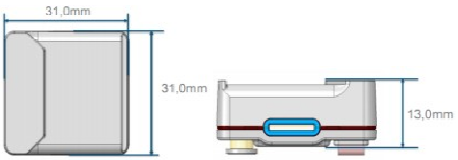
Easergy TH110

Wireless Thermal Sensor



Easergy TH110 Wireless Thermal sensor

Applications

The Easegy TH110 is a battery free wireless smart sensor enabling to perform the continuous thermal monitoring of all the critical connections made on field like:

- Cable connections
- Bus bar connections
- Withdrawable CB connections

It allows also the monitoring of any power connections of indoor installation like MV Transformers connections or LV Switchgears.

High performances

Easergy TH110 can perform accurate thermal monitoring because it is in direct contact with the measured point guaranteeing an accuracy of ±1°C.

Wide measurable temperature range from -25°C up to 115°C (max 150°C).

Self powered

Easergy TH110 is battery free self powered by the network current.

The minimum activation current is 5A for average power conductor dimensions.

Wireless

By using Zigbee Green Power wireless communication protocol IEEE802.15.4 at 2,4GHz Easergy TH110 ensure a reliable and robust communication

It must be paired with an access point having the function to concentrate the signal coming from different sensors.

Easy installation

TH110 allows the thermal monitoring of every possible critical points thanks to its very compact footprint (31x31x14mm) and its only 15g weight.

This sensor can be installed directly on the conductive metal part or on the shielded insulated part.

Reference and packaging

EMS59440	Easergy TH110 set of 3 pieces
EMS59441	Ferromagnetic ribbon for energy harvesting

The TH110 is supplied in a package with a min quantity of 3 sensors.

Easergy TH110

Wireless Thermal Sensor

Rated supply	Starting current: for energy harvesting 0.4A / cm of the peripheral AC live part (Battery free)
Voltage limit of the active part	52kV
Current limit of the active part	5000A
Wireless communication protocol	Zigbee green power at 2.4 GHz according to IEEE 802.15.4
Transmission period	60s
Mounting support	Direct on active part or shielded insulation part by fixing tape
Height	14 mm
Depth	31 mm
Width	31 mm
Product weight	0.015 kg
Product certifications	CB IECEE ID: FR682889
	cBVus ID: CABA
	FCC ID: 2AHP8-097742
	IC : 21245-097742
	LV Directive 2014/35/EU
	EMC Directive 2004/108/EC
	RE Directive 2014/53/EU (R&TTE directive 1999/5/EC)
Main Standards	EN / IEC 61010 2010
	UL 61010 -1 2012
	ETSI EN 300238 2012 V1.9.1 (§ 3.2 R&TTE Directive)
	IEEE 802.15.4 2013
Power emission	EIRP= +5dBm
Resistance to electrostatic discharge	2-4-8-15kV (Direct & Indirect contact) according to EN/IEC 61000-4-2
	2-4-8-15kV (in air) according to EN/IEC 61000-4-2
Resistance to electromagnetic fields	30V/m (80MHz...5.7 GHz) according to EN/IEC 61000-4-3
	20 V/m (80MHz....5.9 GHz) according to EN/IEC 61000-4-3
Resistance to conducted disturbances, induced by radio frequency fields	20 V (0.15...80 MHz) according to EN/IEC 61000-4-6
Power frequency magnetic field immunity	1000A/m Pulse EN/IEC 61000-4-8
	300A/m Continue EN/IEC 61000-4-8
Pulse magnetic field immunity	1000A/m Pulls EN/IEC 61000-4-9
Damped oscillatory magnetic field immunity	30A/m (0.1 & 1 MHz) EN/IEC 61000-4-10
Electrical fast transient/burst immunity	4kV impulse EN/IEC 61000-4-4
	2kV 5min (Marine) EN/IEC 61000-4-4
Damped oscillatory wave immunity	3kV (CM - 100kHz & 1MHz) EN/IEC 61000-4-18
	2.5kV (CM - 3MHz, 10MHz, 30MHz) EN/IEC 61000-4-18
Surge immunity	0.5-1-2-4kV (Common mode) EN/IEC 61000-4-5
	0.5-1-2-4kV (Differential mode) EN/IEC 61000-4-5
Immunity to common mode conducted disturbances	30V Continuous (0 – 150kHz) EN/IEC 61000-4-16
	300V Short duration (0 – 150kHz) EN/IEC 61000-4-16
Ambient air temperature for operation	-25...80°C Any live and measured parts shall be lower than IEC limits (115°C Max)
Accuracy within ambient air temperature for operation	+/-1°C between -25°C...80°C and +/-2°C outside the range.
Measured temperature for operation	-25...115°C for 80°C at maximum ambient temperature
	-25...125°C for 40°C at maximum ambient temperature
	150°C max (limited time)
Ambient air temperature for storage	-40...70°C
Relative humidity	10...95 % over a period of 24h condensation may occasionally occur in operation
	10...90% over a period of one month condensation may occasionally occur in operation
IP degree of protection	IP54 IEC 60529
Mechanical impact	IK07 IEC 62262 (Exposed side vs Measuring side)
Pollution degree	2 IEC 61010-1
Operating altitude	0...2000 m
Storage altitude	0...3000 m
Vibrations sinusoidal during transport	5-8Hz Ampl 7.5mm, 8-200Hz 2g, 200-500Hz 4g 20 cycles Test Fc according to IEC 60068-2-6 (2M3 according to IEC 60721-3-2)
Vibrations random during transport	10-2000Hz 0,1g/Hz 30 min/axe according to IEC 60068-2-64
Shocks	3 shocks 2 directions 3 axes 40g 6ms (Ea) according to IEC 60068-2-27 (2M3)
	1000 shocks 2 directions 3 axes 20g 16ms (Ea) according to IEC 60068-2-27
Free falls	2m 2 free falls according to IEC 60068-2-31
Vibrations sinusoidal in operation (Installed on bar)	5-500Hz 1g 1cycle (10min) 3mm Test Fc according to IEC 60068-2-6 (3M5 according to IEC 60721-3-3)
Shocks in operation (Installed on bar)	3 shocks 3 directions 10g 11ms (Ea)according to IEC 60068-2-27 (3M5 according to IEC 60721-3-3)
Glow-wire flammability withstand	650°C
Maximum distance between sensor and the access point	100m in free field unobstructed
	25m when the components are separated by one layer of metal
	10m when the components are separated by two layers of metal

