

Cyble™ Sensor ATEX

A Smart Pulse Transmitter for Gas Meters

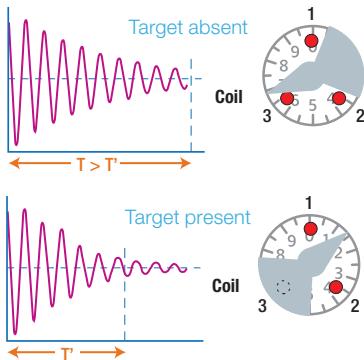
The Cyble Sensor ATEX has been designed specifically for gas utilities needing to connect electronic devices with a LF pulse input, such as volume converters to a gas meter.

It can be mounted at any time onto any Itron meter equipped with an Itron universal totaliser. It provides a completely flexible solution for current or future remote reading technologies.

PRINCIPLE OF OPERATION

The Cyble Sensor ATEX works as follows:

- » A Cyble target is fitted as a standard into the Itron universal totaliser. It rotates proportionally to the registered volume of gas.
- » 3 coils fitted in the Cyble Sensor ATEX detect the rotation of the target by measuring the change of induction in front of each coil.
- » An electronic board records the complete rotation of the target. This detects and compensates for any backflows: the meter index and remote register are identical. When a complete rotation is validated, a pulse is sent out at the output of the Sensor.



APPLICATIONS

The Cyble Sensor ATEX can be mounted onto the Itron Fluxi 2000/TZ, Delta and MZ meters.

It can be used to ensure reliable transmission of the non-corrected volume from the meter to the Itron Corus volume converter or to any volume converter using a standard low frequency input.

KEY BENEFITS

- » High reliability for remote reading.
- » Magnetic tampering is impossible.
- » Easily retrofittable (no breaking of seals) onto meters equipped with the Itron universal totaliser.
- » Long term experience: Since 1995, more than 5 M. modules in the field

The Cyble M-Bus, RF and Coder presented are also available for other applications.

They can also be used to ensure a reliable remote reading of the meter.



Technical Specifications

Intrinsic safety approval	L.C.I.E. 06 ATEX 6044 X
Intrinsic safety level	Ex II 1 G Ex ia IIC T3
Signal output	Ui ≤ 15 Volt Ii ≤ 900 mA No polarisation to be observed: wires white and yellow Type dry contact equivalent Anti-tampering (AT): wires grey and green.
Cable length	5 m
Power supply	Lithium battery - not replaceable Life time > 12 years (in normal applications within the specified temperature range)
Working temperature	-25°C to +55°C
Storage temperature	-25°C to +55°C
Protection	IP68
E.M.C standards	EN 61000-6-2, EN 61000-6-3, EN 60947-5-6

OTHERS TYPES OF CYBLE SENSORS AVAILABLE

Cyble Sensor 5 wires:

it provides the same functionalities as the Cyble Sensor ATEX and additionally has:

- » 1 signal for the flow direction
- » 1 pulse output without backflow compensation

Cyble M-Bus:

it can be used to integrate the Itron gas meters into a M-Bus network. In addition to the meter reading, Cyble M-Bus also provides smart functions such as database management.

It provides all relevant data compliant to EN 1434.

Cyble RF:

it provides all benefits of a wireless solution; higher data acquisition speed and complete accessibility to all meters even if the customer is absent.

Characteristics:

- » Protocol: RADIAN
- » Frequency carrier: 433.82 MHz

Cyble SC:

Its serial communication provides an error free value of the meter index to be transmitted with the highest reliability to the volume converter or data logger.

Standards Compliance:

- » Namur according to EN 60947-5-6.
Unidirectional ASCII protocol according to DVGW document.
- » L-Bus according to EN 13757-3 and EN 13757-6.

