Magna Sensor

VD961a is an exit sensor with 3 separate sensitivitiy outputs.
VD963a is a presence sensor with 3 separate sensitivity outputs.
VD962a and **VD964a** are pulse & presence sensor with sens adjust.

Magna uses ambient magnetic fields. The sensors zero to the local magnetic conditions on powered up. Sensors must not be within a steel framed building or within 0.5m of an iron man hole cover, drain or large ferrous mass. Magna sensors are designed to be fitted to the centre of the road . Test the location before fixing in the ground. Contacts are volt free.
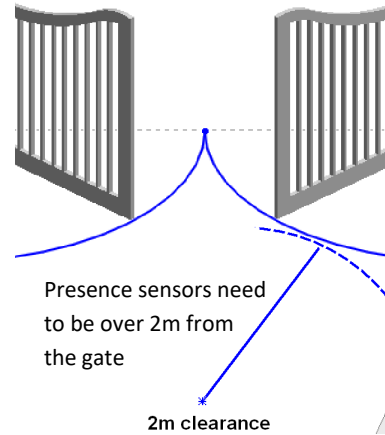
1. Position

The sensor is mounted in the road centre clear of moving steelwork. **Presence sensors** need to be positioned 2m or more from metal gates. Wooden gates have no effect.

We recommend **exit sensors** are positioned 3m or more from the nearest moving gate part, mainly for driver for convenience.
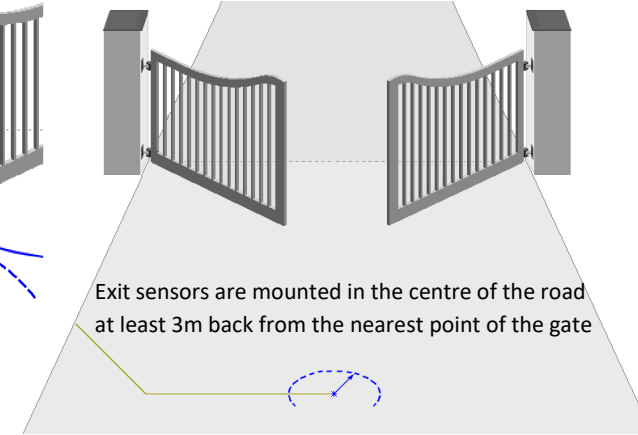
Test the sensor in position before burying. It can be moved if necessary. It resets on each power up, so can be moved several times.

Placing Magna in a non metallic pipe pre-laid in the road is highly recommended.

...for presence

Presence sensors need to be over 2m from the gate

2m clearance

... for exit

Exit sensors are mounted in the centre of the road at least 3m back from the nearest point of the gate

2. Fitting

The sensor is fully waterproof. Depth is not critical for operation. When fitting in a drilled hole, the middle should be over **150mm** deep with a min cable bend radius of **75mm** for stability and protection.
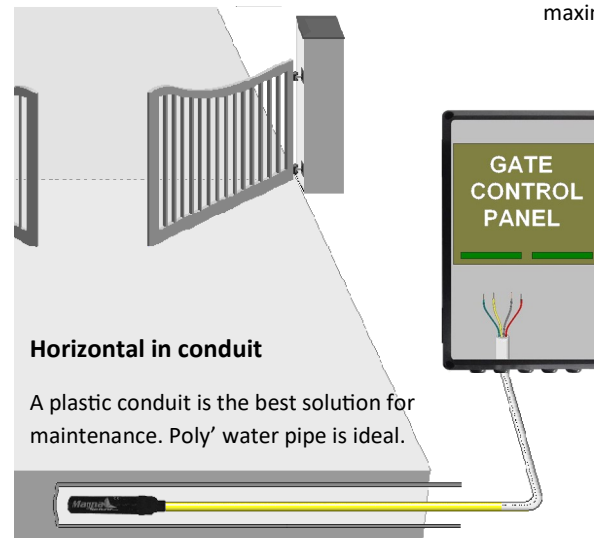
The sensor can be set in any orientation. A hole drilled at an angle is a simple and effective option setting it deep enough to be protected, and reducing cable radius. A 20mm drill bit is just big enough.

