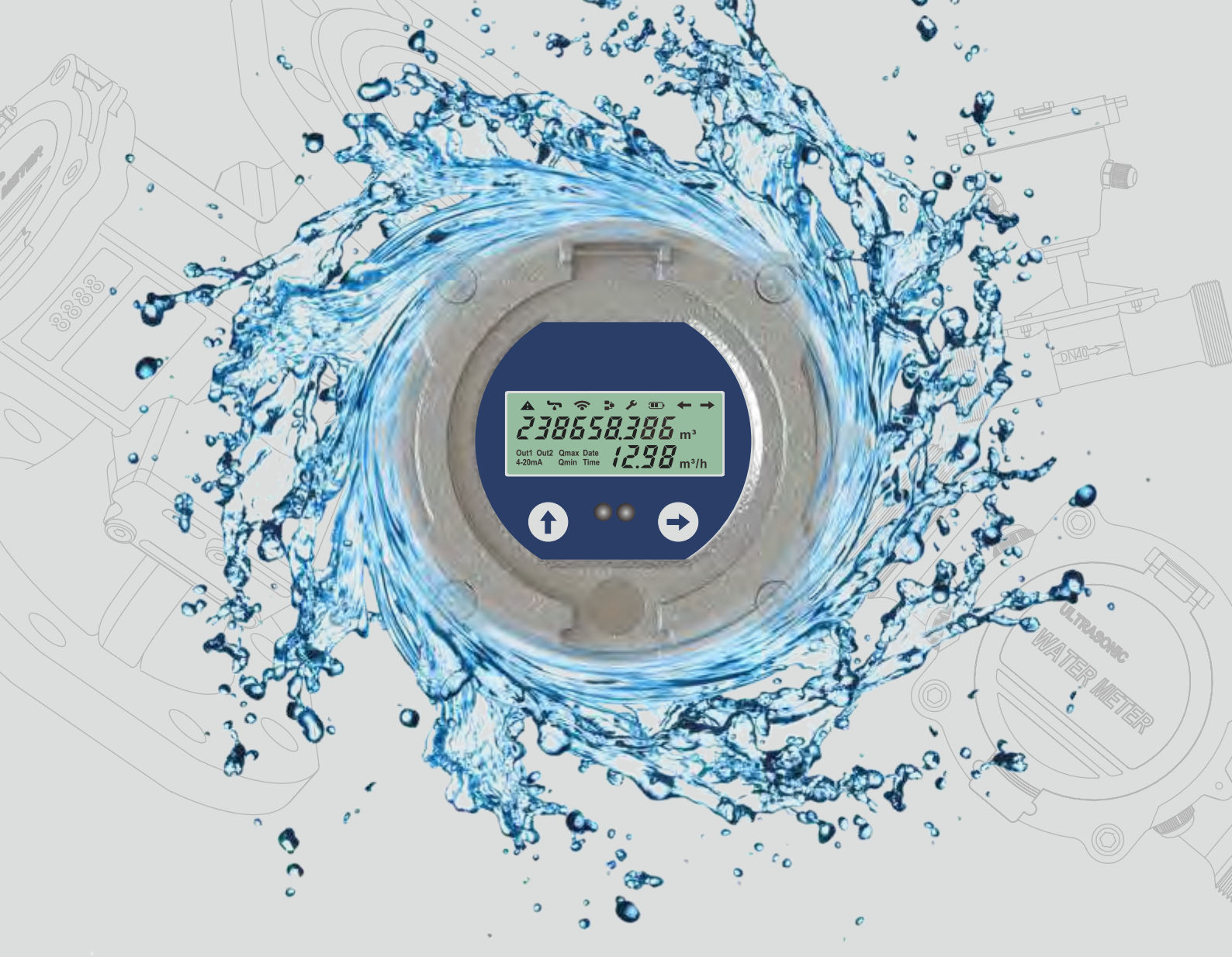