For more details about these 4 Cyble Sensors, please consult the relevant brochures online at www.itron.com



Fluxi 2000/TZ fitted with the universal totaliser and the Cyble Sensor ATEX



Universal totaliser fitted as standard with Cyble target

Installation of the Cyble Sensor ATEX onto the meter:



1) Mounting



2) Screwing



3) Sealing



Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: www.itron.com

For more information, contact your local sales representative or agency:

ITRON GmbH

Hardeckstraße 2
D-76185 Karlsruhe
Germany

Phone: +49-721 5981 0
Fax: +49-721 5981 189



Cyble™ Sensor

Cyble technology for reliable gas meter data transmission

Cyble communication modules have been designed to fulfil requirements of all gas management utilities willing to remote read their gas meters. As gas meters are an important investment for utilities, all Itron gas meters can be 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.

FEATURES & BENEFITS

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

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 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 operate 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 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.

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

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

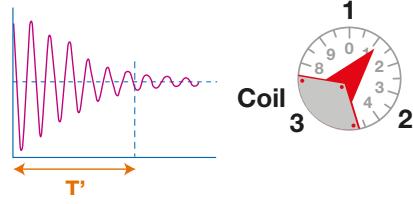
- » HF (high frequency)
The HF signal detects the rotation of the Cyble target.
HF signal = 1 pulse per revolution.
It represents the smallest pulse weight that can be remotely transmitted.
It remains active whenever there is a flow, whatever the flow direction is.
- » A DIR signal indicates that the 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			

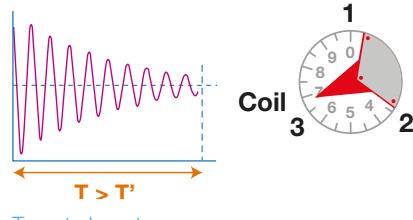


Pre-equipped registers with the Cyble Target

TARGET PRINCIPLE

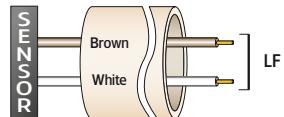


Target present

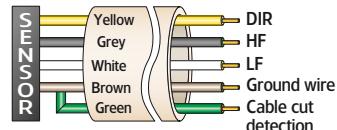


Target absent

CONNECTIONS



» 2-wires



» 5-wires

Important Note:

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

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 signal 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.



Create a more resourceful world. Visit itron.com to learn more.

ITRON GmbH

Hardeckstraße 2
D-76185 Karlsruhe
Germany

Phone: +49-721 5981 0
Fax: +49-721 5981 189



Knowledge to Shape Your Future

Cyble Sensor



Cyble Sensor Pulse Value

Meter Type	Pulse Value				
	Size	K=1	K=10	K=100	K=1000
TD8	15mm – 32mm	1 l	10 l	100 l	1 m ³
Flostar M	40mm – 100mm	10 l	100 l	1 m ³	10 m ³
Flostar M	150mm	100 l	1 m ³	10 m ³	100 m ³
Irrimag	65mm – 125mm	10 l	100 l	1 m ³	10 m ³
Irrimag	150mm – 200mm	100 l	1 m ³	10 m ³	100 m ³
Woltex	50mm – 125mm	100 l	1 m ³	10 m ³	100 m ³
Woltex	150mm – 300mm	1 m ³	10 m ³	100 m ³	1,000 m ³
Woltex	400mm – 500mm	10 m ³	100 m ³	1,000 m ³	10,000 m ³

* Please note for ALL Woltex meters purchased to 2007 only please contact your Itron representative for further clarification as they have different Pulse Weights to the information above.

