

WIRELESS TRANSMITTER DUOS MULTITEMP



DUOS Multitemp is the perfect wireless solution to monitor up to 5 temperature sensors with one transmitter. It allows to monitor applications, automation and centralization of temperature measurements throughout the production substances, distribution and storage of refrigerated foods, frozen and deep-frozen, HVAC and other industries processes.

Product References

	Black	White
868MHz	PA210310510	PA210310520
915MHz	PA210310530	PA210310540

KEY FEATURES

–40°C TO 90°C

TEMPERATURE SENSOR MEASUREMENT RANGE*

UP TO 5 TEMPERATURE SENSORS

LONG COMMUNICATION RANGE

DUAL TEMPERATURE PROBE

INTERNAL AND EXTERNAL PROBES

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

* The temperature measurement sensor range is related with the external temperature probes.

DS_DUOS_MULTITEMP_E01B

TECHNICAL SPECIFICATIONS			
RADIO SPECIFICATIONS		868MHZ	915MHZ
Range ¹		Up to 4 Km LoS	
Minimum communication distance		3 m @ 27 dBm (500mW)	
Radio transmit power ²		0 to 27 dBm	8 to 27 dBm
Radio receiver sensitivity ²		-97 to -110 dBm	
Frequency band ²		868 to 869 MHz	902 to 928 MHz ⁵
Radio channels		16	50 ⁶
Radio transmission rate ²		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 – EXTERNAL PROBES			
Range		-40 to 90°C	
Resolution		0,1 °C	
Accuracy		Typical: ± 0,25 °C / Maximum: ± 0,5 °C	
Sensor type		I2C digital sensor	
Response time		1 second	
Connector		M8 female socket, 4 poles	
TEMPERATURE MEASUREMENT – INTERNAL PROBE			
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			
3x1,5 V AA Lithium/Alkaline/Rechargeable(Ni-MH) batteries ³			
3 years of estimated battery life ⁴			
External power supply with 5 VDC ± 5%			
Peak current < 100 mA ²			
Supply voltage measurement accuracy ± 100 mV			
Sleep mode current consumption < 30 µA			
OPERATING ENVIRONMENT			
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		
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		

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 Batteries not included.

⁴ Considering a communication period of 10 minutes, and maximum transmit power (27dBm) at 25 °C

⁵ In some countries, the frequency band admitted is not so extended as the default range.

⁶ The radio frequencies admitted in Australia are available from channel 26 to channel 50.

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

* Software configurable values

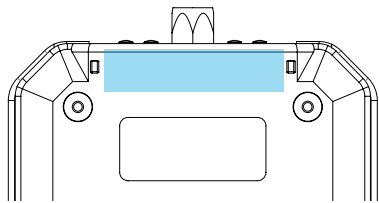
BATTERIES

RECOMMENDED BATTERIES				
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 ₂	Zn/MnO ₂	Zn/MnO ₂	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

