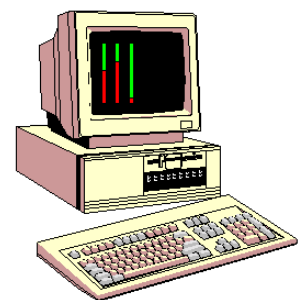
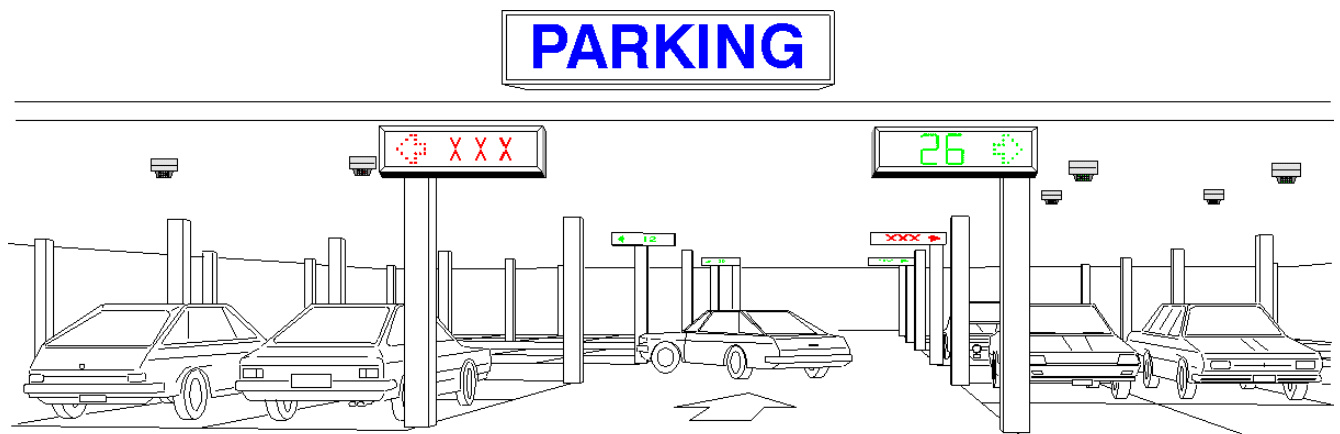


