

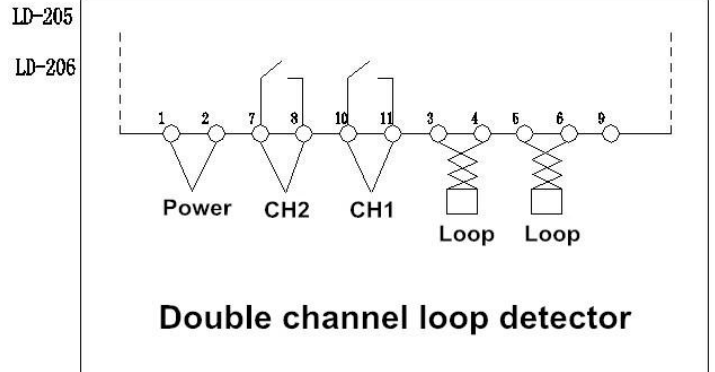
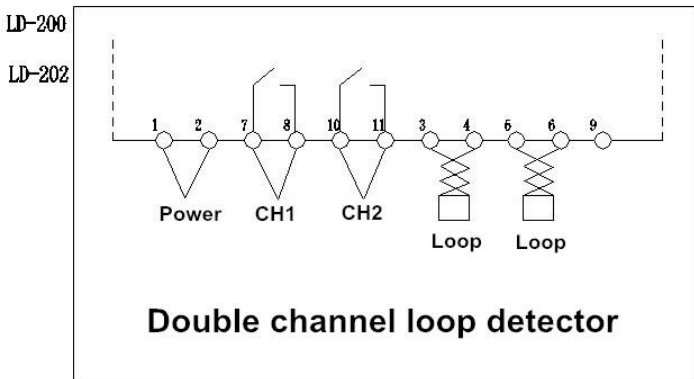
# Double channel loop detector

## Specification:

Supply voltage AC: 110V/220V/DC12~24  
 Frequency range: 20KHz to 100 KHz  
 Sensitivity: adjustable in 16 increments  
 Reaction time: 10ms  
 Loop inductance: Ideal: 100 $\mu$ H to 300 $\mu$ H (incl. conn. wiring)  
 Environment Compensation : Automatic drift compensation  
 Loop connection: <5m optimal ,twisted at least 20 times per meter,  
 <10  $\Omega$  total resistor  
 Operating temperature: -20 to +65 $^{\circ}$  C  
 Storage temperature: -40 to +85 $^{\circ}$  C  
 Relative Humidity : <90%



## Double channel wire connecting picture:

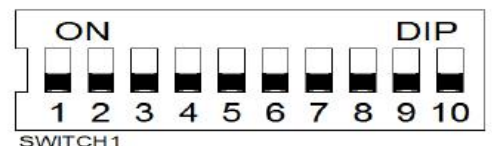
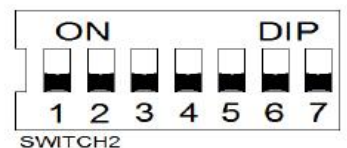


## Instruction:

Power Led: RED power LED indicates "Power ON"  
 CH1 Detecting Led: Continuously On: Indicates vehicle detection.  
 Blinking slowly: Indicates loop is short circuit or the number of twists after the loop is not enough.  
 Blinking fast: Indicates loop is open circuit or too many twists after the loop.  
 CH2 Detecting Led: Continuously On: Indicates vehicle detection.  
 Blinking slowly: Indicates loop is short circuit or the number of twists after the loop is not enough.  
 Blinking fast: Indicates loop is open circuit or too many twists after the loop.

## Sensitivity adjust:

Sensitivity and frequency of the loop can be adjusted by 7-way dip switch and 10-way dip switch setting.



User can select 8 different setting by changing the setting of the dip-switch to different modes as in the dip-switch setting tables below. Dip switch 6, 7 and 8 for CH1 sensitivity selection with 0.8 being the least sensitive and 0.015 being the most sensitive.

Dip switch 3, 4 and 5 for CH2 sensitivity selection with 0.8 being the least sensitive and 0.015 being the most sensitive.

