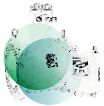




Partially-filled Electromagnetic Flow Meter



QTLD/F Partially-filled Electromagnetic Flow Meter



Description

QTLD/F partially-filled flowmeter is composed of converter, flow sensor and level sensor. The user only needs to enter the diameter of pipe, the non-full pipe flowmeter will automatically calculate the flow rate, and automatically display the instantaneous flow, total flow, velocity, height, etc. It can measure liquid volume min 10% of full pipe. It is especially suitable for the needs of municipal rainwater, waste water, sewage discharge and irrigation.



Suitable For Low Flow Rate

Can measure liquid volume min 10% of full pipe

Small Blind Zone 60mm

QTLD/F Partially-filled Electromagnetic Flow Meter



Features

- Partially filled pipe electromagnetic flow meter can measure partially filled pipe liquid flow, it is very popular in irrigation.
- Its can use solar power supply, this type is very suitable for remote areas where has no industrial power supply.
- It adopts safe and durable material, service life is longer than normal products. Normally, it can work at least 5-10 years or longer.
- And we have already got food grade certificate for its liner so it can be used for drinking water, underground water, etc. Many drinking water companies use this type in their big size pipelines.
- We use an accurate mini ultrasonic level meter for its liquid level measurement then the flow meter will record the liquid level and use this parameter to measure liquid flow. This ultrasonic level meter's blind area is very small and its accuracy can reach $\pm 1\text{mm}$.



