

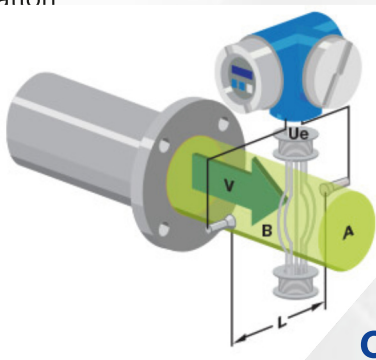
## FULL BORE ELECTROMAGNETIC FLOW METER

### KBN 100

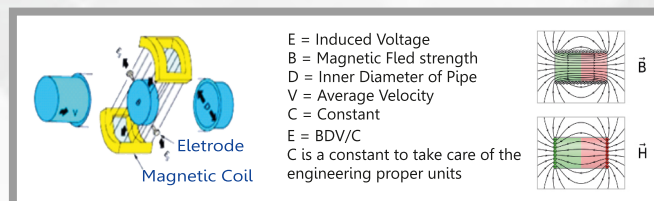
#### Applications:

Electromagnetic flow meter can be used for precise flow measurement of all electrically conductive liquids such as sludges, slurries, sewage, milk, water and waste water.

- Electromagnetic flow meter has many applications across many industries
- Chemical measurement, Water/waste water Treatment & metering
- Building Automation & plant automation
- Pulp, paper, Food & Beverage
- Advanced Metering Infrastructure
- American Water Works Association
- Automated meter reading
- Drinking water
- Electricity Meter
- Flow measurement
- Gas meter
- Meter Data Management
- Public utility
- Utility sub meter
- Water conservation



#### Operation Diagram:



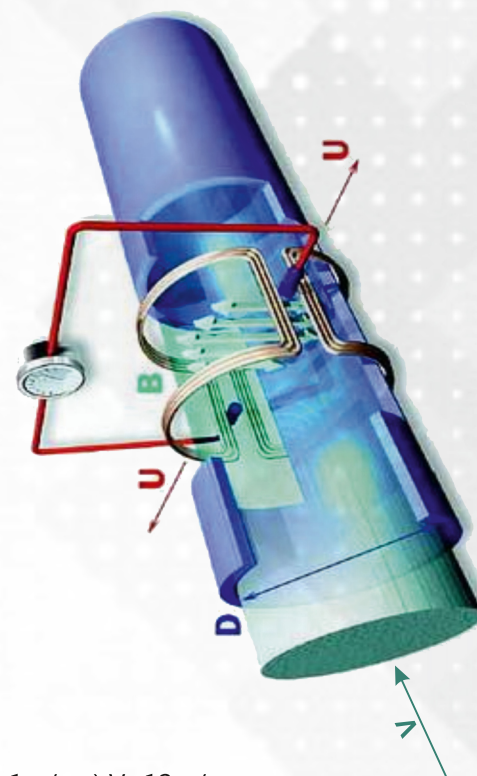
### Technical Specifications

#### Primary Flow Tube Specifications

1. **Media Pressure**- 20kg/cm<sup>2</sup>, 25 kg/cm
2. **Flow Tube Lining**- PTFE LINER, Hard Rubber LINER
3. **Operating Temp** - 0 – 130°C PTFE, RUBBER 0-60°C
4. **Materials- Pipe** – SS 304 [non magnetic & without paint]
5. **Electrodes** – SS 316/SS 316L/hastalloy C
6. **Inner lining** – PTFE / Hard rubber
7. **Coil Housing** – CS (Polyurethane Painted) on demand available SS-304, SS-316

