 (1,8)
K	-230 to 1370 (-382 to 2498)	1 (1,8)
N	-200 to 1300 (-328 to 2372)	1 (1,8)
R	-50 to 1760 (-58 to 3200)	2 (3,6)
S	-50 to 1760 (-58 to 3200)	2 (3,6)
T	-200 to 400 (-328 to 752)	1 (1,8)

POWER SUPPLY	
Voltage Range	[5; 24] VDC
Power Consumption (Sleep)	< 0.2 mA

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] According to the radio channel selection.

ONE
WGW410
WIRELESS MODBUS GATEWAY

868MHz

2.4GHz

KEY FEATURES

SUPPORTS UP TO 16 THW401
TEMPERATURE TRANSMITTERS

UP TO 4KM OR 2KM DISTANCE (LoS)
TRANSMISSION UP TO 4KM DISTANCE (LoS) 868 MHZ
TRANSMISSION UP TO 2KM DISTANCE (LoS) 2.4 GHZ

1 SECOND NETWORK REFRESH TIME

RS-485 INTERFACE WITH MODBUS PROTOCOL

8 X ANALOG OUTPUTS (4…20MA)

Dimensions 98mm x 66,22mm x 35,80mm

Weight 120g

Material PA – UL 94 V0

Protection Index IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

POWER SUPPLY	
Voltage supply	12 VDC to 24 VDC +/- 10%
Current consumption	70 mA @ 12 VDC / 45 mA @ 24 VDC (@ 25 ºC)
Power consumption	0.85 W @ 12 VDC / 1.1 W @ 24 VDC (@ 25 ºC)
Power up time	900 ms

RS-485 INTERFACE	
Protocol	Modbus RTU
Galvanic isolation	1KV

ANALOG OUTPUTS	
Output signal	8 x 4 to 20 mA
Max. load	360 Ω @ 12VDC / 1 KΩ @ 24VDC
Out of range	[3.2;4.0] mA and [20.0;20.2] mA
Fault signal (e.g. sensor fault)	3.1.mA or 20.4 mA
Sample cycle	1s to 24h (configurable)
Protection	Against reversed polarity Surge protection
Power on or reset initial value	Last written value

CERTIFICATIONS AND APPROVALS	
EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, Radio-Frequency, Electromagnetic Field Immunity test
IEC 61000-4-4	Electrical fast transient/brust immunity test
IEC 61000-4-5	Surge Immunity Test
EN 300 228	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
EN 300 440	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] According to the radio channel selection.

ACCESSORIES

STARTER KITS

PA12377.2100

ANTENNA
· Cable Extension 868MHz SMA 2.0m

PA160410005

ANTENNA
· Cable Extension 2.4GHz SMA-RP 2.0m

PA12379.0200

BUZ CONNECTION HEAD

PA160410006

PROBE HEAD ANTENNA FIXING

PA12379.0400

RS485 TO USB CONVERTER CABLE
Cable to connect WGW410 Gateway to an USB port.

PLUS

PA164510410

PLUS TWP4AI 868MHZ STARTER KIT
· PLUS TWP4AI Wireless Transmitter 868 MHz;
· PLUS WGW420 Wireless Gateway 868 MHz;
· Antennas and accessories;
· RS485-USB Converter Cable;
· Suitcase.

ONE

PA144010200 (A)
PA144010100 (B)

THW401 STARTER KIT - 868 MHZ (A) / 2.4 GHZ (B)
· THW401 Wireless Transmitter;
· WGW410 Wireless Gateway;
· BUZ head including 6X50 mm "K" thermocouple probe;
· Antennas and accessories;
· RS485 to USB configuration cable;
· Suitcase.

WIRELESS SENSORS

DUOS
system overview

> **Up to 55 transmitters**

> **Up to 12 repeaters**

> **Serial or TCP/IP connection**

Wireless System DUOS is a solution developed with the highest standards regarding measurement and signal transmission. Suitable for monitoring applications of temperature, humidity, and CO2 variables. With a long power and battery life, also present long-range communications (up to 4 Km LoS).

With IP67 protection, the transmitter supports temperature range from -40 to +80 Celsius degrees. Designed to operate in extremely cold environments, the DUOS could also be connected to an external digital input or a cable adapter in order to adapt to different probe connection configurations.

MESH NETWORKS

Mesh networks are a very compact, multi-hop, mesh protocol for bi-directional wireless communication. Mesh networks are designed for data acquisition applications that need to transport short, messages, such as control commands, instructions, conditional responses, metered data, measurements, and other types of information. Mesh networks excel in applications that have most data traffic up to the gateway and limited non time critical data down from the gateway and/or between nodes.

1 Transmitter

DUOS Wireless Transmitter supports various external sensors for temperature, humidity or CO2 monitoring. It encloses an extra internal temperature sensor for product thermal inertia simulation and optionally, an external Digital Input for event detection.

2 Repeater

DUOS Wireless Repeater provides extra communication range by supporting up to 13 hops (12 repeaters in series).
It also adds network redundancy with unlimited devices taking advantage of mesh network topology and permanently discovering the best wireless link.

3 Gateway

DUOS Wireless Gateway is the mesh network central device collecting information from up to 55 DUOS Transmitters simultaneously.
It communicates via Modbus RTU with any PLC or HMI for industrial applications. Seamless PC integration is possible using Tekon IoT Platform software for remote monitoring.

