



Special characteristics

- Compact integrated design with transmitter and sensor in one housing
- Compatible with various media such as domestic water, industrial water, sewage, corrosive solutions, and slurry.
- Excellent long-term stability with no moving parts

Features

- High accuracy: $\pm 0.5\%$ for flow, $\pm 2\%$ for heat/cold quantity, $\pm 0.1^\circ\text{C}$ for temperature
- Wide nominal diameter range from DN15 to DN1200
- Multiple output options: 4-20mA, pulse, relay alarm, RS485 (Modbus-RTU), HART 6.0
- Wide medium temperature range: $-10^\circ\text{C} \sim +180^\circ\text{C}$

Measuring principle

The electromagnetic BTU meter based on Faraday's law, detecting induced voltage proportional to fluid velocity. It then calculates thermal energy by integrating flow rate with the temperature or enthalpy difference between inlet and outlet water over time.



Recorder



Flow



Temp



Analyzer



Level



Pressure

The FK-LDGR Electromagnetic BTU Meter works on Faraday's Law, measuring heat energy transfer in heating and cooling systems. Integrated with a flow sensor and paired temperature sensors, it calculates energy exchange accurately via flow rate and temperature difference data for precise energy metering.

Preferred areas of use are



Widely used in district heating and cooling systems, HVAC systems, and industrial processes



Material and test



Parameters

Converter	Compact Type	IP65
	Remote Type	IP65 for transmitter (IP65/IP68 for sensor)
Nominal Diameter	DN15-DN1200	
Flange	In line with GB/T9119-2000 standard carbon steel (Optional stainless steel flanges), other standard flange can be customized	
Pressure rating (High pressure can be customized)	DN15 - DN250, PN≤1.6MPa	
	DN300~DN1000, PN≤1.0MPa	
	DN1200~DN2000, PN≤0.6MPa	
Lining Material	Neoprene (CR), Polyurethane (PU) PTFE (F4), PFEP (F46), PFA	
Electrode Material	316L Stainless Steel, Hastelloy C, Hastelloy B, Ti, Ta, Pt	
IP Rate	IP65 for converter, IP68 for sensor	IP65
Medium temperature	Neoprene: -10℃ ~ +60℃	Neoprene: -10℃ ~ +60℃
	Polyurethane: -10℃ ~ +60℃	Polyurethane: -10℃ ~ +60℃
	PTFE/FEP: -10℃ ~ +120℃	PTFE/FEP: -10℃ ~ +120℃
	PFA: -10℃ ~ +180℃	PFA: -10℃ ~ +120℃
Buried depth	Not deeper than 5 meters (only for remote type sensors with IP68 protection)	
Immersion depth	Not deeper than 3 meters (only for remote type sensors with IP68 protection)	
Communications	Serial communications	RS-485, HART, RS-232
	Output	Current (4-20 mA) , pulse , frequency , state switch
	Function	Empty pipe recognition, electrode contamination
Graphic display	Monochrome LCD, white backlight; Size: 128*64 pixels	
Display function	2 measurement value pictures (measurements, condition, etc)	
Language	Chinese/ English/Spanish (Spanish version can be customizable)	
Unit	You can configure the menu to select the unit Refer to "6.5 Configuration details" --- "flow units 1-1"	

Operating unit	4 Mechanical keys (Compact Type) or 4 touch key (Remote Type)	
Max measuring error	Flow meter	Measurement value $\pm 0.5\%$ (Flow speed $> 1\text{m/s}$) ; Measurement value $\pm 0.5\% \pm 2\text{mm/s}$ (Flow speed $< 1\text{m/s}$)
	BTU meter	2%
Repetitiveness	0.16%	
Temperature sensor measuring range	$-20^{\circ}\text{C} \sim 120^{\circ}\text{C}$	
Maximum measurement error	$\pm 0.1^{\circ}\text{C}$ (Within the measuring range of temperature sensor)	
Environment Temperature	$-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$ for Compact-Type Flowmeter	
	$-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ for Converter of Remote-Type Flowmeter $-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$ for Converter of Remote-Type Flowmeter	
Storage	$-40^{\circ}\text{C} \sim 65^{\circ}\text{C}$	
Electric Conductivity	Water	Min. $20\mu\text{S/cm}$ (Actual electric conductivity should be greater than $50\mu\text{S/cm}$)
	Other	Min. $5\mu\text{S/cm}$ (Actual electric conductivity should be greater than $50\mu\text{S/cm}$)
Material	Sensor housing	Carbon steel, stainless steel 304, stainless steel 316L
	Converter	Standard painted die cast aluminum
	Cable gland	(M20*1,5.) Polyamide
	Cable material	Polyurethane
Electrical Connections	Power supply	85-245 VAC, 50/60 Hz, 22-26 VDC
	Power consumption	Max 15W
	Insulation resistance	$\geq 20\text{M}\Omega$
	Signal cable	Apply only to remote type
	Shielded cable	Signal section, wire: 0.5mm^2 Cu /AWG20

