

FEATURES

- Good sealing, leakage proof and reliable measurement in high temperature, high pressure, high viscosity and strong corrosion applications.

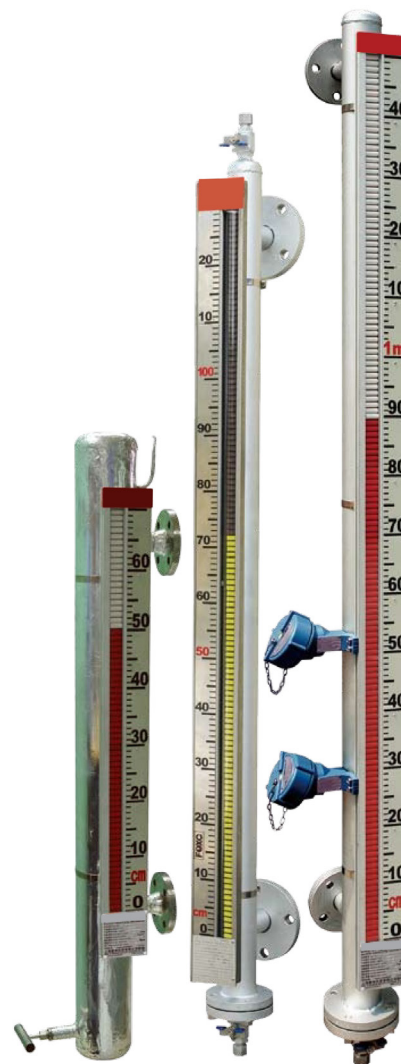
- No blind area. Striking in display, clear in reading and wide in range; with alarm and control switch, the liquid level or interface can be controlled at upper or lower limit

- LB transmitter converts the signal of liquid or interface level into 4~20mA DC standard signal, and achieves the purpose of remote measurement, indication, record and control

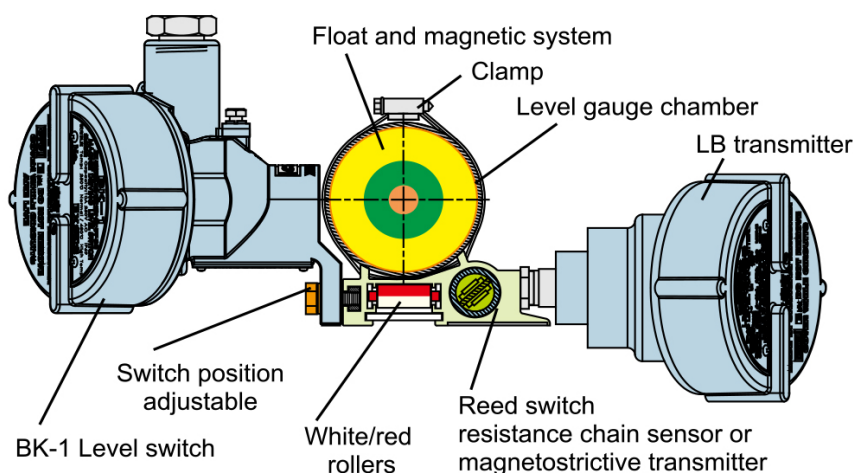
APPLICATIONS

- 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



SECTION STRUCTURE DRAWING



TECHNICAL SPECIFICATION

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	: $\leq 0.5\text{mm}$



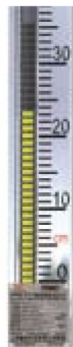
STANDARD SCALE
MAGNETIC ROLLER
TYPE (A)



HIGH TEMPERATURE SCALE
CERAMICS MAGNETIC ROLLER
TYPE (B)



EXTRA-WIDE SCALE
EXTENDED MAGNETIC ROLLER
TYPE (C)



STAINLESS STEEL SCALE
MAGNETIC FLAP
TYPE (D)



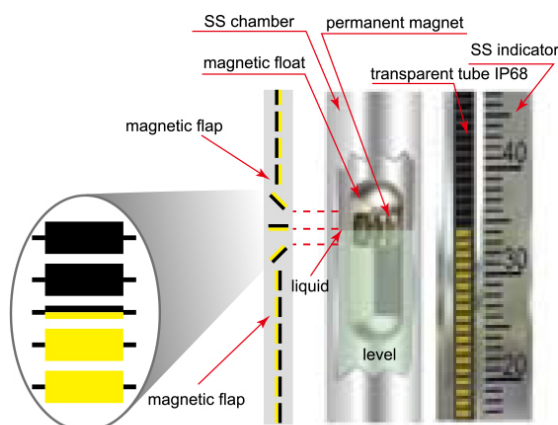
STAINLESS STEEL SCALE
TWIN FLAPS
TYPE (E)