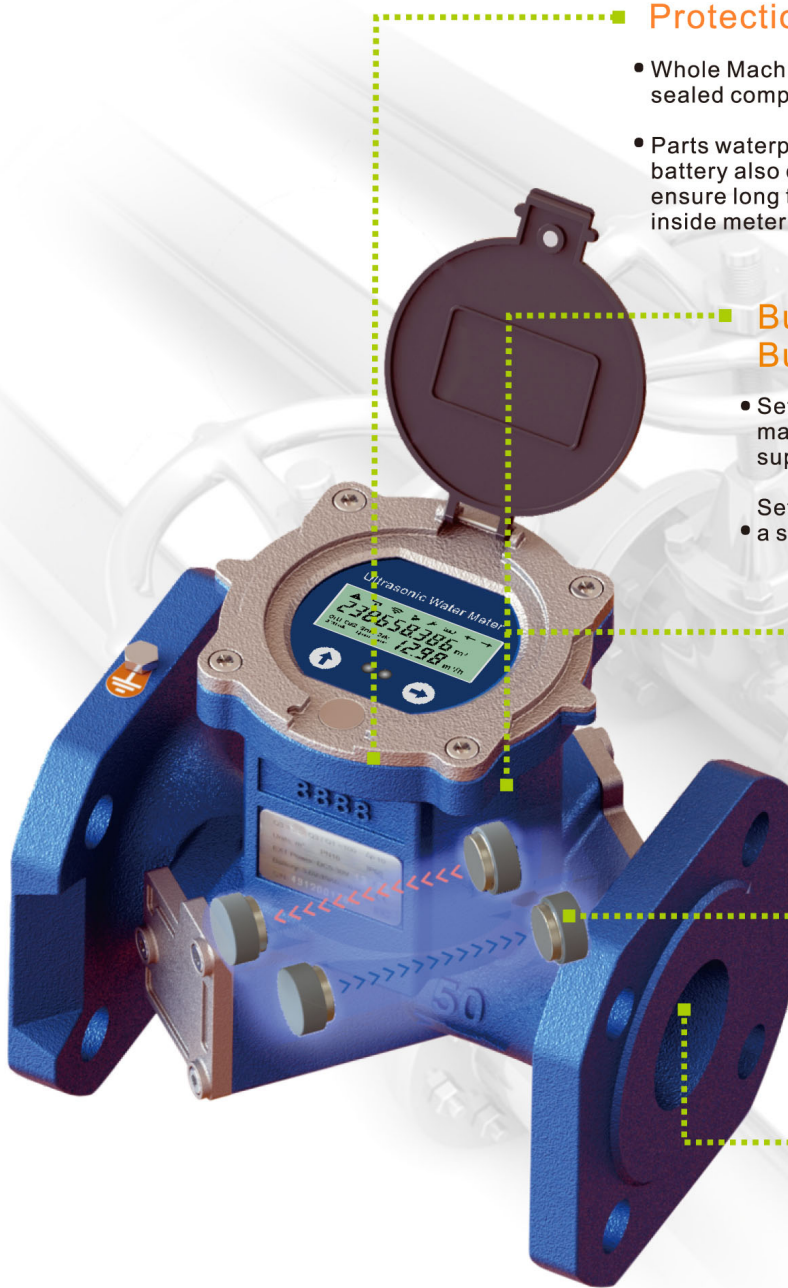


