

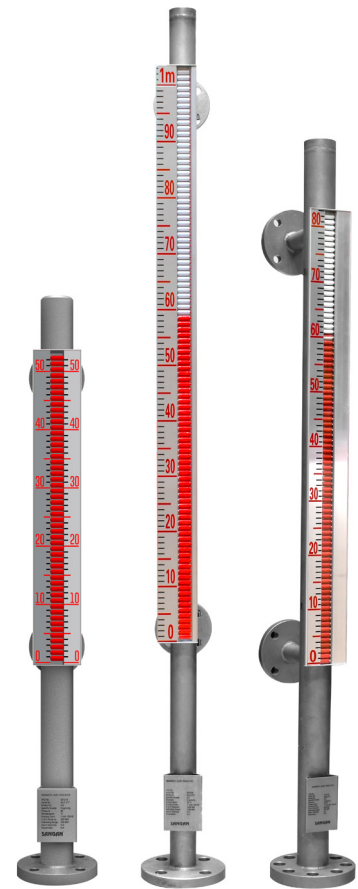
FEATURES

- Good sealing, leakage proof and reliable measurement in high temperature, high pressure, high viscosity and strong corrosion applications
- No blind area. Striking in display clear in reading and wide in range; with alarm and control switch, the liquid level or interface can be controlled at upper or lower limit
- LB transmitter converts the signal of liquid or interface level into 20~4mA DC standard signal, and achieves the purpose of remote measurement, indication, record and control

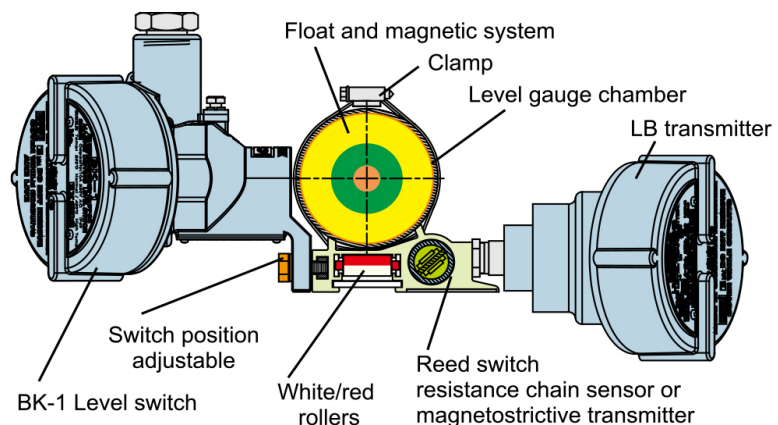
APPLICATIONS

- The products are widely used in electric power, petroleum, chemical, metallurgy, environmental protection, marine ship, architecture and foodstuff industries

- Magnetic column / fap
- Remote transmitter
- Tri-magnet switch
- Can bind with magnetostrictive transmitter

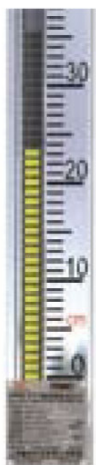


DRAWING



STANDARD SPECIFICATIONS

Accuracy	: $\pm 10\text{mm}$
Measure range	: 300~15000mm
Medium density	: $\geq 350\text{kg/m}^3$
Density difference	: $\geq 150\text{kg/m}^3$
Ambient vibration	: $\leq 25\text{Hz}$
Medium viscosity	: $\leq 0.4\text{PaS}$, For the high viscosity and easy crystallization at low temperature, heating jacket level gauge can be used.
Material	: 304, 316, 316L, 316Ti, 321, 1.4301, 1.4435, 1.4401, 1.4571, 1.4783, 0Cr18Ni9, 1Cr18Ni9Ti, 00Cr17Ni14Mo2, 0Cr17Ni1Mo2, 0Cr18Ni2MoTi, PP, PVC, PTFE, Ti, Zr, Ta, Hastelloy C-276, Monel
Process range	: Factory standard: HG059-0635-97 Dn5 PN1.0~PN32 Or according to ANSI B16.5; 1/2"~10" DN10-DN50 GB/T 911-000; JB/T 79.1-94 SH3406-1996 DIN 2635; DN10-DN250; DIN 2527; DN10-DN25010A~50A JIS 20K FF RF; 1/2"~10" JPI
Pressure rating	: PN1.0, PN1.6, PN2.5, PN4.0, PN6.4, PN11.0, PN16.0, PN25, PN32.0; Class 150LB, 300LB, 600LB, 900LB, 1500LB, 2500LB, ANSI
Working temperature	: -196...+520°C, 77.15~793.15K
Enclosure	: IP66
Safety mark	: Exia IICT1~T6; Exd IIBT1~T6
Follow Speed	: $\leq 0.08\text{m/s}$
Amplitude	: $\leq 0.5\text{mm}$