depth

cable saw cut

min radius

20mm drill

cable saw cut
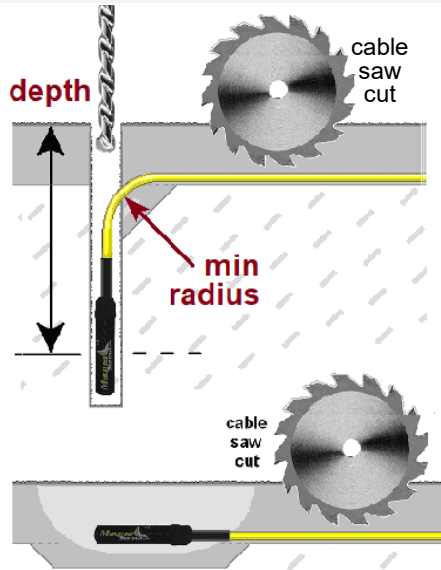
When setting the lead in black top, use a packer or sand layer as protection against hot pitch sealing. Setting in a sand course below **paving** is ideal. Poly-pipe is also recommended for fitting in gravel.
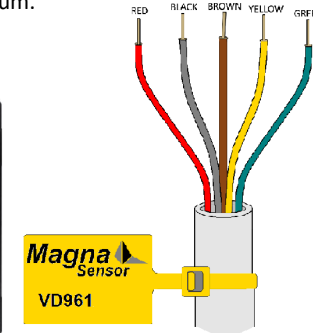
3. Running the cable

Run the yellow cable back to the control panel. The Magna wires direct to control PCB. A stable 12Vdc supply is recommended. A yellow marker tag is provided to identify the connections.

GATE CONTROL PANEL

Horizontal in conduit

A plastic conduit is the best solution for maintenance. Poly' water pipe is ideal.
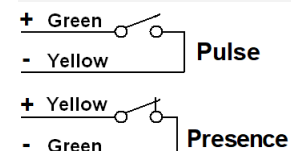
4. Connections

Sensors power wires are red and black, non-polarised, so connected either way around.   16-30Vac or 12-30Vdc

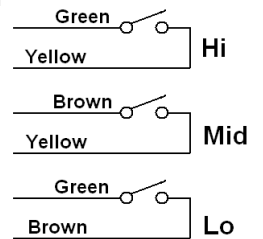The solid state outputs are only for switching control panel inputs, 100mA maximum.
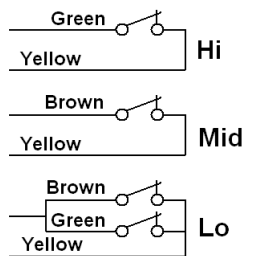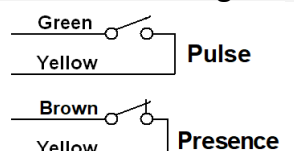
RED BLACK BROWN YELLOW GREEN

Magna Sensor VD961

VD961a wiring

Green		Hi
Yellow		
Brown		Mid
Yellow		
Green		Lo
Brown		

VD963a wiring

Green		Hi
Yellow		
Brown		Mid
Yellow		
Brown		Lo
Green		
Yellow		

VD964a wiring

+ Green		Pulse
- Yellow		
+ Yellow		Presence
- Green		

VD962a wiring

Green		Pulse
Yellow		
Brown		Presence
Yellow		

VD961a and VD963a have no adjustment, but for wire selection. VD962a and VD964a sensitivity can be adjusted during power up. A multi-meter is useful for trouble shooting. Only qualified technicians are authorised to work on gate automation systems. Technical help may be withheld if this cannot be confirmed.
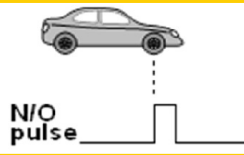
5A. Exit sensor function

VD961a has 3 sensitivity outputs. Pulse is 3 sec N/O (normally open).
Connect to **GREEN** and **YELLOW** for **HIGH** sensitivity
Connect to **YELLOW** and **BROWN** for **MID** sensitivity
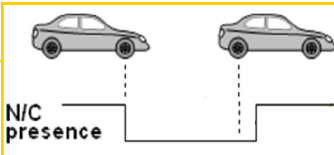Connect to **GREEN** and **BROWN** for **LOW** sensitivity

5B. Presence function

VD963a has 3 sensitivity outputs. Presence N/O is extended for 3 secs.
Connect to **YELLOW** and **GREEN** for **HIGH** sensitivity
Connect to **YELLOW** and **BROWN** for **MID** sensitivity
Connect to **YELLOW** and **GREEN+BROWN** for **LOW** sensitivity

Set as an exit sensor VD961a only		
Red & Black	16-30Vac or 12-30Vdc either way around	
Green/Yellow Yellow/Brown Green/Brown	Pulse N/O 3 sec, starting from first point of detection	

Set as a presence sensor VD963a only		
Red & Black	16-30Vac 12-30Vdc either way around	
Yel/Grn or Yel/Brn or Ye/Gn+Brn	N/C for presence off while car is detected	

6. Manual sensitivity setting VD962a and VD964a

On first power up these sensors (VD296A and VD964A) begin on a default sensitivity. This section describes how to adjust sensitivity. After changes are made the device will power up on the new setting. Always clear any vehicles near the detection area before power up. Normal operation mode takes 5 seconds to power up. In manual operation mode the unit takes 30 seconds to power up. Reset the sensor whenever it is moved.

