

FEATURES

- The accuracy can reach 0.15 grade (up to 0.05%) in batches.
- Ratio of measure range up to 100:1
- Measurement stability is highly reliable.
- Measuring general viscosity liquid, high viscosity liquid, non-Newtonian one-way liquid and evenly multi-phase fluid are available.
- Excellent anti-corrosion performance. Different materials can be customized for measuring all sorts of common corrosive fluids.
- Measure mass flow directly without being affected by temperature, pressure, flow rate, etc.
- Display mass flow-rate, volume flow-rate, density and temperature parameters.
- Integrated design, small size and easy installation.
- With a variety of flow tube designs and flow rate ranges to choose from, it can meet the measurement needs of any process and application. A variety of sensor interface sizes, transmitter installations and a wide range of output signal options are fully compatible with your system.



MEASUREMENT PRINCIPLE

Coriolis mass flow meter is based on the principle of Coriolis, which makes the meter tube vibrate when there is a medium passing through. Sensor detect and analyze the change of frequency, phase difference and temperature of the meter tube. So that it can directly measure the mass flow-rate of the medium, and density is calculated by vibrate frequency. Other process variables also can be obtained, like mass flow, volume flow, density and temperature.

Mass flow measurement	:	The driving coil inside the sensor ensures that the measuring tube always vibrates, if there is no medium flowing, the measurement tube will homogeneously vibrate. When the material is transported and distributed through the sensor measuring tube, the vibration of the measuring tube is distorted due to its inertia, and the inlet and outlet of the pipe vibrated in different directions. The detection coils located at the entrance and exit accurately record the changes in the pipe's vibrations in time and space. By recording the phase difference, the current mass of the medium flowing through the pipe can be directly calculated.
Density measurement	:	The sensor records the number of times the measuring tube vibrates in one second, which is the vibration frequency. The measuring tube vibrates at its natural frequency. For fluids with different densities, the vibration frequency is different. The more frequent the vibration, the smaller its density.
Volume flow rate measurement	:	The volume flow rate is calculated by measuring the obtained mass flow and density.
Temperature measurement	:	Built-in temperature sensor, the temperature can be directly output as a measurement variable

ACCURACY AND REPEATABILITY

Accuracy	:	$\pm 0.5\%$ (Optional: $\pm 0.15\%$, $\pm 0.2\%$)
Repeatability	:	0.25% (Optional: 0.075%, 0.1%)
Range ratio	:	20:1
Density accuracy	:	$\pm 0.001 \text{ g/cm}^3$ ($\pm 1 \text{ kg/m}^3$)
Temperature accuracy	:	$\pm 1^\circ\text{C} \pm 0.5\% \times \text{measured value}$
Temperature repeatability	:	0.2°C

HYDROGEN ULTRA-HIGH PRESSURE MASS FLOW METER (35/70MPa)



- U-tube low-frequency design, excellent flow measurement performance, are more in line with the precise measurement of the use of hydrogenation machine condition
- The main parts are made of anti-hydrogen embrittlement materials, and the welds are treated by special processes, which have excellent anti-hydrogen embrittlement performance

HIGH ACCURACY CORIOLIS MASS FLOWMETER FOR COMPRESSION OF NATURAL GAS (CNG,25MPa)



- U type single bend thick wall tube and intermediate frequency design to effectively guarantee the zero point stability in the case of multi impurity and multi component
- Using the conventional 316L material, Smooth tube without other components. There is no additional pressure loss during measuring process

CORIOLIS MASS FLOWMETER FOR CRYOGENIC LIQUID (LNG) (-192°C)



- Accurate and stable measurement is implemented by the high precise digital signal process
- Compact design, small size, reliable performance, longer service life
- Degree of Protection: IP67

BEST OPTION FOR PROCESS INDUSTRY



- Not affected by physical properties such as viscosity and density of liquid
- Integrated design, small size, easily installed
- Degree of Protection: IP67
- No movable parts inside for long working life

PROFESSIONAL SERVICE IN HIGH SANITARY SITUATION REQUIREMENT FIELDS



- No dead angle, easily cleaned; save space, easily installed. Do not need maintenance
- Excellent quake resistance performance
- Measurement performance is not affected by medium properties
- Can be used for CIP/SIP cleaning