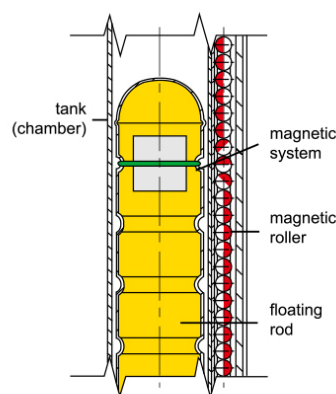
STAINLESS STEEL SCALE
SINGLE FLAP
TYPE (F)

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. MLG 517T 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

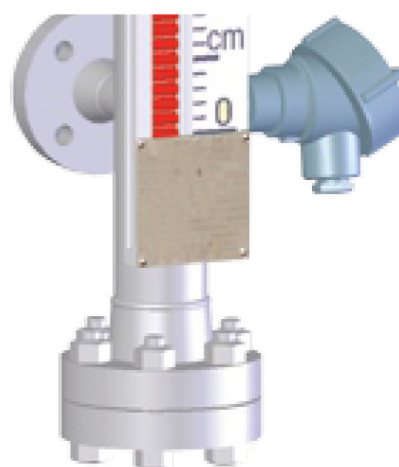


principle scheme of magnetic roller level gauge

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



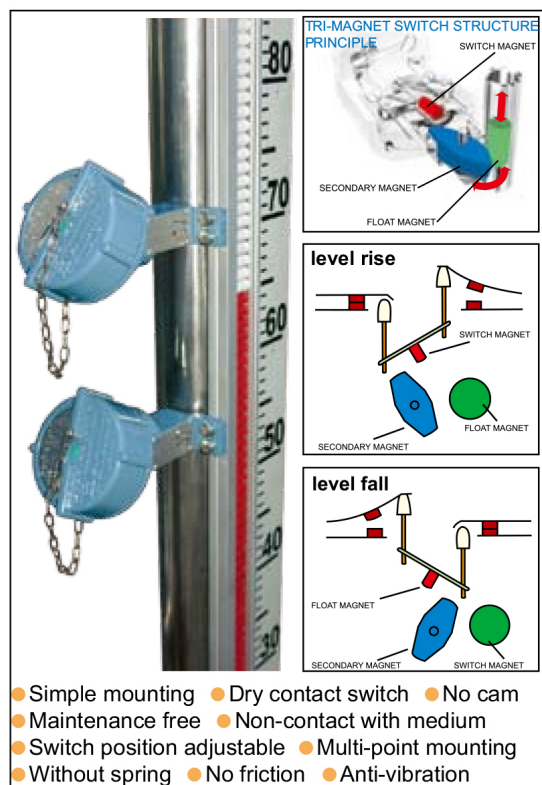
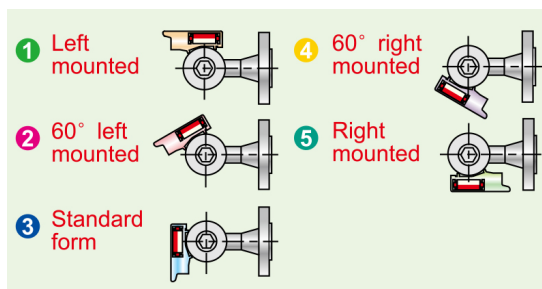
lower terminal box type

