

Snow Load Sensor

TNS-01

Real-time monitoring of live loads (snow, water and ice) on the roof of commercial, industrial and institutional buildings with steel structures.



Strain Gauge Technical Parameters

Dimensions	13 x 25 x 5 mm
Cable length	650 mm
Nominal dimension of each gauge grid	4 x 4 mm
Nominal resistance	1000 OHMS
Excitation range	1 to 15 (typ. 12) V
Precision	$2.5 \pm 0.5 \%$
Gauge factor	2.12 ± 0.11
Heat dissipation	0.000005 m/m °C
Temperature range	-40 to 60 °C
Nominal capacity	Same as the structure on which the gauge is installed
Safe maximum overload	Same as the structure on which the gauge is installed
Wheatstone bridge configuration	Full bridge

Device Technical Parameters

Dimensions	90 x 130 x 40 mm
Device weight	303 g
Data acquisition frequency (F)	1 to 1440 (typ. 60) min
Resolution	0.01 kPa
Operating temperature range	-40 to 85 °C
Wireless range	800 m (1)
Battery type	Lithium battery D / 3.6 V / 19 Ah
Battery life (2)	27 mo (F=1) 81 mo (F=5) 159 mo (F=60)
Accuracy	3 - 5 % of the structure's capacity to withstand snow, water and ice loads (3)
Offset accuracy	0 - 1 % of the limiting capacity of the structure with respect to snow, water and ice loads
Offset accuracy for winter installations	0 - 10 % of the structure's capacity to withstand snow, water and ice loads (4)

(1) Based on the statistical average of the Tensio technology park.

(2) Best data rate and power level available.

(3) Accuracy may vary if a building reacts more than normal to temperature.

(4) Applicable to winter installations. Offset is reset in summer, meaning accuracy goes down to 0 - 1 % at the end of the first winter.

Certifications, Compatibility and Prerequisites

Material	ABS
Ingress protection	IP67
Analog-to-digital converter (adc) resolution	24 bit
Communication protocol	LoRaWAN (1)
Other prerequisites	Installing a LoRaWAN gateway

(1) LoRaWAN region US915.