➔ SIGNAL-PARK ⚡

The first system that detects, counts and indicates the vacant places

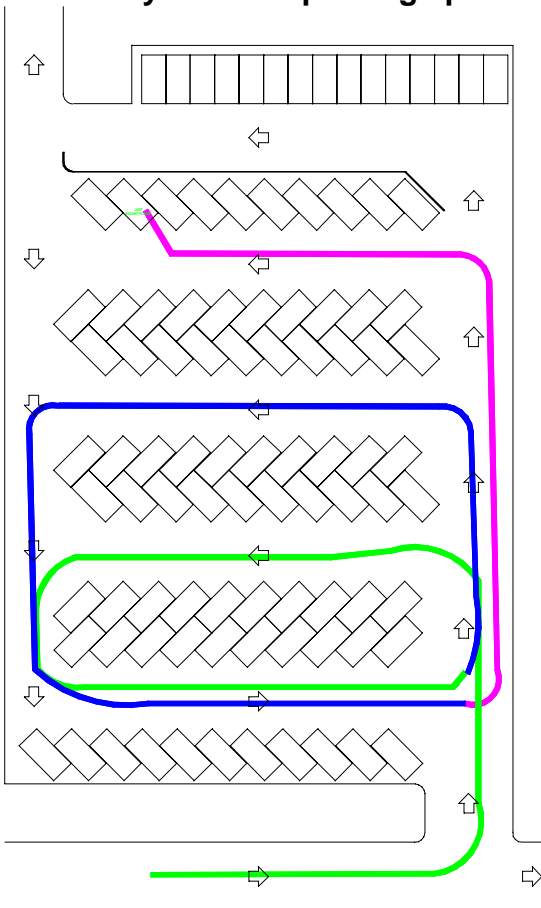


SIGNAL-PARK

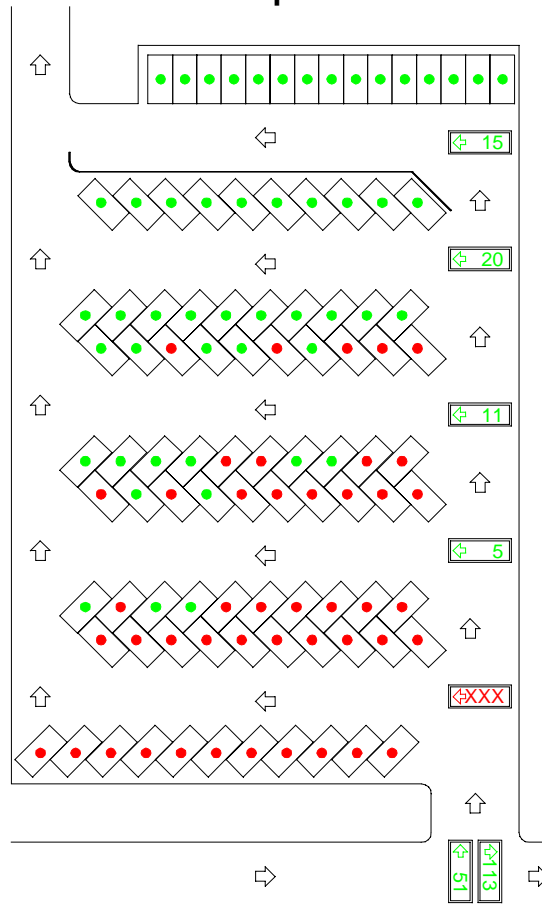
Look carefully at this sketch of a typical car park layout, equipped with **SIGNAL-PARK**, after the original construction, showing the difference in the ease of parking once **SIGNAL-PARK** has been installed, compared with the same car park without the benefit of **SIGNAL-PARK**.

Clearly, without the **SIGNAL-PARK** guidance system, a driver, who did not find a vacant place, even after a slow search, would have to leave the floor, or even the car park, otherwise he or she would become an obstruction for following vehicles and to efficient movement.

WITHOUT SIGNAL-PARK
Drivers will turn and turn around to try to find a parking space.



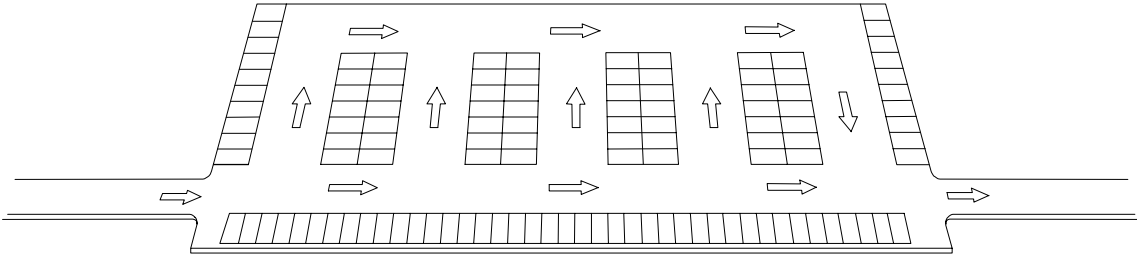
WITH SIGNAL-PARK
Drivers will quickly find vacant space.



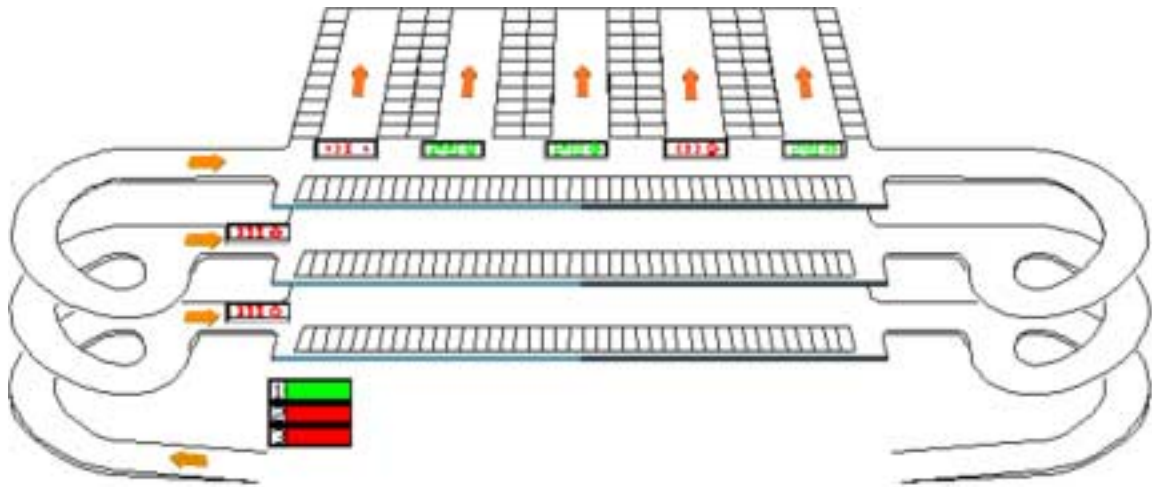
With **SIGNAL-PARK**, drivers are now guided directly, by strategically located signs, to a vacant car park place, indicated by its green overhead light.

