

# Sensus((S))cout

The flexible radio solution



## Main characteristics

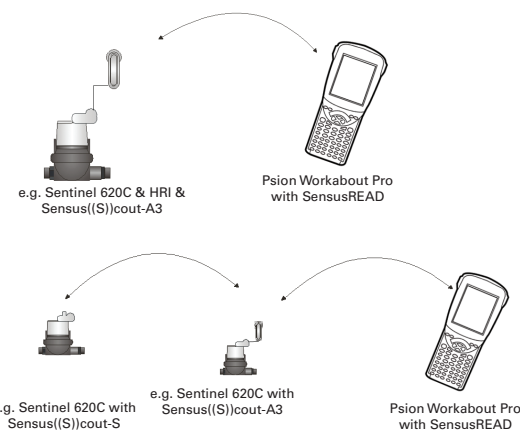
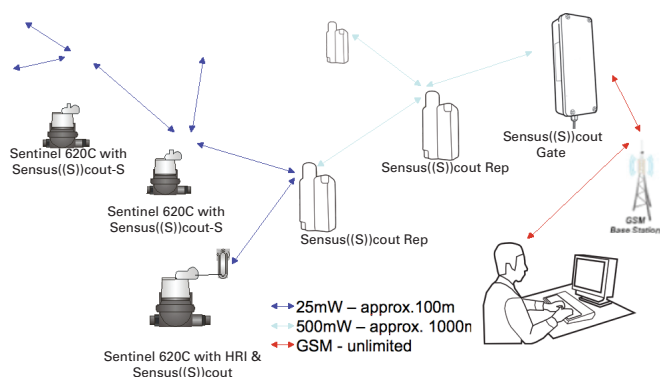
Sensus((S))cout is a 868MHz bidirectional radio system flexible in topology and application.

It was specially developed for meter reading. Available options include the collection of readings via the GPRS-Network.

Also provides a comprehensive solution for mixed applications.

Extensions or changes in the reading procedure can be easily realised.

Allows consumption meters to be read by radio using different methods.



Allows the operators to read all their meters as often as they wish and to collect the following information:

- Meter identification number
- Current meter index reading
- Stored monthly values
- Tamper detection
- Leakage and broken pipe detection
- Reverse flow volume

Sensus((S))cout enables every radio transponder usable as a repeater for other meters

# System's advantages

## Mobile meter reading

For single meters in difficult or inaccessible installations e.g. bulk water meters in a pit. The distance to the mobile reading terminal is

- line of sight 1 km
- normal conditions outside a building 100 m to 200 m
- hard conditions e.g. pit installation 20 m to 100 m

The reading is made with the PSION Workabout Pro hand held unit and SensusREAD software. The radio for the bidirectional communication is installed inside the handheld unit. SensusREAD provide facilities for

- Route planning and installation
- Reading via a route



The data is transferred to a PC via a docking station with USB connection. The data can be converted into other useful formats for evaluation or processing in the billing software. For further information about SensusREAD see leaflet LS3400

## The Components

### Independence and reliability

Through newest technology and innovative energy a stand-alone battery operation time of approx. 12 years with weekly reading is possible. (\*)

Also in difficult environmental situations like pit installations the electronics is protected by its sealed IP68 housing.

Sensus((S))cout modules demonstrate a long radio range, because the radio power used is 25mW.

Interference free data transfer is achieved by the using the European regulated radio band 868MHz.

(\*) by point to point access, no repeater function, no unaddressed wake up

### Further technical features:

Power supply from an integral lithium battery

Operating temperature range: -10 .... +55 °C

Storage temperature range: -20 .... +70 °C



## Reading with HRI

### Directly compatible with Sensus Sentinel domestic water meters (HRI prepared):

With these components Sensus Sentinel domestic water meters can be connected cost-effectively.

The Sensus((S))cout-S has an integrated radio transponder.

The Sensus((S))cout-Ax and Sensus((S))cout-Mei-Bx has the radio transponder directly connected to an HRI.

This avoids any issue of connecting two cables ends.

The Sensus((S))cout-Ax and Mei-Bx cable allows the best position for the radio transmission to be found.

Parameter such as meter start index and meter identification number can be set via the bidirectional radio protocol.

Order information:

Sensus((S))cout-S	HRI sensing technology with integrated radio transponder	68115767
Sensus((S))cout-A3	Radio transponder with HRI-A3 (reverse flow detection)	68115760
Sensus((S))cout-A4	Radio transponder with HRI-A4 (cable cut detection)	68115761
Sensus((S))cout-Mei-B3 (DN 40-125)	(reverse flow detection)	MEI4CBG2XX
Sensus((S))cout-Mei-B4 (DN 40-125)	(cable cut detection)	MEI4DBG2XX
Sensus((S))cout-Mei-B3 (DN 150-300)	(reverse flow detection)	MEI4CBG3XX
Sensus((S))cout-Mei-B4 (DN 150-300)	(cable cut detection)	MEI4DBG3XX

# Reading meters with MiniBus outputs

## The solution suitable for Sensus meters with a MiniBus output

Up to 2 of the following meters can be connected:

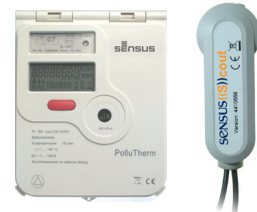
- All Sensus heating/cooling meters PolluCome/C (MiniBus version), PolluTherm, PolluStat E; where additional pulse meters are connected to these heating/cooling meters their consumption will also be transmitted
- Sensus C&I and Sentinel meters with encoder (MiniBus version)
- The radio transponder stores monthly values from the encoder; details see table below.
- HRI data units, Residia-M and HRI-Mei

After the cable connection there is no need to configure the radio transponder. The first MiniBus communication automatically sets up all of the information needed for the radio transponder.