FLOW RATE

MODEL	STANDARD CALIBER		LIMITED DATA		MAXIMUM FLOW	
	inch	mm	kg/min	lb/min	kg/min	lb/min
FL115 - 04P	1/8"	DN04	6	13	8	17
FL115 - 08P	1/4"	DN08	15	33	18	39
FL115 - 15P	1/2"	DN15	50	110	55	121
FL115 - 08L	1/4"	DN08	15	33	18	39
FL115 - 25L	1"	DN25	200	440	220	485
FL115 - 04T	1/8"	DN04	6	13	8	17
FL115 - 08T	1/4"	DN08	15	33	18	39
FL115 - 15T	1/2"	DN15	72	158	80	176
FL115 - 25T	1"	DN25	200	440	220	485
FL115 - 50T	2"	DN50	720	1587	750	1653
FL115 - 80T	3"	DN80	-	-	-	-

WORKING PRESSURE

The process pressure level represents the maximum working pressure of the sensor. It can be different due to different process connection types. The table below shows the pressure levels of factory standard products.

MODEL	MPa	Bar g	Pis g
FL115 - 04P	70	700	10150
FL115 - 08P	25/35	250/350	3625/5075
FL115 - 15P	25	250	3625
FL115 - 08L	4	40	580
FL115 - 25L	4	40	580
FL115 - 04T	4	40	580
FL115 - 08T	4	40	580
FL115 - 15T	4	40	580
FL115 - 25T	4	40	580
FL115 - 50T	4	40	580

TRANSMITTER

Installation	:	For the installation of the transmitter, as for the FL115 series, it is recommended to be integrated with the sensor in a compact installation (factory default). It can be customized on-site split installation under harsh conditions according to user needs.
Display	:	The display interface provides users with a better user performance, and provides users with a display function transmitter. Due to electronics are susceptible to ambient temperature, it is recommended to use a non-display transmitter (factory default).
The output signals include	:	Modbus / RS-485; pulse; 4-20mA current loop.
Electrical connections	:	The end of the cable to the customer site is a M20 × 1.5 lead.

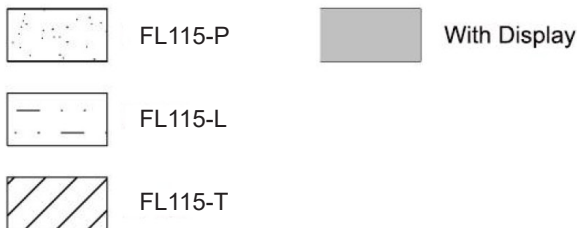
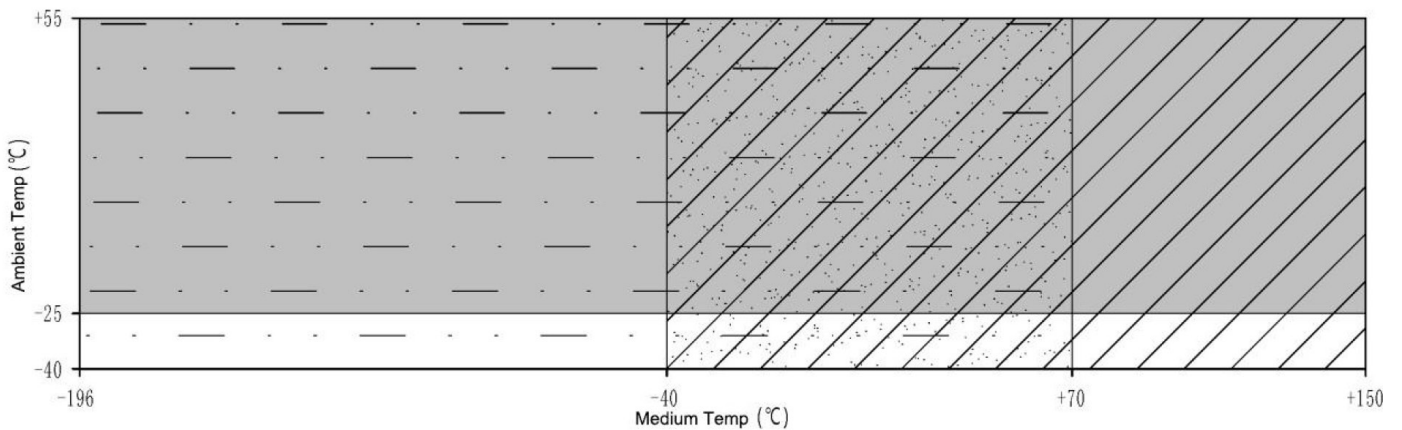
WORKING CONDITIONS

Medium temperature	: FL115-P: -40°C...+70°C FL115-L: -196°C...+70°C FL115-T: -40°C...+150°C
Ambient temperature	: -40°C...+55°C With display: -25°C...+55°C
Relative humidity	: ≤95%
Measurement medium	: Gas, liquid, uniform multiphase flow
Power supply	: 12VAC~30VAC / 15VDC~40VDC

VIBRATION LIMIT

Conform to GB / T 2423.10, use 5 ~ 55Hz frequency sweep, amplitude 0.35mm, sweep frequency 5 times on three mutually perpendicular each axis.