#### Transmitter Specifications

1. **Type**- Integral / Remote Mounting
2. **Enclosure**- Aluminum Die-cast - for Amplifier / Transmitter
3. **Dimensions**- Head Mount: 100 mm (L) x 160 mm (W) x 80 mm (D)  
- **Remote Mount**: 100 mm (L) x 160 mm (W) x 80 mm (D)
4. **Cable Entries**- 3 nos. for remote / integral Transmitter
5. **Cable Glands**- PG-7 [Standard]
6. **Power Supply** - 110 V / 220 V AC 50 Hz S.P.  $\pm 10\%$  on Demand 24VDC, 12VDC
7. **Temperature** - 0 – 50 °C (Operating Ambient)
8. **Temp. Drift** - 0.010 % / °C
9. **Humidity**- 90 % R.H. max. Non-condensing
10. **Input**- Micro-volt signal proportional to flow rate from Flow Tube
11. **Outputs**- 4 – 20 mA dc in max. 110 Ohms – Proportional (0 – 100 % flow rate), RS 485, RS232
12. **Flow Range**- m<sup>3</sup>/hr, LPH, LPM & LPS
13. **Totalizer Range** - Litre & m<sup>3</sup>
13. **Min. Media** - 5  $\mu$ Siemens / cm (Conductivity)
14. **Coil Excitation**- Pulsed DC
15. **Local Display** - [a] 4 digit 7 Segment LED Display (with unit indications)  
[b] 10 Digit 7 Segment LED Display for Totalized quantity (with unit indication)
16. **Flow Velocity** - a) 1.25m/s, b) 2.5m/s, c) 5.0m/s, d) 10.0m/s - a) V=0.3m/s, b) V=1m/s, c) V=12m/s
17. **Accuracy** -  $\pm 0.5\%$  (10 % to 90 % of calibrated range in ref. conditions)
18. **Ref. Conditions**- Power supply nominal  $\pm 10\%$  Temperature 27°C  $\pm 2^\circ$ C
19. **Repeatability**-  $\pm 0.2\%$  of reading
20. **Ingress Protection** - IP – 65 Equivalent On demand –IP 67,68 Flame Proof , Explosion Proof, **Water proof**



### Flow Rate Table

Flow rates with velocity						
METER SIZE		Flow Rates ( in m <sup>3</sup> / hr ) at different velocities				
Inch	DN	1.00 m/s	1.25 m/s	2.50 m/s	5.00 m/s	10.00 m/s
0.5	15	0.636	0.795	1.59	3.18	6.36
0.75	20	1.131	1.41375	2.8275	5.655	11.31
1	25	1.767	2.20875	4.4175	8.835	17.67
1.25	32	2.895	3.61875	7.2375	14.475	28.95
1.5	40	11.95	14.9375	29.875	59.75	119.5
2	50	7.068	8.835	17.67	35.34	70.68
2.5	65	11.95	14.9375	29.875	59.75	119.5
3	80	18.907	23.63375	47.2675	94.535	189.07
4	100	28.2	35.25	70.5	141	282
5	125	44.18	55.225	110.45	220.9	441.8
6	150	63.62	79.525	159.05	318.1	636.2
8	200	113.1	141.375	282.75	565.5	1131
10	250	176.7	220.875	441.75	883.5	1767
12	300	254.5	318.125	636.25	1272.5	2545
14	350	346.4	433	866	1732	3464
16	400	452.4	565.5	1131	2262	4524
20	500	706.9	883.625	1767.25	3534.5	7069
24	600	1018	1272.5	2545	5090	10180
28	700	1385	1731.25	3462.5	6925	13850
32	800	1810	2262.5	4525	9050	18100
36	900	2290	2862.5	5725	11450	22900

### Installation & Commissioning of Primary Flow Tube

The Primary Flow Tube can be installed at any point in the pipe run either horizontal or vertical provided the following conditions are satisfied as per figure 1.1 / 1.2 / 1.3 do not install flow meter as per Figure 1.4

- 1) The direction of flow through the pipe is the same as indicated on the primary flow tube by a red arrow.
- 2) Straight lengths of 5D on upstream and 3D on downstream, measured from the Electrode axis is maintained.
- 3) If disturbances like cork screwing or vortex flow conditions are present straight lengths should be increased or flow straightness should be used. Flaps, slide gates, valves etc should be arranged at a distance of at least 3D downstream of primary flow tube.
- 4) Installations are as under

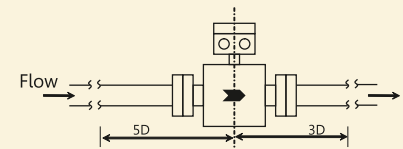
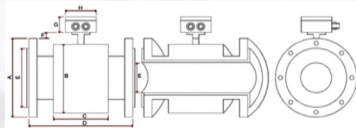