STAINLESS STEEL SCALE
MAGNETIC FLAP TYPE
(D)



STAINLESS STEEL SCALE
TWIN FLAPS TYPE
(E)



STAINLESS STEEL SCALE
SINGLE FLAP TYPE
(F)



EXTRA-WIDE SCALE
EXTENDED MAGNETIC ROLLER TYPE
(C)



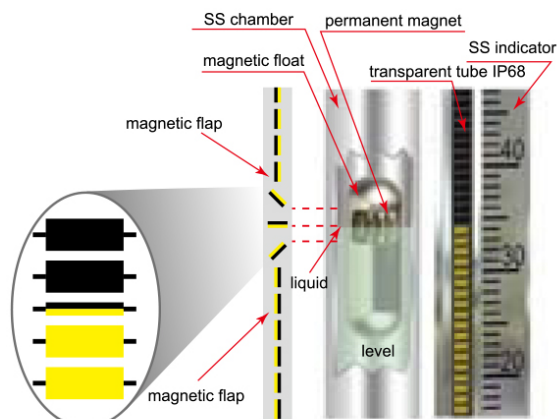
STANDARD SCALE
MAGNETIC ROLLER TYPE
(A)



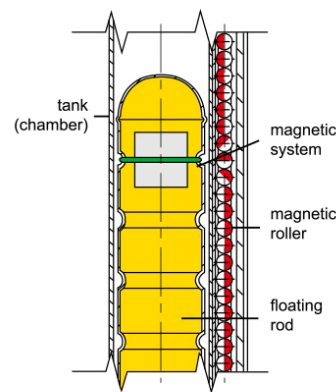
HIGH TEMPERATURE SCALE
CERAMICS MAGNETIC ROLLER TYPE
(B)

STRUCTURE PRINCIPLE

The magnetic liquid level gauge operates on principle of Buoyancy and Magnetic Coupling. As the liquid level rise or fall in the vessel, the float in chamber will rise or fall correspondingly (See fig.1). The permanent magnet in the float actuates the white and red rollers to reverse 180° due to magnetic coupling. As liquid level increases, rollers reverse from white to red; while liquid level decreases, rollers reverse from red to white. The red/white interface of indicator shows the actual level of medium in vessel. The rollers material of common level gauge for atmospheric temperature is plastic resin; and for high temperature applications (up to 520°C), alumina ceramic rollers with permanent magnet steel armored should be used. LG20 series are top mounted magnetic level gauge the chamber is on the top of vessel and connected with float and connecting rod, the magnet field of permanent magnet makes the level in vessel to the top chamber and conveys to level indicator, transmitter and switch due to magnetic coupling effect.