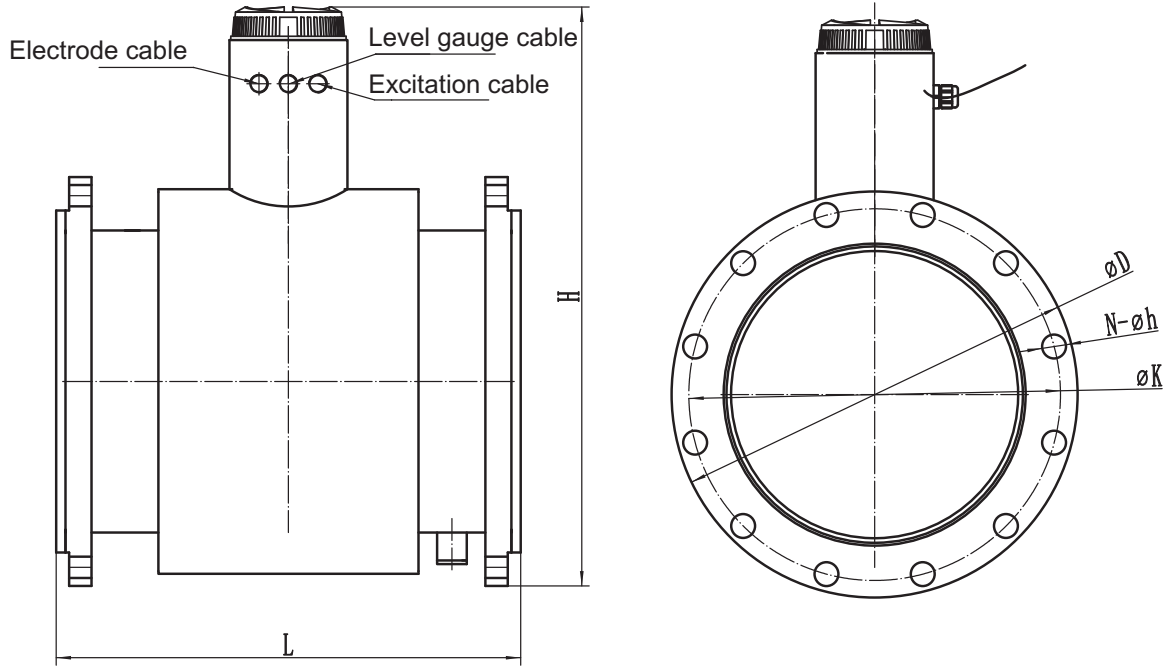
Technical Data

Size	DN200-DN3000 (8"-120")	
Accuracy	$\pm 2.5\%$ of reading at flow velocity $\geq 0.5\text{m/s}$	
Velocity	0.1~15 m/s	
Structure	Remote, cable length 10m standard, 100m max	
Conductivity	$> 5 \mu\text{S/cm}$, demineralized water $> 20 \mu\text{S/cm}$	
Protection Grade	Transmitter: IP65	
	Sensor: IP65 standard, IP68 (submersible, only available for remote type)	
Electrode	SS316L, Hastelloy C, Hastelloy B, Titanium, Tantalum, Platinum-iridium	
Power Supply	85~250 VAC (50/60 Hz), 20~36 VDC	
Power Consumption	$< 20\text{W}$	
Signal Output	Analog	4~20mA (load resistor 0~750 Ω)
	Frequency	Forward & reverse flow output with a frequency range of 1~5000Hz
	Alarm	Two isolated open collector transistor (OCT) outputs for alarm signals
Communication	Rs485 MODBUS standard, HART, GPRS, PROFIBUS optional	
Display	LCD Display, 128X128mm, three lines, 4 buttons	
Ambient Temperature	$-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$	
Fluid Temperature	$-20^{\circ}\text{C} \sim 120^{\circ}\text{C}$	
Liner Material	PTFE ($-20^{\circ}\text{C} \sim 150^{\circ}\text{C}$, DN200-DN1600)	
	FEP ($-20^{\circ}\text{C} \sim 120^{\circ}\text{C}$, DN200-DN1800)	
	PFA ($-20^{\circ}\text{C} \sim 160^{\circ}\text{C}$, DN200-DN800)	
	Polyurethane ($-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$, DN200-DN1600)	
Flange	DIN PN6 / PN10 / PN16 / PN25 / PN40 / PN64 / PN100	
	JIS 10K / 20K / 30 K	
	ANSI 150# / 300# / 600#	
Sensor Material	Measuring tube: SS304	
	Flange & housing: carbon steel (standard), SS304 / SS316 optional	
Transmitter Material	Aluminium alloy with epoxy painting	
Nominal Pressure	0.6Mpa, 150lb optional	
Display	Instantaneous flow, total flow, flow velocity	
Function	High and low alarm, empty pipe alarm, exciting alarm, self-diagnosis	
Totalizer	Three built-in totalizers: forward flow, reverse flow and net flow	
Display Unit	L/s, L/m, L/h, m ³ /s, m ³ /m, m ³ /h, UKG, USG, gal/s, gal/m, gal/h, kg/s, kg/m, kg/h, t/s, t/m, t/h	
Language	English	

QTLD/F Partially-filled Electromagnetic Flow Meter



Features



DN200-DN1000 Drawing (DIN Flange), Other flange standards are available

Diameter		Nominal pressure	L (mm)	H (mm)	ϕA (mm)	ϕK (mm)	n* ϕh (mm)
(mm)	Inch						
DN200	8"	0.6	400	494	320	280	8* $\phi 18$
DN250	10"	0.6	450	561	375	335	12* $\phi 18$
DN300	12"	0.6	500	623	440	395	12* $\phi 22$
DN350	14"	0.6	550	671	490	445	12* $\phi 22$
DN400	16"	0.6	600	708	540	495	16* $\phi 22$
DN450	18"	0.6	600	778	595	550	16* $\phi 22$
DN500	20"	0.6	600	828	645	600	20* $\phi 22$
DN600	24"	0.6	600	934	755	705	20* $\phi 22$
DN700	28"	0.6	700	1041	860	810	24* $\phi 26$
DN800	32"	0.6	800	1149	975	920	24* $\phi 30$
DN900	36"	0.6	900	1249	1075	1020	24* $\phi 30$
DN1000	40"	0.6	1000	1359	1175	1120	28* $\phi 30$



Main Performance of Electrode Material

Electrode Material	Application
SS316L	Applicable to industrial and municipal water, wastewater and low corrosive mediums. Widely used in petroleum, chemical industries.
Hastelloy B	Strong resistance to hydrochloric acids below the boiling point. Resist against oxidable acids, alkali and non-oxidable salts, like vitriol, phosphate, hydrofluoric acids and organic acids.
Hastelloy C	Exceptional resistance to strong solutions of oxidizing salts and acids, like Fe ⁺⁺⁺ , Cu ⁺⁺ , Nitric acids, mixed acids.
Titanium	Titanium can withstand corrosive mediums such as seawater, chloride salt solutions, hypochlorite salts, oxidable acids (including fuming nitric acids), organic acids, and alkali. Not resistant to high purity reducing acids such as sulphuric acids, hydrochloric acids.
Tantalum	Highly resistant to corrosive mediums. Applicable to all chemical mediums except Hydrofluoric Acids, Oleum and Alkali.
Platinum-iridium	Applicable to all chemical mediums except for Ammonium salts and Fortis.



Main Performance of Liner Material

PTFE	Best chemical resistance, withstand boiling hydrochloric acid, sulfuric acid, nitric acid, alkali and a variety of organic solvents. Poor wear resistance and poor adhesion.
PFA	Highly resistant to chemicals. Performance well under vacuum pressure condition.
Neoprene	Excellent elasticity, good abrasion resistance. Withstand the corrosion of low-concentration acid, alkali, salt and other media. Not resistant to corrosion by oxidizing medium.
Polyurethane	Strong abrasion resistant, applicable for slurries and muds. Poor corrosion resistance, can't be used for corrosive medium.
Hard Rubber	Withstand the corrosion of hydrochloric acid, acetic acid, oxalic acid, ammonia water, phosphoric acid and 50% sulfuric acid, sodium hydroxide, potassium hydroxide. Use for general acid, alkali, and salt solutions, not resistant to the corrosion of strong oxidants.
Ceramic	Withstands high temperature, corrosion and wear Smooth inner Totally vacuum resistant