Increase the number of places.

A car-park designed without the benefit of a **SIGNAL-PARK** installation must leave access-lanes free at both ends to give drivers the facility to slowly search each lane for a vacant space, as shown below.



When **SIGNAL-PARK** is fitted, those expensive turning areas **ARE NOT NEEDED** thus producing a considerable increase in the number of parking bays and a valuable increase in car park revenue.



By taking a typical example, shown above, it is possible to find space for 24 additional car park places, **if** **SIGNAL-PARK** is installed, giving:

- an increase of 19,2% for almost the same construction cost.
- even more, the additional spaces now created bring in extra revenue and easily pay for the approximate 2% of total additional costs needed to for the purchase and installation of **SIGNAL-PARK** installation.



SIGNAL-PARK is a profitable investment for the car park owner or operator, which can earn back its cost in a single year because it guarantees that if properly managed, advertised and promoted, **SIGNAL-PARK** user benefits can quickly add recoverable value (and therefore enhanced profit) to the Operator's annual business.

BENEFITS FOR THE CAR PARK OPERATOR

Clear and simple management and control

Less supervision time

No resetting of zone and floor-counting "numbers"

Complete and immediate daily to annual statistics

Unaffected by passengers or baggage trolleys

Less driving distance = Cleaner floors, cleaner air = lower maintenance costs

Self-detection of system or equipment faults

Easy addition of fire and other detectors

Easy and economical control of lighting

Special, individual, car security systems

Far greater comfort and convenience for users

A solid answer to pollution criticisms

No moving parts - in a "stand-alone" installation

BENEFITS FOR THE MOTORIST

Instant guidance, by the shortest route, to the very last available place - guaranteed.

Confidence in fast, trouble-free, parking.

Easy-to-see signs and lights - visible up to 100 yards.

No unnecessary searching from side to side for a hidden parking place.

100% accurate in real time - unlike any other known system.

Saves valuable time in finding a parking space – more economical, saving on fuel and tyre/brake wear.

Less stressful for drivers (and passengers!).

Far less risk of damage to moving vehicles.



GOOD REASONS TO INSTALL **SIGNAL-PARK**

PRINCIPALLY, IT IS A PRECISE GUIDE BY THE SHORTEST WAY TOWARDS WHERE PARKING SPACES ARE VACANT.

A car park without a guidance system is similar to a crossroads without traffic lights! **SIGNAL-PARK** checks each place twice per second, thus assuring instant navigation towards the floor or the zone with available space.

FUNCTIONING PRINCIPLE

A detector specially developed for this purpose, equipped with pilot lights, is installed above each car park bay. It constantly checks if a vehicle is present or not and immediately sends the information to a central computer, which is connected by a communication network. The computer processes the fresh data in order to update the information supplied to drivers by way of the signs, which are located in each fork.

As soon as the driver is confronted with a choice of direction - floor, zone, lane - a very visible sign indicates with the help of green or red arrows which direction to follow and which direction to avoid. All the driver need do is to simply follow the direction and space indicators to be certain of finding a vacant space, clearly indicated by a green light immediately above the empty bay.

SIGNAL-PARK is effective, whatever size car park, from 20 places upwards.

SIGNAL-PARK is essential for very busy and regularly full car parks, where there is constant entry and exit movement and a constant flow of drivers searching for every possible free space.

WHY CHOOSE SIGNAL-PARK?

Your most regular clients will be the drivers who return, safe in the knowledge that parking is easier and saves time where **SIGNAL-PARK** is installed, compared with car parks without the benefit of the **SIGNAL-PARK** guidance system..

They will certainly realise that **SIGNAL-PARK** can remove many of the frustrations of parking and is easier on the nerves and on the temper!.

By installing **SIGNAL-PARK** you will be offering your clients an effective, quality service that fully justifies your hourly charges, because you will have made parking easier and a pleasure.



THE COST OF SIGNAL-PARK

Calling on the experience that has installed SIGNAL-PARK in car parks all over the world, we are able to estimate that on average, based on a principle of classic construction, the installation of SIGNAL-PARK would equate to approximately 2% of the total cost of a car park construction

How to recover this cost?

FOR A NEW CAR PARK

You have to remember that SIGNAL-PARK allows you to maximise the use of space in the site for parking. Because of its guidance system, SIGNAL-PARK means you can plan additional spaces and also plan to have dead ends as these will not create traffic jams – because any vacant bays will be clearly indicated.