# ULTRASONIC WATER METER

## TFM-6000 WF



## ● Characteristics



### ■ Protection Class IP68

- Whole Machine Waterproof: whole machine sealed completely, reach IP 68 protection class.
- Parts waterproof: Circuit board, transducer and battery also can reach IP68 protection level, to ensure long term operation though water in the inside meter

### ■ Built-in Batch Controller Built-in Time Accumulator

- Set up the time controller by automatically or manually, so as to finish quantitative water supply or quantitative irrigation automatically.
- Set up the time- sharing flow accumulation at a set period time, to finish a gradient rate.

### ■ Heat Measurement

- With the two way PT1000 temperature transducer, which can finish the heat measurement, especially for the refrigeration and air-condition industry.

### ■ High Accuracy Measurement

- Double beam ultrasonic sensor for high accuracy.

### ■ Ultrasound Measurement, No Rotation, No Moving Parts

- Long term measurement with high accuracy, stable and reliable operation.
- Applicable to variety of water quality, including the gravel and weeds water quality.

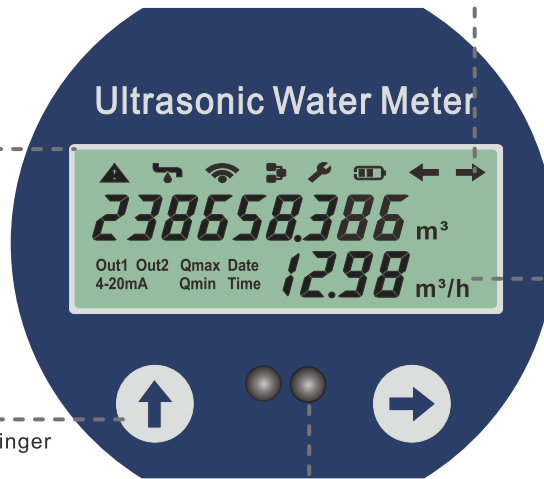
## Display and Operation

### 58X22mm LCD

Display the instantaneous flow, accumulative flow, time and various kinds of working status

### Smart Touch Key

Easy for operation with finger



### Support Bi-directional Flow Measurement

Can measure instantaneous flow and accumulative flow under the forward and backward direction separately

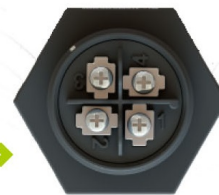
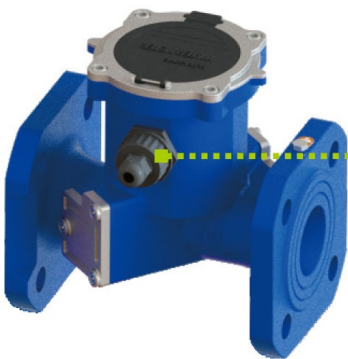
### Various of Units Selected

Accumulative flow:  
m<sup>3</sup>, ft<sup>3</sup>, GAL, L  
Instantaneous flow:  
m<sup>3</sup>/h, GPM, L/m

### Infrared Communication Interface

Support CJ-188 communication, support the M-BUS and MODBUS communication, and support upgrade software

## Communication and Signal Output



### Standard Configuration:

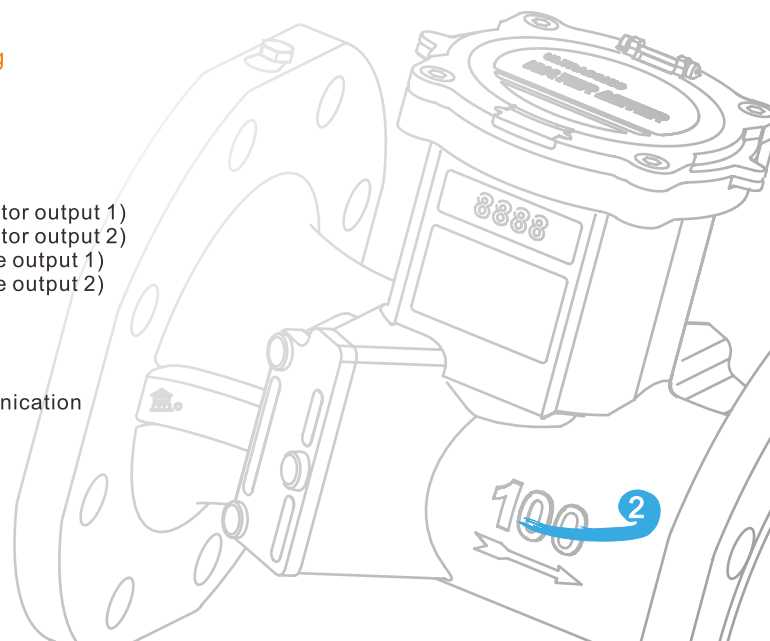
1-2 485+,485-  
3-4 V+,V-(DC8~36V)

