



VD964 is a dual purpose vehicle sensor for the centre of a road with an isolated output. **VD964** zeros to the local environment each time it is powered up.

Magna uses ambient magnetic fields. Sensors must not be within a steel framed building or within 0.5m of an iron man hole cover, drain or large ferrous mass. Test the location before fixing in the ground.

1. Position

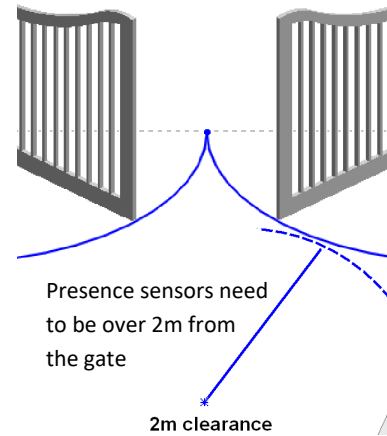
The sensor is mounted in the road centre clear of moving steelwork. **Presence sensors** need to be positioned 2m or more from metal gates. Wooden gates have no effect.

We recommend **exit sensors** are positioned 3m or more from the nearest moving gate part, mainly for driver convenience.

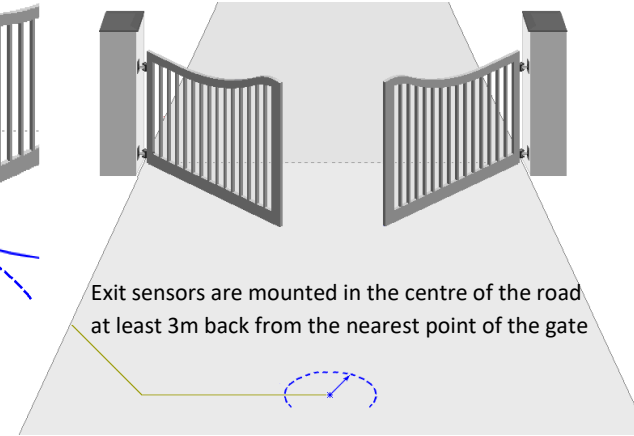
Test the sensor in position before burying. It can be moved if necessary. It resets on each power up, so can be moved several times.

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

...for presence

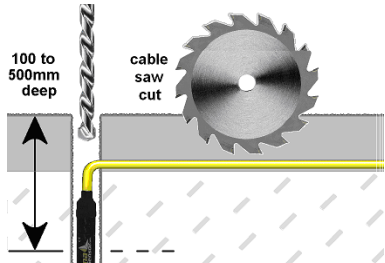


... for exit



2. Fitting

This sensor can be set in any orientation. It is fully waterproof. Depth is not critical. We recommend over **50mm** deep for stability and protection. Setting in a sand course below **paving** is ideal.



Vertical in a hole

The direct burial cable is resistant to concrete and chemicals. Directly bury the sensor in a fine aggregate layer such as sand. Use a packer or sand protection against hot pitch sealing.

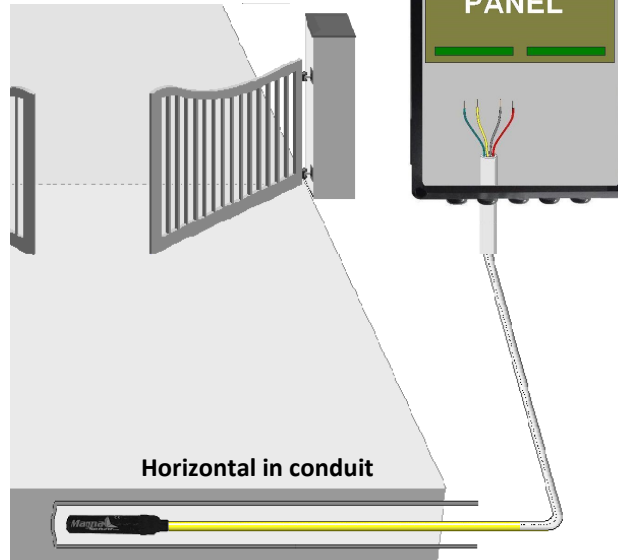
A plastic conduit is the best solution for maintenance. Water pipe with a sealed end is ideal. Use a pull cord or fish tape, to position the sensor in the pipe.



Horizontal in conduit

3. Running the cable

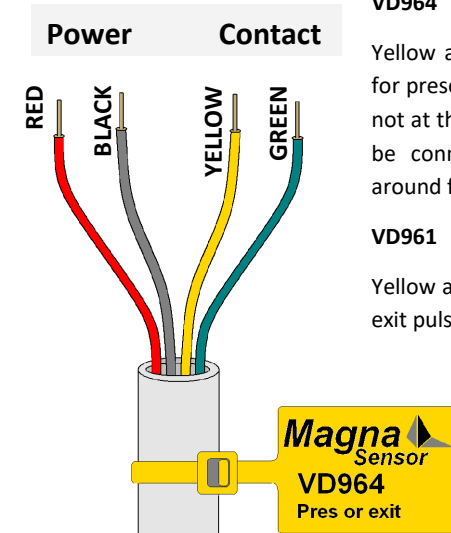
Run the yellow cable back to the gate control panel. Secure with a compression gland. A yellow marker tag is provided to identify the connections.