The additional places created by SIGNAL-PARK will raise additional revenues that will contribute to the recovery of the purchase and installation costs of your SIGNAL-PARK system.

FOR AN EXISTING CAR PARK

Car parks not fitted with SIGNAL-PARK usually have to display "FULL", notices well before all the bays are really occupied. If this safety margin exceeds 2% of the car park capacity, the loss of earnings represents the writing off of SIGNAL-PARK purchase and installation costs.

Furthermore a judicious redistribution of the car park places, less limited by the old traffic and traffic flow problems, will simply generate new income.

OTHERS BENEFITS TO TAKE INTO ACCOUNT

SIGNAL-PARK allows a new driver to enter the "full " car park as soon as a bay is vacated, without having to wait for the departing vehicle to pass the exit barrier. This reduction in the waiting period considerably increases the daily entrance figures, with a positive effect on takings and also with a further contribution to the costs of installing SIGNAL-PARK.

SIGNAL-PARK installation can even justify an increase in the hourly rate - higher than the increase necessary to recover the purchase and installation costs - because it makes the car park much more user-friendly, with drivers enjoying the ease of parking compared with other car parks. This will also lead to greater revenues and will enhance the car park's profitability.

* This assumption is based on a standard installation in a 500 space car park and is for guideline purposes only. A detailed cost could only be provided following a site survey and a full specification of the required features of the SIGNAL-PARK installation.



SIGNAL-PARK PROFITABILITY

Car park accommodation is very costly to build. It is therefore imperative that all possible parking space is maximised. With its guidance system, **SIGNAL-PARK** can contribute significantly to the full exploitation of available space. Taking as an example a car park for 1000 cars, situated in a city centre, some of the financial benefits directly accruing from installing **SIGNAL-PARK** are shown below.

SIGNALLING VACANT PLACES

By directing drivers straight to a vacant space, pollution within the car park is reduced, resulting in a reduction in air-cleansing fan running time. Car parks of this size are likely to be spending a significant amount of money on electricity, just for ventilation purposes. With the installation of **SIGNAL-PARK** savings in this particular area of overhead can be as much as 20%.

COUNTING THE VACANT PLACES

A car park without **SIGNAL-PARK** has to display "FULL" notices, despite the fact that there are still several vacant places, which then cannot be used. By knowing the exact status of each car park bay, it is possible to maximise utilisation of the car park at **100%**.

During a peak period of six hours daily, this car park will have about 12 cars movements per minute. Since a car needs about three minutes to reach the exit, this effectively means 36 cars leave their bays and moving towards the exit, before being registered at the exit barrier. This means 36 vacant bays are not being utilised. **SIGNAL-PARK** detects these spaces immediately they are vacated and allows new customers to park in them, without delay, quickly guiding them to the appropriate location.

SAVINGS

Taking this further, with 36 empty bays not being signalled, assuming a price per hour of 80p and a seven days per week operating period, **lost revenue is potentially a staggering £63,000!**

If the above-mentioned savings on electricity costs are included, this will increase the annual revenue benefit of installing **SIGNAL-PARK** quite substantially, enabling the car park operator to cover the purchase and installation costs in a comparatively short period. From then on, all this increased revenue is bottom line contribution. Finally, a recent poll conducted in locations where **SIGNAL-PARK** is already installed concluded that most car park users would be prepared to pay a higher hourly charge for the convenience of using a car park equipped with **SIGNAL-PARK**.

MONITORING THE OCCUPIED PLACES

It often happens that cars exceed the maximum permitted parking time, or in pay and display car parks, the amount of parking time purchased.

The detailed information available to the car park management (by computer display or printout), such as number plate recognition, can be used to counter the claim from the driver who maintains he or she has lost the parking ticket, but has only been parked for the minimum time.



CONCLUSION

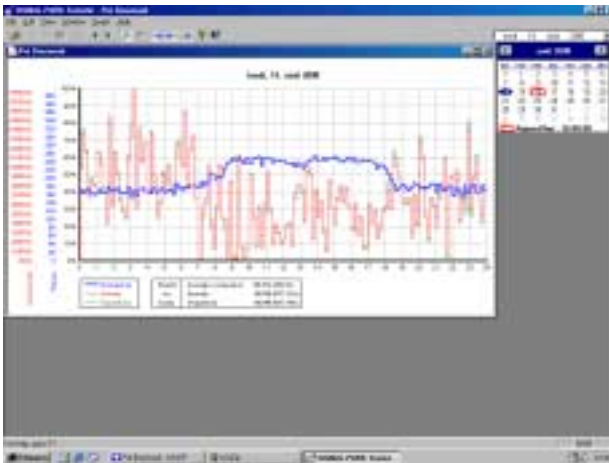
There can be no doubt. Installing **SIGNAL-PARK** will bring financial benefits, because of increased revenue, lower overheads and better management information. Plus, the car park will be more popular with drivers because of its easier parking than in car parks without **SIGNAL-PARK**. With the greater use of space, precise guidance to an available bay, the ease and speed of parking, a car park equipped with the **SIGNAL-PARK** guidance system will be the car park of choice every time!