Figure No. 1.1

### Dimension

Dimensions



Construction

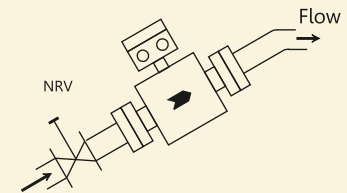
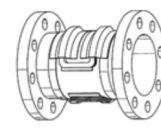


Figure No. 1.2

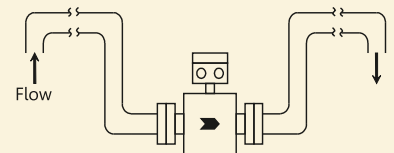


Figure No. 1.3

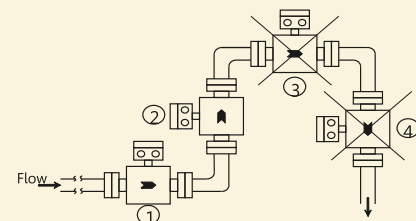


Figure No. 1.4

DN SIZE	METER SIZE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
6	?"	88.9	130	84	200	34.9	35	100	80
10	?"	88.9	130	84	200	34.9	35	100	80
15	½"	88.9	130	84	200	34.9	35	100	80
20	¾"	98.4	130	84	200	42.9	35	100	80
25	1"	107.9	130	84	200	50.8	35	100	80
32	1¼"	117.5	130	84	200	63.5	35	100	80
40	1½"	127.0	130	84	200	73.0	35	100	80
50	2"	152.4	156	84	200	92.1	35	100	80
65	2½"	177.8	184	84	200	104.8	35	100	80
80	3"	190.5	195	84	200	127.0	35	100	80
100	4"	228.6	233	115	235	157.2	35	100	80
125	5"	254.0	258	120	235	185.7	35	100	80
150	6"	279.4	284	120	240	215.9	35	100	80
200	8"	342.9	348	150	290	269.9	35	100	80
250	10"	406.4	412	200	390	323.8	35	100	80
300	12"	482.6	490	250	490	381.0	35	100	80
350	14"	533.4	540	300	540	412.7	35	100	80
400	16"	596.9	603	340	590	469.9	35	100	80
450	18"	635.0	641	340	590	533.4	35	100	80
500	20"	698.5	706	340	590	584.2	35	100	80
600	24"	812.8	820	400	650	692.1	35	100	80
700	28"	925	935	430	700	798.0	35	100	80



## ANALYTICAL INSTRUMENT PH / CONDUCTIVITY (TDS) METER & CONTROLLER



KBN Solutions provide wide range of instruments with different types as per the industrial requirements, we provide

Sensor housing is designed to mount at by-pass line, thereby gives you convenient mounting of sensor and housing.

We supply industrial standard pH/TDS sensor along with this meter to give you best performance.



MODEL NO: KBN - 201



pH & TDS Meters made available by KBN Solutions are applicable in every area such as agricultural, chemical, pharmaceutical, research institutes, bio-technology laboratories, hospitals etc. These devices have been designed with respect to the scientific precision that is accepted in analytical instruments requirements. The offered Ph & TDS Meters come with advanced microprocessors as well as provision of auto temperature compensation that is highly desired in analytical instruments. Microcontroller based pH meters and is considered to be an ideal choice for carrying out high end pH measurements. Further, these pH Meter is scientifically designed for achieving maximum stability and quick results. The range offered by us as pH & TDS Controllers Transmitters & indicators in different requirements Like Panel, field, flameproof & Bench top.

### Salient Features:

- Advanced micro controller based design
- Full 4 Digit, 14mm red LED display for two different parameters with Error code for self diagnosis for easy trouble shutting.
- User Pass code provision for Authorized settings for change as per application requirement
- Isolated proportional Retransmitting Output options 4-20 mA, 0-2 Volt, 0-5 Volt, 0-10 Volt
- Temperature Compensation: Auto and Manual auto switching mode
- Software settings allow you for your regular calibration of instruments in the easiest way.
- Available in panel type, field type, and Flame proof and weather proof version on customer request