Setting method:

(Switch 1=S1)D6 & D7 & D8 and (Switch 2=S2)D3 & D4 & D5 Setting CH1 and CH2 Sensitivity Selection. (Eight Levels Choices)

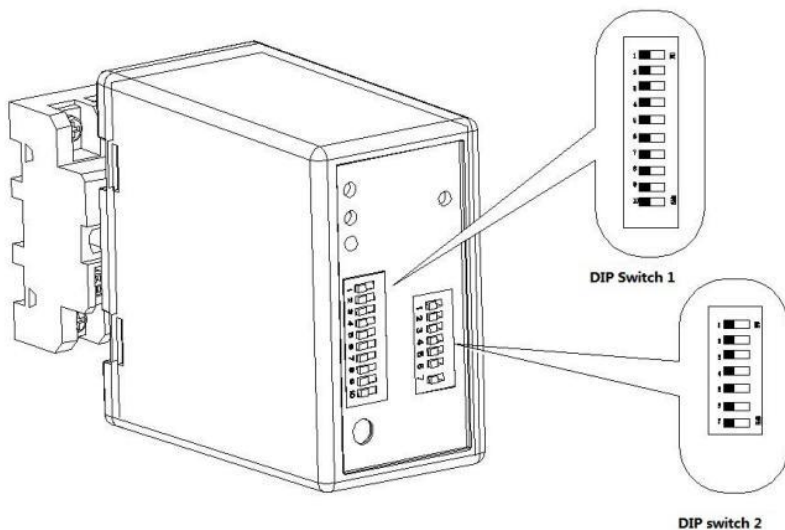
SW1	SW2	Sensitivity(%)							
		0.015(Highest)	0.02	0.04	0.08	0.12	0.2	0.5	0.8(Lowest)
D6	D3	ON	ON	ON	ON	OFF	OFF	OFF	OFF
D7	D4	ON	ON	OFF	OFF	ON	ON	OFF	OFF
D8	D5	ON	OFF	ON	OFF	ON	OFF	ON	OFF

**Working frequency adjust:**

The loop coil frequency adjustment by two DIP switch. (Switch 1=S1)D9 & D10 and (Switch2=S2)D6,D7 Setting Frequency (20 K to 100 KHz).

SW1	SW2	Frequency			
		High	Middle High	Middle low	Lower
D9	D6	OFF	ON	OFF	ON
D10	D7	OFF	OFF	ON	ON

**Reset Button:** Please note: The LD-200 must be reset every time a setting change is made to the Dip switches.



**The reply output method:**

(Switch 1=S1)D 3,D4,D5 and (Switch 2=S2) D1,D2 Setting Special Functions(Mode1,2,3 Direction Detection. Mode4,5,6 Normal mode, two loop detection are separated.)

	SW1	SW2	Function
<b>Mode 1</b>	<b>D3-&gt;ON</b>		Direction Detection. (If vehicle moves from CH1 to CH2, and left CH1, then CH1 relay pulse output; if vehicle moves from CH2 to CH1, and left CH2, then CH2 relay pulse output).
	<b>D4-&gt;OFF</b>	<b>D1-&gt;OFF</b>	
	<b>D5-&gt;ON/OFF</b>	<b>D2-&gt;ON/OFF</b>	
<b>Mode 2</b>	<b>D3-&gt;ON</b>		Direction Detection. (If vehicle moves from CH1 to CH2, and goes in CH2, then CH1 relay presence output; if vehicle moves from CH2 to CH1, and goes in CH1, then CH2 relay presence output).
	<b>D4-&gt;ON</b>	<b>D1-&gt;ON</b>	
	<b>D5-&gt;OFF</b>	<b>D2-&gt;OFF</b>	
<b>Mode 3</b>	<b>D3-&gt;ON</b>		Direction Detection. (If vehicle moves from CH1 to CH2, and goes in CH1, then CH1 relay presence output; if vehicle moves from CH2 to CH1, and goes in CH2, then CH2 relay presence output).
	<b>D4-&gt;ON</b>	<b>D1-&gt;ON</b>	
	<b>D5-&gt;ON</b>	<b>D2-&gt;ON</b>	
<b>Mode 4</b>	<b>D3-&gt;OFF</b>		CH1 and CH2 are separated presence output.
	<b>D4-&gt;OFF</b>	<b>D1-&gt;OFF</b>	
	<b>D5-&gt;ON/OFF</b>	<b>D2-&gt;ON/OFF</b>	
<b>Mode 5</b>	<b>D3-&gt;OFF</b>		When vehicle goes in CH1, then CH1 relay is pulse output; When vehicle goes in CH2, then CH2 relay is pulse output.
	<b>D4-&gt;ON</b>	<b>D1-&gt;ON</b>	
	<b>D5-&gt;OFF</b>	<b>D2-&gt;OFF</b>	
<b>Mode 6</b>	<b>D3-&gt;OFF</b>		if vehicle goes in CH1,when left CH1,CH1 relay pulse output; if vehicle goes in CH2,when left CH2,CH2 relay pulse output.
	<b>D4-&gt;ON</b>	<b>D1-&gt;ON</b>	
	<b>D5-&gt;ON</b>	<b>D2-&gt;ON</b>	