THE CAR PARK OF THE FUTURE IS AVAILABLE NOW!



CONTROL CENTRE:

The control centre computer allows the operator to see in real time, the occupation rate of the car park, by level or by zone.

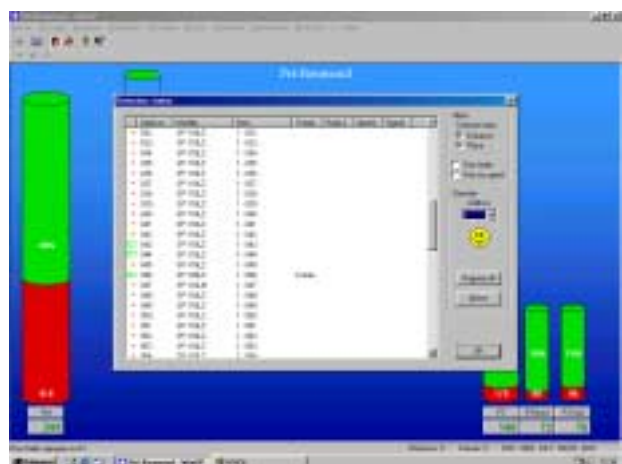


Several types of statistics are possible, such as the number of occupied places, the number of entrances and exits and a list of parked vehicles during a given period, ie the last 24 hours, previous three days etc.

All data is available in a file which can be read by another network.

OPTION

It is possible to have an on-screen representation of the car park with the status of each car park bay.





INTELLIGENT COUNTING

The control centre monitors the detectors several times a second, thus obtaining a true and accurate picture of the occupation level throughout the car park. A major benefit of this monitoring is that the system knows immediately when a vehicle has vacated a parking bay and is able to guide the next car straight to this vacant place, by means of a series of strategically located signs, automatically controlled by the **SIGNAL-PARK** software.

ZONE CONTROL

The centralised data enables the car park operator to selectively control certain critical zones. On receiving information from an entrance detector that a new car is entering a section that is almost full, the central control can bar access (with advanced **FULL** display) for a certain adjustable time sufficient for parking. After this delay, the control verifies whether there are still vacant places and if there are, a new car is allowed in. This procedure prevents congestion and assists smooth traffic flow.

If required, and during certain periods of the day, the central control can count the number of places reserved for regular customers and deduct them from the total vacant places.

By connecting a printer it is possible to keep a written log of various events, such as the date and the time of an alarm and its acknowledgement, the general car park situation for statistical analyses, a list of places when the authorised parking time has been exceeded, etc.

If necessary the central control can allow a manual control of the display signs. That enables a zone to be closed for maintenance or other purposes.

FULL INTERACTION

The **SIGNAL-PARK** network is very economical on cabling. Thus the nearest detector activates the display signs operated by the central control. A special unit is provided for controlling complicated signs with displays grouped on different levels. Connected into the network, this unit is capable of operating a dozen relays.

Needless to say, other information can be transmitted by the system, such as fire detection, excessive CO₂ level, violence alarm etc, with precise information regarding the actual location of the signal's origin.