External waterproof junction box, Can complete the wiring connection without opening the water meter cover

Provide below communication interface and output

- RS485
- M-BUS
- DC8~36V
- Two-wired system 4-20mA output
- OCT1(open collector output 1)
- OCT2(open collector output 2)
- C1(TTL level pulse output 1)
- C2(TTL level pulse output 2)

Ps: when ordering, you can choose any two of the above communication interface or output, lead to the external junction box

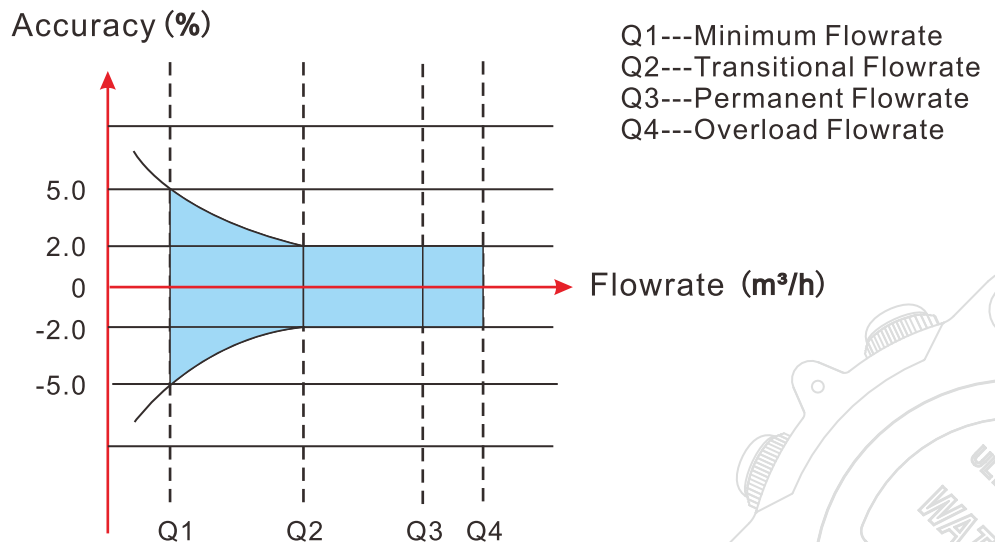




# Data Sheet

Item	Specification
Standard	ISO 4064-2005, GBT 778-2007
Measurement Liquid	Water, Sewage, Seawater(Other liquid need to customized), liquid should be full of the pipeline
Medium Temperature	0.1-30℃
Working Environment	Temperature; -10~45℃; Humidity≤100%(RH)
Working Pressure	1.6MPa (2.5Mpa optional)
The sensitivity of upstream	U3
The sensitivity of downstream	D0
Climatic and mechanical	C class
Electromagnetic compatibility class	E2 class
Communication Interface	RS485/USART/Infrared
Output Signal	Two Way OCT pulse output/TTL pulse output/One way 4-20mA output
Power supply	Built-in Lithium battery(3.6,19AhV)/DC8~36V power supply
Protection Class	IP68, can work 2 meters under water
Digital Display	Multi line 9 digital accumulative flow, 4 digital display for instantaneous flow, varies of state prompt and units
Data Storage	EEPROM/FLASH, automatically record the accumulative flow of last 512 days
Measurement Cycle	Measuring : 1 times/second ; Verification : 4 times/second
Power Consumption	≤ 2.7AH/Year, 6 years battery life

