

Sensor Transmitter Module STM 100

The extremely power saving RF transmitter module STM 100 of EnOcean enables the realization of wireless and maintenance free sensors. Power supply is provided by a small solar cell. An integrated energy store allows unrestricted functionality for several days in total darkness.

Three 8 bit A/D converter inputs and 4 digital inputs facilitate multifunctional detector systems, based on application specific passive sensing components. This allows easily and comfortable monitoring of position, temperature, illumination, pressure, etc. - or simply supervising voltages or currents.



The STM 100 module serves the 868 MHz air interface protocol of EnOcean. Together with the receiver module RCM 120 this module can be easily implemented into operation and control units for realization of different application specific system solutions.

Technical Data

Power Supply:	by Solar Cell or external (3.0-4.0 V)
Antenna:	pre-installed 9 cm whip antenna
Frequency / Transmission power / Modulation type:	868.3 MHz / max. 10 mW / ASK
Data rate / Channel bandwidth / Transmission range: .	120 kbps / 280 kHz / 300 m free field
Input Channels:	4 x digital inputs, 3 x analog inputs (8 bit resolution)
Sleep mode power consumption:	≈ 25 nA
A change of WAKE PIN status will instantly force the module to check all actual analogue and digital input values. In addition an user programmable CYCLIC WAKE UP is provided (every 1, 10 or 100 sec.). After wake up a radio telegram (input data, unique 32 bit sensor ID, checksum) will be transmitted in case of a change of any digital input value compared to the last sending or in case of a significant change of measured analogue values (different input sensitivities can be selected). In case of no relevant input change a PRESENCE SIGNAL is sent after an user configurable number of wake-ups (every wake up, every 10th or every 100th) to announce all actual measured values nevertheless (sign of life).	
Operation start up time with empty energy store:	< 10 min @ 400 lx
Illumination time for loading empty energy store to 14h operation in total darkness:	≈ 6 h @ 400 lx, ≈ 1.5 h @ 1000 lx ¹⁾
Illumination time for reloading energy store from module working limit to 14h operation in total darkness:	< 1 h @ 400 lx, < 15 min @ 1000 lx ¹⁾
¹⁾ Wake up every 100 s and RF signal transmission every 17 min. on average	
Operation time during total darkness:	e.g. ≈ 90 h ²⁾
²⁾ Energy storage cell is filled up @ 1000 lx, wake up every 100 s and RF signal transmission every 17 min. on average	
Ext. Power Supply Output:	≥ 2.7 V, 1 mA max. ²⁾ , ≥ 2 ms (during wake up time)
Ext. Voltage Reference Output:	2.048 V ± 1%, 1mA max. ²⁾ , ≥ 2 ms (during wake up time)
²⁾ total current of both outputs 1 mA max.	
Transmitting indication output (LED):	≥ 2.7 V, 2 mA max., ≈ 3x1 ms within 70 ms
Dimensions of discrete Solar Cell:	exposed area 11 x 20 mm, frame 13 x 28 mm
Dimensions of PCB:	21 x 40 x 9 mm (incl. energy store and wiring pins)
Operating Temperature:	-25 up to +65 °C
EnOcean Ordering Code:	S3001-C100

This product is CE certified and conforms to the R&TTE EU-Directive on radio equipment. The EnOcean 868 MHz radio technology can be approved for operating in the USA and in Canada.