principle scheme of magnetic flap level gauge

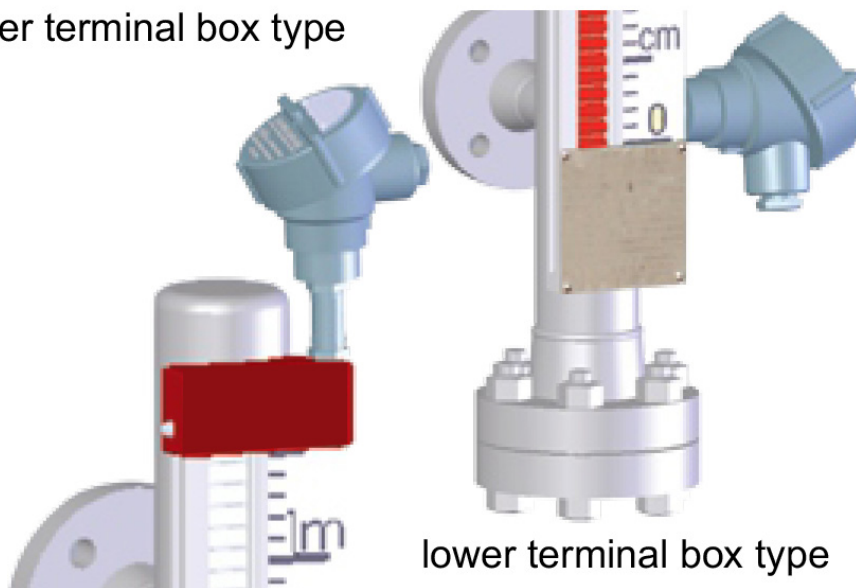


principle scheme of magnetic roller level gauge

OPTIONAL LB LEVEL TRANSMITTER

LB transmitter imposes the level signal from magnetic system coupling on every dry reed of resistance chain in sensor. It will change output resistance continuous. The measure voltage will change accordingly proportional to the level in vessel. With transmission transducer, output a two wire 4~20mA analog signal; HART communication protocol is optional.

Upper terminal box type



lower terminal box type

TRI-MAGNET (QUADRA-MAGNET) DRIVEN LEVEL SWITCH

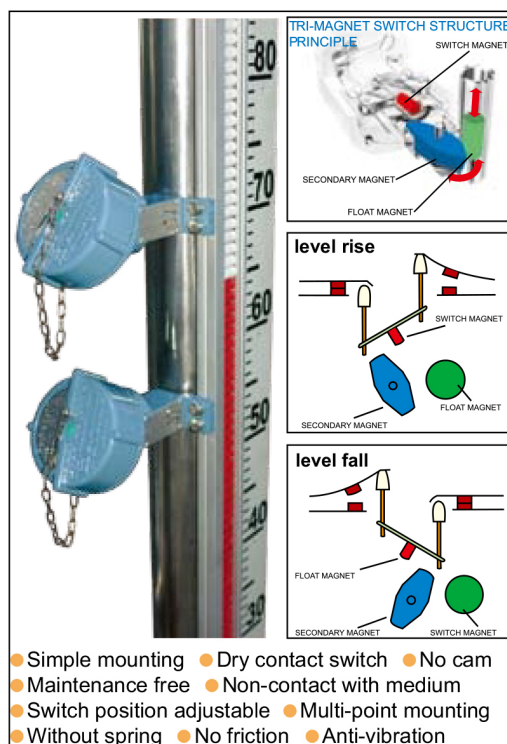
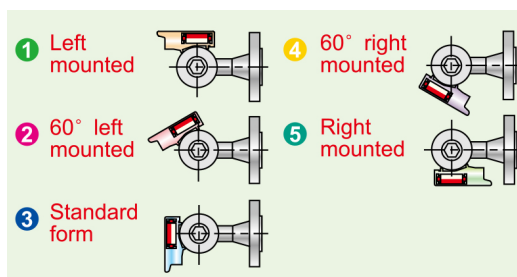
BK-1/EX Tri-Magnet Level Switch, as the most reliable and practical level switch in the world, has bistable memory function. Mounted on the indicator, in the same magnetic coupling system with level gauge, not contact with the process medium, this level switch is high-temperature resistant, explosion proof and shockproof. It utilizes three magnetic coupling burst switches. When the magnetic float (the first magnet steel) in the chamber close to the switch, the second magnetic component will rotate, meanwhile the third magnet steel in the switch will rotate reversely and the push bar will actuate the switch. BK-1H/Ex Quadra-magnet driven level switch is suitable for high temperature applications. The fourth magnetic coupling is used to keep the terminal box far from the high temperature heat source, and working temperature of BK-1H/Ex Quadra-magnet level switch can be up to 420°C.