Note:When detect the vehicle direction, the two loop buried distance can't over vehicle length, must make the vehicle stay on the two loop at the same time.

### Loop coil details:

Formal national standard loop detector the coil, High temperature wire, High temperatures resistant, There are many colors. (There are some vendor using ordinary tinned wire posing as high-temperature wire sales, the kind of low-cost wire, but the laying of a long-term use of hidden dangers, please buyers attention to distinguish.)

Which are 19 tinned copper wire, different specifications, different brass wire diameter, teflon outer sheath , high temperature waterproof anti-corrosion, dedicated to the loop detector of the coil.(this kind of wire often used in high temperature environment, in order to prevent high temperature oxidation. State regulations and industry specifications using tinned copper wire as a conductor, tinned copper wire outside the silver-white metallic luster, cut open inside is pure copper. **So please buyers don' t have to question whether the fine copper.**

## National standards loop detector wire

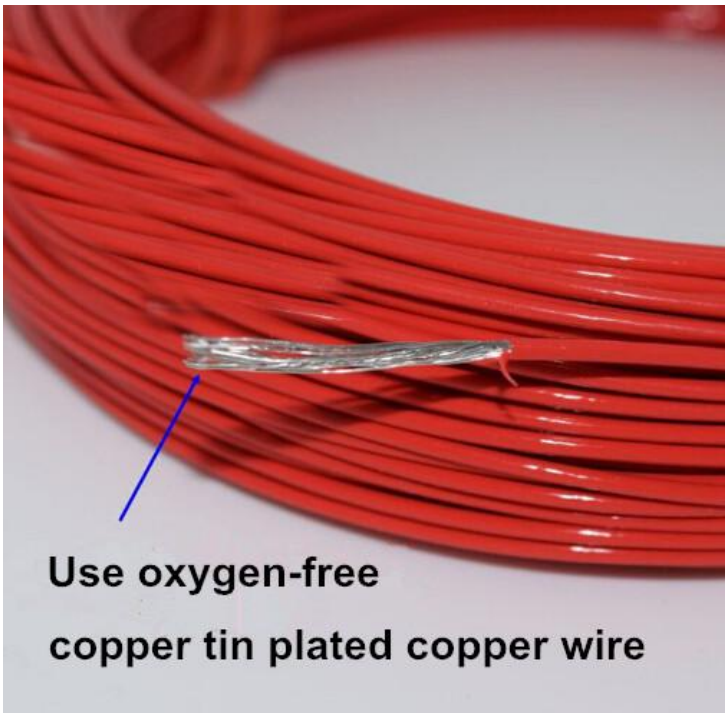
High  
temperature  
resistant  
anti-aging



