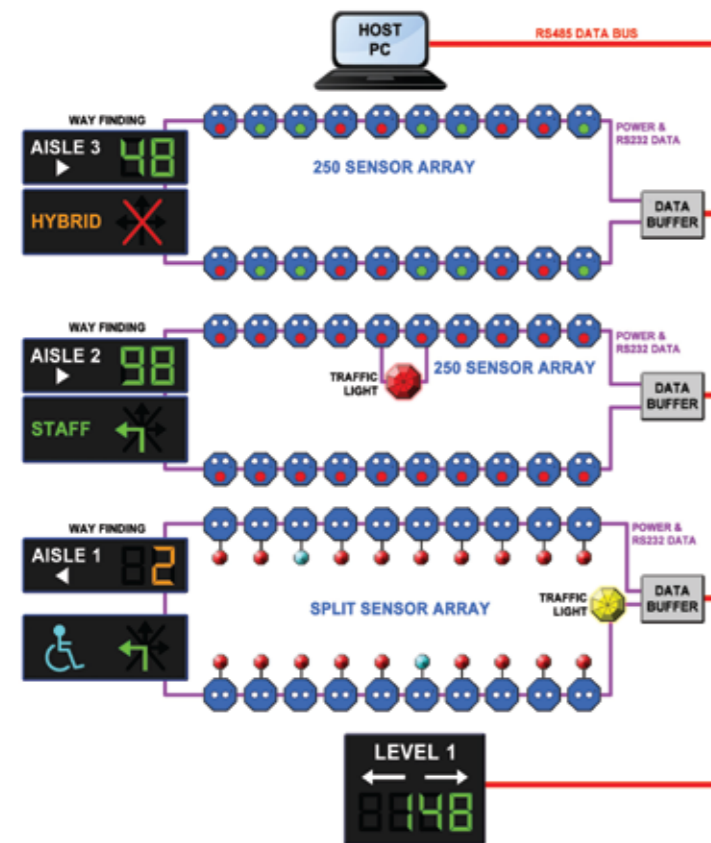


The how, where and why of wayfinding

Joint Ventures Electronic Services (Pty) Limited (JVES), is widely known as the leading Parking Guidance System (PGS) manufacturer in South Africa that design and manufactures all its systems locally. The benefits of installing such systems have frequently been discussed, and they include making parking lots greener, reducing driver frustration and recouping lost revenue. However, the prospect of installing such systems may, at first pass, be daunting to a developer. Spencer Schwartz of JVES provides the following overview of PGS components and how they fit together.

Understanding the Diamond Parking Guidance System

The following drawing illustrates a typical parking guidance system:



PGS sensors

In the front of the data collection devices stands the PGS sensor. The JVES PGS sensors are ultrasonic range finders. The device sounds a short sound at high frequency and measures the time it takes the echo to come back. JVES offers two types of PGS sensors:

- HexBox PGS sensor
- Trunking embedded PGS sensor



HexBox combo PGS sensor

Trunking embedded combo PGS sensor



Both versions of the PGS sensor are electrically identical. They only differ with their enclosure.

The HexBox PGS sensor is suitable for direct ceiling mounting. It is intended for new installations where it is possible to lay the conduit array in the concrete, resulting in a neat and clean system. However, care must be taken with the layout of the conduit junctions, as the position of the sensors above each parking bay is critical for the accuracy of the system. JVES can be contacted directly for further guidelines.

The trunking embedded PGS sensors are suitable for retrofitting and for suspended systems.

- Retrofitting – Installation of PGS into existing parking lots. In this case the trunking serves as the cable way and as the sensors' mounting bracket producing a neat aesthetically pleasing system.
- Suspension – It is not recommended to have the PGS sensors at heights of more than 3 m above ground level. The trunking embedded system was designed for suspension in areas with high sealing.

Most PGS sensors will have a green or red space indicator. However, they are available in other colour combinations as well. Each colour can be allocated to a different parking zone such as disabled parking (blue), visitors' parking (white) and hybrid parking (yellow), amongst others.

The PGS sensor is also available as a combo sensor (sensor and indicator combination) and a split system (with separate sensor unit above the parking space and separate space indicator unit visible in the aisles). The split system should be considered in cases where obstacles such as columns obstruct the view to the sensors located above the middle of the parking space. In the split system the sensor is mounted as usual, but the indicator is brought forward to the driveway making it completely visible to drivers.

Zone counters

The secondary data collection devices are the PGS zone counters. Zone counters are based on magnetic loop detection technology. Two devices must be placed at the entry and exit of each level or parking area.

The zone counters provide exact information regarding the number of vehicles in a specific zone, including vehicles in transit. During the morning rush hours there are vehicles on each level about to park. Indicating the number of available parking based on the bay monitors only, may give drivers wrong information regarding the actual available parking.

While a useful add-on, PGS zone counters are not mandatory to the system. During most of the day the number of vehicles in transit is low, down to 1% of the total bay number. In addition, during most of the day, the number of cars in transit looking for parking should be offset by the number of cars on their way to the exit.

PGS DataBuffers

The heart of the Diamond Parking Guidance System is the DataBuffer. The DataBuffer is a local controller and first line communication hub.

The PGS DataBuffer powers up the PGS sensors and collects their data. It then controls the way-finding devices connected to it.

Each DataBuffer can be connected to 250 PGS sensors and control 32 traffic lights, 16 numeric display all in eight logical zones.

The PGS DataBuffer compresses and relays the collected information to the host computer. On a 5 000 parking bay site, this can be accomplished in under one second.

PGS way-finding

The purpose of the PGS is to assist drivers to find parking within a parking lot. In order to do that, the system provides drivers with information enabling them to make a decision based on their destination and parking availability.

The PGS relays the availability information to the drivers using:

1. Numeric displays
2. Guiding arrows
3. Traffic lights

The selection and distribution of the various way finding devices is application specific. JVES's technical support team are happy to analyse specific sites and propose the best solution.

PGS host computer

Each PGS DataBuffer can control an area with up to 250 sensors and a few local way-finding devices. Most sites are much larger and contain way-finding devices that must be controlled based on information from more than one DataBuffer.

One good example would be the main entry sign, which indicates the total available parking spaces in the entire parking lot. For this display, data must be collected from all DataBuffers on site.

Also, the parking lot managers and operators may require statistics regarding usage of various parking zones. Parking is a valuable commodity and must be managed carefully in order to maximise occupancy and revenue.

The PGS Host PC collects the information from all the DataBuffers and controls the various global way-finding indicators. Data is stored in a database and reports regarding occupancy ratios can be generated for any group of sensors and any time slot.

The JVES system in a nutshell

- Neat and aesthetically pleasing installation
- 99% accuracy
- Very competitive pricing
- Green – lowest power consumption in the industry by far!
- Early fault alert
- 24 months full guarantee
- Proudly South African 🇷🇷

For further information, please contact Spencer Schwartz
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