

M-Bus

Virtec
VIRTEC INSTRUMENTS INC.

 **MID**
Measuring Instrument Directive
2014/32/EU Compliant



LXC Series
Heat Meter

**ENERGY
METERING
QUICK & RELIABLE**

Precise Heat and Flow Meters



Virtec offers a complete range of Heat Meter and Flow Meters in Ultrasonic and Electro-Magnetic technologies, which can be used to complete all your measurement tasks in a chilled water line. From compact meters DN 15 for submetering to DN 800 flow parts in Ultrasonic, Electro Magnetic, Clamp-On, Insertion type, we have products suitable for chilled water applications.

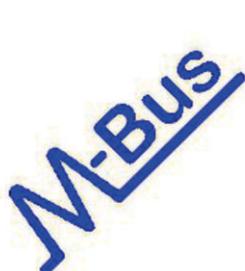
All Meters are manufactured with MID guidelines complying to EN-1434 standards and certified to NABL standards specifically for the Indian market.

The fusion of precise measurement technology and innovative remote reading tenant billing software enables the transmission of the entire consumption data in a precise and secure manner with minimal efforts from the consumption reading per AHU to the Chiller plant.

LXC is a compact ultrasonic meter for measuring energy consumption in cooling application. Its high measuring accuracy and reliability makes it suitable for district energy application measurement. The meter offers a new level of installation and commissioning simplicity by using built in Mbus and meets all national compliance requirements.

Salient features of the LXC Series and VIR-850 Series

- Class-2 accuracy ensures valid billing of cooling energy
- Best in class battery lifetime (up to 16 years) & 24V mains powered.
- Upgradable and robust meter – lowers ownership cost for meter replacements.
- Open communication protocol/interfaces increase flexibility with Mbus/Modbus/Bacnet
- Self-diagnostics and high accuracy
- Measure volume every few milli second, increase measurement accuracy.
- Insensitive to dirt, thereby lowering the needs for replacing the sensor.
- Low pressure loss
- Nominal size: qp 0.6 m³/h to 8,000 m³/h
- The wear-free ultrasonic technology is stable in the long run, and measures reliably, even with exceedingly small flow volumes.
- A single button can be used to pull up all the important device and consumption data, such as reference data, maximum values, or the stored monthly values over the entire lifetime of the meter.



LXC Series Heat Meters - upto 500 mm

Compliance of Technical Data As Per Standards Mentioned	
General	
Measuring Accuracy	Class 2 (EN1434) MID Complied
Environment Class	Class-A (EN1434 for indoor installation)
Mechanical Class	MI*
Electromagnetic Class	E1*
Ambient Humidity	<93% RH without condensation
Max installation Altitude	2000m above sea level
Storage Temperature	. -20°C - 60°C
BTU Calculator	
Ambient operating temperature	5°C - 55°C
Housing Protection Rating	IP54 according to EN60529
Operation Threshold	0.5K
Temperature Difference	3 K - 70 K
Temperature Measurement Range	0°C - 99°C
LCD	9 Digits
Optical Interface	Standard
Communication	M-Bus or Modbus RTU
Temperature Sensor	
Type	PT1000 (Optional PT500/PT100)
Temperature Range	0°C - 105°C (up to 1.5 m overall length)
Flow Sensor	
Protection Class	IP67
Mounting Place	Return Line
Installation Position	Any
Flow Straightening	The sensor installation point is best to meet Upstream 10D, Downstream 5D;30D from the pump outlet (D is the pipe Diameter).
Dynamic Measuring Range	(1:100)
Temperature Range	4°C - 95°C
Cooling Application	5°C - 50°C
Nominal Pressure	PN16 (Optional PN25)
Maximum Overload	2 X qp-30 Seconds

