TRE37-001

Shock, Temperature and Humidity sensor

Measuring range :
-16g to +16g
-40°C to 85°C
0 to 100% RH

Accuracy :
0.5g
±0.2°C for (0... 60°C)
±1.8% RH (0... 80% RH) at 23°C

Certification: CE

Description

The TRE37 measures and records the conditions under which goods are transported, tracing shocks and variations in temperature and humidity.
Each event is time-stamped. The data can be downloaded and analysed on a PC.
The TRE37 can be used in two distinct modes:
Live/Record: Before sending the parcel, the user activates the "record" mode. As soon as it is activated, the TRE stores the values in its memory. The recorded data can be read using RF Monitor. At the end of transport, the user stops recording and can retrieve the data from memory.
Monitoring (real-time monitoring applications): The TRE sends measured data to the PC in real time. If communication is not possible, the logger stores the data in memory and sends it as soon as a connection is possible.
A silent mode can be used for air transport. In this case, to retrieve the recorded data, it will be necessary to use the "find products in silent mode" function in the RF Monitor software.
It is equipped with :
IP 65 enclosure
Internal antenna
Power supply 1 A Lithium battery

Specifications

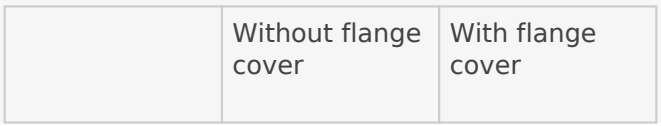
	Accelerometer	Temperature	Humidity	Brigtness
TRE37	-16g to +16g on 3 axes	-40°C to 85°C	0... 100%RH	------

Shock sensor	1 accelerometer that measures on 3 axes (XYZ)
Measurement Range	Shock : -16g to +16g on each axis Minimum threshold : -1g to +1g on each axis (XYZ)
Resolution	14 bit-3.9 mg
Accuracy at 25°C	±0.5g from -16g to +16g (without resonance) If the shok is too hight over this range, the TRE at 16g, and will record the measurement.
Noise	65 mg
Calibration	Calibration carried out at the factory by the manufacturer
Drift of accuracy	Possible drift of 10 mg/year on each axis for 4 years. Not guaranteed after 4 years.
Bandwidth	1600 Hz
Temperature sensor	
Measuring range	-40°C to 85°C
Accuracy	± 0.2°C for (0... 60°C)
Resolution	0.015°C
Response time	<10 seconds
Long-term drift	<0...05K / year
Humidity sensor	
Measurement range	0... 100% RH
Accuracy	± 1.8% RH (0... 80% RH) at 23°C
Resolution	0.003% RH Dew point max 80°C
Response time	<10 seconds
Long term drift	<0.5% RH/ year

Power supply	1 Lithium Thionyl battery size A (3.6V) with connector	1 AA Alkaline battery (1.5V) in the battery holder

Operating temperature range	-40°C to +60°C (up to 85°C peak) but the case may be damaged	-10°C to +50°C
Battery Life	At 25°C : almost 2 years	At 25°C : approximately 1 year
Battery Supplier	Newsteo	Any supplier
User replaceable	Yes, From connector to plug	Yes, Battery holder, polarity correct

RTC	Integrated real-time clock for timestamping measurements Resolution : 1s Maximum drift : 2 minutes/month at 25°C The time is set in production
Operating temperature range	-40°C to 60°C with lithium batteries, -10°C to 60°C with alkaline batteries Recommended temperature range to maximize peoduct autonomy : +5°C to 35°C
Flash memory	16 Mbits flash, or 129.000 measurement blocks (shocks take 2 blocks) For example, it allows in a single 2 years measurement campaign : - 1 inclination and temperature measurement every 15 minutes (70.080 records) - 29.000 shocks recordings
Wireless communication	Operates on ISM band, short range device This device is designed for the European market (Uses the 868MHz band)
Antenna	Internal antenna
range	100 meters in open space
ILS	Magnetic sensor for user actions : - Wake up the product in hibernation mode - Taking a measurement outside the defined measurement frequency

Color	Black
Material	Plastic
Charactteristics of the case	The case included 2 holes for fixing to a wall or inside a package
Dimensions	

	Length	84.80mm	110.15mm
	Width	56mm	56.20mm
	Height	22mm	26.2mm
Weight approx.	160g (lithium batteries included)		
IPlevel	IP65		