TRI-MAGNET (QUADRA-MAGNET) DRIVEN LEVEL SWITCH

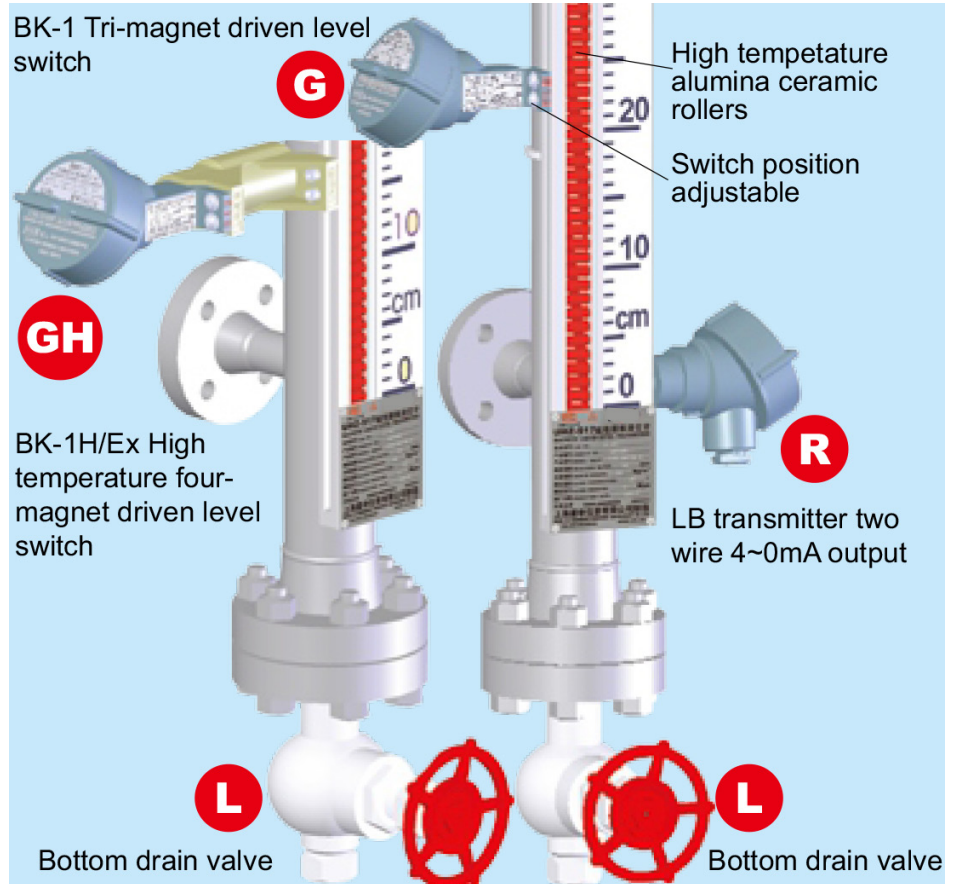
BK-1/EX Tri-Magnet Level Switch, as the most reliable and practical level switch in the world, has bistable memory function. Mounted on the indicator, in the same magnetic coupling system with level gauge, not contact with the process medium, this level switch is high-temperature resistant, explosion 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

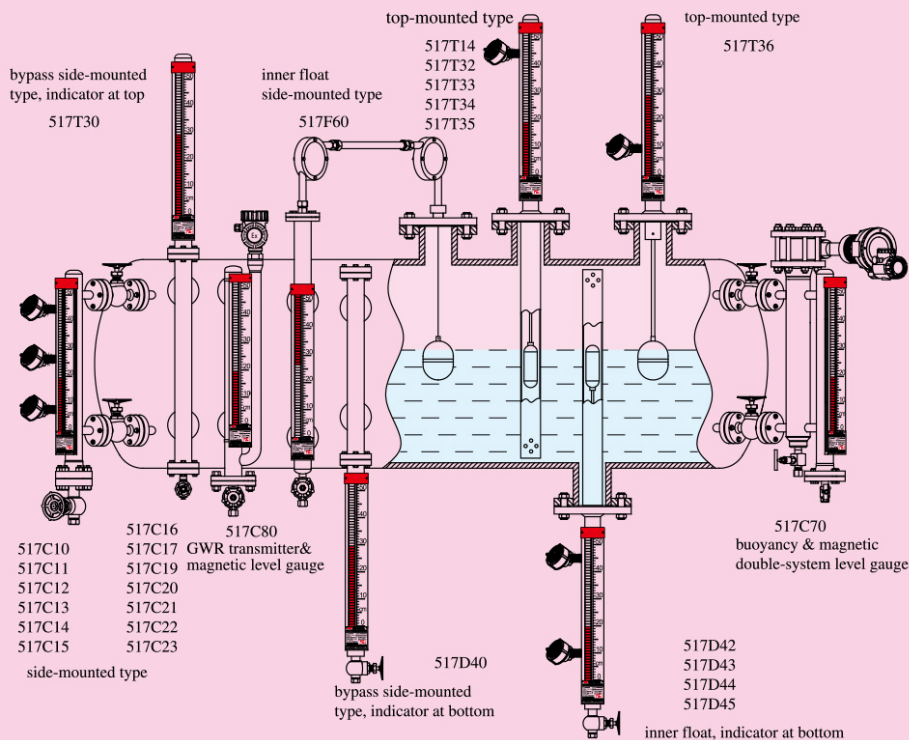
	: 10A 220VAC; 0.6A 150V DC; SPDP, -50~180℃, -50~420℃
Safety class	: ExiaIICT1~T6, ExdIIBT1~T6
Electrical entry	: M20×1.5NPT(F)