QTLD/F Partially-filled Electromagnetic Flow Meter



Selection Table

QTLD/F		X	X	X	X	X	X	X	X	X
Caliber size	DN200-DN3000(8"-120")									
Structure	Remote		1							
	Remote with explosion proof		2							
Lining Material	Neoprene			1						
	FEP			2						
	PFA			3						
	PTFE			4						
	Polyurethane			5						
	Hard Rubber			6						
	Others			7						
Electrode Material	SS316L				1					
	Hastelloy B				2					
	Hastelloy C				3					
	Titanium				4					
	Tantalum				5					
	Platinum-iridium				6					
	Stainless steel covered with tungsten carbide				7					
	Others				8					
Sensor Material	Carbon Steel					1				
	SS304					2				
	SS316					3				
Power Supply	20~36 VDC						G			
	85~265 VAC						E			
	9~36 VDC solar power						SD			
	Others						X			
Signal Output /Communication	4~20 mA + Pulse + RS485 MODBUS							A		
	4~20 mA + HART							B		
	4~20 mA + Profibus							C		
	GPRS							D		
Flange Standard	DIN D6: DIN PN6, D10: DIN PN10, D16: DIN PN16								D**	
	ANSI A15: ANSI 150#								A**	
	JIS J10: JIS 10K, J20: JIS 20K, J30: JIS 30K								J**	
	Others								O	
Protection Grade	IP65 Transmitter + IP65 sensor									1
	IP65 Transmitter + IP68 sensor									2

QTLD/F Partially-filled Electromagnetic Flow Meter



Flow Range Table

Size		Flow Range & Velocity Table							
mm	Inch	0.1 m/s	0.2 m/s	0.5 m/s	1 m/s	4 m/s	10 m/s	12 m/s	15 m/s
DN3	1/8"	0.003	0.005	0.013	0.025	0.102	0.254	0.305	0.382
DN6	1/4"	0.01	0.02	0.051	0.102	0.407	1.017	1.221	1.526
DN10	3/8"	0.028	0.057	0.141	0.283	1.13	2.826	3.391	4.239
DN15	1/2"	0.064	0.127	0.318	0.636	2.543	6.359	7.63	9.538
DN20	3/4"	0.113	0.226	0.565	1.13	4.522	11.304	13.56	16.956
DN25	1"	0.177	0.353	0.883	1.766	7.065	17.663	21.2	26.494
DN32	1¼"	0.289	0.579	1.447	2.894	11.575	28.938	34.73	43.407
DN40	1½"	0.452	0.904	2.261	4.522	18.086	45.216	54.26	67.824
DN50	2"	0.707	1.413	3.533	7.065	28.26	70.65	84.78	105.98
DN65	2½"	1.19	2.39	5.97	11.94	47.76	119.4	143.3	179.1
DN80	3"	1.81	3.62	9.04	18.09	72.35	180.86	217	271.3
DN100	4"	2.83	5.65	14.13	28.26	113.04	282.6	339.1	423.9
DN125	5"	4.42	8.83	22.08	44.16	176.63	441.56	529.9	662.34
DN150	6"	6.36	12.72	31.79	63.59	254.34	635.85	763	953.78
DN200	8"	11.3	22.61	56.52	113.04	452.16	1130.4	1356	1696
DN250	10"	17.66	35.33	88.31	176.53	706.5	1766.25	2120	2649
DN300	12"	25.43	50.87	127.2	254.34	1017	2543.4	3052	3815
DN350	14"	34.62	69.24	173.1	346.19	1385	3461.85	4154	5193
DN400	16"	45	90	226.1	452	1809	4522	5426	6782
DN450	18"	57	114	286.1	572	2289	5723	6867	8584
DN500	20"	71	141	353.3	707	2826	7065	8478	10598
DN600	24"	102	203	508.7	1017	4069	10174	12208	15260
DN700	28"	138	277	692.4	1385	5539	13847	16617	20771
DN800	32"	181	362	904.3	1809	7235	18086	21704	27130
DN900	36"	229	458	1145	2289	9156	22891	27469	34336
DN1000	40"	283	565	1413	2826	11304	28260	33912	42390
DN1200	48"	407	814	2035	4069	16278	40694	48833	61042
DN1400	56"	554	1108	2769	5539	22156	55390	66468	83084
DN1600	64"	723	1447	3617	7235	28938	72346	86815	108518
DN1800	72"	916	1831	4578	9156	36625	91562	109875	137344
DN2000	80"	1130	2261	5652	11304	45216	113040	135648	169560
DN2200	88"	1368	2736	6839	13678	54711	136778	164134	205168
DN2400	96"	1628	3256	8139	16278	65111	162778	195333	244166
DN2600	104"	1910	3821	9552	19104	76415	191038	229245	286556
DN2800	112"	2216	4431	11078	22156	88623	221558	265870	332338
DN3000	120"	2543	5087	12717	25434	101736	254340	305208	381510

Remark: Recommend flow velocity range 0.5 ~ 15 m/s