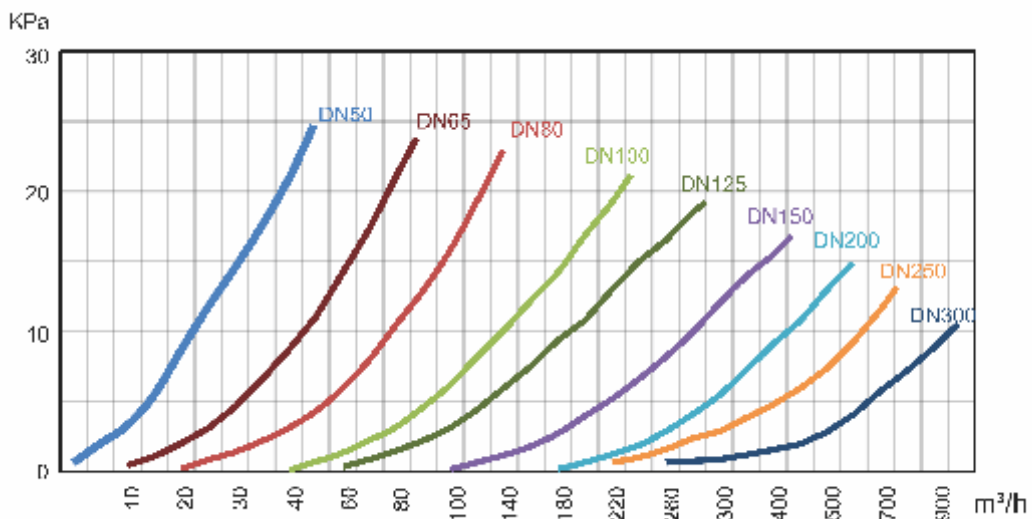
## Performance Error Curve



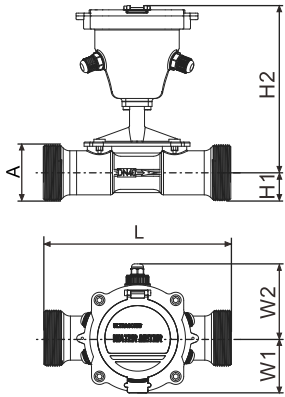
## Flow Range

Nominal Diameter (mm)	R	Flow (m <sup>3</sup> /h)				
		Starting Flowrate	Minimum Flowrate Q1	Transitional Flowrate Q2	Permanent Flowrate Q3	Overload Flowrate Q4
DN15	200	0.003	0.0125	0.020	2.500	3.125
DN20	200	0.0035	0.016	0.026	3.200	4.000
DN25	200	0.007	0.020	0.032	4.000	5.000
DN32	200	0.010	0.032	0.050	6.300	7.875
DN40	200	0.015	0.100	0.160	20.000	25.000
DN50	100	0.030	0.400	0.640	40.000	50.000
DN65	100	0.059	0.630	1.008	63.000	78.750
DN80	100	0.064	1.000	1.600	100.000	125.000
DN100	100	0.094	1.600	2.560	160.000	200.000
DN125	100	0.120	2.000	3.200	200.000	250.000
DN150	100	0.270	2.500	4.000	250.000	312.500
DN200	100	0.315	4.000	6.400	400.000	500.000
DN250	100	0.508	4.000	6.400	400.000	500.000
DN300	100	0.770	6.300	10.080	630.000	787.500

## Pressure Loss Curve



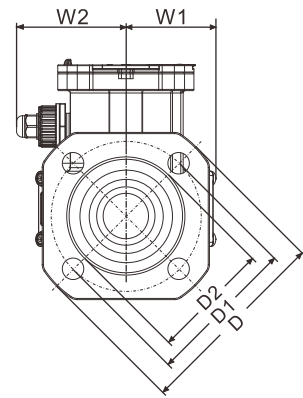
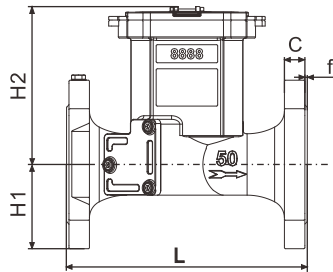
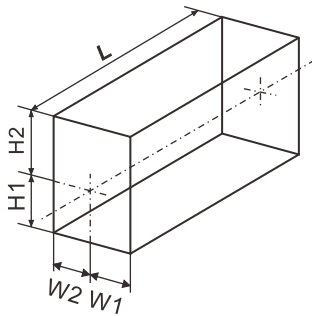
## Dimension & Weight