Set Sensitivity manually

To enter manual setting, switch power on for less than 1 second then back off again. Switch power up again. The sensor is now in setting mode.

The pulse (GREEN) comes on for 3 seconds to indicate setting mode. Then presence (YELLOW) starts to flash slowly. The number of flashes denotes sensitivity. Switch off on the 4th flash to set sensitivity 4.

1 Flash = max sens

5 Flashes = min sens

DEFAULT=3 Flashes

N.B. the fewer the flashes, the higher the sensitivity

Factory Reset

Follow the routine for setting sensitivity, but do not set a sensitivity by switching off. This takes about 10 secs. No sensitivity is chosen, so it reverts to factory default.

Factory reset is recommended after a sensor has been moved.

View Sensitivity

When the sensor is powered up, it will flash the sensitivity level quickly on the YELLOW output. The example above is sensitivity level 4. However, there is no sensitivity report if the sensor is in factory default (level 3).

7. Sensitivity setting VD962a using VDMA

Most gate control panels have indicators to show the input state. Troubleshooting is easier if this sensor is the only device connected to the controller's input terminal,

From VD962a
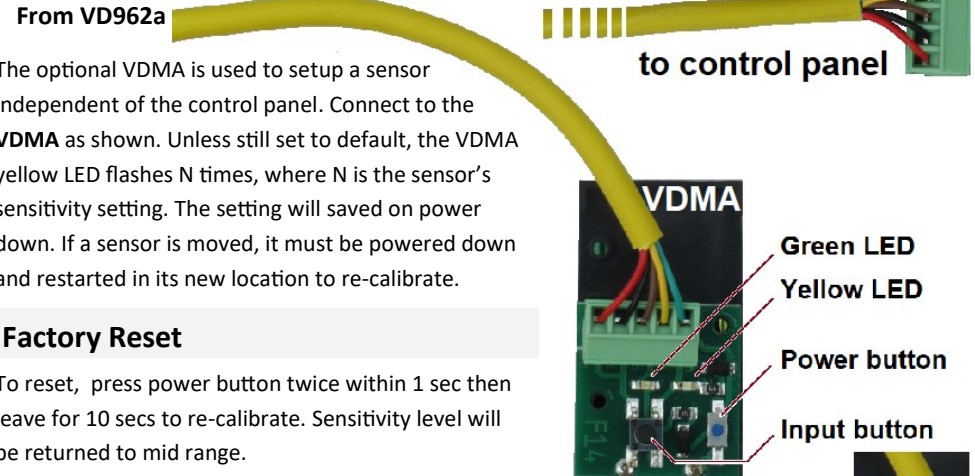
The optional VDMA is used to setup a sensor independent of the control panel. Connect to the **VDMA** as shown. Unless still set to default, the VDMA yellow LED flashes N times, where N is the sensor's sensitivity setting. The setting will saved on power down. If a sensor is moved, it must be powered down and restarted in its new location to re-calibrate.

Factory Reset

To reset, press power button twice within 1 sec then leave for 10 secs to re-calibrate. Sensitivity level will be returned to mid range.

Sensitivity Setting

To change sensitivity, press power button twice. The green LED lights for 3 secs, then yellow LED will begin flashing slowly. To set sensitivity "4", press the power button on or just after the 4th flash. There are 5 sensitivity settings. Sensitivity 5 is the lowest level.

to control panel

VDMA

Green LED
Yellow LED
Power button
Input button
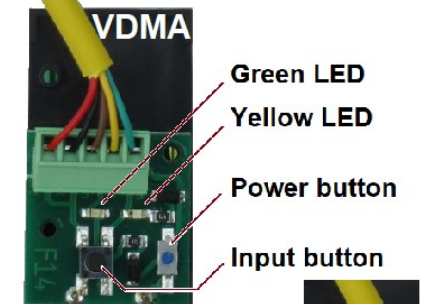
VD964a connections Only yellow LED works with **VD964a**. Green does not.

NB Setting up in manual for one vehicle will not guarantee it will activate on all other vehicles