Sufficient cable length is provided to allow the best position for the radio transmission to be found.

Order information:

Sensus((S))cout-MB	external radio transponder with one input cable for 2 MiniBus meters	48116474
Jointing Sleeve	water tight connection IP68	181784



## Reading meters with pulse outputs

e.g. PolluTherm with Sensus((S))cout-MB

## The solution suitable for every meter with a pulse output

The radio pulse transponder is available with 1, 2 or 4 inputs.

Parameter such as meter start index and pulse value can be set via the bidirectional radio protocol.

Sufficient cable length is provided to allow the best position for the radio transmission to be found

Order information:

Sensus((S))cout-P1	external radio transponder with 1 pulse inputs	48115768
Sensus((S))cout-P2	external radio transponder with 2 pulse inputs	48115762
Sensus((S))cout-P4	external radio transponder with 4 pulse inputs	48115763
Jointing Sleeve	water tight connection IP68	181784



## Available Data

(\*) only when the protocol provides this information or function is enabled.  
Sensus((S))cout-MB can transmit additional information, when it's used in the MiniBus protocol  
(\*\*) for encoder and HRI registers monthly indexes will be stored in the radio module.

Module	Sensus((S))cout-P1/P2/P4	Sensus((S))cout-A3/A4, Mei-B3/B4
Medium	Various	Water
	meter index cable cut detection battery discharge	meter index cable cut detection (A4 only resp. -Mei-B4) battery discharge
	12 monthly meter indexes, (P1 with 24) changeable to weekly, daily or other time periods	24 monthly meter indexes, changeable to weekly, daily or other time periods
	reverse flow index with date/time (P1 and P2 only) leakage/broken pipe detection with adjustable thresholds	reverse flow index with date/time (A3 only resp. -Mei-B3) leakage/broken pipe detection with adjustable thresholds

Module	Sensus((S))cout-S	Sensus((S))cout-MB	Sensus((S))cout-MB
Medium	Water	Water	Heating/Cooling
	meter id. no. module removed detection battery discharge	volume index current flow rate(*) meter id. no. battery discharge	current and monthly indexes for heating-, cooling-(*), tariff-(*) energy meter id. no. volume index battery discharge
	24 monthly meter indexes, changeable to weekly, daily or other time periods	monthly indexes (**) yearly key index (*) year before key index (*)	current and monthly indexes for 2 connected pulse meters (*) current power current flow rate
	reverse flow index with date/time leakage/broken pipe detection with adjustable thresholds		supply temperature return temperature temperature difference average power

## Bridge for distances

Repeaters work as a relay station for the received radio transponder modules and forward the data over longer distances to the handheld.

The maximum number of repeaters in this chain can be 3; the maximum of read radio transponders is unlimited.

The Sensus((S))cout-Rep uses an integral lithium battery with approx. 7 years lifetime with weekly reading. (\*)

It can transmit over a longer distance because its output power is 500mW.

The distance to the first repeater is set by the meter transponder or the reading device and is line of sight 1 km, normal conditions outside a building 100 m to 200 m, hard conditions e.g. pit installation 20 m to 100 m.

The distance between repeaters is set by the output power of the repeater and is line of sight 4 km, normal conditions 1 km.

Every radio transponder can be used as an additional repeater, but with its 25mW and lower radio distance only.

(\*) in connection with up to 20 repeaters

Order information:

Sensus((S))cout-Rep      Radio repeater for data transmission with expanded distance range      4410567



## Remote Display

### Easy display of meter readings

Display unit to indicate up to 4 consumption meters.

Programming of the radio address and user interface via 4 buttons.

Display function only, no interface to the PC.

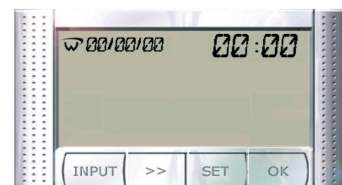
Opportunity for fixed mounting with a screw.

Not compatible with Sensus((S))cout-MB.

To expand the radio range, up to 3 repeaters can be used.

Order information:

Sensus((S))cout-Display      Remote display for up to 4 radio transponder Sensus((S))cout      4410568



## Mobile Reading

### SensusREAD

With SensusREAD and the hand held unit PSION WA pro the radio transponder modules can be read.

The Psion WA pro can be delivered with the radio modem card built in.

The mobile reading system is compatible with the further Sensus mobile reading methods as listed in the leaflet LS3100.

SensusREAD helps the reader to find meters and data endpoints with a previously defined route.

Reading errors or fraud attempts on the meter can be detected by the software's plausibility checks.

To expand the radio range, up to 3 repeaters can be used in a path.

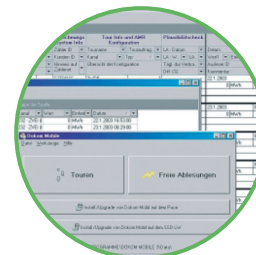
For further information about SensusREAD refer leaflet LS3400

Order information:

PsionWorkabout Pro G2      Handheld for mobile reading with build in radio      18 30 64  
modem card for Sensus((S))cout.

Docking-station      Charging station and USB connection to PC      18 40 32

SensusREAD      Software for data exchange with PSION WA pro      18 41 23



## Horizontal Fixed Network

Using a horizontal radio network with transponders, transponders used as repeaters and Sensus((S))cout-Rep long distance repeaters a GPRS Gateway Sensus((S))cout-Web can read up to 500 metering endpoints. The Gateway is connected to a FTP-Server via a GPRS connection. Network administration and readout data are managed by easy to use Microsoft Excel data sheet.

Sensus((S))cout-Web      GPRS remote access gateway      4410574



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