CLOUD IOT

ETHERNET TCP/IP
RS485-MODBUS RTU
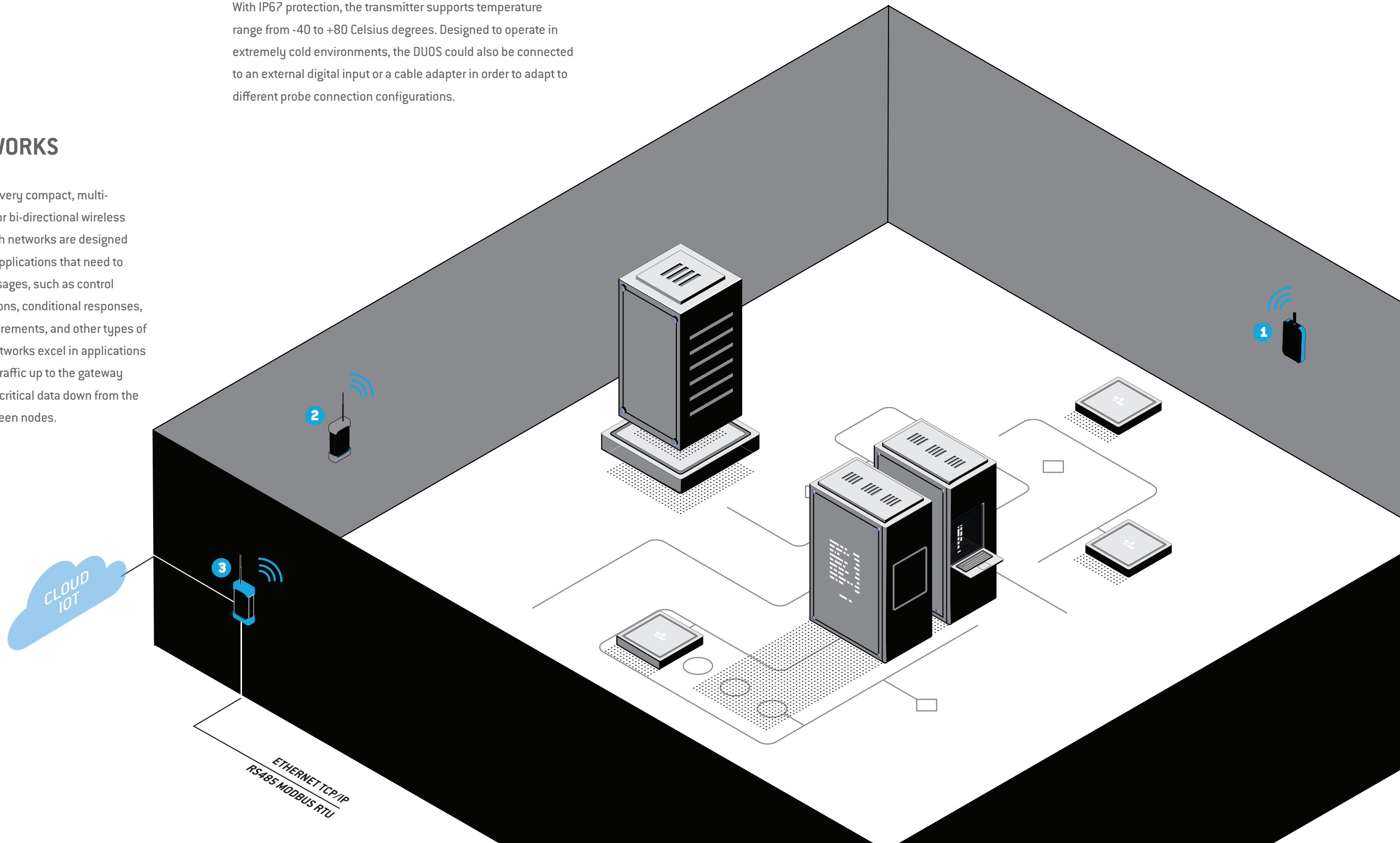
DUOS

TEMP
WIRELESS SENSOR

868MHz

2.4GHz

KEY FEATURES

−40 °C TO 125°C
TEMPERATURE SENSOR MEASUREMENT RANGE

AGRIFOOD INDUSTRY COMPATIBILITY
COMPATIBLE WITH AGRIFOOD INDUSTRY STANDARDS

DUAL TEMPERATURE PROBE
INTERNAL AND EXTERNAL PROBE

WIRELESS LINK STRENGTH (RSSI)
AUTO DISCOVERY OF THE BEST WIRELESS LINK

LOW POWER AND LONG BATTERY LIFE
MEASUREMENT AND TRANSMISSION OF BATTERY VOLTAGE

WATER RESISTANT
IP67 PROTECTION

AVAILABLE COLOURS

white / blue

black / blue

Dimensions 162 x 88.5 x 25 mm

Weight 100 g

Material ABS UL94HB

Protection Index IP67

TECHNICAL SPECIFICATIONS Data applicable at 25°C

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13
Communication Period	1 to 43200 seconds (configurable)

TEMPERATURE MEASUREMENT	EXTERNAL PROBE	INTERNAL PROBE
Range	-40 to 125ºC	From -40 to 80 ºC
Resolution	0.1 ºC	
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC	

TEMPERATURE MEASUREMENT INTERNAL PROBE	868MHZ	2.4GHZ
Range	-40 to 80 ºC	-20 to 80ºC
Resolution	0.1 ºC	
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC	

SUPPLY VOLTAGE	
3x3.6 AA lithium batteries (PN EVE ER14505)[3]	
3 years of estimated battery life[4]	
External power supply with 12 VDC ± 5%	

OPERATING ENVIRONMENT	
From -40 ºC to 80 ºC	

CERTIFICATIONS AND COMPLIANCE
EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-3 Electrical fast transient/burst immunity Test
IEC 61000-4-4 Surge Immunity Test
IEC 61000-4-5 Electrostatic discharge immunity test

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[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.
[3] Batteries not included.
[4] Considering a communication period of 10 minutes, and maximum transmit power (27dBm) at 25 ºC, with PN EVE ER14505 batteries.

DUOS
HYGROTEMP
WIRELESS SENSOR

868MHz

2.4GHz

KEY FEATURES

0% TO 100%
HUMIDITY SENSOR MEASUREMENT RANGE

−40 °C TO 80 °C
TEMPERATURE SENSOR MEASUREMENT RANGE

DUAL PROBE
FOR TEMPERATURE AND HUMIDITY MEASUREMENT

WIRELESS LINK STRENGTH (RSSI)
AUTO DISCOVERY OF THE BEST WIRELESS LINK

LOW POWER AND LONG BATTERY LIFE
MEASUREMENT AND TRANSMISSION OF BATTERY VOLTAGE

WATER RESISTANT
IP67 PROTECTION

AVAILABLE COLOURS

white / blue

black / blue

Dimensions	162 x 88.5 x 25 mm
Weight	100 g
Material	ABS UL94HB
Protection Index	IP67

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13
Communication Period	1 to 43200 seconds (configurable)

INTERNAL TEMPERATURE	868MHZ	2.4GHZ
Range	-40 to 80 ºC	-20 to 80ºC
Resolution	0.1 ºC	
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC	
Sensor Type	I2C digital sensor	
Response Time	1 second	

EXTERNAL TEMPERATURE [5]	
Range	-40 to 80 ºC
Resolution	0.01 ºC
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC
Sensor Type	I2C digital sensor
Response Time	1 second

HUMIDITY [5]	
Range	0 to 100%
Resolution	0,01%
Accuracy	±2% (0 to 90%); ±3% (90 to 100%)
Sensor Type	I2C digital sensor
Response Time	1 second

SUPPLY VOLTAGE
3x3.6 AA lithium batteries (PN EVE ER14505)[3]
3 years of estimated battery life[4]
External power supply with 12 VDC ± 5%

OPERATING ENVIRONMENT
From −40 ºC to 80 ºC

CERTIFICATIONS AND COMPLIANCE
EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-3 Electrical fast transient/burst immunity Test
IEC 61000-4-4 Surge Immunity Test
IEC 61000-4-5 Electrostatic discharge immunity test

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.
[3] Batteries not included.
[4] Considering a communication period of 10 minutes, and maximum transmit power (27dBm) at 25 ºC with PNEVEER14505 batteries.
[5] External probe sold separately.

DUOS

DI+TEMP
WIRELESS SENSOR

REF.: PA160411210 (A) / PA160412510 (B)

868 MHz (A)

2.4 GHz (B)

DI

DIGITAL INPUT

KEY FEATURES

−40 °C TO 125°C
TEMPERATURE MEASUREMENT SENSOR RANGE

DIGITAL INPUT EVENT TRIGGER COMMUNICATION

AGRIFOOD INDUSTRY COMPATIBILITY
COMPATIBLE WITH AGRIFOOD INDUSTRY STANDARDS

DUAL TEMPERATURE PROBE
INTERNAL AND EXTERNAL PROBE

WIRELESS LINK STRENGTH (RSSI)
AUTO DISCOVERY OF THE BEST WIRELESS LINK

LOW POWER AND LONG BATTERY LIFE
MEASURING AND TRANSMITTING BATTERY VOLTAGE

WATER RESISTANT
IP67 PROTECTION

AVAILABLE COLOURS

white / blue

black / blue

Dimensions 162 x 88.5 x 25 mm

Weight 100 g

Material ABS UL94HB

Protection Index IP67

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km LoS, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13
Communication Period	1 to 43200 seconds (configurable)

TEMPERATURE MEASUREMENT – EXTERNAL PROBE	
Range	-40 to 125ºC
Resolution	0.1 ºC
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC

TEMPERATURE MEASUREMENT INTERNAL PROBE	
Range	-40 to 80ºC
Resolution	0.1 ºC
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC

DIGITAL INPUT	
Contact Type	Dry contact
Communication Time after DI activation	< 1.1 seconds

SUPPLY VOLTAGE

3x3.6 AA lithium batteries (PN EVE ER14505)[3]

3 years of estimated battery life[4]

External power supply with 12 VDC ± 5%

OPERATING ENVIRONMENT

From -40 ºC to 80 ºC

CERTIFICATIONS AND COMPLIANCE

EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.

IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test

IEC 61000-4-3 Electrical fast transient/burst immunity Test

IEC 61000-4-4 Surge Immunity Test

IEC 61000-4-5 Electrostatic discharge immunity test

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.
[3] Batteries not included.
[4] Considering a communication period of 10 minutes, and maximum transmit power (27dBm) at 25 ºC, with PN EVE ER14505 batteries and Digital Input OFF.