RSSI LEVELS

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

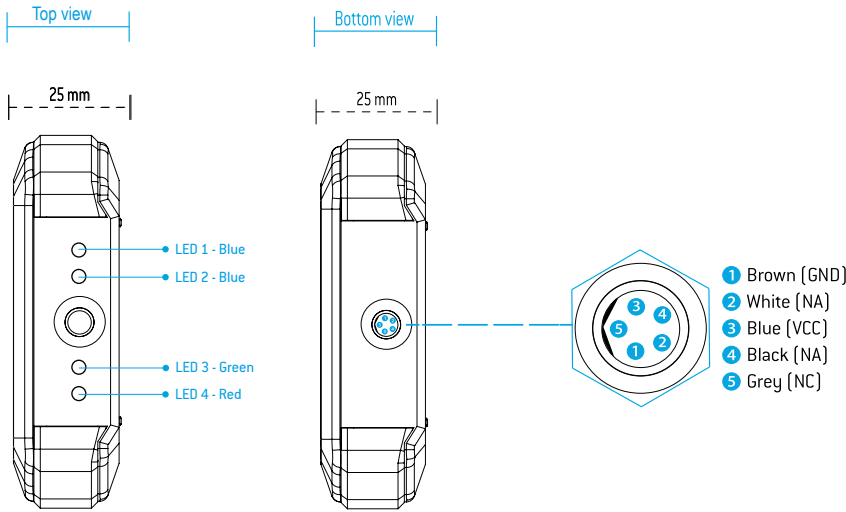
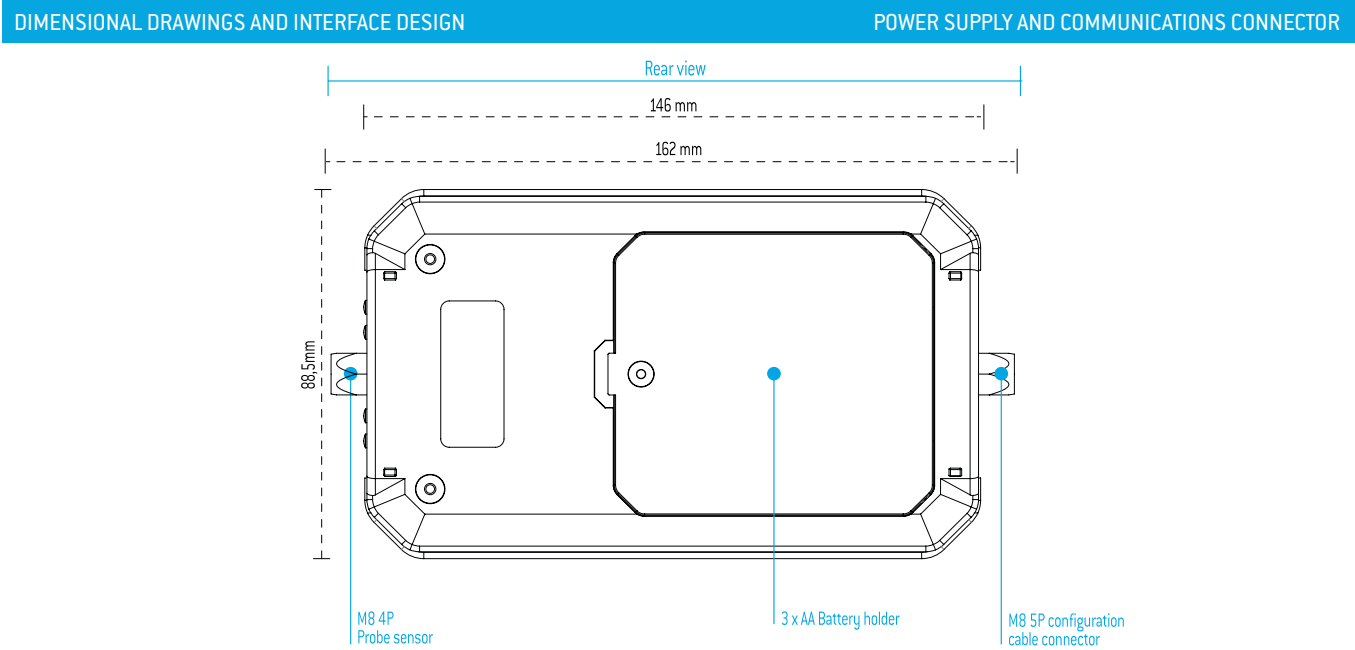
MAGNETIC SWITCH



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



ACCESSORIES



DUOS MULTITEMP PROBE SPLITTER BOX TK-PSB-015
REF.: PA160413910
Junction box for digital temperature probes. Up to 5 probes simultaneously.



DUOS MULTITEMP DOUBLE PROBE 2M TK-DP-20
REF.: PA160414010
External double digital temperature probes. Temperature range: -40 to +90°C.



DUOS MULTITEMP DOUBLE PROBE 5M TK-DP-50
REF.: PA160414110
External double digital temperature probes. Temperature range: -40 to +90°C.



DUOS MULTITEMP SINGLE PROBE 0.5M TK-SP-05
REF.: PA160414210
External single digital temperature probe. Temperature range: -40 to +90°C.



DUOS MULTITEMP SINGLE PROBE 2M TK-SP-20
REF.: PA160414310
External single digital temperature probe. Temperature range: -40 to +90°C.



DUOS MULTITEMP SINGLE PROBE 5M TK-SP-50
REF.: PA160414410
External single digital temperature probe. Temperature range: -40 to +90°C.



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 EXTERNAL POWER CABLE
REF.: PA160410008
Cable for external power supply to DUOS wireless transmitter.

REVISION HISTORY

VERSION

E01B	New product references for 868 MHZ and 915 MHz frequencies Update of “Accessories” table with new related references
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