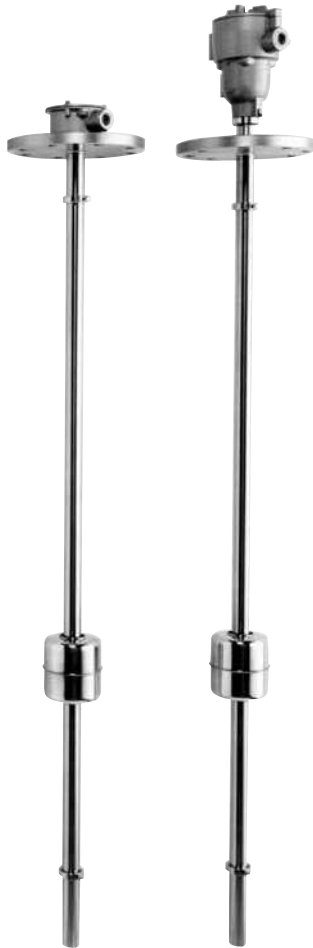


# MODEL LR

## CUSTOM CONTINUOUS LEVEL SENSOR



### Features

- Continuous level indication
- 4 to 20mA output
- Very reliable
- Wide choice of materials
- Durable float

### Approval

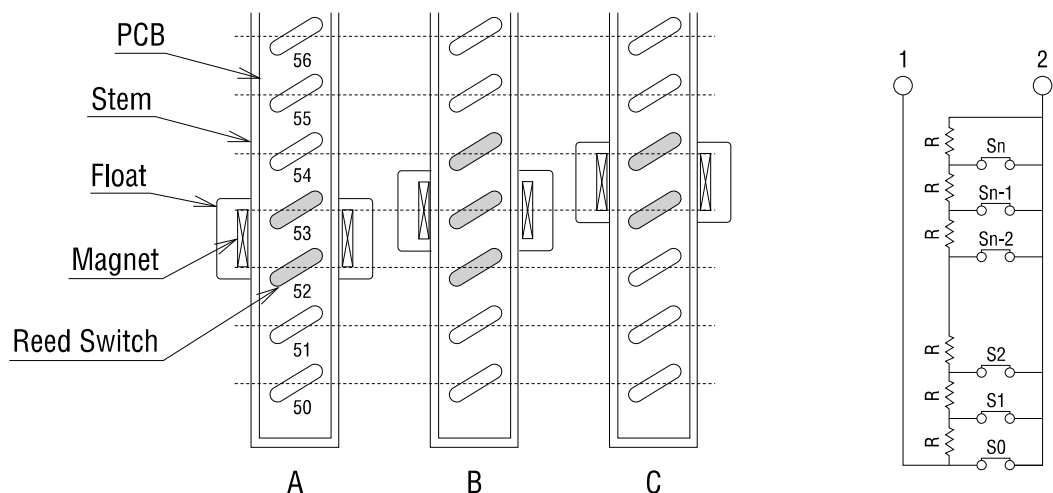
d2G4

### General Description

The LR series, custom continuous level sensors, are designed to meet customer's requirements for reliable operation. Models are available in lengths up to 3900mm with a variety of mounting configurations. The wide selection of materials include 304SS, 316SS, PVC, CPVC, PP, and others. For stable operation, we recommend using with our controller of Model MP2000 or CU2000.

### Operational Description

The LR series consists of the reed switch and resistor on the PCB inside the stem and permanent magnet inside the float. The float is the only moving part which travels vertically on the stem. A permanent magnet inside the float acts on a series of closely set reed switches and resistors on the PCB inside the stem. The reed switches are actuated by the float magnetic field in a "2-3-2 at a time" as the float travels. Accordingly, the total resistance value of PCB is changed by float traveling. The total resistance value is converted into voltage and current signals in proportion to the level of the liquid.



### Interface Monitor

Model LR series float transmitters can monitor the interface between two immiscible liquids. A minimum specific gravity difference of 0.1 can be accommodated. The weight and buoyancy of the magnetic float will be adjusted so that the float sinks through the lighter liquid and rides on the heavier liquid. This option can be provided if the following conditions are met:

1. Float material is 316 stainless steel
2. Minimum specific gravity difference is 0.1
3. Liquids have a specific gravity of 0.6 or greater

### Volume Monitor

The control unit, MP2000-2, is provided with the function of volume conversion selected from seven common tank shapes as mentioned below.

