

# WIRELESS TRANSMITTER DUOS TEMP WITH BUILT-IN SENSOR



Tekon Wireless Transmitter DUOS Temp is the perfect wireless solution for monitoring applications, automation and centralization of temperature measurements throughout the production substances, distribution and storage of refrigerated foods, frozen and deep-frozen, HVAC and other industry processes.

Equipped with a smart dual probe transmitter, it allows the user to monitor not only the air temperature but also the product temperature, thanks to the second enclosed probe.

#### Product References

	Black	White
868MHz	PA160411710	PA160411720
915MHz	PA160411730	PA160411740

## KEY FEATURES

### -40 °C TO 60°C

TEMPERATURE SENSOR MEASUREMENT RANGE

### LONG COMMUNICATION RANGE

### DUAL TEMPERATURE PROBE

INTERNAL AND BUILT-IN 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

DS\_DUOS\_TEMP\_BUILT-IN\_E01A

**TECHNICAL SPECIFICATIONS**

RADIO SPECIFICATIONS	868MHZ	915MHZ
Range <sup>1</sup>	Up to 4 Km LoS	
Minimum communication distance	3 m @ 27 dBm (500mW)	
Radio transmit power <sup>2</sup>	0 to 27 dBm	8 to 27 dBm
Radio receiver sensitivity <sup>2</sup>	-97 to -110 dBm	
Frequency band <sup>2</sup>	868 to 869 MHz	902 to 928 MHz <sup>5</sup>
Radio channels	16	50 <sup>6</sup>
Radio transmission rate <sup>2</sup>	1,2 to 76,8 kbit/s	
Modulation	GFSK	
Encryption method	AES 128 (Advanced Encryption Standard)	

**WIRELESS NETWORK**

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

**TEMPERATURE MEASUREMENT**

Range	-40 to 60°C
Resolution	0,1 °C
Accuracy	Typical: ± 0,25 °C / Maximum: ± 0,5 °C
Sensor type	I2C digital sensor
Response time	1 second

**POWER SUPPLY (HARDWARE VERSION < 3.5)**

3x3,6 AA lithium batteries <sup>3</sup>
3 years of estimated battery life <sup>4</sup>
External power supply with 12 VDC ± 5%
Peak current draw of 250 mA <sup>2</sup>
Supply voltage measurement accuracy ± 1 V DC
Sleep mode current consumption < 8 µA

**POWER SUPPLY (HARDWARE VERSION ≥ 3.5)**

3x1,5 V AA Lithium/Alkaline/Rechargeable(Ni-MH) batteries <sup>3</sup>
3 years of estimated battery life <sup>4</sup>
External power supply with 5 VDC ± 5%
Peak current < 100 mA <sup>2</sup>
Supply voltage measurement accuracy ± 100 mV
Sleep mode current consumption < 30 µA

OPERATING ENVIRONMENT	868MHZ	915MHZ
Temperature range	-40 °C to 60° C	
Humidity	95% maximum relative humidity (non-condensing)	

**INTERFACE**

2 blue LED (LED 1 and LED 2) for wireless network address identification and general operation status
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- 1 green LED (LED 3) and 1 red LED (LED 4) for wireless network operation status
- 1 magnetic reed switch for system reboot
- 1 M8 female socket with 5 poles for device configuration through host computer

**CASING**

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

FACTORY DEFAULT SETTINGS	868MHZ	915MHZ
Frequency (MHz)	869,525	915,000
Radio transmit power	27 dBm	
Radio transmission rate	76,8 kbit/s	
Wireless channel	13	26
Transmitter ID	1	
Communication period	10 seconds	
Configuration time window at startup	10 seconds	
Wireless network ID	16777217	

**CERTIFICATIONS AND APPROVALS**

- EN 300 220 -2 V3.1.1
- EN 301 489-1 V2.2.0
- EN 301 489-3 V2.1.1

<sup>1</sup> Range depends on the RF propagation environment and Line of Sight (LoS). Always verify your wireless network's range by performing a Site Survey.  
<sup>2</sup> Dependent on radio channel selection.  
<sup>3</sup> Batteries not included.  
<sup>4</sup> Considering a communication period of 10 minutes, and maximum transmit power (27dBm) at 25 °C  
<sup>5</sup> In some countries, the frequency band admitted is not so extended as the default range.  
<sup>6</sup> The radio frequencies admitted in Australia are available from channel 26 to channel 50.