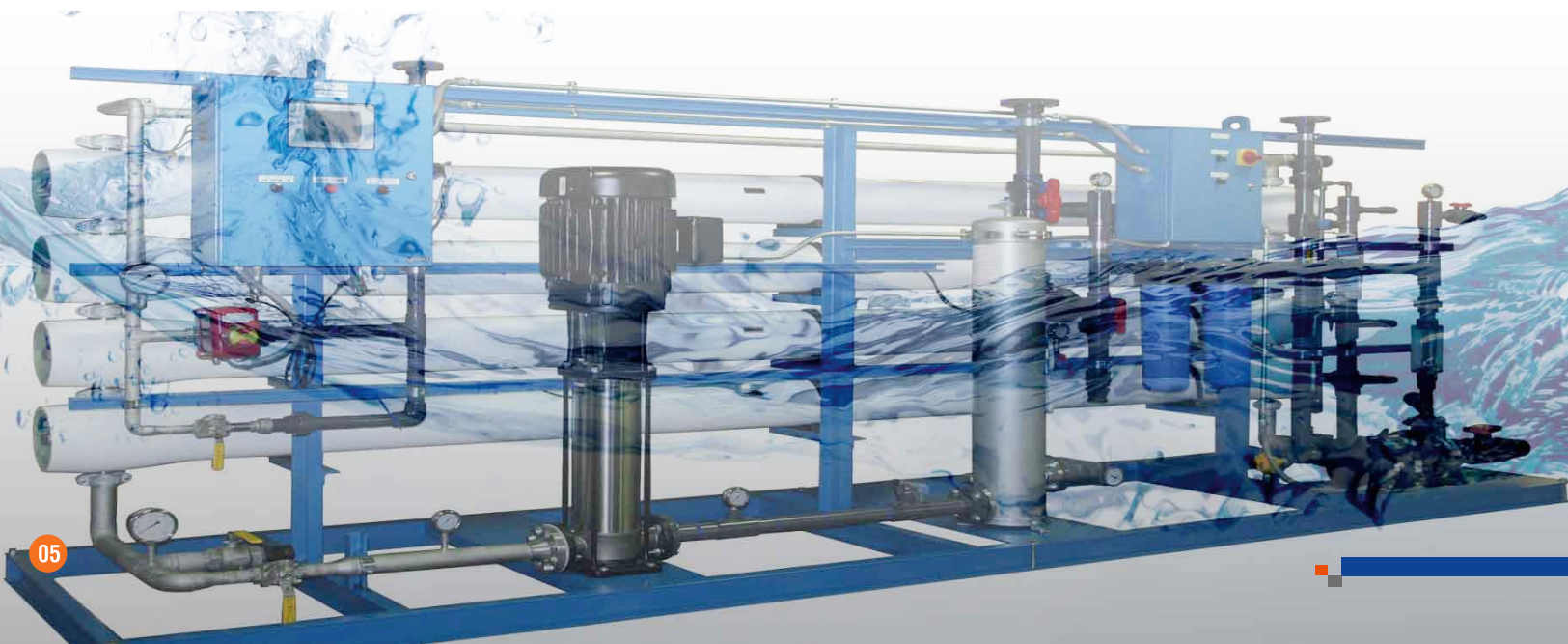


### Technical Specification chart For PH Meter

Parameter	pH	mV	Temperature Range
<b>Range</b>	0-14.00 pH	0 - ± 1999.9 mV	0 - 100 °C
<b>Resolution</b>	0.01 pH	0.1mV	0.5 °C
<b>Accuracy</b>	±0.01 pH	± 0.1 mV	± 0.1 °C
<b>Temperature Compensation</b>	Auto	PT100	0 - 100 °C
	Auto	PT1000	0 - 100 °C
	Manual	--	0 - 100 °C
<b>Calibration</b>	4.00 pH, 7.00 pH, 9.20 pH any Std. Solution		
<b>Display</b>	pH	Full four Digit LED 7 Segment	
	TEMP	Full four Digit LED 7 Segment	
	Maximum	0 to 9999 Counts	
<b>Keyboard</b>	4 Keys, Soft Touch Membrane Type		
<b>Input impedance</b>	Less than 100 mega Ohm		
<b>Accuracy</b>	±0.5% full scale		
<b>Output (Transmitter)</b>	4-20mA		
<b>Relay Set Point (Controller)</b>	Set Point 1	0.00 14.00 pH	
	Set Point 2	0.00 14.00 pH	
<b>Response time</b>	0.33 sec		
<b>Dimensions</b>	Panel	96 x 96 x 85 mm	
	Filed	120 x 140 x 70 mm	
	Table	100 x 140 x 85 mm	
<b>Weight Instrument</b>	0.4 Kg (Approx.)		
<b>Power</b>	230 V ± 10% AC, 50 Hz		
<b>Accessories</b>	Combination pH Electrode, Temperature Probe(PT100 / PT1000), pH Electrode Stand, Buffer Tablets (7.0 & 4.0 pH), Operation Manual		