- Horizontal cylinder with flat ends
- Horizontal cylinder with parabolic end
- Spherical tank
- Cylinder tank with cone bottom
- Cylinder tank with parabolic bottom
- Vertical round tank with flat bottom
- Vertical square tank with flat bottom

### Ordering Information

LR200	Standard
LR400	Integral
LR520	d2G4, Cable entry G3/4
LR522	d2G4, Cable entry G1/2
	0 Flat-face flange
	1 Raised-face flange
	S 304 stainless steel
	S6 316 stainless steel
	V PVC
	HV CPVC
	P PP
	J JIS flange
	A ANSI flange
	D DIN flange
	A $\phi 90 \times H100$ , 316SS for LR200, LR52
	D $\phi 90 \times H100$ , 316LSS for LR200, LR52
	E $\phi 90 \times H100$ , 316LSS with ribs for LR200, LR52
	M $\phi 89 \times H150$ , PVC for LR200, LR52
	P $\phi 89 \times H150$ , CPVC for LR200, LR52
	X $\phi 88 \times H150$ , PP for LR200, LR52
	10 Standard: 10mm resolution
	5 Option: 5mm resolution
	■■■■ Specify desired length

LR200 0 S J A 10 1000 = LR200-0-SJA-10-1000

\* The mounting size should be specified when you order.

\* The measuring range should be specified when you order.

## Specifications

### Sensor

Model	LR200S	LR200V	LR52■S	LR52■V
Description	Standard		Explosion-proof, d2G4	
Drawing				
Mounting size	JIS5K100A	JIS5K100A	JIS5K100A	JIS5K100A
Operating Temperature	-10 to 100°C	0 to 50°C	-10 to 100°C	0 to 50°C
Maximum Pressure	500 kPa	200 kPa	500 kPa	200 kPa
Minimum Specific Gravity	0.7	0.8	0.7	0.8
Material	Housing	ADC12	ADC12	
	Flange Stem*	304SS	304SS	PVC
	Float*	316SS	316SS	PVC
Maximum Length of Stem	3900mm		3900mm	
Minimum Length of S1	80mm	90mm	80mm	90mm
Minimum Length of S2	80mm	135mm	80mm	135mm
Resolution	10mm (5mm is option)		10mm (5mm is option)	
Cable Entry	G3/4		G1/2 or G3/4	
Protection	IP55	IP43	IP65	

\*Other materials are available.

### Controller

Model	MP2000-2	CU2000
Description	2-wire for LR	2-wire for LR
Drawing		
Supply Power	100 to 240V AC 50/60Hz	90 to 132V AC / 180 to 264V AC 50/60Hz
Power Consumption	Approx. 20VA Max.	Approx. 20VA Max.
Output Signal	4 to 20mA DC	
Load Resistance	600 Ω Max.	750 Ω Max.
Alarm Output	4 points (2 points × 2 circuits) 240V 3A AC, 30V 3A DC (Resistive)	
Operating Temperature	-5 to 50°C	0 to 50°C
Maximum Humidity	85% RH	
Accuracy	±0.5% F.S.	±0.5% F.S.
Weight	Approx. 520g	Approx. 350g
Mounting	Panel mount, In conjunction with DIN43 700-96 x96 (Panel cut-out: 92mm×92mm)	11-pin socket* <sup>1</sup> (11PFA equivalent)

\*<sup>1</sup> 11-pin socket can be mounted on DIN rail.

Model	LR400S	LR400V	
Description	Integral		
Drawing			
Mounting size	JIS5K100A	JIS5K100A	
Supply Power	11 to 34V DC		
Output Signal	4 to 20mA DC		
Operating Temperature	-10 to 100°C	0 to 50°C	
Maximum Pressure	500 kPa	200 kPa	
Minimum Specific Gravity	0.7	0.8	
Material	Housing	ADC12	PVC
	Flange Stem*	304SS	PVC
	Float*	316SS	PVC
Maximum Length of Stem	3900mm		
Minimum Length of S1	80mm	90mm	
Minimum Length of S2	80mm	135mm	
Resolution	10mm (5mm is option)		
Cable Entry	G3/4		
Protection	IP55	IP43	

### Wiring