4. Connections

Sensor wires are red and black wires. Connect either way around. **16-30Vac or 12-30Vdc** can be drawn from most control panels.

The solid state switching contact is on the yellow and green wires. It is only suitable for switching control panel inputs.



VD964

Yellow and green wires are used for presence or for exit pulse, but not at the same time. Wires must be connected the correct way around for the control panel.

VD961

Yellow and green wires are for an exit pulse, either way around.

Finally, fix the ID marker onto the yellow cable





Test and commissioning the VD964 is very simple, but you may need a standard multi-meter 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

VD964 gives a 3 sec N/O (normally open) exit pulse. Connect YELLOW to the negative terminal. Connect GREEN wire to positive input terminal.

VD961 gives a 0.8 sec N/O exit pulse. Connect either way around.

5B. Presence function VD964 only

VD964 has a N/C (normally closed) presence output. It remains unsafe for 3 secs after the vehicle leaves. Connect YELLOW to the positive terminal. Connect GREEN wire to negative input terminal. You can use a test meter to check which terminal is negative or positive. Presence function is not available on VD961

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

Set as a presence sensor VD964 only		
Red & Black	16-30Vac 12-30Vdc either way around	
Yellow +ve Green -ve	N/C for presence off while car is detected	

6. Setting & resetting

Clear any vehicles near the detection area before power up. After power up, the sensor takes 5 secs to settle before it is ready. Then the sensor will be in the 'NO VEHICLE' state.

The sensor will reset each time it is powered. To reset power down, make sure all vehicles are clear then turn power on. There are no sensitivity adjustments.

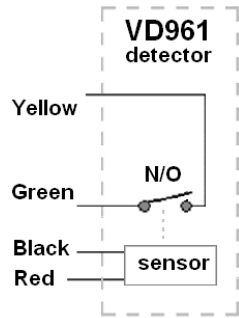
7. Connection polarity

Gate automation brands comply with one of two polar conventions. CAME & FAAC normally have **common NEGATIVE** inputs at 5V. BFT, NICE, and Beninca prefer to use **common POSITIVE** inputs over 10V. Use a meter to confirm input voltage.

There will be no harm to the sensor if it is the wrong way. Trial and error will also work.

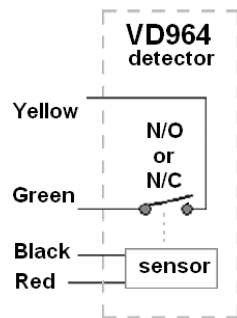
8. Trouble shooting

Magna has no visible indicators. Most gate control panels have indicators to show the input state. Troubleshooting is easier if this sensor is the only wire in a terminal, otherwise other devices will also show on the control panel indicator.

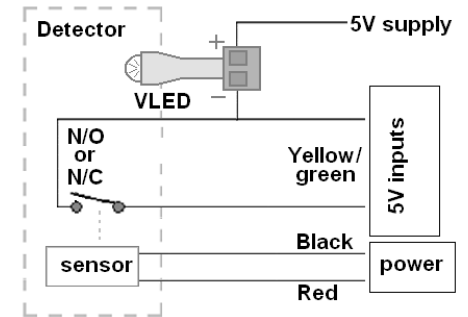
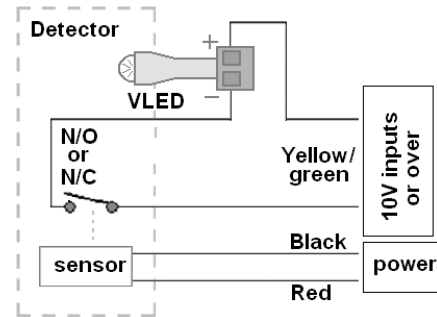


Power to red & black either way around 16-30Vac 12-30Vdc

Exit N/O	Presence N/C	Exit N/O	Presence N/C
Common yellow	Foto input yellow	Open input yellow	Common yellow
Open input green	Common green	Common green	Foto input green
Came, Faac Control panels with a negative common		BFT Nice Beninca Control panels with a positive common	



Power to red & black either way around 16-30Vac 12-30Vdc



The 'VLED' indicator can be used if your control panel does not have an input LED. For inputs over 12V, wire 'VLED' in series with the YELLOW/GREEN contact. For 5V inputs, the 'VLED' will need its own supply, often available from the board. 'VLED' can also be used in series with the RED/BLACK supply wires on power supplies over 30V.

The VD961 & VD964 draws less than 10mA. They are best tested by connecting RED/BLACK to a 12V battery. Connect YELLOW/GREEN to the same battery via the 'VLED'. Alternatively, YELLOW/GREEN the switch output can be connected directly to a continuity buzzer found on most good multi-meters. The meter will buzz when the output is active.