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CL110(EMS59443)

Indoor thermal and humidity sensor

H×D×W: 20mm×40mm×40mm

Main

Range of product	Easergy
Product or component type	Indoor thermal and humidity sensor for wireless access point
Rated supply	3V (battery)

Complementary

Measured surfaces	Flat area wider than 50 mm x 100 mm
Power consumption	20mA during radio transmission mode
	2µA max in sleeping mode
Wireless communication protocol	ZigBee Green Power at 2.4 GHz according to IEEE 802.15.4
Transmission period	120s
Connection type	See associated ZigBee concentrator (e-access ZBRN32 ...)
Marking	CE (cf applicable Directives)
Height	20 mm
Depth	40 mm
Width	40 mm
Product weight	0.030 kg

Environment

Product certifications - compliance	CB IECEE ID: FRXXXXXX (In progress)
	cBVus ID: XXXX (In progress)
	FCC ID: 2AHP8-130729 (In progress)
	IC : 21245-130729 (In progress)
	LV Directive 2014/35/EU
	EU RoHS directive
	EU REACH directive
	EU EMC directive 2004/108/EC
	EU RED directive 2014/53/EU
	EU WEEE directive 2012/19//EU
	EU Battery directive 2013/56//EU
Main standards	EN / IEC 61010-1 2010
	UL 61010 -1 2012
	ETSI EN 300238 2012 V1.9.1
	IEEE 802.15.4 2013
Power emission	EIRP= +5dBm
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Power frequency magnetic field immunity	1000A/m Pulse EN/IEC 61000-4-8
	300A/m Continue EN/IEC 61000-4-8
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Damped oscillatory magnetic field immunity	30A/m (0.1 & 1 MHz) EN/IEC 61000-4-10
Electrical fast transient/burst immunity	4kV 1 min EN/IEC 61000-4-4
	2kV 5min (Marine) EN/IEC 61000-4-4
Damped oscillatory wave immunity	3kV (CM - 100kHz & 1MHz) EN/IEC 61000-4-18
	2.5kV (CM - 3MHz, 10MHz, 30MHz) EN/IEC 61000-4-18
Surge immunity	0.5-1-2-4kV (Common mode) EN/IEC 61000-4-5
	0.5-1-2-4kV (Differential mode) EN/IEC 61000-4-5
Immunity to conducted RF disturbances	30V Continuous (0 – 150kHz) EN/IEC 61000-4-16