TEMPERATURE LIMIT



PHYSICAL SPECIFICATIONS

STRUCTURAL MATERIAL AND PROTECTION LEVEL

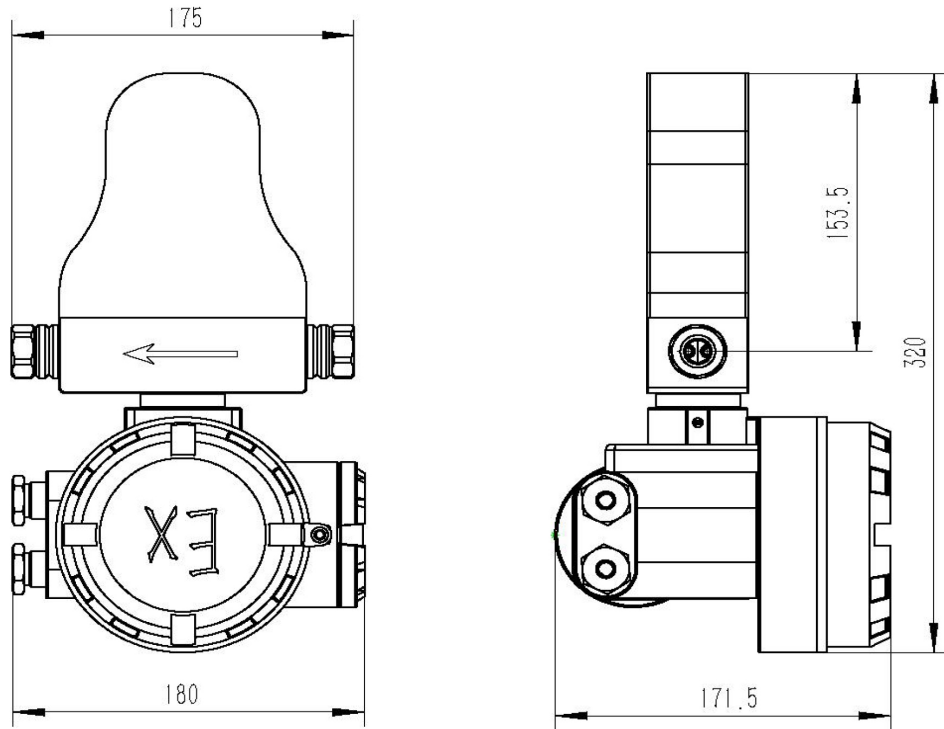
MODEL	WETTED PARTS		NON-WETTED PARTS		
	Measuring tube material	Other parts material	Sensor housing material	Transmitter housing Material	Enclosure rating
FL115 - 04P	316L	316L	304	ZL401	IP67
FL115 - 08P	316L	316L	304	ZL401	IP67
FL115 - 15P	316L	304/304L	304	ZL401	IP67
FL115 - 08L	316L	304/304L	304	ZL401	IP67
FL115 - 25L	316L	304/304L	304	ZL401	IP67
FL115 - 04T	316L	304/304L	304	ZL401	IP67
FL115 - 08T	316L	304/304L	304	ZL401	IP67
FL115 - 15T	316L	304/304L	304	ZL401	IP67
FL115 - 25T	316L	304/304L	304	ZL401	IP67
FL115 - 50T	316L	304/304L	304	ZL401	IP67

