



Technical Guide WIT3.2

# Intelis C&I

Intelis C&I is a meter designed to measure water to light commercial and industrial customers. Ideal for billing, it leverages ultrasonic technology to offer precise measurements at all flow rates. Agile, it proves equally valuable in district metering, set up ahead of residential networks to monitor water losses before individual counting. Robust alternative to traditional mechanical meters of large diameters (DN 50 - 200), Intelis C&I's technology offers a hassle-free option for heavy water clients.

## INTELIS C&I IS LOW MAINTENANCE

Relying on ultrasonic technology, Intelis C&I has no moving parts in comparison to mechanical meters, thus maintaining a high level of accuracy over its entire lifecycle with low to no field maintenance for utilities.

## INTELIS C&I SIMPLIFIES DATA COLLECTION

Compatible with communication modules\* through pulse outputs, Intelis C&I connects to wireless data collection systems to provide an accurate reading of water consumption.

## INTELIS C&I HELPS MONITOR WATER LOSSES

Intelis C&I goes beyond billing and brings ultrasonic precision to district metering applications. Ahead of residential distribution networks, Intelis helps monitor water flows, improving the identification of water losses.

## FEATURES

- » Highly accurate at both high and low flow rate
- » IP68, compatible with pit conditions
- » Battery lifetime up to 15 years, based on environmental conditions
- » Ultrasonic technology resistant to the adhesion of dirt and contaminants
- » Flow Measurement Bi-directional / cumulated index

## Technology

- » Dual beam ultrasonic technology adapted to large DN sizes
- » Free bore hole diameter for very low pressure loss
- » Insensitive to harsh water conditions, pressure peaks and peak flows for long lasting accuracy performances
- » Capable of installation in any position

## Communication

- » Pulse output for volume and flow direction
- » 2-Pulse Option Available

## Approval and Standards

- » MID, Directive 2014/32/EU,
- » ROHS 2 2011/65/EU
- » ACS certification (compliance for potable drinking water)

\*With external communication module through pulse outputs (Itron's or 3rd party).

## TECHNOLOGY DESCRIPTION



Intelis C&I DN 100

Intelis C&I is a dual beam ultrasonic meter.

A dual pair of transducers **1** is implemented in the meter body. The water velocity on each of the two chords is measured according the difference in transit time of ultrasonic signal principle. The integration of the dual chord velocity profile allows high accurate measurement of the volume flown through the meter even in the larger diameters.

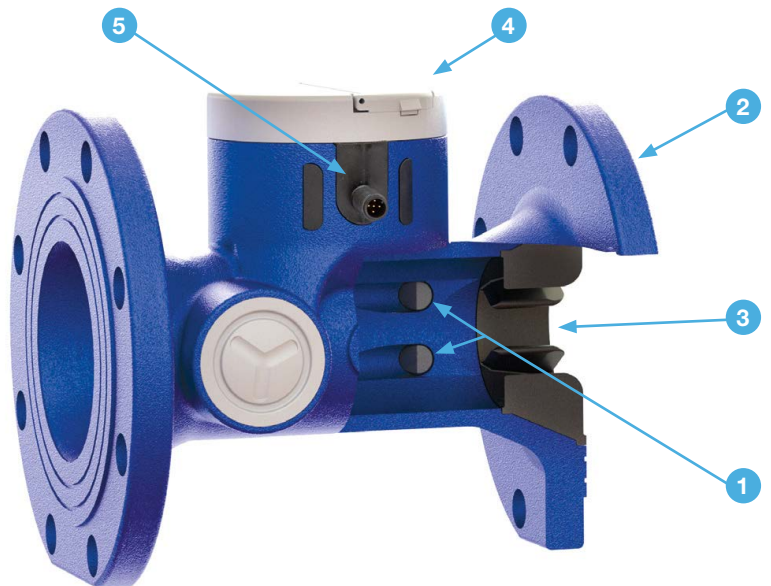
This technology allows a free bore hole of the meter flow section resulting in a very low pressure loss. It allows a large turndown approved up to a ratio of R500 according the provisions of ISO 4064/OIML R49/MID, and low starting flow, whatever the position of installation and the water temperature.

The cast iron body **2** is epoxy coated. A built-in flow conditioner **3** is minimizing the effect of flow disturbances upstream of the meter, that is approved U0/D0 according the provisions of ISO4064/OIML R49/MID.

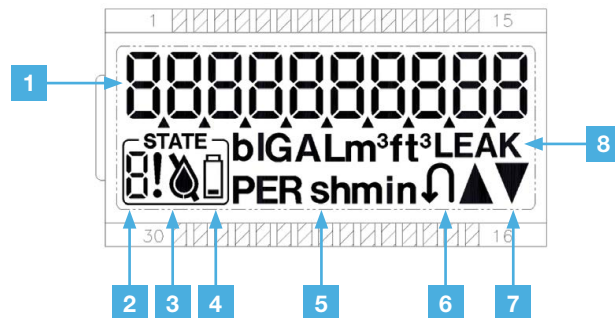
The electronics **4** dealing with signal treatment and displaying information is encapsulated in a waterproof housing. A standard M12 connector **5** allows to output bi-directional pulses. Intelis C&I is ranked IP68 and suitable with humid and flooded pit environments.