MAINTENANCE AND CHECK-UPS

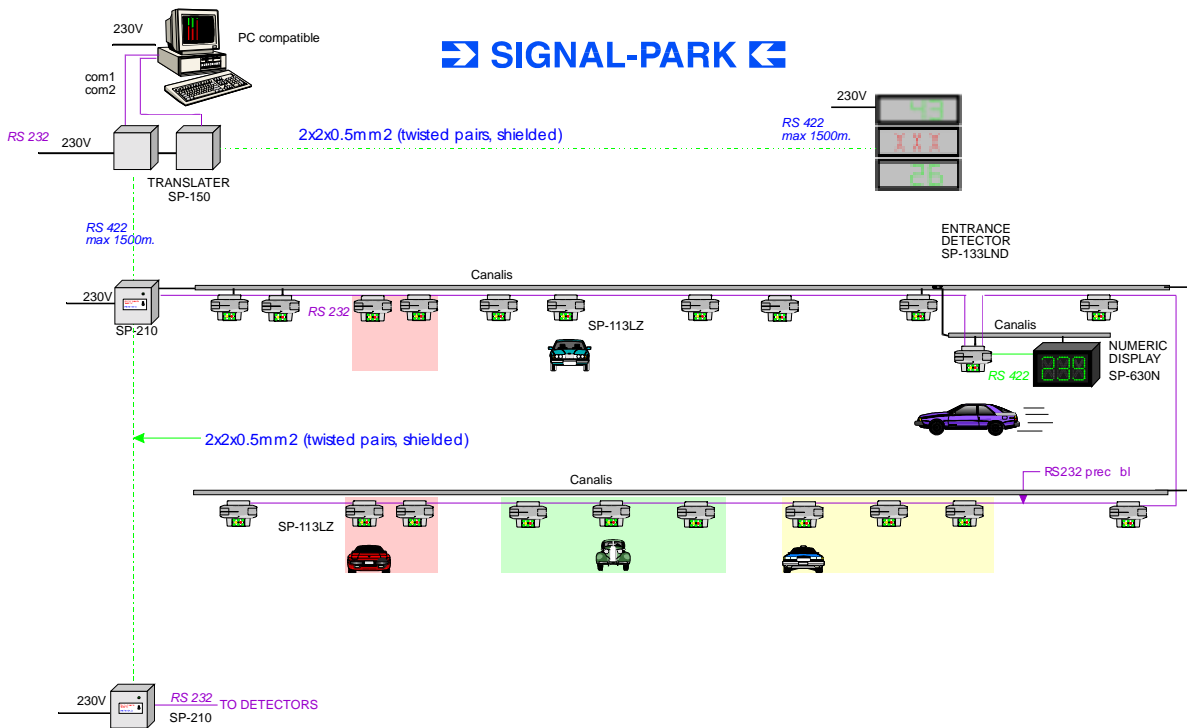
The central control is constantly informed whether the detectors are properly functioning, and signals any loss of information due to an accident (such as a detector damaged by an over-height vehicle).

In the maintenance mode the central control can light all the signal lamps in a given sector, operate the signs and receive a certain amount of information from the detectors being examined, thereby allowing a simple but thorough check to ensure the entire **SIGNAL-PARK** installation is functioning normally.

COMMUNICATION NETWORK

Indicating empty places to the motorist, by a few, bright signs, is certainly very useful, but guiding him or her straight to a vacant bay right from the car park entrance with full direction displays, is a substantial improvement on this and therefore a much more desirable system. The **SIGNAL-PARK** car parking guidance system has been designed specifically to give the motorist a fully guided parking service, from the point of entrance through to the exact point of parking.

By linking the detectors to a control centre, it becomes possible to completely control a car park with any number of places and levels. Five wires are sufficient to provide the power feed (area) and to allow complete interaction between the car park places and control centre. The detectors are thus integrated in a real communication network. **SIGNAL-PARK** owes its unequalled efficiency to this advanced conception.



THE HIERARCHY

The network configuration conforms to a hierarchy mainly depending on the number of places to be managed and the complexity of traffic within the car park.

For up to 240 places, control may be entrusted to a simplified unit: the mini-central. From 240 places up, the detectors are arranged in groups and linked to decoders. These filter the information and directly communicate with the computer managing the whole car park. Each decoder can accept up to 240 detectors, and several dozen decoders may be used.

DETECTION SYSTEM

Several years of research have enabled us to conceive and a perfect car detector based on the ultrasonic radar principle, whereby the time is measured between the emission of a sonic signal and the return of its echo.

This measured time is converted into a length, as everyone knows, sound travels at 340 meters per hour in normal atmosphere (20°C and 40% relative humidity).

CHARACTERISTICS

When it is put in use the equipment is calibrated to the distance from floor to ceiling. Any alteration of more or less than 50 centimetres is detected, so that the arrival of a vehicle is registered and signalled. The transmitting power and the reception sensitivity allow measurement up to a height of 4 meters.

This system functions with extreme reliability. Measuring is unaffected by the state of the floor surface or car bodies (oil, dust, snow, etc.). The emission cone of the ultrasonic beam is sufficiently wide to render the equipment insensitive to a laminar movement of air at 70 km/h at a height of 2.2 meters.

The design of the housing and electronics enables these detectors to be used on outdoor car parks.

MAINTENANCE

No further adjustment is necessary, since the detector has no mechanical parts. Maintenance is confined to simply cleaning the signalling lamps.