PROCESS CONNECTION

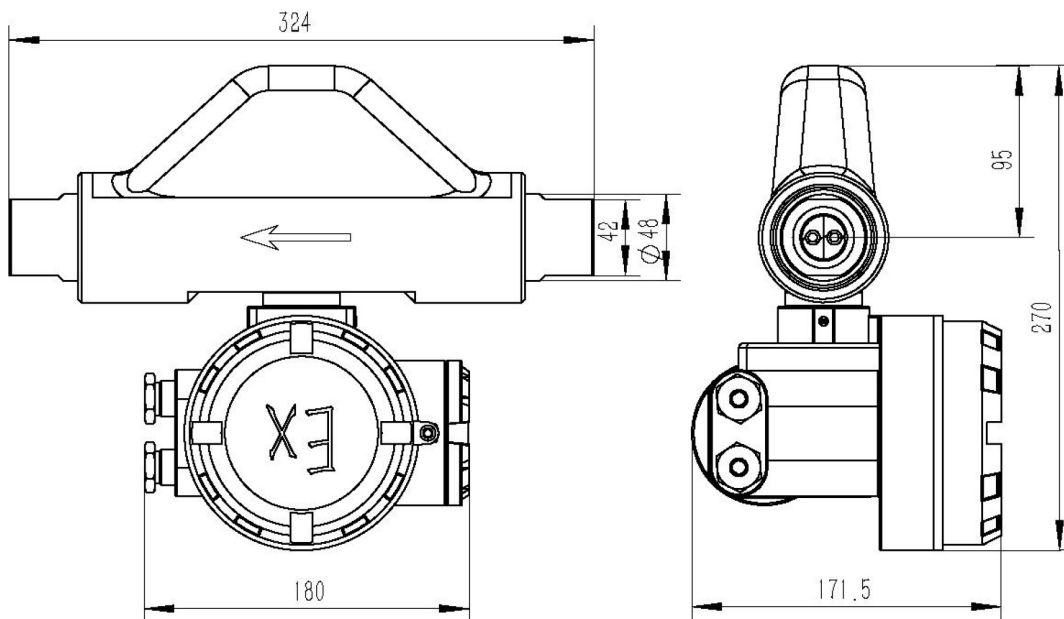
MODEL	PROCESS CONNECTION TYPE
FL115	Standard (factory default) (Optional)
	UNF9/16 (F)
	1/4" BSP (F)
	3/4" BSP (F)
	HG / T 20592 DN15 PN40 flange
	HG / T 20592 DN25 PN40 flange
	HG / T 20592 DN50 PN40 flange
	HG / T 20592 DN80 PN40 flange
	ANSI B 16.5 WN25 150LB flange

DIMENSIONAL DRAWING

FL115-08P:

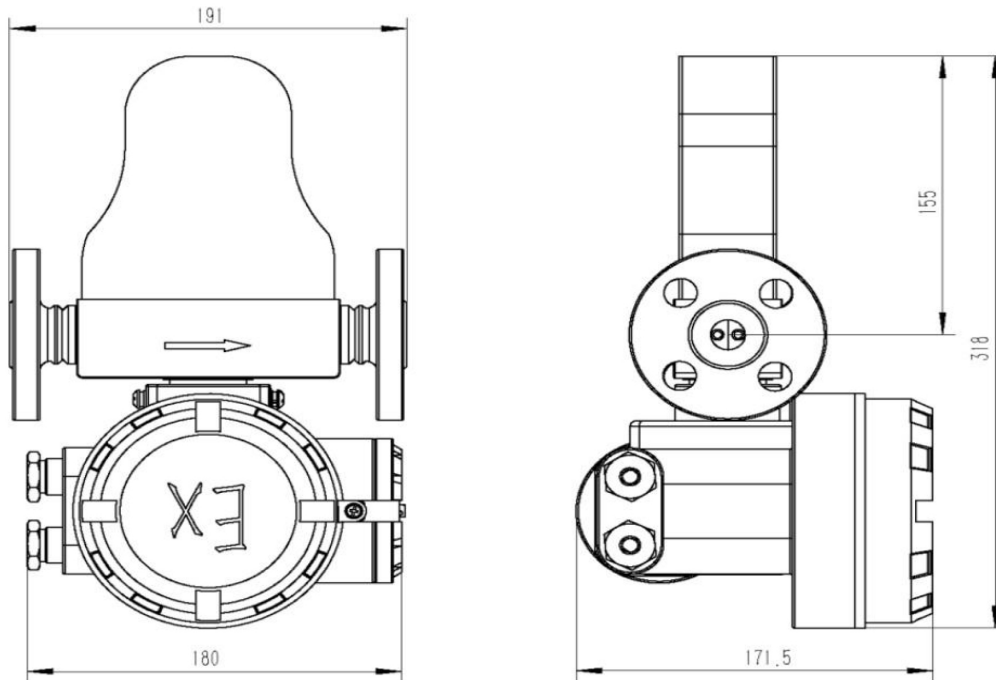


FL115-15P:

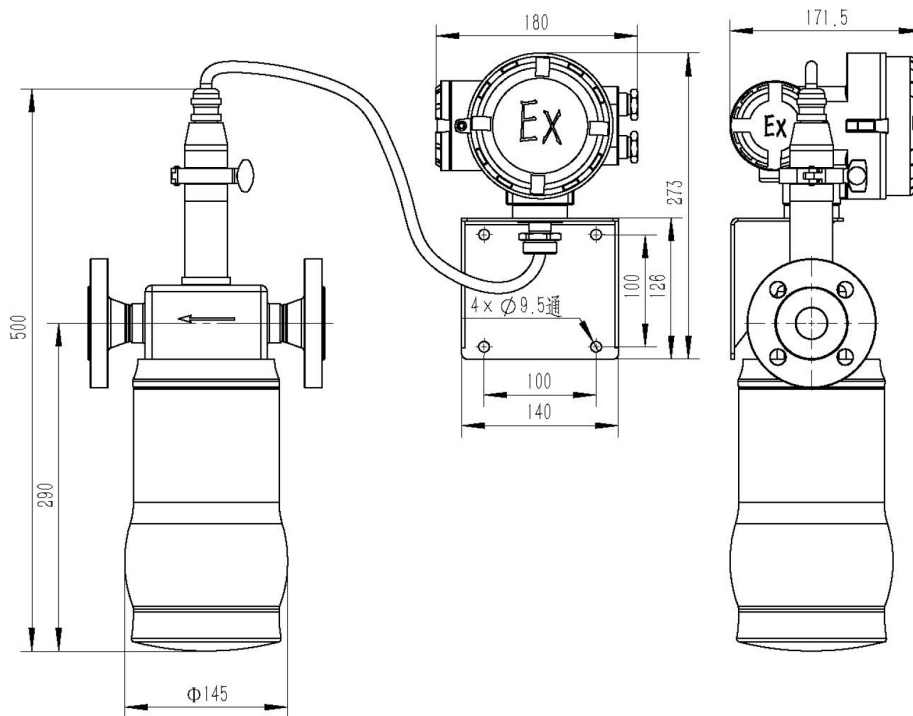


All dimensions are in mm. Error: ± 2 mm

FL115-08L:

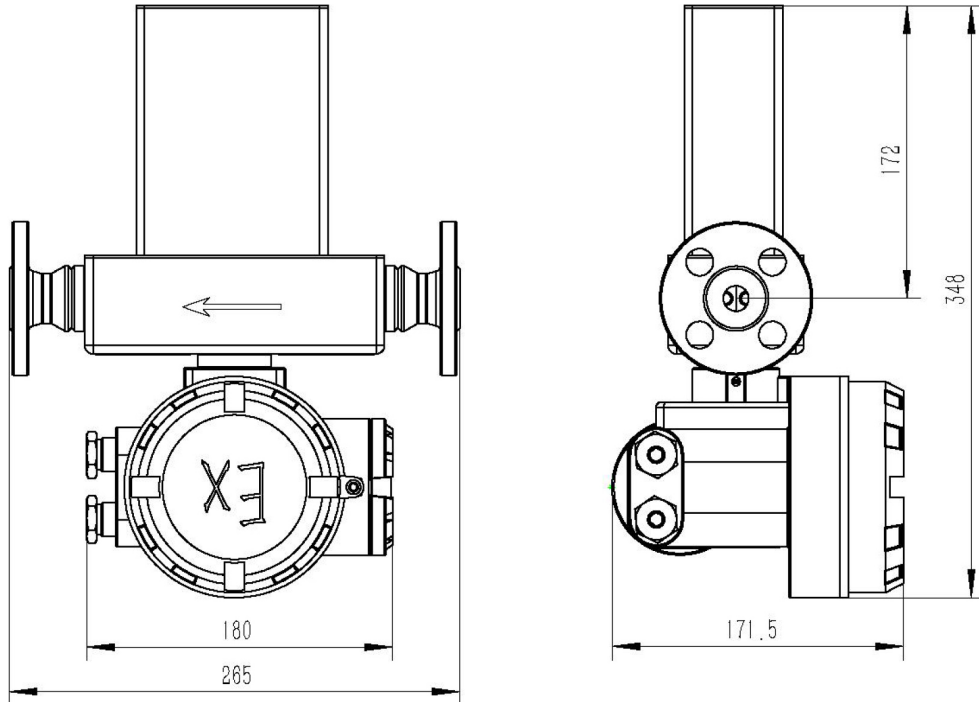


FL115-25L:

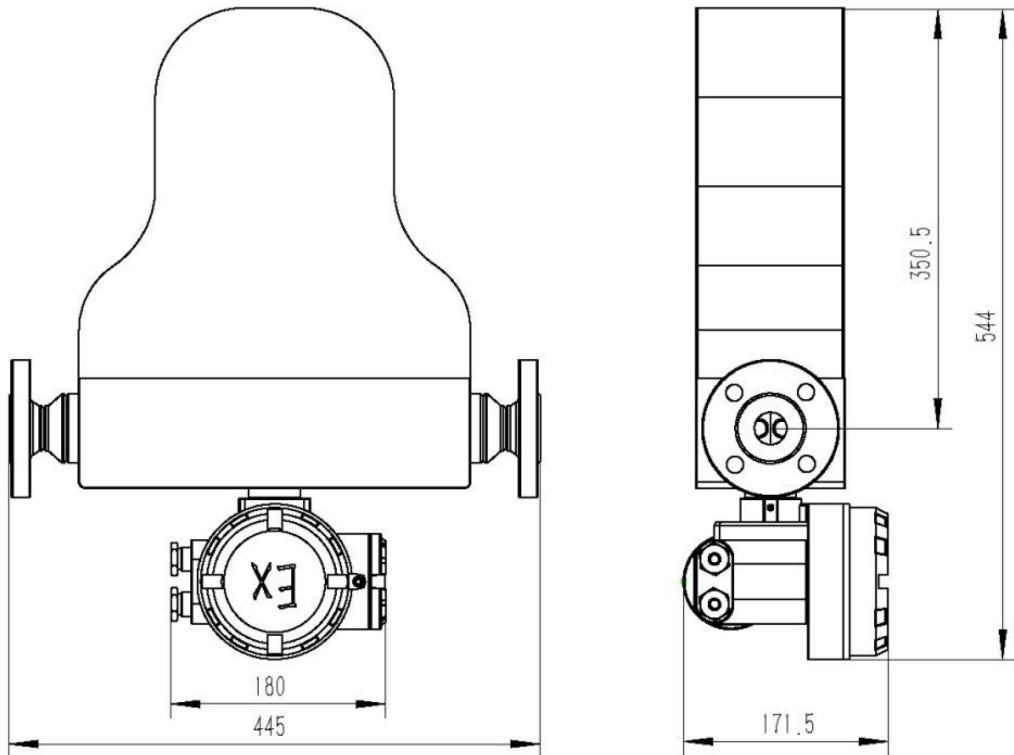


All dimensions are in mm. Error: ± 2 mm

FL115-15T:



FL115-25T:



All dimensions are in mm. Error: ± 2 mm

ORDERING CODES

1. NOMINAL DIAMETER

04	DN04	
08	DN08	
15	DN15	
20	DN20	
25	DN25	25
50	DN50	
80	DN80	
100	DN100	

2. APPLICATION CODE

T	Normal	T
L	Cryogenic	
P	High pressure	
W	Sanitary	

3. NOMINAL PRESSURE

02	1.6MPa	
04	4Mpa	04
06	6Mpa	
10	10Mpa	
25	25Mpa	
35	35Mpa	
70	70Mpa	

4. PROCESS CONNECTION

FS	HG / T 20592 flange	FS
F0	HG / T 20615 flange	
F1	ANSI B 16.5 flange	
F2	SME B 16.5 flange	
GS	Pipe thread	
NS	NPT thread	
HS	Sanitary Quick coupling (for application code W)	

5. MATERIAL OF MEASURING TUBE

S	316L (default)	S
H	Hastelloy C22	

6. ACCURACY

A	0.15%	
B	0.2%	
C	0.5%	C
D	1.0 %	

7. MOUNTING TYPE OF TRANSMITTER

N	Integrated	
S	Split	S

8. DISPLAY

C	With display	
M	Without display	M

9. OUTPUT

L	4-20mA current loop	
M	Modbus / RS-485, pulse	M

10. CERTIFICATION

N	None	
C	CNEX certification	C

11. ALTERNATIVE OPTION

C	Test report, material certificate	
E	English User Manual	
Z	Normal standard product (default)	Z

Ordering Example : FL115-25-T-04-FS-S-C-S-M-M-C-Z

NOTES

1. Iterate options default to normal standard products(z), or multiple selections as needed.