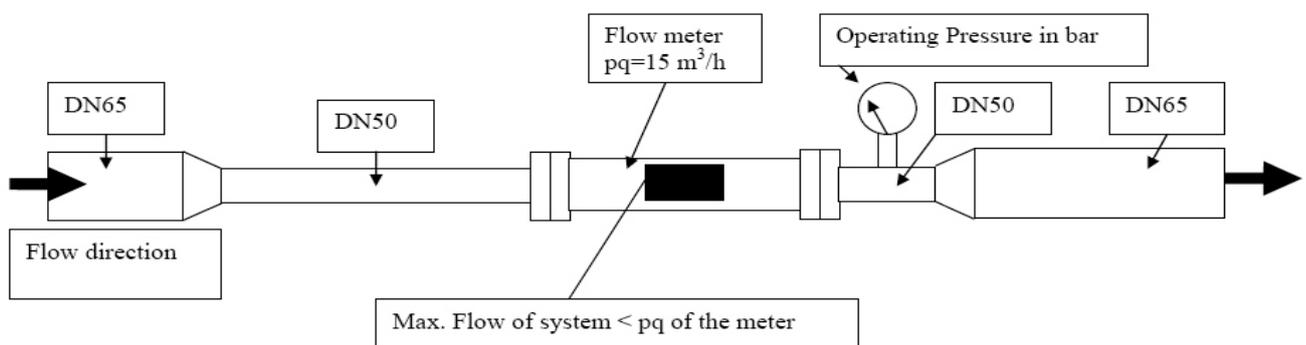




MODEL	DN(MM)	Nominal Flow qp (m ³ /h)	Min. Flow qd (cut off) (m ³ /h)	Min. Flow qi (m ³ /h)	Max.Flow qs (m ³ /h)	Connection	Material	ΔP	PN
LXC-15	15	1.5	0.015	0.03	3	Threaded	Brass	0.100	PN-16
LXC-20	20	2.5	0.025	0.05	5	Threaded	Brass	0.095	PN-16
LXC-25	25	3.5	0.035	0.07	7	Threaded	Brass	0.093	PN-16
LXC-32	32	6	0.06	0.12	12	Threaded	Brass	0.091	PN-16
LXC-40	40	10	0.10	0.2	20	Threaded	Brass	0.092	PN-16
LXC-50	50	15	0.15	0.60	30	Flanged	Carbon Steel	0.073	PN-16
LXC-65	65	25	0.25	1.00	50	Flanged	Carbon Steel	0.062	PN-16
LXC-80	80	40	0.40	2	80	Flanged	Carbon Steel	0.060	PN-16
LXC-100	100	60	0.60	2	120	Flanged	Carbon Steel	0.075	PN-16
LXC-125	125	100	1.00	4	200	Flanged	Carbon Steel	0.080	PN-16
LXC-150	150	150	1.50	6	300	Flanged	Carbon Steel	0.075	PN-16
LXC-200	200	250	2.50	10	500	Flanged	Carbon Steel	0.070	PN-16
LXC-250	250	400	4.00	16	800	Flanged	Carbon Steel	0.010	PN-16
LXC-300	300	600	6.00	24	1200	Flanged	Carbon Steel	0.015	PN-16
LXC-350	350	750	7.50	30	1500	Flanged	Carbon Steel	0.012	PN-16
LXC-400	400	1000	10.00	40	2000	Flanged	Carbon Steel	0.012	PN-16
LXC-450	450	1200	12.00	48	2400	Flanged	Carbon Steel	0.012	PN-16
LXC-500	500	1500	15.00	60	3000	Flanged	Carbon Steel	0.012	PN-16

*Pressure Rating PN-25 is optional. Battery: Lithium-Ion, upto 16 Years on Mbus ,Dynamic Flow range is 1:100(qd/qp)
Only Qp, Qi and Qs values shall be printed on calculator

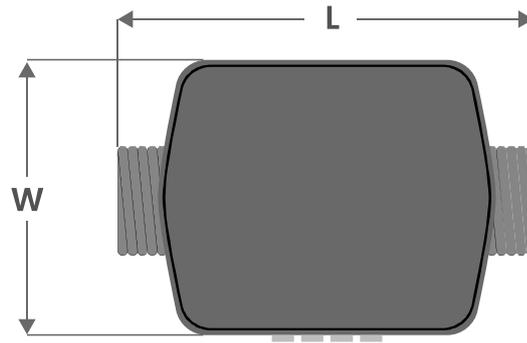
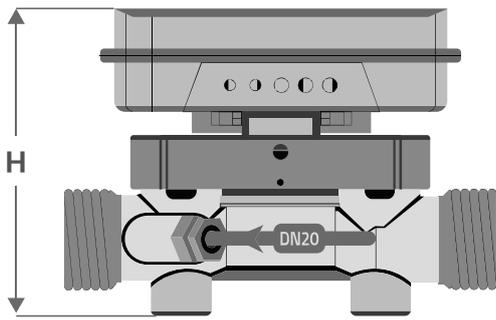
* The importance of accurate meter dimensioning