DUOS

CO$_2$
WIRELESS SENSOR

868MHz

2.4GHz

CO$_2$

KEY FEATURES

MULTIPLE CO2 MEASUREMENT RANGES
2.000PPM, 5.000PPM, 10.000PPM, 3% AND 5%

−40 °C TO 60°C
TEMPERATURE SENSOR MEASUREMENT RANGE

DUAL PROBE
INTERNAL TEMPERATURE AND EXTERNAL CO2 PROBE

WIRELESS LINK INDICATION (RSSI)
AUTO DISCOVERY OF THE BEST WIRELESS LINK

WATER RESISTANT
IP67 PROTECTION (TRANSMITTER)
IP65 PROTECTION (CO2 PROBE)

Dimensions	162 x 88.5 x 25 mm
Weight	100 g
Material	ABS UL94HB
Protection Index	IP67

AVAILABLE COLOURS

white / blue

black / blue

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 MHz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13
Communication Period	16 to 3600 seconds (configurable)

CO2 MEASUREMENT – EXTERNAL PROBE	
Operating Temperature	-40ºC to 60ºC (0-100%RH non-condensing)
Acquisition Range[3]	0-5000ppm 0-10000ppm 0-3% 0-5%
Accuracy at 25ºC and 1013 mbar	0 to 5000ppm: +- 50ppm + 3% measured value 0 to 10000ppm +- 100ppm + 5% measured value 0 to 3%: +- 1.5% of the scale + 2% measured value 0 to 5%: +-1.5% of the scale + 2% measured value

TEMPERATURE MEASUREMENT INTERNAL PROBE	
Range	From -40 to 80 ºC
Resolution	0.1 ºC
Accuracy	Typical: ± 0.25 ºC / Maximum: ± 0.5 ºC

SUPPLY VOLTAGE	
3x3.6 AA lithium batteries (EVE ER14505)[4]	
External power supply with 12 VDC ± 5%	

OPERATING ENVIRONMENT	
Probe	From -40 °C to 60 °C
Transmitter	From -40 °C to 80 °C

CERTIFICATIONS AND COMPLIANCE
EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-3 Electrical fast transient/burst immunity Test
IEC 61000-4-4 Surge Immunity Test
IEC 61000-4-5 Electrostatic discharge immunity test

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.
[3] CO2 acquisition range available upon probe selection. Probe sold separately.
[4] Batteries not included.

DUOS

WIRELESS GATEWAY

868 MHz

2.4 GHz

KEY FEATURES

SCALABLE NETWORK
SCALABLE UP TO 55 DUOS TRANSMITTERS

MULTIPLE NETWORKS SIMULTANEOUSLY
UP TO 12 REPEATERS IN SERIES

UP TO 4KM OR 2KM DISTANCE (LoS)
RANGE OF 868MHZ, 27 DBM (500mW) OR 2.4GHZ, 10 DBM (10mW)

AUTOMATIC MESH NETWORK MANAGEMENT

AES KEY DATA ENCRYPTION 128 BITS

SERIAL MODBUS RTU COMMUNICATION
RS485

EASY TO CONFIGURE
SIMPLE, INTUITIVE AND FREE CONFIGURATION SOFTWARE

AVAILABLE COLOURS

white / blue

black / blue

Dimensions 142 x 73 x 34,5 mm	
Weight 100 g	
Material ABS UL94HB / Silicone	
Protection Index IP40	

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz[2]
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13

SUPPLY VOLTAGE
External power supply with 12 VDC ± 5%

SERIAL COMMUNICATION (RS-485)	
Protocol	Modbus RTU (Slave)
Interface	2-wire RS-485

OPERATING ENVIRONMENT
−10 ºC to +60 ºC

CERTIFICATIONS AND COMPLIANCE
EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-3 Electrical fast transient/burst immunity Test
IEC 61000-4-4 Surge Immunity Test
IEC 61000-4-5 Electrostatic discharge immunity test

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.

DUOS

WIRELESS GATEWAY IOT

868 MHz

2.4 GHz

ETHERNET TCP/IP

NEW

KEY FEATURES

ETHERNET TCP/IP MODBUS COMMUNICATION

INTEGRATION WITH TEKON IOT PLATFORM
REST API FOR SYSTEM INTEGRATION

SCALABLE NETWORK
SCALABLE UP TO 55 DUOS TRANSMITTERS

MULTIPLE NETWORKS SIMULTANEOUSLY
UP TO 12 REPEATERS IN SERIES

UP TO 4KM OR 2KM DISTANCE (LoS)
RANGE OF 868MHZ, 27 DBM (500mW) OR 2.4GHZ, 10 DBM (10mW)

AUTOMATIC MESH NETWORK MANAGEMENT

AES KEY DATA ENCRYPTION 128 BITS

EASY TO CONFIGURE
SIMPLE, INTUITIVE AND FREE CONFIGURATION SOFTWARE

AVAILABLE COLOURS

white / blue

black / blue

Dimensions 142 x 73 x 34,5 mm

Weight 100 g

Material ABS UL94HB/Silicone

Protection Index IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz[2]
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13

SUPPLY VOLTAGE
External power supply with 12 VDC ± 5%

SERIAL COMMUNICATION (RS-485)	
Protocol	Modbus RTU (Slave)
Interface	2-wire RS-485

NETWORK COMMUNICATION (ETHERNET)	
Protocol	TCP / IP Modbus
Interface	Ethernet

IOT CONNECTIVITY
Tekon IoT Platform / Microsoft Azure / Blue Mix
REST API

OPERATING ENVIRONMENT
−10 ºC to +60 ºC

CERTIFICATIONS AND COMPLIANCE
EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-3 Electrical fast transient/burst immunity Test
IEC 61000-4-4 Surge Immunity Test
IEC 61000-4-5 Electrostatic discharge immunity test

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.

DUOS

WIRELESS REPEATER

868MHz

2.4GHz

KEY FEATURES

EASY TO CONFIGURE
SIMPLE, INTUITIVE AND FREE CONFIGURATION SOFTWARE

UP TO 4KM OR 2KM DISTANCE (LoS)
RANGE OF 868MHZ, 27 DBM (500mW) OR 2.4GHZ, 10 DBM (10mW)

AUTO DISCOVERY OF BEST WIRELESS LINK
AUTOMATIC FORWARDING OF COMMUNICATION

MESH NETWORK
IMPROVEMENT OF THE MESH NETWORK RELIABILITY

IMPROVEMENT OF THE NETWORK COVERAGE
IMPROVEMENT OF THE SIGNAL STRENGTH

AVAILABLE COLOURS

white / blue

black / blue

Dimensions 142 x 73 x 34.5 mm

Weight 100 g

Material ABS UL94HB/Silicone

Protection Index IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

RADIO SPECIFICATIONS	868MHZ	2.4GHZ
Range[1]	Up to 4 Km LoS, 868MHz, 27 dBm (500mW)	Up to 2 Km LoS, 2.4GHz, 10dBm (10mW)
Radio Transmit Power	0 to 27 dBm[2]	-10 to 17dBm[2]
Radio Receiver Sensitivity	-97 to -110 dBm[2]	-91 to -108dBm[2]
Frequency Band	868.050 to 869.575 MHz[2]	2400.75 to 2482.75 Mhz[2]
Radio Channels	16, 868MHz	83, 2.4GHz
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum Devices	55
Maximum Hops	13

SUPPLY VOLTAGE
External power supply with 12 VDC ± 5%

OPERATING ENVIRONMENT
−10 ºC to 60 ºC

CERTIFICATIONS AND COMPLIANCE
EN 61326 Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-3 Electrical fast transient/burst immunity Test
IEC 61000-4-4 Surge Immunity Test
IEC 61000-4-5 Electrostatic discharge immunity test

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.
[2] Dependent on radio channel selection.

ACCESSORIES

DUOS

PA160410004

DUOS RS485-USB CONVERTER
• DUOS gateway configuration cable (to use with Tekon Configurator);

PA160410005

DUOS TRANSMITTER SARC
• DUOS transmitter configuration cable (to use with Tekon Configurator).

PA160410006 (A)
PA160412810 (B)
PA160412710 (C)

DUOS POWER SUPPLY
• DUOS 110-230 VAC / 50-60 Hz;
• EU Type C plug (A);
• US Type A plug (B);
• UK Type G plug (C).

PA160410007

DUOS GATEWAY EXTERNAL CABLE
• DUOS gateway communication (via RS-485) and power supply cable.