Corrosion  
resistant  
and  
acid  
alkali



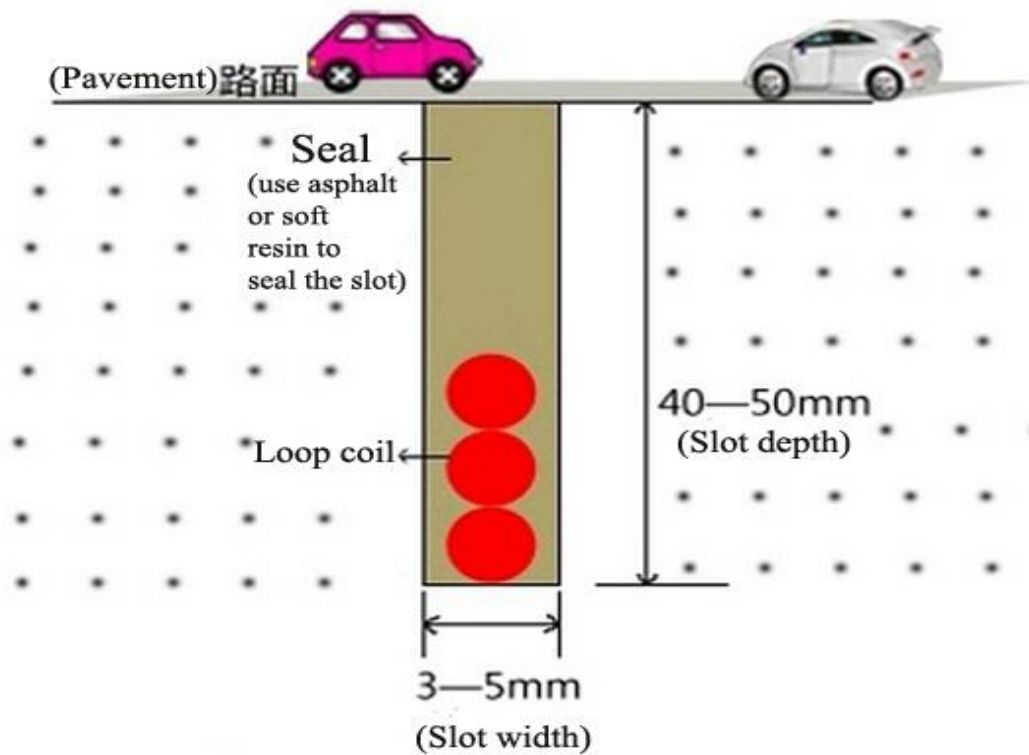
0.75 square  
19 bar 0.23 tinned  
copper brass wire