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Product datasheet
Characteristics

ZBRN32
access point - 2 RJ45-24..240V AC/DC-4 displays-5 LEDs

Main

Range of product	Harmony
Product or component type	Wireless access point
Device short name	ZBRN2
Product specific application	Interface to PLC
Function of module	Monostable

Complementary

[Us] rated supply voltage	24...240 V AC/DC at 50/60 Hz (- 10...10 %)
Immunity to microbreaks	10 ms
Response time	< 30 ms after transmitter clicks
Channels utilisation	<= 60
Power consumption in W	<= 4 W AC/DC
Breaking capacity	15 W
Breaking capacity	750 VA
Control circuit frequency	50...60 Hz +/- 10 %
Short-circuit protection	16 A by GB2 circuit breaker
Rated short-duration power frequency withstand voltage	1.5 kV at 50 Hz conforming to EN/IEC 60947-5-1
[Uimp] rated impulse withstand voltage	4 kV
Surge withstand	1 kV (differential mode) conforming to IEC 61000-4-5 2 kV (common mode) conforming to IEC 61000-4-5
Width	122 mm
Height	90 mm
Depth	60 mm
Product weight	0.27 kg
Marking	CE

Environment

product certifications	CCC CE CSA C-Tick GOST UL
directives	2004/108/EC - electromagnetic compatibility 2006/95/EC - low voltage directive 1999/5/EC - R&TTE directive
standards	EN/IEC 60950-1 EN/IEC 61131-2 UL 508 EN 62311 CSA C22.2 No 14 ETSI EN 300 440-2 ETSI EN 300 328
ambient air temperature for storage	-40...70 °C
vibration resistance	+/- 3.5 mm (f= 5...14 Hz) conforming to IEC 60068-2-6 1 gn (f= 5...150 Hz) on panel mounting conforming to IEC 60068-2-6 2 gn (f= 8...150 Hz) on DIN rail conforming to IEC 60068-2-6
IP degree of protection	IP20 (terminals)

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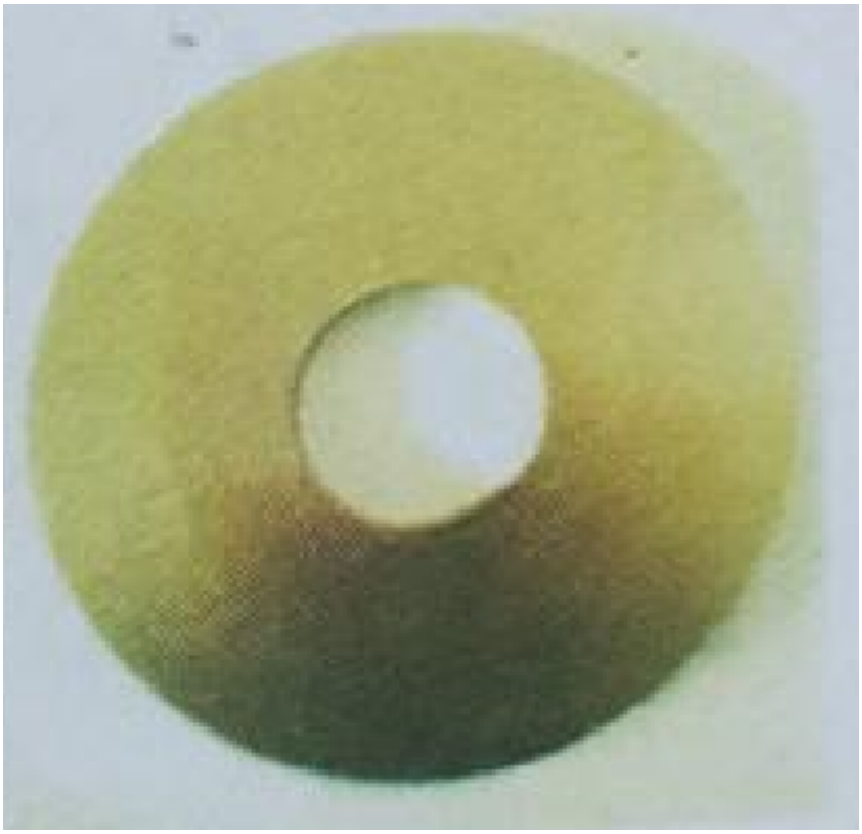
Ribbon for TH110(EMS59441)

Diam: 150mm
Weight: 1kg



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