**CALIBRATION SETTINGS**

Linear Calibration (y=mx+b)*	m	b
External temperature	1 (default)	0 (default)
Internal temperature	1 (default)	0 (default)

\* Software configurable values

**BATTERIES**

**RECOMMENDED BATTERIES (HARDWARE VERSION < 3.5)**

BRAND	SAFT	EVE
Model	LS14500	ER14505
Classification	Lithium-thionyl	Lithium-thionyl
Chemical System	Li-SOCl <sub>2</sub>	Li-SOCl <sub>2</sub>
Nominal Voltage	3,6 V	3,6 V
Type	AA	AA
Operating Temperature	-60°C to 85°C	-55°C to 85°C

RECOMMENDED BATTERIES (HARDWARE VERSION >= 3.5)

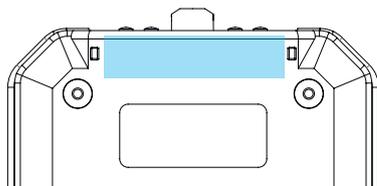
BRAND	ENERGIZER	PANASONIC	DURACELL	DURACELL
Model	Ultimate Lithium L91	Alkaline Power	MN1500	DX1500H
TME Part Number	BAT-FR6/EGL-B4	BAT-LR06/P-B4	BAT-LR6/DR-B12	ACCU-R6/2500/DR
Classification	Lithium	Alkaline	Alkaline	Rechargeable
Chemical System	Li/FeS <sub>2</sub>	Zn/MnO <sub>2</sub>	Zn/MnO <sub>2</sub>	Ni-MH
Nominal Voltage	1,5 V	1,5 V	1,5 V	1,2 V
Type	AA	AA	AA	AA
Operating Temperature	-40°C to 60°C	-20°C to 54°C	-20°C to 54°C	-10°C to 50°C

VOLTAGE THRESHOLD (VDC)	INTERNAL TEMP. ≥ -10°	INTERNAL TEMP. < -10°
Critical battery	3 V	2,5 V

RSSI LEVELS

SIGNAL (DBM)	QUALITY
0 to -50	Excellent
-51 to -60	Good
-61 to -70	Acceptable
-71 to -100	Poor

MAGNETIC SWITCH



The DUOS Wireless Transmitters have a magnetic switch that allows to reset the devices.