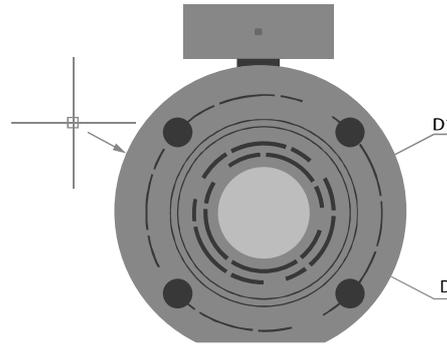
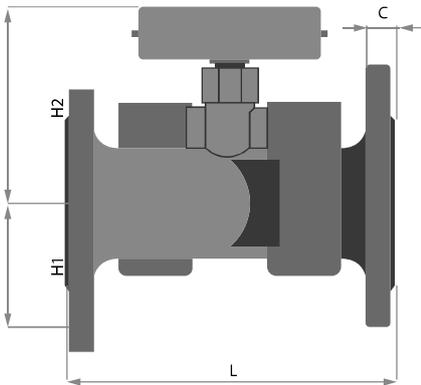
How to dimension your Virtec flow sensor accurately :

When dimensioning your meter, two major conditions must be considered: Pipe dimension and maximum flow of the system. Regarding pipe dimension, going one dimension up or down in meter size will in general cause no problems, as long as the second parameter, the maximum flow does not exceed the nominal flow of the flow meter. Maximum flow of the system must be obtained without exceeding the nominal flow.

Dimension - A



Dimension - B



Threaded Series-Dimension A

MODEL	L (mm)	W (mm)	H (mm)	Weight-Kgs
LXC-15	110	85	85	1
LXC-20	130	85	95	1.1
LXC-25	160	85	105	1.2
LXC-32	180	85	105	2.1
LXC-40	200	85	115	3

Flange Series- Dimension B

MODEL	L (mm)	H1 (mm)	H2 (mm)	C (mm)	D (mm)	D1 (mm)	Bolt Hole	Weight (Kg)	Pressure
LXC-50	200	72	115	18	165	125	4 - ϕ 18	7.2	PN-16
LXC-65	200	78	125	18	182	145	4 - ϕ 18	7.8	PN-16
LXC-80	225	88	132	20	197	160	8 - ϕ 18	9.2	PN-16
LXC-100	250	98	142	22	218	180	8 - ϕ 18	12.2	PN-16
LXC-125	250	116	155	22	245	210	8 - ϕ 18	16.5	PN-16
LXC-150	300	135	165	24	283	240	8 - ϕ 22	22.5	PN-16
LXC-200	350	162	193	24	335	295	12 - ϕ 22	30	PN-16
LXC-250	450	195	225	26	405	355	12 - ϕ 26	56	PN-16
LXC-300	500	223	250	28	460	410	12 - ϕ 26	85	PN-16
LXC-350	500	250	280	30	520	470	16 - ϕ 26	110	PN-16
LXC-400	500	280	310	32	580	525	16 - ϕ 30	145	PN-16
LXC-450	500	310	340	40	640	585	20 - ϕ 30	178	PN-16
LXC-500	500	348	378	44	715	650	20 - ϕ 33	202	PN-16

Installation Recommended

A Recommended flow sensor position.

B Recommended flow sensor position.

C Unacceptable position due to risk of air build-up

D Acceptable position in closed systems. Unacceptable position in open systems due to risk of air build-up in the system.

E A flow sensor ought not to be placed immediately after a valve, with the exception of block valves (ball valve type) which must be fully open when not used for blocking.

F A flow sensor ought not to be placed directly before (inlet side) or directly after (outlet side) a pump.

G A flow meter ought not to be placed directly after a doubled bend, in two levels.

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