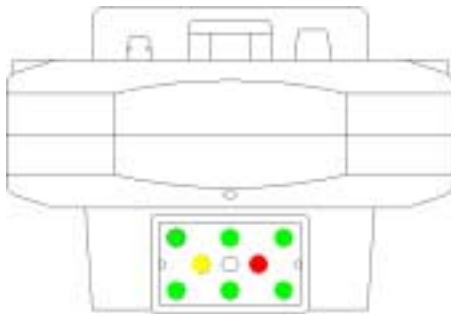
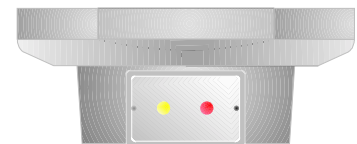
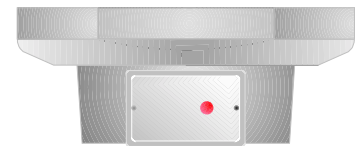
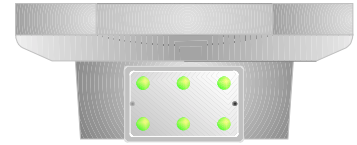
Other parameters, which it is not proposed to enlarge upon here, are likewise analysed by the microprocessor included in the electronic circuit.

SIGNALLING

The lamps signalling the state of the car park places have an anticipated life expectancy of more than 10 years and are visible at a distance exceeding 100 meters. For signalling the vacant places we have adopted 6 green L.E.D. (light emitting diodes) adequately spaced out and providing an adjustable field of vision.

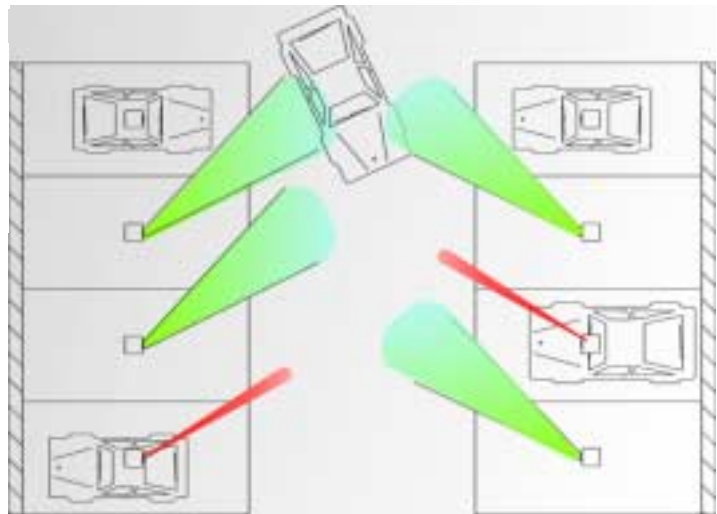
The occupied places are indicated by a red L.E.D., and those occupied longer than the authorized maximum time are revealed by a second orange L.E.D.

This system stands up to various stresses, such as vibration set up by vehicles moving on the next floor up.