Intelis C&I indicator



## DISPLAY DESCRIPTION

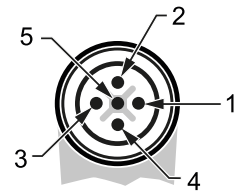


- |                                 |                                |                         |
|---------------------------------|--------------------------------|-------------------------|
| <b>1</b> Main display 10 digits | <b>4</b> Battery alert         | <b>7</b> Flow direction |
| <b>2</b> Error / Communication  | <b>5</b> Units flow and volume | <b>8</b> Leak indicator |
| <b>3</b> Air in pipe            | <b>6</b> Reverse flow          |                         |

## COMMUNICATION

Intelis C&I features a pulse output for volume and flow direction with the following characteristics:

Electrical characteristics	Open collector
Pulse weight (standard)	10 liter/pulse (other setting on request)
OFF-State max Ext. Voltage	48 VDC
ON-State max. Sink current	50mA
Pulse width (ON-State)	50ms*
M12 connector cabling	4 wires with direction and cable cut detection: 1- Not Used (Brown) 2- Pulse (white) 3- Ground (blue) 4- Direction (black) 5- Cable cut (grey or yellow/green)



Male

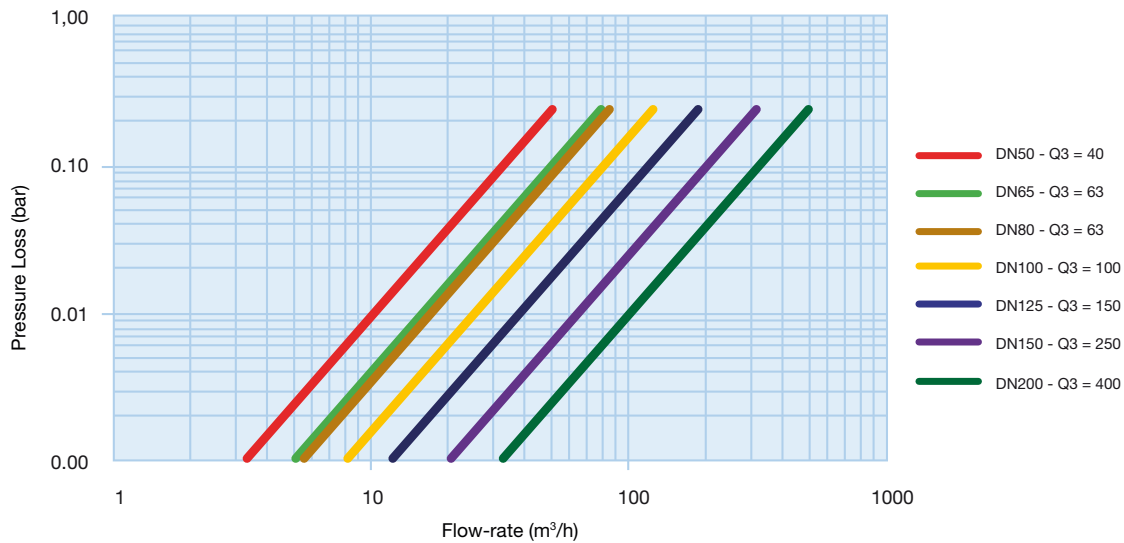
Intelis C&I is compatible through pulse output and remote modules with Itron mobile and cellular solutions Pulse Anyquest & Watermind V2.

## METROLOGICAL CHARACTERISTICS

Nominal Diameter DN		mm	50	65	80	100	125	150	200
		inches	2	2½	3	4	5	6	8
Permanent flowrate	Q3	m³/h	40	63	63	100	160	250	400
Approved Ratio	R					500			
Overload flowrate	Q4	m³/h	50	80	80	125	200	313	500
Minimum flowrate	Q1	l/h	80	126	126	200	300	500	800
Starting flowrate		l/h	20	31	31	50	78	125	200
Cut-off flowrate		m³/h	60	100	100	150	250	400	600
Maximum pressure	MAP	bar				16			
Metrological Water Temperature Range		mAT - MAT				+0.1°C ... +50°C			
Sensitivity class						U0/D0			
Pressure loss class						0.16			
Maximum Admissible Water temperature						+55°C			
Pulse weight*		Liter	1	10	10	10	10	10	10

\*Configurable with NFC

## PRESSURE LOSS



## DIMENSIONS AND WEIGHT

Nominal Diameter DN	mm inches	50 2	65 2½	80 3	100 4	125 5	150 6	200 8	
Body Material		Cast Iron - EN GJL-250 - Epoxy coated 400µ - With electrophoretic deposition							
Flanging (EN1092-1)		ISO PN16							ISO PN10 or PN16
- Flange diameter (W)	mm	165	185	200	220	240	260	340	
- ø (W1)	mm	125	145	160	180	210	240	295	
- ø Holes	mm	19	19	19	19	19	23	23	
- Nb Holes		4	4	8	8	8	8	8 (PN10) 12 (PN12)	
- Tolerances		0.2 mm for machined area - 2 mm otherwise							
Total length (L)	mm	200	200	225	250	250	300	350	
Height (H1)	mm	97	103	108	115	127	134	152	
Total Height (H)	mm	182	198.5	215.5	233.5	259.5	275.5	312	
Housing diameter (L1)	mm	110	110	110	110	110	110	110	
Weight (kg)	mm	10	12	13	15	18	25	36	

