SENSECOM-HP series

Communication devices functionalities overview

IoT communication device for Vibrating Wave (VW) gauges / sensors

SENSECOM devices are used to transmit values from sensors and data sources to IoT SIGFOX network either periodically or based on external stimulus or event. The HP series is designed to operate VW gauges/sensors.

Device types:

SENSECOM-HP1 is a single channel device which transmits string oscillation period of VW sensor including thermistor resistance if it is a part of the sensor

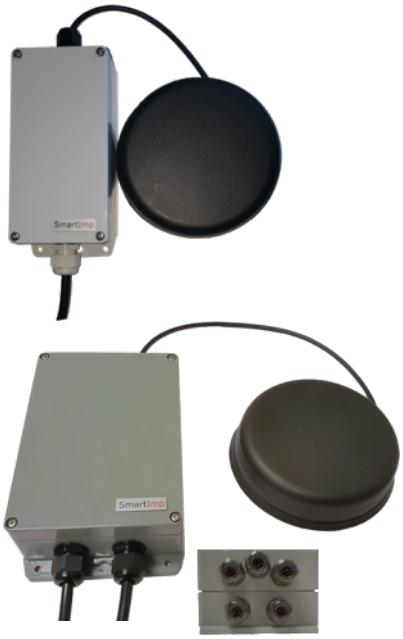
SENSECOM-HPC is a multi-channel device with one channel built-in and extendable up to 5 channels (by plug-in modules) which transmits string oscillation period of VW sensors including their thermistors if they are part of the sensor.

SENSECOM-HPCM is plug-in module for single channel applied for **SENSECOM-HPC** devices.

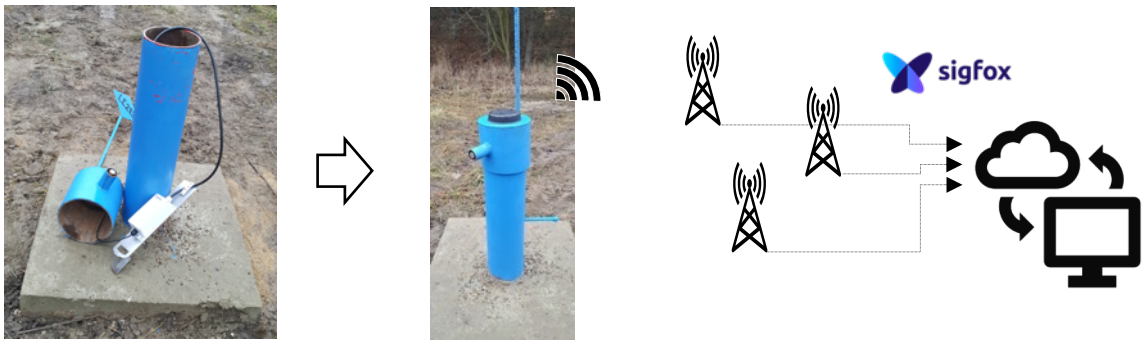
Functionalities:

- Inputs for each channel:
  - VW sensor
  - Thermistor (if it is a part of the sensor)
- Connectable VW sensors 1,2-5kHz
- Extendable up to 4* additional plug-in VW modules (channels)
- Periodical messages at pre-set intervals (30min-24h, default 12h)
- Communication over national-wide SIGFOX network to the cloud
- High availability and reliability of transmission (received simultaneously by all available base stations nearby)
- Remote parameter settings (periods, volumes, ...)
- Battery operation> 5 years
- Casing IP65, IP67-68 with silicon (ABS housing)
- Connectable ISM antenna (hat or rod type) with SMA connector

* only multichannel device SENSECOM-HPC



SENSECOM-HP1 applied for ground water elevations (pore water pressures or water levels) in boreholes/wells:



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Typical applications with VW sensors:

- VW Piezometers & Pressure Transductors for applications: Ground water elevations, Pore water pressures, Pump tests, Uplift pressures in dam foundations, Hydraulic pressures in tanks and pipelines
- VW Displacement Transducers for applications: Expansion or contraction of a joint, Displacements associated with landslides, Movement of boulders, snow, etc. on unstable slopes
- VW Tilt sensors for applications: Buildings, Dams, Embankments, Slopes, Excavation walls, Open pits

Technical Parameters

Parameters	SENSECOM-HP1	SENSECOM-HPC
Connectable sensors	VW sensors (1.5-5kHz)	
Inputs (per channel)	- Vibrating Wire (string) coil - Thermistor (1-10kΩ)	
Number of channels	1	1 - 5 (1-4 plug-in modules)
Estimated battery runtime (at 12h-message period)	>5 years	> 10years
Power supply	Lithium Battery SAFT LS 26500 7,7Ah "C", replaceable	Lithium Battery SAFT LS 33600-CNT 17Ah "D", soldered, Terminal for spare replaceable battery (incl.casing) or external power supply
Main measured values	VW period VW measurement noise level Sensor thermistor resistance	
Supporting measured values (for alarms)	Unit motion/violence (accelerometer) Unit temperature Unit humidity Processor temperature Battery (TX and idle)	
Message period	12h default (adjustable 30min-24h)	
Keep-Alive messages	Yes (interval 24h)	
IoT transmission network	**SIGFOX nationwide network** - national-wide network at ISM bandwith (868MHz) - messages are received simultaneously by all (in a given location) available base stations (redundancy ensures high reliability of transmission) - data availability at back-end typically within 5s of transmission, max 30s - message length max 12B uplink (8B downlink)	
Data access	**SIGFOX cloud** - Callback, API or CSV download from SIGFOX cloud (received datagrams from the device), source (raw) data without calibrations **SENSEPARAM.COM portal (with SQL db for data normalization)** - Callback or CSV download (normalized data, data calibration possible based on calibration tabs of particular sensors or using by polynomial function)	
Antenna	Antenna output – SMA-M connector on board Hat-type ISM horizontal antenna is supplied with 0,5m coaxial cable as a default, alternatively rode-type antenna	
Casing, dimensions*	IP65 (IP67-68 with silicon), ABS, Outside brackets, 160x80x55mm with 1+1 grommets	IP65 (IP67-68 with silicon), ABS, Outside brackets, 171x121x55 mm (lower lid) with 1+2 glands 171x121x80 mm with 1+5 glands (higher lid)
Temperature range	-25 up to 75°C	

*dimensions without glands and brackets (H x W x D)

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