■ Dimension

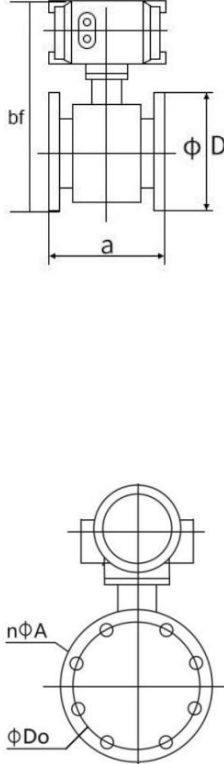
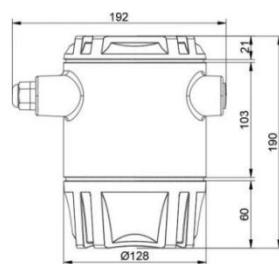
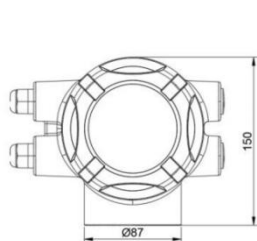
	DN	a	bf	D	Do	n*A	Pressure resistance
	15	200	326	95	65	4*14	1.6 MPa
	20	200	326	105	75	4*14	
	25	200	316	115	85	4*14	
	32	200	331	135	100	4*18	
	40	200	339	145	110	4*18	
	50	200	358	160	125	4*18	
	65	200	370	180	145	4*18	
	80	200	389	195	160	8*18	
	100	250	410	215	180	8*18	
	125	250	440	245	210	8*18	
	150	300	469	280	240	8*23	
	200	350	522	335	295	12*23	
	250	450	824	405	355	12*25	1 MPa
	300	500	624	440	400	12*23	
	350	550	1029	500	460	16*23	
	400	600	737	565	515	16*25	
	450	600	786	615	565	20*25	
	500	600	839	670	620	20*25	
	600	600	944	780	725	20*30	
	700	700	1052	895	840	24*30	
	800	800	1164	1015	950	24*33	
	900	900	1264	1115	1050	28*33	
	1000	1000	1374	1230	1160	28*36	
	1200	1200	1589	1405	1340	32*33	0.6 MPa

Figure 27 Compact type



Unit:mm

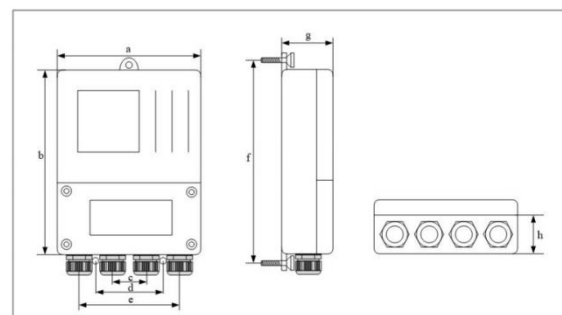


Figure 28 Remote type

Table 2

Dimension[mm]								Weight[Kg]
a	b	c	d	e	f	g	h	
164	214.5	34	70	102	233.5	69.7	45.7	0.6

■ Ordering Code

FK-LDGR-15-J-A-MC-N-AA-M3-N6-WA-00													Description
LDGR	-	-	-	-	-	-	-	-	-	-	-	-	BTU Meter
Nominal Diameter	15												DN15(1/2")
	20												DN20(3/4")
	25												DN25(1")
	32												DN32(1.25")
	40												DN40(1.5")
	50												DN50(2")
	65												DN65(2.5")
	80												DN80(3")
	1C												DN100(4")
	1E												DN125(5")
	1G												DN150(6")
	2C												DN200(8")
	2G												DN250(10")
	3C												DN300(12")
	3G												DN350(14")
	4C												DN400(16")
	4G												DN450(18")
	5C												DN500(20")
	6C												DN600(24")
	7C												DN700(28")
	8C												DN800(32")
	9C												DN900(36")
	A0												DN1000(40")
Thread Type Standard	J												JB/T 81 flange
	D												GB/T9124 flange
	I												ISO2852 Clamp
	X												Other
Nominal pressure	A												PN6
	B												PN10
	C												PN16
	D												PN25
	E												PN40
	F												PN63
	X												Other
Thread Type Material and Body Material				MC									Carbon steel
				M1									304SS
				XX									Other
Accuracy				N									2.0 Class
Output and Power Supply					AA								4-20mA+pulse+RS485, 220VAC
					AB								4-20mA+HART+pulse, 220VAC

	AM							4-20mA+pulse+RS485, 24VDC
	AK							4-20mA+HART+pulse, 24VDC
Electrode Material	M3							316LSS
	MF							Hastelloy B
	MG							Hastelloy C
	T1							Titanium
	T2							Platinum Iridium Alloy PT
	MH							Platinum Iridium Alloy PT
	MJ							Tungsten carbide WC
Lining material	N6							Polytetrafluoroethylene/PTFE
	N1							Chloroprene Rubber CR
	N2							Polyurethane PU
	N7							Teflon F46/FEP
Electrical Interface, Housing Material, and Ingress Protection	WA							Integrated Type, M20×1.5 Cable Gland, Aluminum Alloy, IP65
	WC							Split Type, M20×1.5 Cable Gland, Aluminum Alloy, IP68
Split cable length	00							0m
	10							10m
	15							15m
	20							20m
	25							25m
	30							30m
	40							40m
	50							50m
	XX							Other
Accessories	PA							Paired with PT1000 temperature sensor
	PB							Paired with Carbon Steel Flange
	PC							Paired with 304SS Flange
	PE							Paired with SS316L Grounding Ring
	PF							Paired with Titanium Grounding Ring