PA160410008

DUOS EXTERNAL POWER CABLE
• DUOS repeater and DUOS transmitter power supply cable;

PA160410910

DUOS TRANSMITTER MOUNTING CLIP
• Stainless steel wall mounting clip;

PA160410810

DUOS TRANSMITTER MOUNTING BRACKET
• Stainless steel wall mounting bracket;

PA160411010

DUOS GATEWAY/REPEATER MOUNTING CLIP
• Stainless steel wall mounting clip;

TEMP

PA160410001

DUOS DIGITAL TEMPERATURE PROBE
• ±0.25ºC typical accuracy with 0.1ºC resolution digital sensor;
• -40ºC to +80ºC operating temperature;
• Stainless steel probe with M8 industrial connector.

PA160410002 (A)
PA160410003 (B)

DUOS DIGITAL TEMPERATURE PROBE WITH 2M (A) OR 5M (B) CABLE
• ±0.25ºC typical accuracy with 0.1ºC resolution digital sensor;
• -40ºC to +125ºC operating temperature;
• 2 or 5 meter cable variants with stainless steel probe and M8 industrial connector.

HYGROTEMP

PA160452001 (A)
PA160452004 (B)

DUOS HUMIDITY + TEMPERATURE PROBE TK07-PFT5 (A) WITH 2M CABLE (B)
• 0..100 % RH and -40..80 ºC T measurement ranges;
• Accuracy: ±2 % (0..90 % RH) and ±3% (90..100 % RH);
• Accuracy: ±0.1 ºC @ 20 ºC (max. ±0.5 ºC @ range extremes);
• -40..+80ºC operating temperature;
• Polycarbonate housing with PTFE filter;
• Special sensor coating extends lifetime and sensor performance;
• IP65 M12 industrial connector with flange coupling + 2 meter cable (B).

CO2

PA160410010 (A)
PA160410011 (B)

DUOS TK871-HR5000J2 CO2 PROBE (A) WITH 2M CABLE (B)
• Measurement range: 0..5000 ppm;
• Accuracy: ±50 ppm @ 25 ºC;
• Operating conditions:-40..60 ºC / 0..100 % RH / 85..110 kPa.
• Dual wavelength NDIR (non-dispersive infrared technology);
• M12 connector, PTFE filter cap with IP65 housing + 2 meter cable (B).

STARTER KITS

PA160410510 (A) / PA160412110 (B)
PA160410620 (C) / PA160412210 (D)
PA160410630 (E) / PA160410640 (F)

DUOS TEMP HW STARTER KIT
BLACK: 868 MHz (A) / 2.4 GHz (B) / 868 MHz IoT Version (C) / 2.4 GHz IoT Version (D)
WHITE: 868 MHz (E) / 868 MHz IoT Version (F)
• DUOS TEMP Wireless Transmitter;
• DUOS Wireless Gateway;
• Temperature probe;
• Antennas and accessories;
• Power Supply and Ethernet Cable (only in (C) and (D) versions);
• DUOS RS485 to USB configuration cable;
• Suitcase.
* batteries not included•

PA160452010 (A) / PA160450410 (B)
PA160452020 (C) / PA160450420 (D)
PA160452030 (E) / PA160452040 (F)

DUOS HYGROTEMP HW STARTER KIT
BLACK: 868 MHz (A) / 2.4 GHz (B) / 868 MHz IoT Version (C) / 2.4 GHz IoT Version (D)
WHITE: 868 MHz (E) / 868 MHz IoT Version (F)
• DUOS HYGROTEMP Wireless Transmitter;
• DUOS Wireless Gateway;
• Temperature and humidity probe (TK07-PFT5);
• Antennas and accessories;
• Power Supply and Ethernet Cable (only in (C) and (D) versions);
• DUOS RS485 to USB configuration cable;
• Suitcase.
* batteries not included

PA160411310 (A) / PA160412310 (B)
PA160411320 (C) / PA160412320 (D)
PA160411330 (E) / PA160411340 (F)

DUOS CO2 STARTER KIT
BLACK: 868 MHz (A) / 2.4 GHz (B) / 868 MHz IoT Version (C) / 2.4 GHz IoT Version (D)
WHITE: 868 MHz (E) / 868 MHz IoT Version (F)
• DUOS CO2 Wireless Transmitter;
• DUOS Wireless Gateway;
• DUOS CO$_2$ Probe TK871-HR5000J2;
• Antennas and accessories;
• Power Supply and Ethernet Cable (only in (C) and (D) versions);
• DUOS RS485-USB Converter Cable;
• Suitcase.
* batteries not included

PA160411410 (A) / PA160412210 (B)
PA160411420 (C) / PA160412220 (D)
PA160411430 (E) / PA160411440 (F)

DUOS DI + TEMP STARTER KIT
BLACK: 868 MHz (A) / 2.4 GHz (B) / 868 MHz IoT Version (C) / 2.4 GHz IoT Version (D)
WHITE: 868 MHz (E) / 868 MHz IoT Version (F)
• DUOS DI + TEMP Wireless Transmitter;
• DUOS DI+TEMP External cable;
• DUOS Wireless Gateway;
• DUOS Digital Temperature Probe;
• Antennas and accessories;
• Power Supply and Ethernet Cable (only in (C) and (D) versions);
• DUOS RS485-USB Converter Cable;
• Suitcase.
* batteries not included

APPLICATIONS

FOOD

Food production processes are extremely sensitive, especially due to demanded temperature precautions during preparation and conservation stages.

Monitor your food storage temperature and humidity in real-time and avoid huge losses due to unnoticed cooler malfunctioning.

AGRO

Wide cultivation areas and long distances between measurement points and control rooms are key monitoring difficulties from Agro Industry. Soil or hydroponics, greenhouse or open-air cultivation farmers can benefit from wireless sensing technology.

PHARMA

Pharmaceutical industry processes are critical and one of the most accuracy demanding applications. Tekon Electronics provides solutions for most challenging storage environment parameters measurement.

MEDICAL

Medical processes are extremely sensitive and the causes of error must be mitigated. Monitoring systems provide valuable information to avoid losses and failures in the process.

COLD CHAIN

Cold chain is one of the most demanding applications regarding temperature monitoring and control and subjected to rigorous norms with legal implications. Besides economic reasons, product quality plays a major role in this area where an ever-growing customer knowledge demands for fresh and good quality products.

RETAIL

Retail facilities demand for an accurate environment condition measurement solution. From cooler storage to shopping shelves and final customer sale, product status must be monitored and guaranteed. Manual temperature readings are prone to human error and cheating leading to unnecessary risks and asset loss.

WIRED TRANSMITTERS

DINRAIL

TDU1219
ISOLATED UNIVERSAL TEMPERATURE TRANSMITTER

KEY FEATURES

UNIVERSAL SENSOR INPUT
RTD, THERMOCOUPLE, ETC

HIGH PRECISION AND ACCURACY
WITH LOW OPERATING TEMPERATURE DRIFT

CONFIGURABLE OVER PC
TEKON CONFIGURATOR FREE SOFTWARE

NAMUR NE43 COMPLIANT
FOR FAULT DETECTION AND INDICATION

COLD-JUNCTION, SENSOR CABLE RESISTANCE AND OUTPUT CURRENT COMPENSATION

Dimensions 17.5 x 98 x 56.4 mm

Weight 50 g (aprox.)