TECHNICAL SPECIFICATION

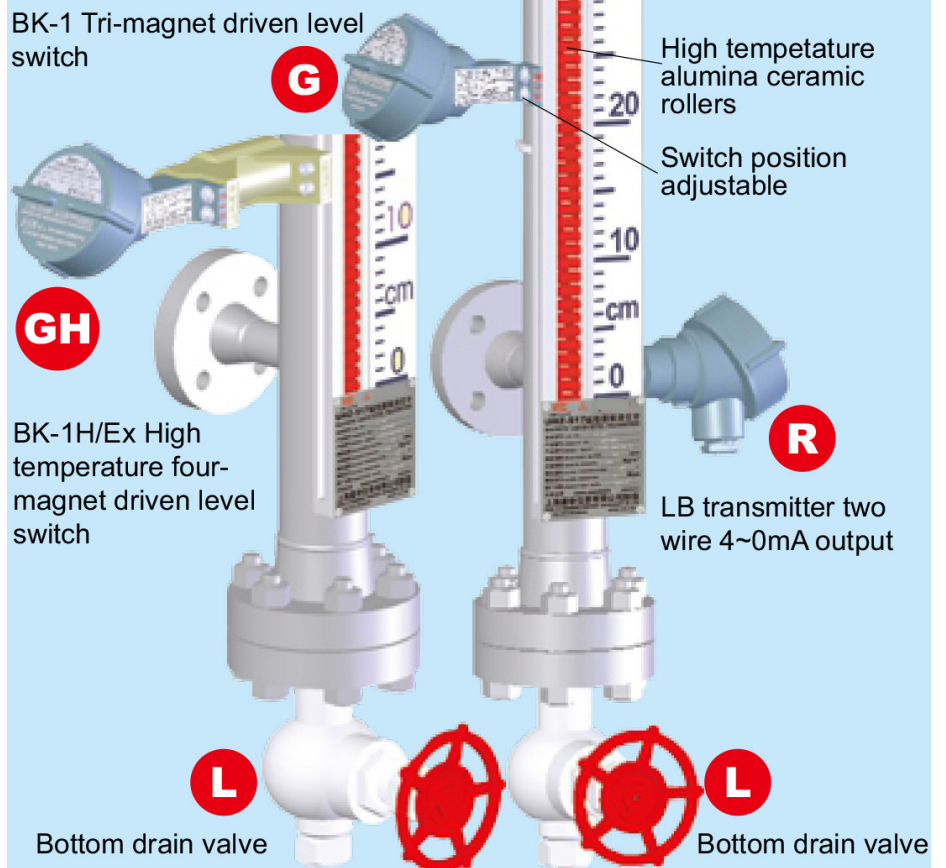
10A 220VAC; 0.6A 150V DC; SPDP, -50~180°C, -50~420°C

Safety class : ExiaIICT1~T6, ExdIIIBT1~T6

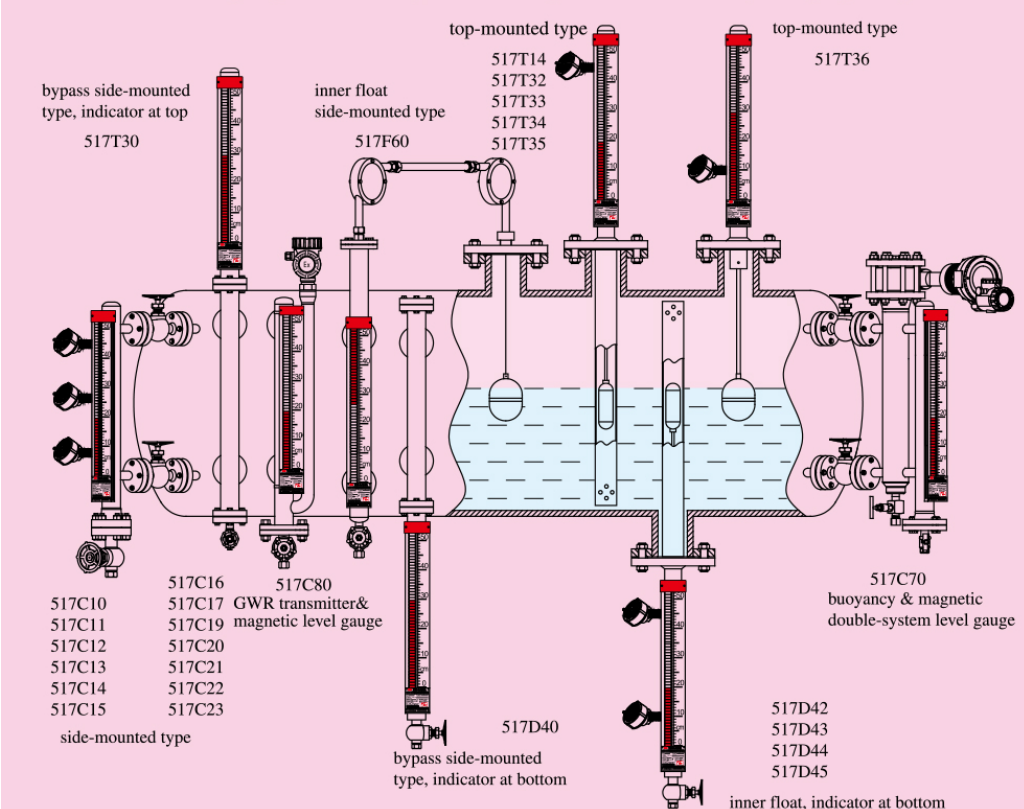
Electrical entry : M20×1.5NPT(F)