Actaris Pty Ltd

ABN 38 002 706 998

8 Rosberg Road

Wingfield SA 5013

Australia

www.itron.com

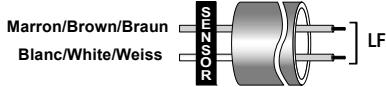
tel. +61 8 8169 2500

fax +61 8 8169 2550

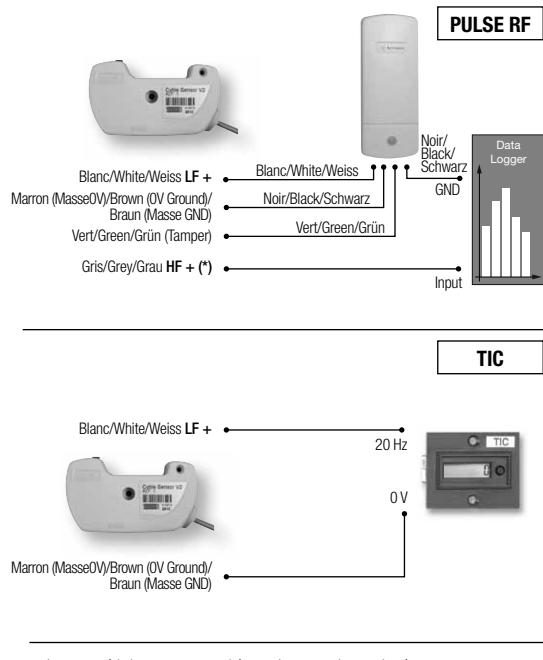
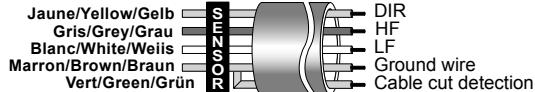
REGISTERED OFFICE : 8 ROSBERG ROAD, WINGFIELD SA 5013, AUSTRALIA


TEMPER / CABLE CUT

2 fils/wire/leiter/hilos



5 fils/wire/leiter/hilos


Itron

 9, rue Ampère
71031 Mâcon
France

 Phone: +33 3 85 29 39 00
Fax: +33 3 85 29 38 58
www.itron.com

 SYS-0005.2-ML-12.10 - SYMBOLE : A001 438-AE
© Copyright 2010, Itron, All Rights Reserved.

Poids d'impulsion / Pulse value / Impuls Wertigkeit / Peso impulso

Signal BF / LF Signal / LF Ausgang / Serial BF	$K = 1$	$K = 2,5$	$K = 10$	$K = 25$	$K = 100$	$K = 1000$
GAMME DE COMPTEURS / METER RANGE/TYP / GAMMA CONTADORES / GAMA CONTADORES						
15*	1L	1L	2,5L	10L	25L	100L
Aquadis/TD8 15/20*	1L	1L	2,5L	10L	25L	100L
25/40*	1L	1L	2,5L	10L	25L	100L
Aquadis 65	10L	10L	25L	100L	250L	1 m³
Flodis	15/32	1L	1L	2,5L	10L	25L
Nerval/Unimag 15/20	1L	1L	2,5L	10L	25L	100L
Flostar M 40/150**	10L	10L	25L	100L	250L	1 m³
Woltang M 50/100	10L	10L	25L	100L	250L	1 m³
50/125	10L	10L	25L	100L	250L	1 m³
Woltex M***	150/500	100L	100L	250L	1 m³	2,5 m³
	150/500	1 m³	1 m³	2,5 m³	10 m³	100 m³
					25 m³	100 m³
						1000 m³

* Pour les calibres 15 et 20 mm, version totalisateur 4/4 diviser les valeurs du tableau par 10.

For sizes 15 and 20mm, 4/4 register divide by 10 the table values.

Für DN15 und DN20 beim 4/4 Zählwerk um Faktor 10 teilen.

Para los calibres 15 y 20 mm, versión totalizador 4/4 dividir los valores de la tabla por 10.

** Diviser par 10 les valeurs du tableau concernant les Flostar M 40 mm fabriqués avant 1999 (numéro de série xxWExxxxx).

For 40mm Flostar M manufactured before 1999 (serial number xxWExxxxx), divide the table values by 10.

Für Flostar M DN40 der Baujahre vor 1999 (Seriennummer xxWExxxxx) um Faktor 10 teilen.

Dividir por 10 los valores de la tabla relacionados con los Flostar M 40mm fabricados antes de 1999 (número de serie xxWExxxxx).

*** WOLTEX AEAS mercado español, tienen los siguientes valores de peso de impulso para:

> DN 50, 65, 80, 125 : HF = 10 l

> DN 150: HF = 100 l

El peso de impulso para la señal de baja frecuencia se obtendrá como (peso impulso para HF) * K


Cyble™ Sensor

(F) Notice d'installation 2 & 5 fils

(GB) Installation instructions 2 & 5 wires

(D) Montageanleitung 2 & 5 Leiter

(E) Instrucciones de instalación 2 & 5 hilos