Material Nylon 66

Protection Index IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

INPUT	RESISTANCE THERMOMETER (RTD)	RESISTANCE-BASED SENSORS (R)	INPUT THERMOCOUPLES (TC)	INPUT THERMOCOUPLES (MV)
Sensor type	PT100, PT500, PT1000	Resistance, potentiometers	E, J, K, N, R, S, T	DC Voltage source
Open-circuit monitoring	Always active (cannot be disabled)			
Short-circuit monitoring	Always active (cannot be disabled)		Not available	

OUTPUT	
Output signal	4 to 20 mA
Power Supply (Uaux)	9 to 30 V DC
Max. load	(Uaux - 9) / 0.022 A
Overrange	3 to 22 mA
Error signal (e.g. following sensor fault) (conforming to NE43)	Software configurable ≤3,6 mA or ≥21 mA
Sample cycle	<1 s

OPERATING ENVIRONMENT
-20 to 80ºC (-4 to 176ºF)

DIGITAL MEASUREMENT ACCURACY RESISTANCE THERMOMETER (RTD)		
Sensor	Range ºC (ºF)	Digital accuracy ºC (ºF)
PT100	-200 to 850 (-328 to 1562)	0,1 (0,18)
PT500	-200 to 850 (-328 to 1562)	0,2 (0,36)
PT1000	-200 to 350 (-328 to 662)	0,2 (0,36)

DIGITAL MEASUREMENT ACCURACY THERMOCOUPLES (TC)		
Sensor	Range ºC (ºF)	Digital accuracy ºC (ºF)
E	-200 to +1000 (-328 to +1832)	1 (1,8)
J	-210 to +1200 (-346 to +2192)	1 (1,8)
K	-230 to +1370 (-382 to +2498)	1 (1,8)
N	-200 to +1300 (-328 to +2372)	1 (1,8)
R	-50 to +1760 (-58 to +3200)	2 (3,6)
S	-50 to +1760 (-58 to +3200)	2 (3,6)
T	-200 to +400 (-328 to +752)	1 (1,8)

DIGITAL MEASUREMENT ACCURACY RESISTANCE-BASED SENSORS (R)		
Sensor	Range	Digital accuracy Ω
Resistance	0 to 2200	0,25
mV	-100 to 1100	0,4

CERTIFICATES AND APPROVALS	
EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic, discharge immunity test
IEC 61000-4-3	Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-4	Electrical fast transient/burst immunity test
IEC 61000-4-5	Surge Immunity Test

INHEAD

THM501
PT100 TEMPERATURE
TRANSMITTER

KEY FEATURES

PT100 SENSOR INPUT
2, 3 AND 4 WIRES

MODBUS SERIAL RTU SLAVE

CONNECTION HEAD TYPE DIN B

CONFIGURABLE OVER PC
TEKON CONFIGURATOR FREE SOFTWARE

CONTINUOUS OPERATING STATUS MONITORING
AND SELF-DIAGNOSTIC

HIGH PRECISION AND ACCURACY

WIDE MEASUREMENT RANGE

Dimensions	45Ø x 23 mm
Weight	50 g (aprox.)
Material	Nylon 66
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

INPUT
RESISTANCE THERMOMETER (RTD)

Sensor type	PT100
Open-circuit monitoring	Always active (cannot be disabled)
Short-circuit monitoring	Always active (cannot be disabled)
Measuring range	-200ºC to 850ºC (-328ºF to 1562ºF)

MODBUS RTU

Physical Layer	RS-485

POWER SUPPLY

12 to 24 V DC ±10%

OPERATING ENVIRONMENT

-20 to 80ºC (-4 to 176ºF)

CERTIFICATES AND APPROVALS

EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/brust/immunity test
IEC061000-4-5	Surge immunity test

INHEAD

THT201
THERMOCOUPLE TEMPERATURE
HEAD TRANSMITTER

KEY FEATURES

THERMOCOUPLE SENSOR INPUT
E, J, K, N, R, S, T

WIDE MEASUREMENT RANGE

4 TO 20 MA ANALOG OUTPUT

2 STATUS LEDS

HIGH MEASUREMENT ACCURACY

IN LINE LOOP CURRENT MEASURE PADS

NAMUR NE 43 FAULT DETECTION

CONFIGURABLE OVER PC
TEKON CONFIGURATOR SOFTWARE

Dimensions	45Ø x 23 mm
Weight	50 g (aprox.)
Material	Nylon 66
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

INPUT
THERMOCOUPLES (TC)

Sensor type	Thermocouples: E, J, K, N, R, S, T
Open-circuit monitoring	Always active (cannot be disabled)
Short-circuit monitoring	Not available
Cold junction compensation (CJC)	Integrated resistance thermometer
Measuring range	Configurable (see table "Digital measuring errors")

OUTPUT

Output signal	4 to 20 mA
Power supply (Uaux)	9 to 30V DC
Max. load	(Uaux - 9) / 0.022 A
Overrange	3 to 22 mA
Error signal (e.g. following sensor fault) (conforming to NE43)	Software configurable $\leq$ 3,6mA or $\geq$ 21mA
Sample cycle	< 1s
Protection	Against reversed polarity Surge protection

OPERATING ENVIRONMENT

Ambient temperature range	-20 to 80ºC (-4 to 176ºF)

CERTIFICATES AND APPROVALS

EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/brust/immunity test
IEC061000-4-5	Surge immunity test

DIGITAL MEASURING ACCURACY

THERMOCOUPLES (TC)

SENSOR	RANGE ºC (ºF)	DIGITAL ACCURACY ºC (ºF)
E	-200 to 1000 (-328 to 1832)	1 (1,8)
J	-210 to 1200 (-346 to 2192)	1 (1,8)
K	-230 to 1370 (-382 to 2498)	1 (1,8)
N	-200 to 1300 (-328 to 2372)	1 (1,8)
R	-50 to 1760 (-58 to 3200)	2 (3,6)
S	-50 to 1760 (-58 to 3200)	2 (3,6)
T	-200 to 400 (-328 to 752)	1 (1,8)

The digital accuracy is the accuracy after the analog/digital conversion including linearization and calculation of the measured value.
An addicional error is generated in the output current 4 to 20mA as a result of the digital/analog conversation of 0.025% of the set span (digital-analog error).
The total error under reference conditions at the analog output is the sumfrom the digital error and the digital-analog error (poss. with the addition of cold junction errors in the case of thermocouple measurements).

INHEAD

THP101
PT100 TEMPERATURE HEAD TRANSMITTER

KEY FEATURES

PT100 SENSOR INPUT

4 TO 20 MA ANALOG OUTPUT

HIGH MEASUREMENT ACCURACY

NAMUR NE 43 FAULT DETECTION

CONFIGURABLE OVER PC
TEKON CONFIGURATOR SOFTWARE

Dimensions	45Ø x 23 mm
Weight	50 g (aprox.)
Material	Nylon 66
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

INPUT
RESISTANCE THERMOMETER (RTD)

Sensor type	PT100
Connection	1 Resistance thermometer (RTD) in 2-wire, 3-wire or 4-wire system
Units	ºC or ºF
Sensor current	600uA (2 or 4 wires); 300uA (3 wires)
Sampling time	<100 ms

OUTPUT

Output signal	4 to 20mA
Power supply (Uaux)	9 to 30 V DC
Max. load	(Uaux - 9)/0.022A
Over range	3 to 22 mA
Error signal (e.g. Following sensor fault) (conforming to NE43)	Software configurable ≤3,6mA or ≤21mA
Sample cycle	<1s
Protection	Against reversed polarity - Surge protection

OPERATING ENVIRONMENT

-20 to 80ºC (-4 to 176ºF)

CERTIFICATES AND APPROVALS

EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/brust/immunity test
IEC061000-4-5	Surge immunity test

The digital accuracy is the accuracy after the analog/digital conversion including linearization and calculation of the measured value.
An addicional error is generated in the output current 4 to 20mA as a result of the digital/analog conversation of 0.025% of the set span (digital-analog error).

INHEAD

THP102-I
PT100 ISOLATED TEMPERATURE HEAD TRANSMITTER

KEY FEATURES

GALVANIC ISOLATION 2KV AC

PT100 SENSOR INPUT

4 TO 20 MA ANALOG OUTPUT

HIGH MEASUREMENT ACCURACY

NAMUR NE 43 FAULT DETECTION

CONFIGURABLE OVER PC
TEKON CONFIGURATOR SOFTWARE

NEW

Dimensions	45Ø x 23 mm
Weight	50 g (aprox.)
Material	Nylon 66
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

INPUT RESISTANCE THERMOMETER (RTD)	
Sensor type	PT100
Connection	1 Resistance thermometer (RTD) in 2-wire, 3-wire or 4-wire system
Units	ºC or ºF
Sensor current	600uA (2 or 4 wires); 300uA (3 wires)
Sampling time	<100 ms

OUTPUT	
Output signal	4 to 20mA
Power supply (Uaux)	9 to 30 V DC
Max. load	(Uaux - 9)/0.022A
Over range	3 to 22 mA
Error signal (e.g. Following sensor fault) (conforming to NE43)	Software configurable ≤3,6mA or ≤21mA
Sample cycle	<1s
Protection	Against reversed polarity - Surge protection

OPERATING ENVIRONMENT
-20 to 80ºC (-4 to 176ºF)

CERTIFICATES AND APPROVALS	
EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/brust/immunity test
IEC061000-4-5	Surge immunity test

