

SENSECOM

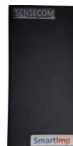
SENSECOM series represents compact IoT devices which combines internal and external sensors and inputs. There is energy saving type of IoT network SIGFOX used for data transmission. The device is in the sleep mode majority of time and awakes either periodically or based on sensors input (alarm). SENSECOM runs usually on batteries for several years. It is produced in several options for different applications, mostly for B2B. It is used in large range of use, from regular SmartCities applications like SmartMetering up to specific ones, e.g. water level measurement in deep drilled wells.



SENSECOM – Options overview and their use

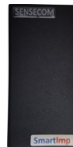
SENSECOM – AC1 Motion detection

Movement or shock detection – doors opening, cover, shield shaking, transportation (car, wagon, container), building or equipment intrusion. SENSECOM-AC1 is based on accelerometer, which detects fine movement or shock in all directions.



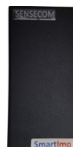
SENSECOM – AN1 Analog transmission

Linkage of industry sensors with standard analog inputs. SENSECOM-AN1 uses A/D convertor and sensible operation amplifiers to process analog input and transmit data.



SENSECOM – CM1 Protocols conversion

SENSECOM-CM1 processes and transmits data using common interfaces like RS485/422 (e.g. DLMS protocol) or general RS232 in periods of 15 minutes or longer. It allows to transmit data from industry measurement switches, industry powermeters (profiles, registers) or SmartMetering AMM.



SENSECOM – HY1, HC1 Air hygiene

Air hygiene conditions measurement (temperature, humidity) including CO2 (option HC1) is used for measurement in offices, meeting and other living rooms.



SENSECOM – HP1 Water level

Water level in deep drilled wells measurement with specific hydrostatic sensor resistant to mineral water.

SENSECOM – IC1 RFID and Bar Code Reader

Person entry into working zones (with RFID reader) in combination with purpose of entry (with BARC reader) using bar code on products, delivery notes, work orders, etc. SENSECOM-IC1 is often applied for job tracking in different working zones.



SENSECOM – ID1 RFID Reader

Person entry monitoring (into buildings, working zones, walking checkpoints, point of presence, desks, etc.). SENSECOM – ID1 can be used for monitoring of health service visits (older people, handicapped). Push button can be used to call for service or request.



SENSECOM – IM1 Impulse readers (energy, gas, water, heating)

Auxiliary measurements from power meters, gas, water or heating meters which are used often for consumption savings analysis, proforma invoicing, or emergency detection at media losses event. Application of SENSECOM-IM1 is used where monthly or more frequent reading is required (15-minute intervals or longer).



Powermeter reading is designed for standardized „SO“ output, SENSECOM-IM1 moreover can distinguish High/Low tariffication if input signal (powerless) is provided.

There is power loss or flood detection, eventually electronic seal available in SENSECOM-IM1 in addition to impulse metering functionality.

SENSECOM – KL2 Icing detection and meteo

Icing measurement (kg/m) including basic meteo (temperature, relative humidity, wind intensity and direction) for icing-critical areas for destruction warning – buildings, roofs, pillars, wiring, bridges, rope based constructions, antennas, barriers, etc.



SENSECOM – KS1 Emergency detection

Monitoring of buildings and areas (critical state infrastructure) for force measure or intrusions. It works independently on local power or data infrastructure. There are several emergency detections to be applied



for, e.g. flood, power outage, shocks, temperature or hydro... thresholds breaking.

SENSECOM – PI1 Movement infra-sensor PIR

Movement detection with PIR sensor within 5m area from sensor. It works independently on local power or data infrastructure. SENSECOM-PI1 includes shock detection and inner lightning detection (cover destruction). It sends KeepAlive message every 24h.



SENSECOM – SE1 Electronic seal

Immediate warning in case of seal manipulation (cutting, bridging of wire) used for sealed equipment, areas, transported goods. It is designed to be used with your regular metal sealing wires. SENSECOM – SE1 works the same way in majority of EU countries where SIGFOX is available, it is not restricted just to local network.



SENSECOM device types

SENSECOM	HY1 HC1*	IM1 IM2*	SE1 SE2*	ID1 IC1*	AC1 AC2*	KS1 KS2*	KL2	CM1 CM2*	AN1 AN2*	PI1	HP1
Name	Air hygiene	Impulse readers (energy, gas, water)	Electronic seal	RFID and BarCode Reader *	Motion detection	Emergency detection	Icing detection and meteo	Protocols conversion	Analog transmission	Motion infra-sensor	Water level
Primary sensors or interfaces	T, RH, CO2*	SO, contact ⁰	Ω	RFID, BARC*	Acceler.	Flood, Power sup., another sensor*	Icing, ext. T+RH, Wind intensity and direction	RS485/422, DLMS, RS232, MBUS, MODBUS	4-20mA, 0-10V, mΩ-Ω	PIR	Hydros. pressure
Applied IoT network, device class	SIGFOX, CLASS 0										
Message period in minutes (default)	60	30	N/A	N/A	N/A	N/A	Adaptive Min. 15min	15	15	N/A	720
Response message up to 10s (alarm) when parameters changed	2°C, 2%RH, 20% z CO2*	Big change	Interrupt, short circuit	RFID + BARC* Reading	Motion / shock	Flood, Power drop, ...	2°C, 2% RH, 0,5kg/1m Ice	N/A	5%	Motion	Big change
Device intrusion detection	Accelerometer, interior lighting (continuous monitoring)										
Remote adjustability	Adjustment within 24h from request in Back-end (remote adjustability of message periods or parameters threshold levels for alarms)										
Device status on delivery	Device is in full sleep, to be activated by attaching a magnet (see manual)										
Device status monitoring	Keep Alive messages daily (Operating parameters and battery status)										
Access to IoT network data	Callback into customer database, REST API in Cloud, SMS, Email, Visualization application (Bluemix and others)										
Message security in IoT network	Device certificate (transmitted message integrity) based on AES-128										
Message content security	Encryption of the AES-128 message in the CTR mode (independent of the IoT network, E2E encryption) is possible on request.										
Power supply ¹	B/A*	B/A	B	B/A*	B	B	B/A	B/A	B	B	B
Running on battery (years)	4 N/A*	2 - 8	8	N/A	1-8	8	2-4	N/A	1	2-4	8
Antenna	internal										
Operating temperatures range	-30 up to 75°C										
IP protection	IP20	IP20 IP65*	IP20 IP65*	IP20 IP65*	IP20 IP65*	IP20 IP65*	IP65	IP20 IP65*	IP20 IP65*	IP20	IP65
Device size ²	S	S V*	S V*	S M*	S V*	S V*	N	S V*	S V*	S	V
Device weight	130g 150g*	130g 200g*	130g 200g*	150g 1,2kg*	130g 200g*	130g 200g*	4kg	150g 200g*	130g 200g*	150g	200g
Color option	black / white	black grey*	black grey*	black grey*	black grey*	black grey*	grey	black grey*	black grey*	black / white	grey

⁰ Potential free contact (optionally also galvanically isolated)

¹ Power Supply B...battery, A...power supply adapter with battery backup

² Device size without adapter, bushings, etc. (H-W-D) S...135x65x30mm, M...240x190x95mm, N 265x150x100 +1000mm, V 160x80x60mm

Further abbreviations:

***Device option**

T...Temperature, RH...relative humidity, Ice - icing