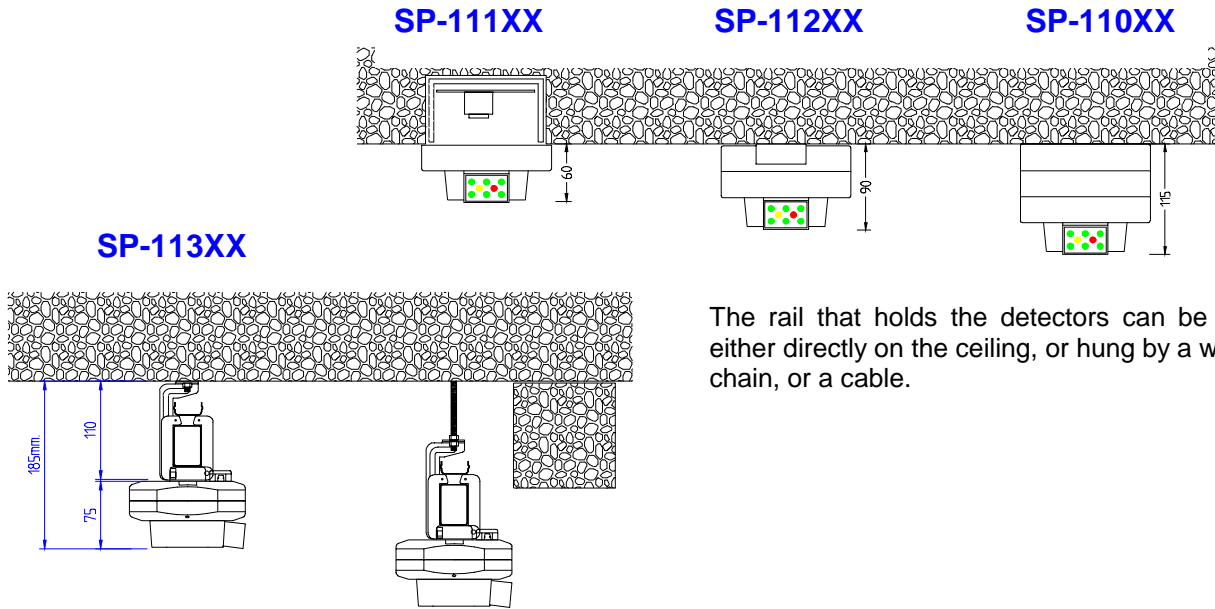


Adjustable L.E.D. holder

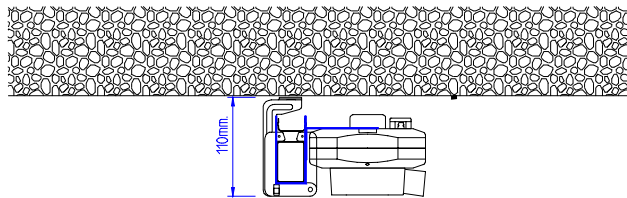
- 6 green L.E.D. : place vacant
- 1 red L.E.D. : occupied place
- 1 orange L.E.D. : time exceed



Detectors housing and types of installation:

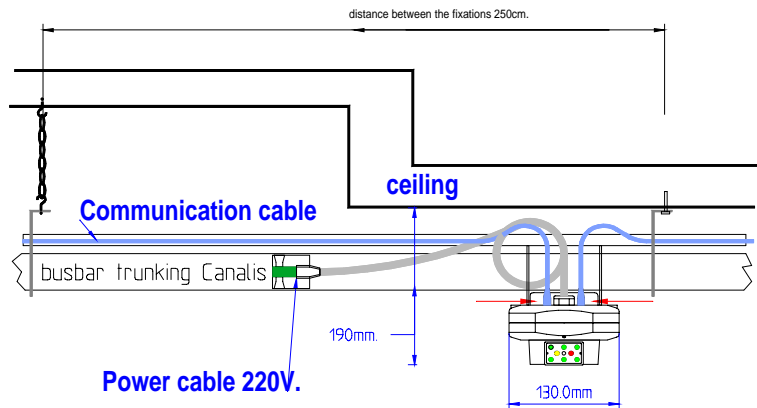


The rail that holds the detectors can be fixed either directly on the ceiling, or hung by a wire, a chain, or a cable.



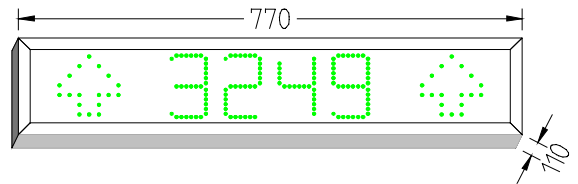
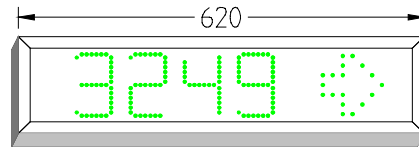
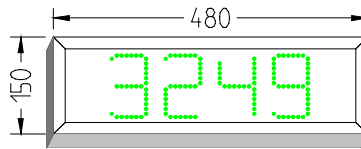
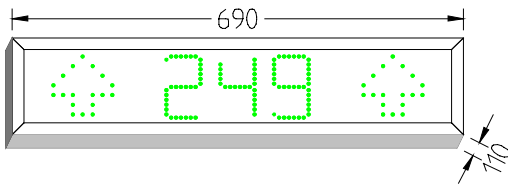
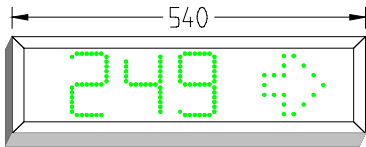
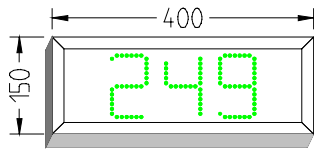
When the available height is limited, it is possible to fix the detector on the side of the rail with a special angle bracket.

SP-113XX installation on the CANALIS rail

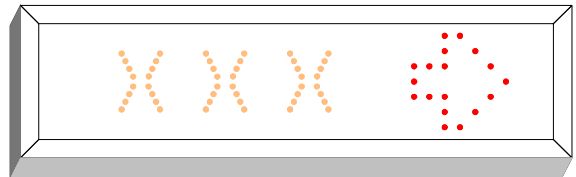


height minimum for Signal-Park 19 cm. page 14 of 15

THE SIGNS



An orange cross means the driver should not take this way for the moment.



A red cross means this zone is **FULL**.