INHEAD

THT202-I
THERMOCOUPLE ISOLATED
TEMPERATURE HEAD
TRANSMITTER

KEY FEATURES

GALVANIC ISOLATION 2KV AC

THERMOCOUPLE SENSOR INPUT
E, J, K, N, R, S, T

WIDE MEASUREMENT RANGE

4 TO 20 MA ANALOG OUTPUT

2 STATUS LEDS

HIGH MEASUREMENT ACCURACY

IN LINE LOOP CURRENT MEASURE PADS

NAMUR NE 43 FAULT DETECTION

CONFIGURABLE OVER PC
TEKON CONFIGURATOR SOFTWARE

NEW

Dimensions	45Ø x 23 mm
Weight	50 g (aprox.)
Material	Nylon 66
Protection Index	IP40

TECHNICAL SPECIFICATIONS Data applicable at 25ºC

INPUT
THERMOCOUPLES (TC)

Sensor type	Thermocouples: E, J, K, N, R, S, T
Open-circuit monitoring	Always active (cannot be disabled)
Short-circuit monitoring	Not available
Cold junction compensation (CJC)	Integrated resistance thermometer
Measuring range	Configurable

OUTPUT

Output signal	4 to 20 mA
Power supply (Uaux)	9 to 30V DC
Max. load	(Uaux - 9) / 0.022 A
Overrange	3 to 22 mA
Error signal (e.g. following sensor fault) (conforming to NE43)	Software configurable ≤ 3,6mA or ≥ 21mA
Sample cycle	< 1s
Protection	Against reversed polarity Surge protection

OPERATING ENVIRONMENT

-20 to 80ºC (-4 to 176ºF)

CERTIFICATES AND APPROVALS

EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/brust/immunity test
IEC061000-4-5	Surge immunity test

DIGITAL MEASURING ACCURACY

THERMOCOUPLES (TC)

SENSOR	RANGE ºC (ºF)	DIGITAL ACCURACY ºC (ºF)
E	-200 to 1000 (-328 to 1832)	1 (1,8)
J	-210 to 1200 (-346 to 2192)	1 (1,8)
K	-230 to 1370 (-382 to 2498)	1 (1,8)
N	-200 to 1300 (-328 to 2372)	1 (1,8)
R	-50 to 1760 (-58 to 3200)	2 (3,6)
S	-50 to 1760 (-58 to 3200)	2 (3,6)
T	-200 to 400 (-328 to 752)	1 (1,8)

The digital accuracy is the accuracy after the analog/digital conversion including linearization and calculation of the measured value.
An addicional error is generated in the output current 4 to 20mA as a result of the digital/analog conversation of 0.025% of the set span (digital-analog error).
The total error under reference conditions at the analog output is the sumfrom the digital error and the digital-analog error (poss. with the addition of cold junction errors in the case of thermocouple measurements).

INHEAD

THU1102
UNIVERSAL TEMPERATURE
TRANSMITTER

KEY FEATURES

UNIVERSAL SENSOR INPUT
RTD / RESISTANCE / THERMOCOUPLES

4 TO 20 MA ANALOG OUTPUT

HIGH MEASUREMENT ACCURACY

NAMUR NE 43 FAULT DETECTION

CONFIGURABLE OVER PC
TEKON CONFIGURATOR SOFTWARE

Dimensions 45ø x 23 mm

Weight 50 g (aprox.)

Material Nylon 66

Protection Index IP40

TECHNICAL SPECIFICATIONS ata applicable at 25ºC

INPUT	RESISTANCE THERMOME-TER (RTD)	RESISTANCE-BASED SEN-SORS (R)	THERMOCOUPLES (TC)	(MV)
Sensor type	PT100, PT500, PT1000	Resistance, potentiometers	E, J, K, N, R, S, T	DC Voltage source
Open-circuit monitoring	Always active (cannot be disabled)			
Short-circuit monitoring	Always active (cannot be disabled)		Not available	

OUTPUT

Output signal	4 to 20 mA
Power supply (Uaux)	9 to 30V DC
Max. load	(Uaux - 9) / 0.022 A
Overrange	3 to 22 mA
Error signal (e.g. following sensor fault) (conforming to NE43)	Software configurable $\leq 3,6$mA or ≥ 21mA
Sample cycle	< 1s

OPERATING ENVIRONMENT

-20 to 80ºC (-4 to 176ºF)

DIGITAL MEASURING ACCURACY

RESISTANCE THERMOMETER (RTD)

SENSOR	RANGE ºC (ºF)	DIGITAL ACCURACY ºC (ºF)
PT100	-200 to 850 (-328 to 1562)	0,1 (0,18)
PT500	-200 to 850 (-328 to 1562)	0,2 (0,36)
PT1000	-200 to 350 (-328 to 662)	0,2 (0,36)

THERMOCOUPLES (TC)

SENSOR	RANGE ºC (ºF)	DIGITAL ACCURACY ºC (ºF)
E	-200 to 1000 (-328 to 1832)	1 (1,8)
J	-210 to 1200 (-346 to 2192)	1 (1,8)
K	-230 to 1370 (-382 to 2498)	1 (1,8)
N	-200 to 1300 (-328 to 2372)	1 (1,8)
R	-50 to 1760 (-58 to 3200)	2 (3,6)
S	-50 to 1760 (-58 to 3200)	2 (3,6)
T	-200 to 400 (-328 to 752)	1 (1,8)

RESISTANCE-BASED SENSORS (R)

SENSOR	RANGE Ω	DIGITAL ACCURACY Ω
Resistance	0 to 2200	0,25

CERTIFICATES AND APPROVALS

EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/brust/immunity test
IEC061000-4-5	Surge immunity test

SOFTWARE

IOT PLATFORM

IoT platform is an essential component of an IoT ecosystem that supports and connects all components within the system. The management of datasources and data analysis, enhances data flow and functionality of smart applications.

KEY FEATURES

CLOUD OR LOCAL DATABASE INSTALLATION

DESKTOP, TABLET AND MOBILE FRIENDLY
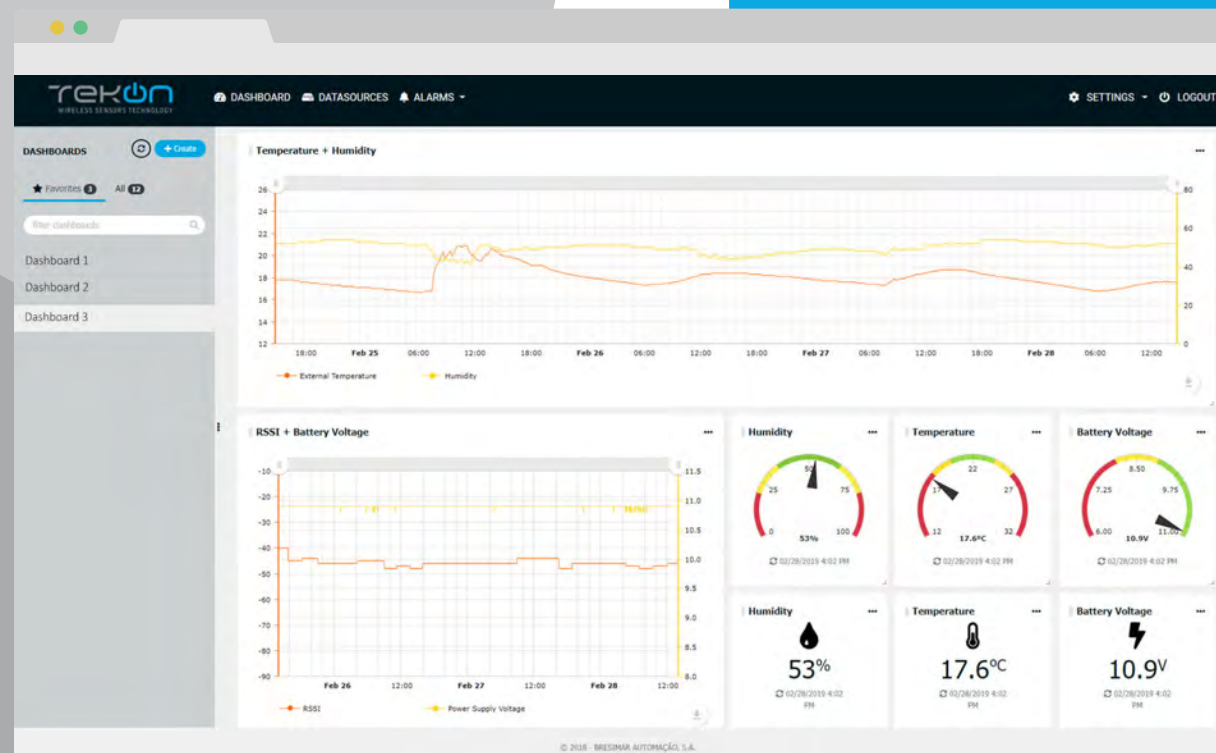
WEB-BASED PLATFORM
FOR WORLDWIDE REMOTE ACCESS

CONFIGURABLE
ERROR AND WARNING ALARMS

BACKUP AND EXPORTATION OF DATA

MULTIPLE DASHBOARDS AND WIDGETS

**INTUITIVE AND MODERN GRAPHICAL INTERFACE**

IN-HOUSE DEVELOPED PROPRIETARY SOFTWARE

Deliver value with your IoT solution for smart metering.

