Pulses counter interface

Description

The device detects, counts and processes the information (water, gas, etc.) received from meters with pulse outputs, and makes it available to the SCS Bus.

The processing and accounting functions are:
- calculation of the instantaneous value (calculated as the average of two pulses received during the time unit);
- hourly, daily and monthly pulse meter (one year memory).

The pulse meter may be installed in a MY HOME Automation/Temperature Control system, or in a system only intended for the display of consumption levels. In this case a mini power supply will be required, to power the BUS, as well as a Touch Screen, for the displaying of consumptions levels.

The device may be installed in flush mounted boxes, behind traditional type devices, or also inside distribution boards, but without taking up any DIN rail space.

In order to allow the device to archive consumption information, the system must be fitted with a device capable of supplying current date and time information (e.g. Touch Screen). If this is not available, the meter will be unable to archive the data, and will continue to increase the meters of the totalizers, and to calculate the instantaneous variables (number of pulses within the time unit).

The device has been designed to save the partial data in the memory in case of power cut. The pulse counter interface is provided with socket for 6 configurators: A1, A2, A3, G, M, SM.

NOTE: the meter cannot detect pulses of less than 50 ms, and cannot be connected to sensors sending more than 5 pulses per second (minimum period 200 ms).

Front view

Technical data

Operating power supply with SCS BUS:	18 – 27 Vdc
Stand-by absorption:	7.5 mA max
Operating temperature:	0 – 40 °C

Dimensional data

Basic module: - Length: 40mm
               - Width: 40 mm
               - Height: 23 mm

Legend

1. Pulse input
2. Opto isolated pulse input repetition
3. Red LED: pulse detection
4. Green LED: device active
5. Virtual configuration pushbutton (for future applications)
6. Configurator socket
7. SCS/BUS connection

Configuration

The device can be configured by connecting the physical configurators to their own sockets (physical configuration).

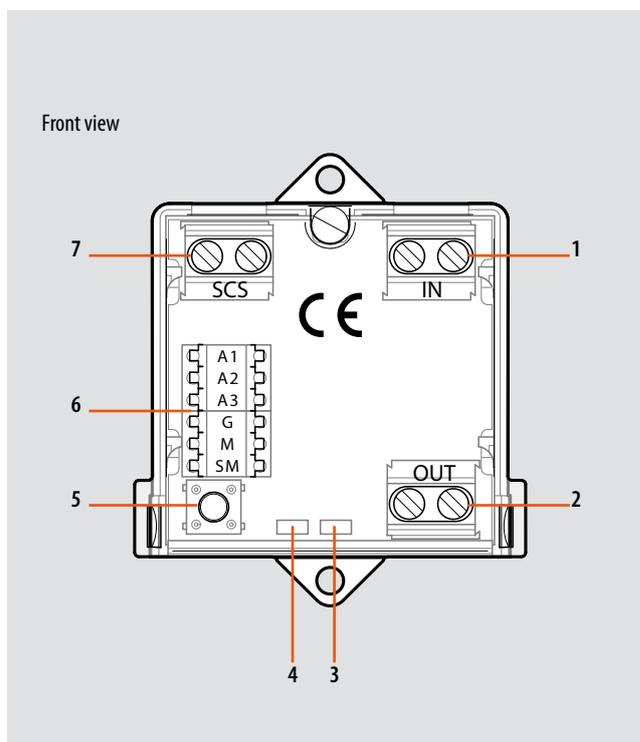The pulses counter interface is provided with socket for six configurators, which define:
- A1/A2/A3 device address (A1 for the hundreds, A2 for the tens, A3 for the units);
  The maximum number of addresses is 255;
- G the group it belongs to (future developments);
- M type of value measured, 1-4;
- SM under 0-3 mode.

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The M configurator indicates the type of value measured by the sensor as shown in the table:

Configurator in M	Measured value
1	Gas volume
2	Heat
3	Water volume
4	Generic sensor (for future uses)

When configured in 1, 2, 3, 4 mode, it processes and/or saves the following variables:
- Number of units/h: it calculates the number of pulses within the observation time, and multiplies the result by a set multiplying coefficient.
- Total number of pulses: it calculates the total number of pulses.
- Unit count profile: it archives the unit meter information for each hour of each day of the month, on the basis of the internal clock.

The SM configurator indicates if the increases of the counted and saved variables, must be performed every 1, 10, 100 or 1000, pulses as shown in the table:

Configurator in SM	Splitter
0	1
1	10
2	100
3	1000

It is generally recommended to leave SM=0. In this case, the value shown coincides with the one released by the meter pulse output.

Explanatory table:

Unit of measur to display	Meter pulses every	Splitter	Resolutions	Full scale
Litres	Litre	1 (SM=0)	1 Litre/hour	254 Litres/hour
Cubic metres	1000 Litres=1m^3	1 (SM=0)	1 m^3/ hour	254 m^3/ hour
	100 Litres	10 (SM=1)		
	10 Litres	100 (SM=2)		
	1 Litre	1000 (SM=3)		

Wiring diagrams