### DN15-DN40

Unite: mm

Nominal Size DN(mm)	Dimension					Thread Connection A	Thread Length	Weight kg	Pressure MPa
	L	H1	H2	W1	W2				
DN15	110	17.5	168	58	90	G3/4B	10	2.2	2.5
DN20	130	24	173	58	90	G1B	12.5	2.3	2.5
DN25	160	25	175	58	90	G1 1/4B	13	2.5	2.5
DN32	180	31	177	58	90	G1 1/2B	14.5	2.8	2.5
DN40	200	31	181	58	90	G2B	18	3.3	2.5



### DN50-DN300

Unite: mm

Nominal Size DN(mm)	Dimension					Flange Dimension						Weight kg	Pressure MPa
	L	H1	H2	W1	W2	Flange Diameter D	Bolt Hole Center D1	Bolt hole x Quantity Φ × n	Sealing surface		Flange thickness C		
									D2	f			
DN50	200	70	131	76	95	165	125	18×4	102	2	19	10.0	1.6
DN65	200	75	135	79	95	185	145	18×4	122	2	20	11.5	1.6
DN80	225	94	132	94	95	200	160	18×8	138	2	20	13.6	1.6
DN100	250	104	140	104	104	220	180	18×8	158	2	22	18.6	1.6
DN125	275	117	148	117	117	250	210	18×8	188	2	22	23.5	1.6
DN150	300	134	155	114	114	285	240	22×8	212	2	24	30.0	1.6
DN200	350	165	254	165	165	340	295	22×12	268	2	26	35.5	1.6
DN250	450	197	269	197	197	405	355	26×12	320	2	29	58.0	1.6
DN300	500	223	287	223	223	460	410	26×12	370	2	32	76.0	1.6

● Agricultural Irrigation and Landscaping



Time control and quantitative control irrigation system

T3 water meter with built-in batch controller function, can set 5 scheduled times per day for the program control according to local weather conditions, crop or plant growth habit, in order to achieve water-saving irrigation, scientific irrigation.

Also through the computer networking, to achieve the time and quantitative management irrigation



● Industrial Water Measurement

Production Water Supply

- Settlement of external water supply
- Settlement of internal water usage
- Two-wired system 4-20mA power supply, can be used to the plant control system conveniently.



# Complete Specifications

[www.aktek.com.tr](http://www.aktek.com.tr)



**DN15 - DN40**

DN15-DN40  
DN50-DN150  
DN200-DN300



**DN 50 -DN150**

Single channel small ultrasonic water meter (Copper)  
Dual channel bulk ultrasonic water meter (Casted ductile iron)  
Dual channel bulk ultrasonic water meter (welded carbon steel)



**DN 200 - DN300**

Letter	Parameter	Description	Remarks
<b>A</b>	Diameter	DN15~DN40 (Signal Channel) DN50~DN300(Dual Channel)	Choose the pipe diameter
<b>B</b>	Pipe Material	1 Casted ductile iron 2 Carbon steel 3 Copper 4 Stainless Steel	According to the pipe diameter
<b>C</b>	Communication Interface	0 None 1 RS 485 2 M-BUS(in development)	Standard configuration 1
<b>D</b>	Output Signal/ External Power Supply	0 None 1 DC 8-36V 2 Two-wired system 4-20mA 3 OCT1 (open-collector output 1) 4 OCT1 (open-collector output 1) 5 OCT2 (open-collector output 2) 6 C1 (TTL pulse output 1) 7 C2 (TTL pulse output 2)	Standard Configuration 1
<b>E</b>	Wireless Meter Reading	0 None 1 RF communication module(indevelopment) 2 GSM module(in development)	





**Aktek Endüstriyel Ekipman ve  
Enstrümantasyon Ltd.Şti.**  
İMES Sanayi Sitesi B Blok 204. Sk.  
No:40 Y.Dudullu Ümraniye - İstanbul

Tel.: +90 216 540 7300  
Fax: +90 216 540 7303  
[www.aktek.com.tr](http://www.aktek.com.tr)  
[info@aktek.com.tr](mailto:info@aktek.com.tr)