Connect sensors and collect all the data.

Tekon IoT Platform is a complete software solution that allows business and industrial professionals to use data collected by Tekon Electronics sensors in order to drive better business outcomes.

| Tekon IoT Platform |
| IoT Gateway |
| Iot Sensors | 🌡 | CO$_2$ | 💧 |
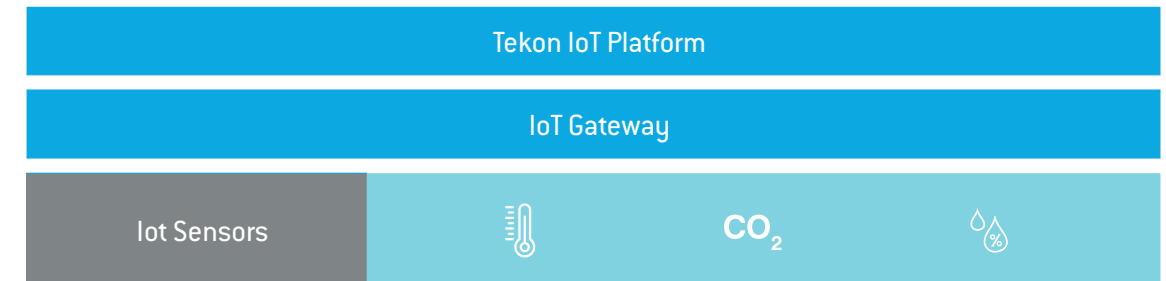
> **Reliable connection and management of datasources**
> **Secure access to data**
> **Dashboard with custom variables and widgets**
> **Instant graphic view IoT data**

MONITORING AND REPORTING

Through Tekon IoT Platform teams have direct and simple access to Tekon devices and associated status. Rapid identification of devices status could help to identify potential problems and avoid huge losses. Also, the data could be exported for further data analysis and reporting.

ALARMS AND WARNINGS

Monitoring temperature, humidity or CO2 tresholds are an important step to avoid product losses.
In IoT platform you can set thresholds for the variables and get alarms before the event happens allowing immediate action.

GROUPS AND USERS MANAGEMENT

Collect the data from all the points in your business and manage the permissions locally.
Get all the data from all the departments / local stores, and delegate the micromanagement. Manage all your users, so they could have access to the information they need.

IoT ECOSYSTEM

Get the most of Tekon sensors and translate insights generated by business assets into critical operational improvements.

PROBES

Tekon Electronics has a high capacity of execution to the custom needs of each client, in all type of probes of temperature and level probe, with different dimensions and varied types of accessories, adapted to the most diverse applications and requirements.

> Customizable solutions
> OEM applications
> Highly specialized industry projects
> High measuring accuracy
> Long-term stability.

LEVEL

Electrical connection by head, connector or cable

• Tailor-made customizable versions

TEMPERATURE

Thermoresistances, thermocouples, thermistors and pyrometric canes

• Temperatures from -200 to + 1700ºC
• Diameter from 0.25mm
• Models for agro-food
• Special coatings
• Mineral insulation

Various types of electrical connection

• Head
  Plastic (PA)
  Metallic (in aluminum or stainless steel)
• Cable
  Silicone
  Metal braid
  PTFE
  Fiberglass
  PVC
• Connector
• Metal or plastic housing

Various types of mechanical connection

• Thread (BSP, NPT, Metric)
• Flange
• Agro-food
• Quick connect
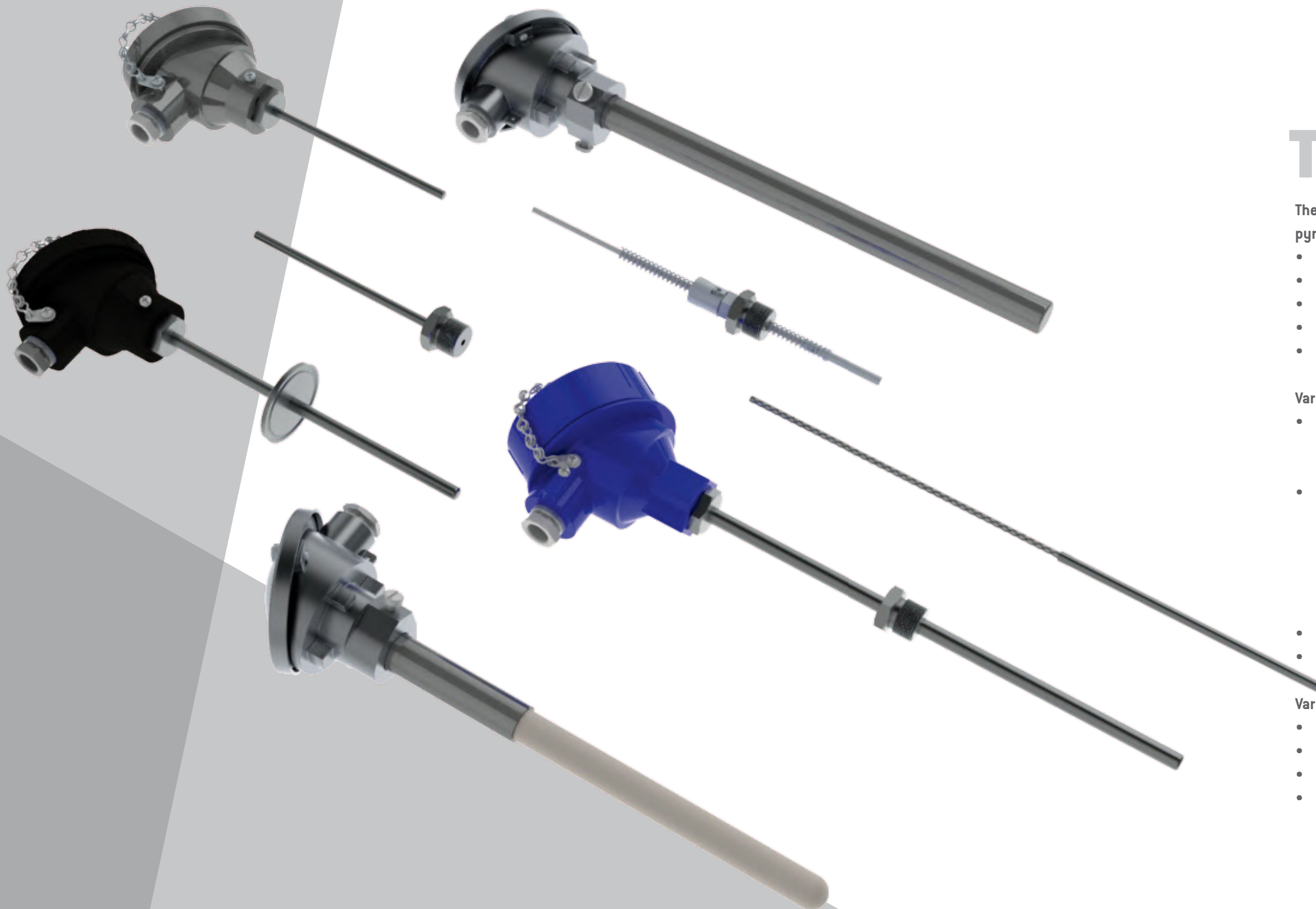
REFERENCE TABLE