SPECIFICATION		Application conditions			Flange connection		Wetted material	Installing	Weight	
Model	Structure features	Temp. °C	Press.MPa	g/cm³	DN(mm)	PN(MPa)			Kg	kg/m
LG20C10	Basic	-0 ~100	≤ .5 150LB	0.5~.0	DN0/5 ¾" 1"	.5MPa 150LB	1.4783 31 SUS31	Side-Side mounted Top-Side mounted	6	5
LG20C10(A)		-0 ~100	≤ .5 150LB	0.5~.0	DN0/5 ¾" 1"	.5MPa 150LB	1Cr8Ni9Ti1.4571		6.8	6
LG20C11	High Temperature low pressure	≤ 40	≤ .5 150LB	0.5~.0	DN0/5 ¾" 1"	.5MPa 150LB	316Ti		7.5	6
LG20C1A	High Temperature mid-pressure	≤ 450	≤ 4.0 300LB	0.5~.0	DN0/5 ¾" 1"	4.0MPa 300LB	0Cr18Ni- MoT1.4401		8.5	7
LG20C1B	High Temperature high pressure	≤ 450	≤ 6.4 400LB	0.5~.0	DN5/40 1" 1½"	6.4MPa 400LB	316 SUS316		10	7
LG20C1C	High Temperature high pressure	≤ 450	≤ 10.0 600LB	0.45~.0	DN5/40 1" 1½"	10.0MPa 600LB	0Cr17Ni1Mo 1.4435		11	7
LG20C1D	High Temperature high pressure	≤ 50	≤ 16.0 900LB	0.45~.0	DN5/40 1" 1½"	16.0MPa 900LB	316L SUS316L		14	7
LG20C1E	High Temperature high pressure	≤ 50	≤ 5.0 1500LB	0.45~.0	DN5/40 1" 1½"	5.0MPa 1500LB	00Cr17Ni14Mo 1.4301		8.5	7
LG20C13	Low Temperature frost proof	-40~100	≤ 4.0 300LB	0.38~1.	DN5/40 1" 1½"	5.0MPa 300LB	304 SUS304		8.5	7
LG20C3A	Low Temperature frost proof	-196~100	≤ 4.0 300LB	0.38~1.	DN5/40 1" 1½"	4.0MPa 300LB	0Cr18Ni9 3.7035		8.5	7
LG20C14	Special for liquid gas	-0~100	≤ 4.0 300LB	0.4~1.	DN5/40 1" 1½"	4.0MPa 300LB	C4.4610 C76 .4819		8.5	7
LG20C15A	PTFE lined without blind area	-30~100	≤ .5 150LB	0.5~.0	DN5 1"	.5MPa 150LB	PTFE		8	7
LG20C15B	Anti-corrosion with blind area	-30~100	≤ .5 150LB	0.6~.0	DN0/5 ¾" 1"	.5MPa 150LB	PTFE		8	7
LG20C15C	Anti-corrosion without blind area	-30~100	≤ .5 150LB	0.6~.0	DN5 1"	0.3MPa	PTFE		8	7
LG20C16	Transparent tube normal pressure	-0~50	≤ 0.3	0.5~.0	DN5/3 1" 1¼"	1.0MPa	UPVC		8.5	7
LG20C17	Anti-corrosion with UPVC fittings	-0~60	≤ 1.6	0.5~.0	DN5/3 1" 1¼"	0.6MPa	UPVC		5.0	.4
LG20C19	Special for HCL tank (PP lined)	-0~80	≤ 0.6	0.6~.0	DN5 1"	1.6MPa 150LB	PPR		6.5	5.7
LG20C0	Special for liquid sulfur	≤ 50	≤ 1.6 150LB	0.9~.0	DN50/65 " 1"	5.0MPa 300LB	304 316L		1	11
LG20C1	For liquid gas of low density	-0~100	≤ 4.0 300LB	≥ 0.35	DN5 1"	1.0MPa	304 316L		10	10
LG20C	Low pressure Mini pipe(1"chamber) Type	0~00	≤ 1.6	≥ 0.6	DN15/0 1" ¾"	0.6MPa	304 316L		.6	4
LG20C3	3A FDA GMP Sanitary type	-0~150	≤ 0.6	0.7~1.	DN5 1"	1.6MPa	316L		6.5	6
LG20F60	Inner float type	≤ 150	≤ 1.6	0.6~.0	DN100/00 4" 6" 8"	4.0MPa 300LB	304		9	8
LG20T14	For LPG & underground tanks	-40~100	≤ 4.0 300LB	0.4~1.	DN150 6"	4.0MPa 300LB	316L	Top-Side mounted	6	1
LG20T30	Side-side mounted with top indication	-0~00	≤ 4.0 300LB	0.65~.0	DN150 6"	.5MPa 150LB	304 316L	Top mounted	7	7
LG20T3	DN80 with Inner protection tube	-40~00	≤ .5 150/300LB	0.65~.0	DN100 4"	.5MPa 150/300LB	304 316L		5	7
LG20T33	UPVC fittings without protection tube	-0~80	≤ 1.0	0.65~.0	DN80 3"	1.0MPa	UPVC		5	4
LG20T34	PP lined with protection tube	-0~80	≤ 1.0	0.65~.0	DN100 4"	1.0MPa	PPR		5	5
LG20T34A	PP lined without protection tube	-0~80	≤ 1.0	0.65~.0	DN80/100 3" 4"	1.0MPa	PPR		5	5
LG20T35	PTFE lined without protection tube	-30~00	≤ .0 150LB	0.65~.0	DN100 4"	.0MPa 150LB	PTFE		6	5
LG20T35A	PTFE lined anti-corrosion with guide tube	-30~00	≤ .0 150LB	0.65~.0	DN100 4"	.0MPa 150LB	PTFE		7	6
LG20T36	Big foat without protection tube	-30~00	≤ .5 150LB	0.5~.0	DN150 6"	.5MPa 150LB	304 316L		10	3
LG20T37	Top mounted with big foat	-40~00	≤ .5 150LB	0.5~.0	DN150 6"	.5MPa 150LB	304 316L		.6	3
LG20T38	For lower density or small entry	-40~00	≤ 4.0 300LB	≥ 0.35	DN80 3"	4.0MPa 300LB	Ti 304 316L		6	6.
LG20C70	Displacer level transmitter & magnetic level gauge	-196~50	≤ 5.0 1500LB	0.35~.0	DN5/40 1" 1½"	.5-5MPa 150-1500LB	304 316L	Side-Side mounted	17	8
LG20C80	Guided wave radar level transmitter & magnetic level gauge	-40~00	≤ .5 150/300LB	0.35~.0	DN5 1"	.5MPa 150/300LB	304 316L		8	8.5