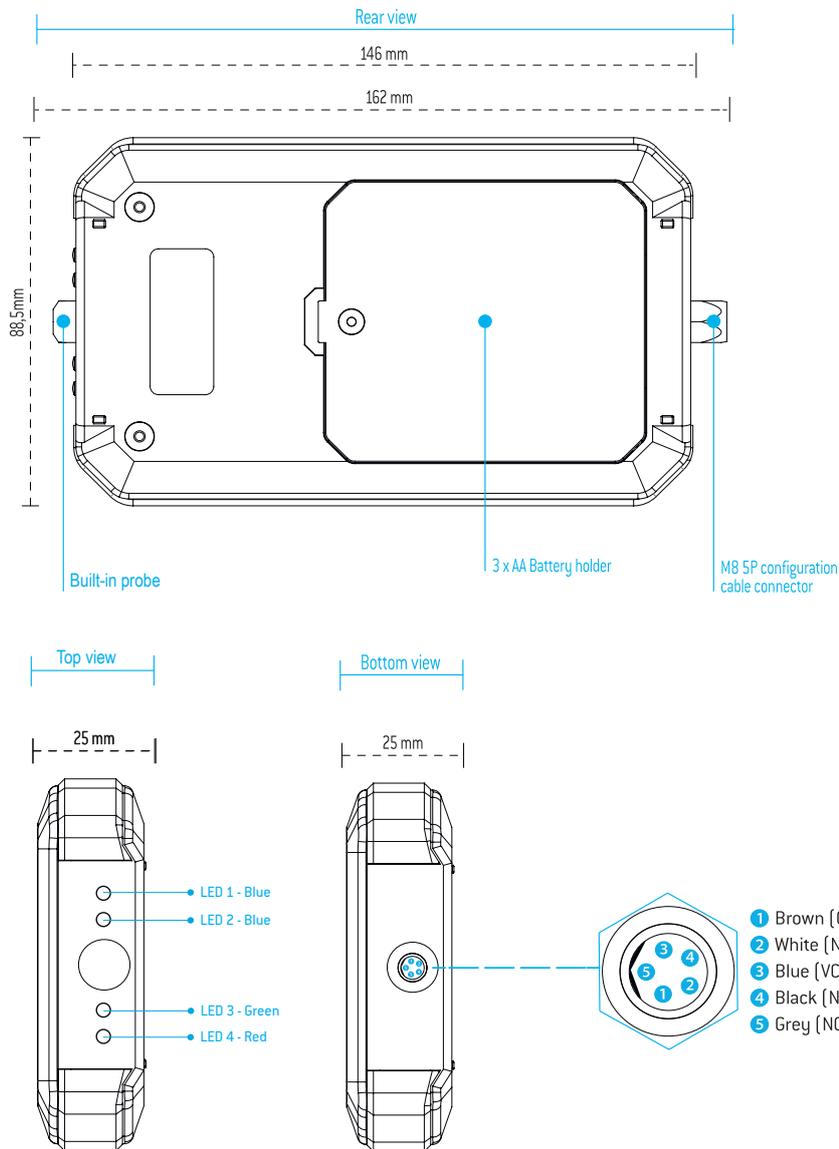
**Operation Mode:**

Slide a magnet in the area marked in the image. All LED's will be active and the transmitter will be restarted.

TECHNICAL DRAWINGS

DIMENSIONAL DRAWINGS AND INTERFACE DESIGN

POWER SUPPLY AND COMMUNICATIONS CONNECTOR



ACCESSORIES



**DUOS TRANSMITTER SARC**

REF.: PA160410005

Cable used to configure DUOS Transmitter using Tekon Configuration software.



**DUOS POWER SUPPLY 230VAC/ 5V DC**

REF.: PA160413610

230V/50Hz Power supply cable to be used with DUOS wireless transmitters with the new hardware version.



**DUOS POWER SUPPLY 230VAC/ 12V DC**

REF.: PA160410006

230V/50Hz Power supply cable to be used with the wireless gateway and repeater DUOS.



**DUOS GATEWAY EXTERNAL POWER CABLE**

REF.: PA160410007

Cable for external power and communication with the wireless gateway DUOS.

**REVISION HISTORY**

**VERSION**

E01B

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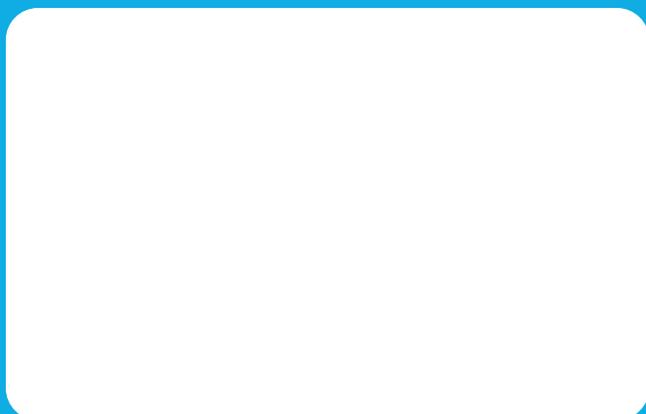
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