Use oxygen-free  
copper tin plated copper wire



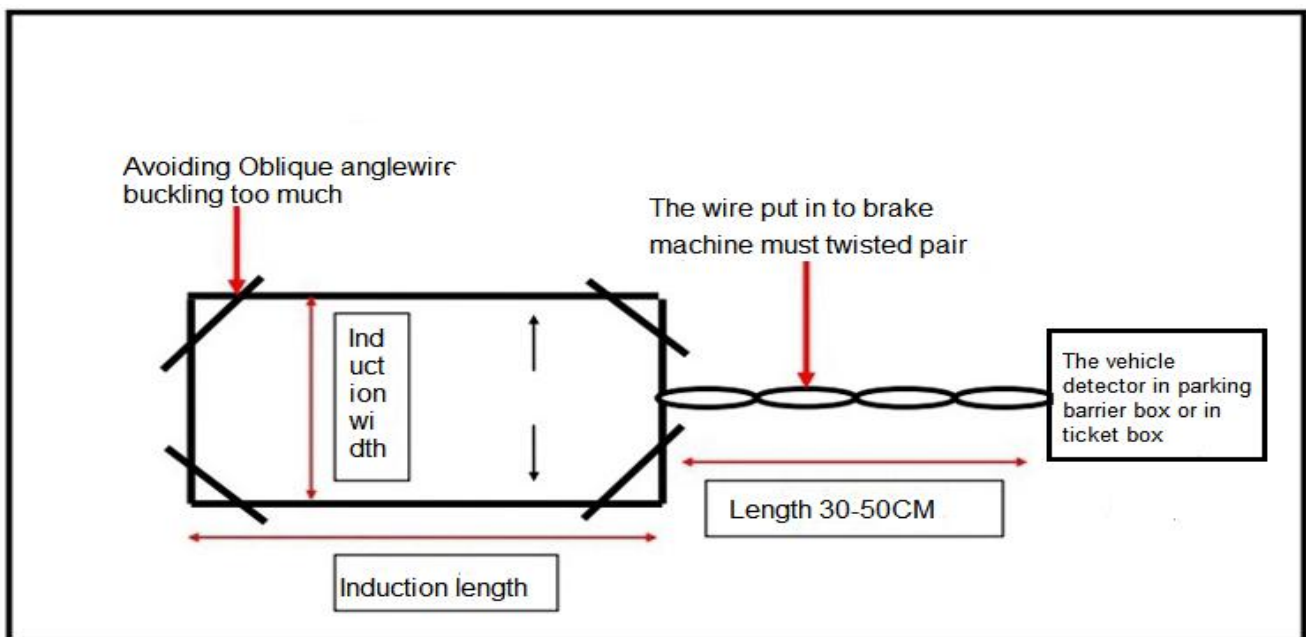
Heat resisting  
Nonflammable



## Wire slot cross-section drawn

### Installation instructions:

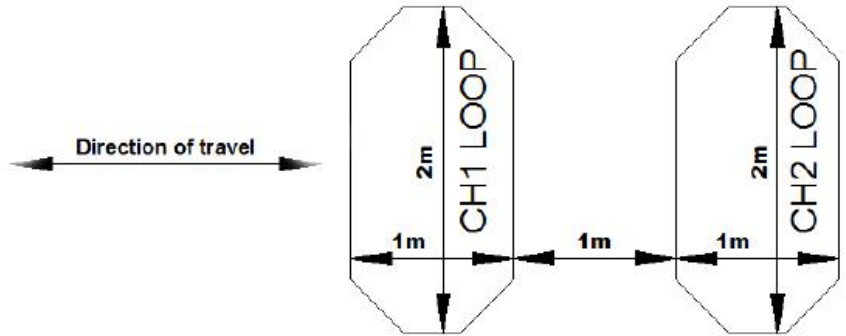
Usually the detection loop should be rectangle. The two long sides are perpendicular to the direction of the movement of the metal object. The gap between them is recommended to be 0.8-1 meter. The length of the long side depends on the width of the road. Generally the both ends are narrower than the separation distance of the road for 0.3-1 meter.



**Cylinder numbers:**

In order to make the detector work in the best condition, the inductance of the loop coil should be keep between 100uH-300uH, In the case of loop coil inductance unchanged. The cylinder numbers has an important relationship with the perimeter, the perimeter is smaller,cylinder more and more, please refer to the following chart:

Loop perimeter	Cylinder numbers
3 ~ 4 M	6
4 ~ 6 M	5
6 ~ 10 M	4
10 ~ 20 M	3
20 M~ UP	2



Due to underground road may be buried a variety of cable, pipe reinforcement,sewer cover and other metal substances. These will have a significant effect on the actual loop coil inductance, Therefore, the above table data is just for user reference. In the actual construction, the user should use the inductance test equipment to test the actually inductance value of loop coil to determine the actual Cylinder numbers. As long as make sure the final coil inductance value stay in the reasonable range of work(such as 100uH--300uH).

**Bury loop coil method:**

First use road cut equipment to cut the slot on the pavement, The four corner angle must be 45 degree. In order to prevent the sharp corner destroy the loop wire, The slot width is generally 4 to 8mm,depth 30-50mm.At the same time need cut a pass slot to the roadside, it need to make sure no water in the slot, The loop wire must be straightened when twisting, also not stretch too tight and close to the slot bottom. After finish twist the loop wire, put twisted output wire through lead-out slot, In the process of twisting loop wire, must use the inductance test equipment to measure the loop wire inductance value, and to ensure the inductance value of the loop coil between100uH-300uH.Otherwise, the Cylinder numbers should be adjusted. After buried the loop coil, in order to strengthen the protection, Anylon loop can be wound around the loop coil. Finally, use asphalt or soft resin to seal the slot.