### Technical Specification chart conductivity meter

Parameter	Conductivity	mV	Temperature Range
<b>Range</b>	0 -20.00 µS	0 - ± 1999.9 mV	0 - 100 °C
	0 -200.0 µS	0 - ± 1999.9 mV	0 - 100 °C
	0 -200.0 µS	0 - ± 1999.9 mV	0 - 100 °C
<b>Resolution</b>	0.01	0.1mV	0.5 °C
<b>Accuracy</b>	±0.01	± 0.1 mV	± 0.1 °C
<b>Temperature Compensation</b>	Auto	PT100	0 - 100 °C
	Auto	PT1000	0 - 100 °C
	Manual	--	0 - 100 °C
<b>Calibration</b>	1.00 µS 2000 µS any Std. Solution		
<b>Display</b>	Conductivity	Full four Digit LED 7 Segment	
	TEMP	Full four Digit LED 7 Segment	
	Maximum	0 to 9999 Counts	
<b>Keyboard</b>	4 Keys, Soft Touch Membrane Type		
<b>Input impedance</b>	Less than 100 mega Ohm		
<b>Accuracy</b>	±0.5% full scale		
<b>Slope</b>	98 -100%		
<b>Response time</b>	0.33 sec		
<b>Output (Transmitter)</b>	4-20mA		
<b>Relay Set Point (Controller)</b>	Set Point 1	Range : 0 - 2000 µS	
	Set Point 2	Range : 0 - 2000 µS	
<b>Dimensions</b>	Panel	96 x 96 x 85 mm	
	Filed	120 x 140 x 70 mm	
	Table	100 x 140 x 85 mm	
<b>Weight</b>	0.5 Kg (Approx.)		
<b>Power</b>	230 V ± 10% AC, 50 Hz		
<b>Accessories</b>	Combination Conductivity Electrode & Temperature Probe (PT100/PT1000) Operation Manual		