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
MLG 517C10	Basic	-0 ~100	≤ .5	0.5~.0	DN0/5	.5MPa	1.4783 31		6	5
MLG 517C10(A)		-0 ~100	150LB		¾" 1"	150LB				
MLG 517C11	High Temperature low pressure	≤ 40	≤ .5 150LB	0.5~.0	DN0/5	.5MPa	SUS31 1Cr8Ni9Ti	Side-Side mounted Top-Side mounted	6.8	6
MLG 517C1A	High Temperature mid-pressure	≤ 450	≤ 4.0 300LB	0.5~.0	DN0/5	4.0MPa	1.4571 316Ti		7.5	6
MLG 517C1B	High Temperature high pressure	≤ 450	≤ 6.4 400LB	0.5~.0	DN5/40	6.4MPa	0Cr18NiMoTi 1.4401		8.5	7
MLG 517C1C	High Temperature high pressure	≤ 450	≤ 10.0 600LB	0.45~.0	DN5/40	10.0MPa	316 SUS316 0Cr17Ni1Mo		10	7
MLG 517C1D	High Temperature high pressure	≤ 50	≤ 16.0 900LB	0.45~.0	DN5/40	16.0MPa	1.4435 316L		11	7
MLG 517C1E	High Temperature high pressure	≤ 50	≤ 5.0 1500LB	0.45~.0	DN5/40	5.0MPa	00Cr17Ni14Mo 1.4301		14	7
MLG 517C13	Low Temperature frost proof	-40~100	≤ 4.0 300LB	0.38~1.	DN5/40	5.0MPa	304 SUS304		8.5	7
MLG 517C3A	Low Temperature frost proof	-196~100	≤ 4.0 300LB	0.38~1.	DN5/40	4.0MPa	0Cr18Ni9 3.7035		8.5	7
MLG 517C14	Special for liquid gas	-0~100	≤ 4.0 300LB	0.4~1.	DN5/40	4.0MPa	C4 .4610 C76 .4819		8.5	7
MLG 517C15A	PTFE lined without blind area	-30~100	≤ .5 150LB	0.5~.0	DN5	.5MPa	PTFE		8	7
MLG 517C15B	Anti-corrosion with blind area	-30~100	≤ .5 150LB	0.6~.0	DN0/5	.5MPa	PTFE		8	7
MLG 517C15C	Anti-corrosion without blind area	-30~100	≤ .5 150LB	0.6~.0	DN5	0.3MPa	PTFE		8	7
MLG 517C16	Transparent tube normal pressure	-0~50	≤ 0.3	0.5~.0	DN5/3	1" 1¼"	UPVC		8.5	7
MLG 517C17	Anti-corrosion with UPVC fittings	-0~60	≤ 1.6	0.5~.0	DN5/3	1" 1¼"	UPVC		5.0	.4
MLG 517C19	Special for HCL tank (PP lined)	-0~80	≤ 0.6	0.6~.0	DN5	1.6MPa	PPR		6.5	5.7
MLG 517C0	Special for liquid sulfur	≤ 50	≤ 1.6 150LB	0.9~.0	DN50/65	5.0MPa	304 316L	Top-Side mounted	1	11
MLG 517C1	For liquid gas of low density	-0~100	≤ 4.0 300LB	≥ 0.35	DN5	1.0MPa	304 316L		10	10
MLG 517C	Low pressure Mini pipe(1"chamber) Type	0~00	≤ 1.6	≥ 0.6	DN15/0	0.6MPa	304 316L		.6	4
MLG 517C3	3A FDA GMP Sanitary type	-0~150	≤ 0.6	0.7~1.	DN5	1.6MPa	316L		6.5	6
MLG 517F60	Inner float type	≤ 150	≤ 1.6	0.6~.0	DN100/00	4.0MPa	304		9	8
MLG 517T14	For LPG & underground tanks	-40~100	≤ 4.0 300LB	0.4~1.	DN150	4.0MPa	316L		6	1
MLG 517T30	Side-side mounted with top indication	-0~00	≤ 4.0 300LB	0.65~.0	DN150	.5MPa	304 316L	Top mounted	7	7
MLG 517T3	DN80 with Inner protection tube	-40~00	≤ .5 150/300LB	0.65~.0	DN100	.5MPa	304 316L		5	7
MLG 517T33	UPVC fittings without protection tube	-0~80	≤ 1.0	0.65~.0	DN80	1.0MPa	UPVC		5	4
MLG 517T34	PP lined with protection tube	-0~80	≤ 1.0	0.65~.0	DN100	1.0MPa	PPR		5	5
MLG 517T34A	PP lined without protection tube	-0~80	≤ 1.0	0.65~.0	DN80/100	1.0MPa	PPR		5	5
MLG 517T35	PTFE lined without protection tube	-30~00	≤ .0 150LB	0.65~.0	DN100	.0MPa	PTFE		6	5
MLG 517T35A	PTFE lined anti-corrosion with guide tube	-30~00	≤ .0 150LB	0.65~.0	DN100	.0MPa	PTFE		7	6
MLG 517T36	Big foat without protection tube	-30~00	≤ .5 150LB	0.5~.0	DN150	.5MPa	304 316L		10	3
MLG 517T37	Top mounted with big foat	-40~00	≤ .5 150LB	0.5~.0	DN150	.5MPa	304 316L		.6	3
MLG 517T38	For lower density or small entry	-40~00	≤ 4.0 300LB	≥ 0.35	DN80	4.0MPa	Ti 304 316L		6	6.
MLG 517C70	Displacer level transmitter & magnetic level gauge	-196~50	≤ 5.0 1500LB	0.35~.0	DN5/40	.5-5MPa	304 316L	Side-Side mounted	17	8
MLG 517C80	Guided wave radar level transmitter & magnetic level gauge	-40~00	≤ .5 150/300LB	0.35~.0	DN5	.5MPa	304 316L		8	8.5



