Cyble™ Sensor

Cyble technology for reliable water meter data transmission

Applications

The Cyble Sensor suits to various remote reading applications for residential, commercial and industrial uses. It provides:

- LF output
  - Remote reading
  - Consumption recording
- HF output
  - Flow analyses (datalogging)
  - Frequency/current conversion
  - Automatic control

- Pre-equipped register with the Cyble Target

Cyble communication modules have been designed to fulfil requirements of all water management utilities willing to remote read their water meters. As water meters are an important investment for utilities, all Actaris water meters are pre-equipped considering actual or future evolutions towards remote reading technologies. Proven by several hundred thousand installed Cyble modules, this patented technology ensures reliable, remote counting.

Cyble Compatibility

The Cyble Sensor is completely compatible with all Actaris water meters equipped with the Cyble target.

- It can be easily retrofitted and installed on meters already on the field.
- With a few easy installation steps, the meter seal and protective cap do not need to be broken or dismantled.
- Pre-equipment is identical for all pulse values.

High Reliability

With the unique patented principle backflow and pulses are detected and compensated so that meter index and remote register are always identical. The integrity and reliability of this data is key for use in billing applications.

- Magnetic tampering is impossible since the non-magnetic target is not influenced by an external magnet.
- As the detection is by change of induction the unit can be operate in floaded pits.
- It is designed to withstand harsh environments (IP68).
- The Cyble Sensor complies with E.M.C. standards for protection against electromagnetic disturbances.

Output Signals

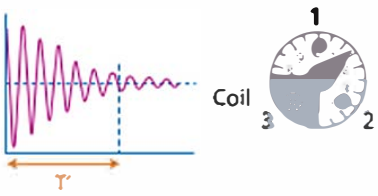
- LF (low frequency)
  - The LF output is the compensated output - backflow and pipe vibrations do not generate any pulses.
  - The modules are factory-programmed with a K factor which, when multiplied by the HF signal, enables greater pulse weight values to be transmitted.

LF = HF multiplied by K K = 1 / 2.5 / 10 / 25 / 100 / 1000

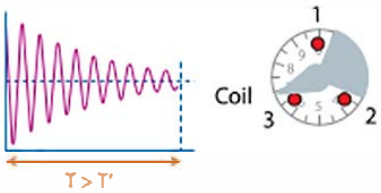
- HF (high frequency)
  The HF signal detects the rotation of the Cyble target.
  HF signal = 1 pulse per revolution.
  It represents the smallest pulse weight that can be remotely transmitted.
  It remains active whenever there is a flow, whatever the flow direction is.
- A DIR signal indicates that the HF signal corresponds to a flow of water in either the forward or reverse direction.
- Cable cut; via a ground loop current, the condition of the cable can be monitored.

Target Principle

Target present



Target absent



Special features

2-wire
- No polarity to be observed.
- The signal is equivalent to a dry contact signal (e.g. reed switch).

5-wire
- Polarities must be observed for each output.
- All signals have a positive value in relation to 0 V (black).
- The HF output signals is present whenever there is flow in the meter, in either direction.
- The DIR output is off when the HF signal corresponds to the forward direction of the water.

Technical Specifications

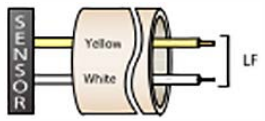
Version		2-wire	5-wire
LF signal		•	•
Cable cut detection			•
HF signal			•
Direction signal			•
Internal power supply (battery)		•	•
Signal output	Power supply	AC or DC	DC
	Max.Current (mA)	100	
	Max. voltage (V)	30	
	Polarization	No	Yes
	Type	Dry contact equivalent	Open collector
Internal battery/Life time(*)		Yes, lithium battery/12 years - Not replaceable	
Length of moulded cable	m	5	
Number of conductors		2	5
Cable dimensions	mm	6.6 x 2.3 round cable	
Conductor diameter	mm	0.9	
Working temperature	°C	-10/+55	
Storage temperature	°C	-20/+55	
Protection		IP 68	
E.M.C. standards		EN 50081-1, EN 50081-2, EN 50082-1, EN 50082-2	

(*) Under normal applications within the specified working temperature range.

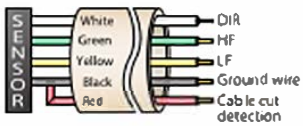
< Connections

Before quarter 2, 2004

2-wires

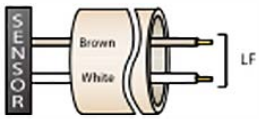


5-wires



After quarter 2, 2004

2-wires



5-wires