ALL TYPES OF MAGNETIC LEVEL GAUGES



ORDERING CODES

1. DRAIN VALVE

N	With blind flange, no drain valve	N
L	Bottom drain valve	

2. LEVEL SWITCH

G	Tri-magnet driven level switch	G
GH	High temperature four-magnet driven level switch	

3. CONTROL POINTS

X	Quantity of level switch	X
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4. LEVEL TRANSMITTER TYPES

R	LB transmitter two wire 4~20mA output	R
R1	LB transmitter HART two-wire 4~20mA output	
R2	AT200 Magnetostrictive transmitter two-wire 4~20mA output HART	
R3	AT201 Magnetostrictive transmitter three-wire 4~20mA output HART	
R4	AT202 High temperature magnetostrictive transmitter two-wire 4~20mA output HART	
R5	AT203 High temperature magnetostrictive transmitter three-wire 4~20mA output HART	

5. NOMINAL PRESSURE

XXX	Mention in 'MPa/LB'	16
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6. MEDIUM DENSITY

XXX	Mention in 'kg/m ³ '	780
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7. Measuring range

XXXX	Mention in 'mm'	XXXX
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8. MOUNTING HEIGHT (N/A FOR SIDE-SIDE MOUNTED GAUGE)

XX	Mention in 'mm'	XX
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9. HEATING JACKET TYPES

J1	Removable heating jacket	J1
J2	Sleeve type heating jacket	
J3	Coil type heat tracing device	
J4	Depth vacuum jacket	
J5	Depth vacuum insulation compound heating jacket	
J6	Automatic temperature-limiting electric heat tracing device	

10. EXPLOSION PROOF

D	Exd IIC T1~T6 Explosion proof	D
E	Exia IIC T1~T6 Intrinsically safe	
EF	Intrinsically safe with barrier	
W	Wide rollers scale	

Ordering Example : LG20-N-G-X-R-16-780-2000-XX-J1-D