ALL TYPES OF MAGNETIC LEVEL GAUGES



ORDERING CODES

MLG 517

With blind flange no drain valve										
Bottom drain valve	L									
Tri-magnet driven level switch	G									
High temperature four-magnet driven level switch	GH									
Control points(quantity of level swithes)										
LB transmitter two wire 4~20mA output	R									
LB transmitter HART two-wire 4~20mA output	R1									
AT200 Magnetostrictive transmitter two-wire 4~20mA output HART	R2									
AT201 Magnetostrictive transmitter three-wire 4~20mA output HART	R3									
AT202 High temperature magnetostrictive transmitter two-wire 4~20mA output HART	R4									
AT203 High temperature magnetostrictive transmitter three-wire 4~20mA output HART	R5									
Nominal press.,MPa/LB										
Medium density,kg/m ³										
Messuring range,mm										
Mounting height(N/A for side-side mounted gauge)										
J1	Removable heating jacket									
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 limition electric heat tracing device									
D	Exd IICT1~T6 Explosion proof									
E	Exia IICT1~T6 Intrinsically safe									
EF	Intrinsically safe with barrier									
W	Wide rollers scale									

Example1: MLG 517C10 magnetic level gauge, side-side mounted, bottom with drain valve, two BK-1/Ex three-magnet driven switches, explosion proof LB transmitter, measuring range 2000mm, medium 98% oil of vitriol, medium density 1840kg/m³ pressure 1.2MPa, maximum operating temperature 120°C ,nominal pressure 2.5MPa.

MODEL NUMBER: MLG 517C10LG2RD-2000-1840-2.5

Example2: MLG 517C1DL high temperature and pressure magnetic level gauge, side-side mounted, bottom with drain valve, measuring range (flange center-center distance) 800mm, medium steam, medium density 780kg/m³, operating pressure 12MPa, operating temperature 420°C , nominal pressure 16MPa.

MODEL NUMBER: MGL 517C12DL-800-780-16

Example3: MGL 517T32 top-mounted magnetic level gauge with inner protection tube, process connection flange DN80 PN1.0, distance from flange to vessel bottom is 3500mm, measuring range 3200mm, medium diesel oil, medium density 810 kg/m³, operating pressure normal, operating temperature 40°C, nominal pressure 150LB.

MODEL NUMBER: MGL 517T32-3500-3200-810-150LB