## INSERTION TYPE ELECTRO MAGNETIC FLOW METER

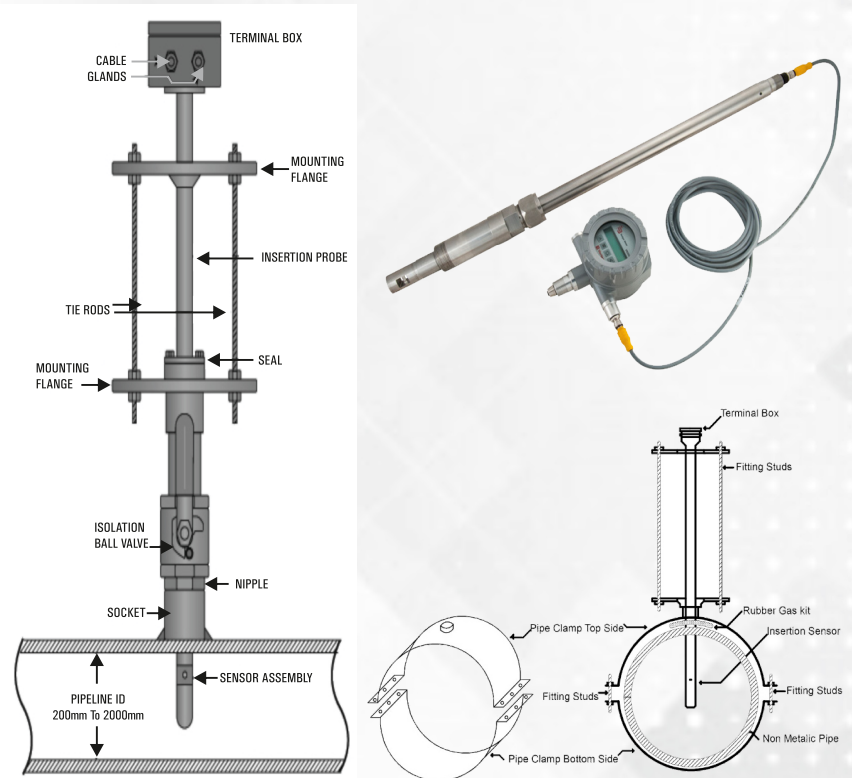
MODEL NO: KBN - 301

### Insertion Feature

- ✓ Field interchangeable electronics
- ✓ High linearity due to characteristic magnetic field
- ✓ High long-term stability and reliability
- ✓ Flow tube sizes 125 mm to 900 mm & above
- ✓ Based on Faraday's law of electromagnetic induction
- ✓ Absolute zero stability and noise elimination due pulsed DC excitation
- ✓ Coil assembly in hermetically sealed welded construction
- ✓ Integral or remote transmitter

### Specification

1. **Media Pressure**- 20kg/cm<sup>2</sup>, 25 kg/cm
2. **Ambient Temp** - 0 – 60 °C
3. **Materials**- Pipe – SS 304 [non magnetic & without paint]  
**Electrodes** – SS 316/SS 316L/has alloy C  
**Output Signal:** 4-20 mA, RS 485, RS 232  
**Transmitter Specifications**
  1. **Type**- Integral / Remote Mounting
  2. **Enclosure**- Aluminum Die-cast - for Amplifier / Transmitter
  3. **Dimensions**- Head Mount: 100 mm (L) x 160 mm (W) x 80 mm  
- Remote Mount: 100 mm (L) x 160 mm (W) x 80 mm (D)
  4. **Cable Entries**- 3 nos. for remote / integral Transmitter
  5. **Cable Glands**- PG-7 [Standard]
  6. **Power Supply** - 110 V / 220 V AC 50 Hz S.P. ± 10 %
  7. **Temperature** - 0 – 50 °C (Operating Ambient)
  8. **Temp. Drift** - 0.010 % / °C
  9. **Humidity**- 90 % R.H. max. Non-condensing
  10. **Input**- Micro-volt signal proportional to flow rate from Flow Tube
  11. **Flow Range**- m<sup>3</sup>/hr, LPH, LPM & LPS
  12. **Totalize Range** - Lit & m<sup>3</sup>
  13. **Min. Media** - 5 μ Siemens / cm (Conductivity)
  14. **Coil Excitation**- Pulsed DC
  15. **Local Display** - [a] 4 digit 7 Segment LED Display (with unit indications)  
[b] 8 Digit 7 Segment LED Display for Totalized quantity (with unit indication)
  16. **Flow Velocity** - A) 1.25m/s, B) 2.5m/s, C) 5.0m/s, d) 10.0m/s  
- A) V=0.3m/s, B) V=1m/s, C) V=12m/s
  17. **Accuracy** - ± 1% (10 % to 90 % of calibrated range in ref. conditions)
  18. **Ref. Conditions**- Power supply nominal ± 10% Temperature 27°C ± 2°C
  19. **Repeatability**- ± 0.2 % of reading
  20. **Ingress Protection** - IP – 65 Equivalent/ IP 68 **Water Proof** (optional)



### Flow Rate Table

Flow rates at velocity						
METER SIZE		Flow Rates ( in m3 / hr ) at different velocities				
Inch	DN	1.00 m/s	1.25 m/s	2.50 m/s	5.00 m/s	10.00 m/s
5	125	44.18	55.225	110.45	220.9	441.8
6	150	63.62	79.525	159.05	318.1	636.2
8	200	113.1	141.375	282.75	565.5	1131
10	250	176.7	220.875	441.75	883.5	1767
12	300	254.5	318.125	636.25	1272.5	2545
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28	700	1385	1731.25	3462.5	6925	13850
32	800	1810	2262.5	4525	9050	18100
36	900	2290	2862.5	5725	11450	22900

Above size detail providing on demand.