



Cyble™ Sensor

Cyble technology for reliable gas meter data transmission

Cyble communication modules have been designed to fulfil requirements of all gas management utilities desiring to remotely read gas meters. As gas meters are an important investment for utilities, all Itron gas meters can be pre-equipped to accommodate present or future evolutions towards remote reading technologies. Proven by hundreds of thousands installed Cyble modules, this patented technology ensures reliable, remote measurement.

FEATURES & BENEFITS

The Cyble Sensor is compatible with 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

Cyble Compatibility

The Cyble Sensor is completely compatible with all Itron gas meters equipped with the Cyble target.

- » It can be easily retrofitted and installed on meters already in 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 should be operated in flooded pits.
- » It is designed to withstand harsh environments.
- » The Cyble Sensor is not sensitive to pipe vibrations. Parasitic pulses do not disturb metering.
- » 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 pulse.

- The modules are factory-programmed with a K factor which, when multiplied by the HF signal, enables greater pulse weight values to be transmitted.

$$LF = HF \text{ multiplied by } K$$

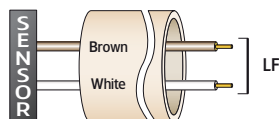
$$K = 1 / 2.5 / 10 / 25 / 100 / 1000$$

- » HF (high frequency)

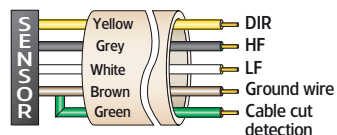
The HF signal detects the rotation of the Cyble target.
HF signal = 1 pulse per revolution.
It represents the smallest pulse weight that can be remotely transmitted. It remains active whenever there is a flow, whatever the flow direction is.
- » A DIR signal indicates that the HF signal corresponds to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

Version		2-wire (a)	5-wire (b)
LF signal		•	•
Cable cut detection		-	•
HF signal		-	•
Direction signal		-	•
Internal power supply (battery)		•	•
Signal output	Power supply	DC	DC
	Max. Current (mA)		100
	Max. voltage (V)		30
	Max. Power (W)		1
	Polarization	No	Yes
	Type	Open Collector	Open Collector
	Capacitance pF	600 (without cable**)	
Internal battery/Life time(*)	Yes, lithium battery/12 years - Not replaceable		
Length of moulded cable	5		
Number of conductors	2		5
Cable dimensions	6.6 x 2.3 round cable		
Conductor diameter	0.9		
Working temperature	-10/+55		
Storage temperature	-20/+55		
Protection	IP68		
E.M.C. standards	EN 50081-1, EN 50081-2, EN 50082-1, EN 50082-2		
(a) standard version			
(b) version possible on request			
(*) Under normal applications within the specified working temperature range.			
(**) Typical value = 100pF / meter			

CONNECTIONS



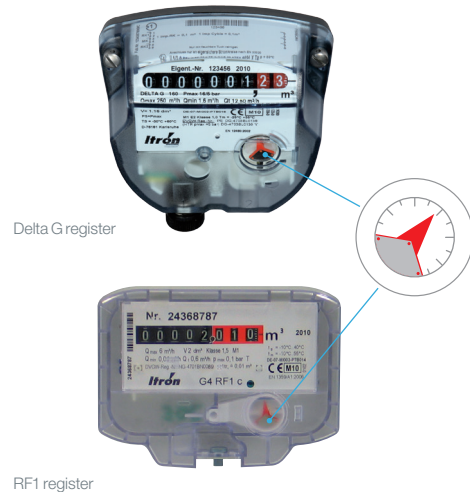
» 2-wires



» 5-wires

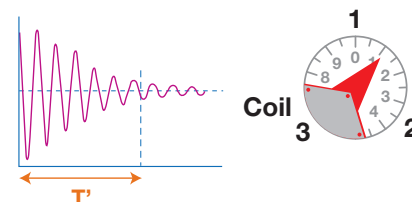
Important Note:

the fast duration of the pulse does not allow to connect electro-mechanical relays

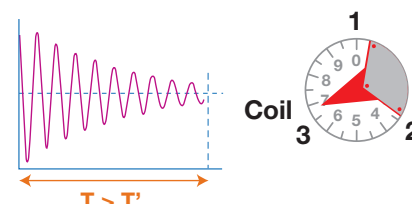


Pre-equipped registers with the Cyble Target

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 gas.

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ITRON GmbH

Hardeckstraße 2
D-76185 Karlsruhe
Germany

Phone: +49-721 5981 0

Fax: +49-721 5981 189