PRODUCT DESIGNATION		REFERENCE		
		868 MHz	2.4 GHz	915 MHz
PLUS TWP4AI		PA164510110	-	
WGW420		PA164510210	-	COMING SOON
WRP001		PA164510310	-	
TWPH-1UT		PA165510510	-	
ANTENNA CABLE EXTENSION 2M		PA123772100	PA123771100	
BUZ CONNECTION HEAD FOR WIRELESS TRANSMITTERS		PA123790200		
PROBE HEAD ANTENNA FIXING		PA160410006		

ONE			
THW401		PA123720200	PA123720100
WGW410		PA123730100	PA123710100
RS485 TO USB CONVERTER CABLE		PA123790400	

DUOS			
TEMP	BLACK	PA160410110	PA160411810
	WHITE	PA160411720	-
HYGROTEMP	BLACK	PA164520110	PA164520510
	WHITE	PA164520120	-
DI+TEMP	BLACK	PA160411210	PA160412510
	WHITE	PA160411220	-
CO_2	BLACK	PA160411110	PA160412410
	WHITE	PA160411120	-
GATEWAY	BLACK	PA160410210	PA160411910
	WHITE	PA160410230	-
GATEWAY IOT		PA160410240	PA160411920
REPEATER	BLACK	PA160410310	PA160412010
	WHITE	PA160410320	-
TRANSMITTER SARC		PA160410005	
POWER SUPPLY		PA160410006	
GATEWAY EXTERNAL CABLE		PA160410007	
EXTERNAL POWER CABLE		PA160410008	
TRANSMITTER MOUNTING CLIP		PA160410910	
TRANSMITTER MOUNTING BRACKET		PA160410810	
GATEWAY/REPEATER MOUNTING CLIP		PA160411010	
DIGITAL TEMPERATURE PROBE		PA160410001	
DIGITAL TEMPERATURE PROBE WITH 2M (A) or 5M (B) CABLE		PA160410002 (A) /PA160410003 (B)	
HUMIDITY + TEMPERATURE PROBE TK07-PFT5 (A) with 2m cable (B)		PA164520001 (A) / PA164520004 (B)	
TK871-HR5000J2 CO2 PROBE (A) with 2m cable (B)		PA160410010 (A) / PA160410011 (B)	
DI+TEMP EXTERNAL CABLE		PA160410009	

	PRODUCT DESIGNATION		REFERENCE
INHEAD	THP101		PA132720110
	THT201		PA132720210
	THP102-I		PA183120110
	THT202-I		PA183120210
	THU1102		PA110020100
	THM501		PA151700100
	SARC1105 - USB CONFIGURATOR		PA110050100
	SARC2 - USB CONFIGURATOR		PA132720310
DIN-RAIL	TDU1219		PA121900100

STARTER KITS

	PRODUCT DESIGNATION		REFERENCE	
			868 MHz	2.4 GHz
DUOS	STARTER KIT DUOS TEMP	BLACK	PA160410610	PA160412110
		WHITE	PA160410630	-
	STARTER KIT DUOS HYGROTEMP	BLACK	PA164520210	PA164520410
		WHITE	PA164520230	-
	STARTER KIT DUOS DI + TEMP	BLACK	PA160411410	PA160412210
		WHITE	PA160411430	-
	STARTER KIT DUOS CO2	BLACK	PA160411310	PA160412310
		WHITE	PA160411330	-
	STARTER KIT DUOS TEMP IoT	BLACK	PA160410620	PA160412120
		WHITE	PA160410640	-
	STARTER KIT DUOS HYGROTEMP IoT	BLACK	PA164520220	PA164520420
		WHITE	PA164520240	-
	STARTER KIT DUOS DI + TEMP IoT	BLACK	PA160411420	PA160412220
		WHITE	PA160411440	-
	STARTER KIT DUOS CO2 IoT	BLACK	PA160411320	PA160412320
		WHITE	PA160410320	-
PLUS	STARTERKIT PLUS TWP4A		PA164510410	-
ONE	STARTERKIT ONE THW401		PA144010200	PA144010100

TEKON ELECTRONICS WORLDWIDE

● Headquarters

● Local Distributors

● Product Presence
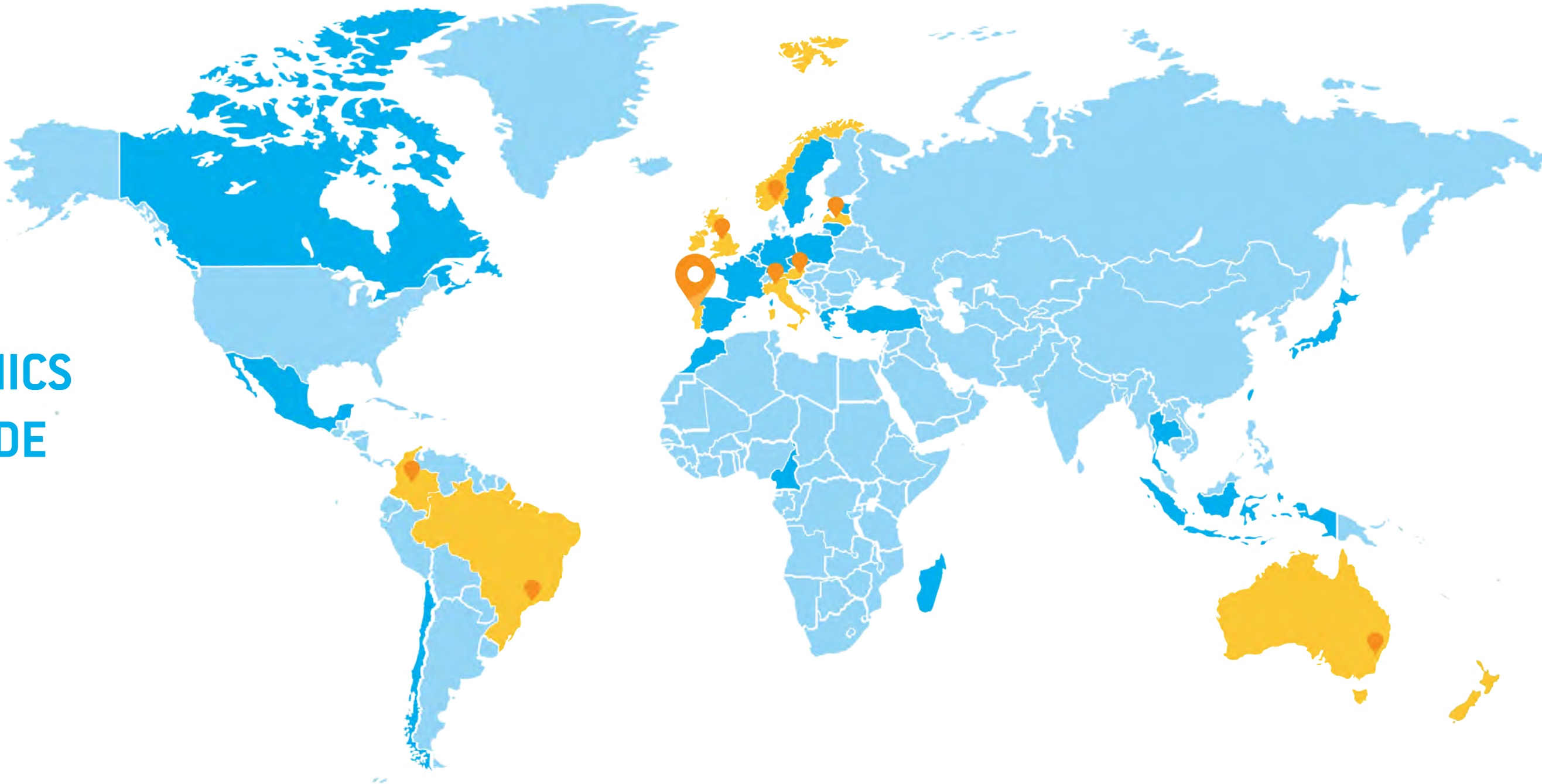
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