Parking GPS synchro

Date and time synchronisation via GPS

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Correctly synchronised date and time are of crucial importance in time-based parking systems.
A GPS receiver synchronises the UTC Coordinated Universal Time) time. Local time is then calculated from this.

OPERATION

The GPS (Global Positioning System) consists of 24 operational satellites that orbit the Earth in six fixed paths, each satellite transmitting its own signal. The system operates 24 hours a day and covers practically the entire globe. Under ideal conditions, from 5 to 10 satellites will be visible at any one time.

Environmental conditions can play a major part in the number of satellites from which data can actually be received, however. Disruptive factors can include: high buildings, steel structures and wooded surroundings, as well as weather conditions such as rain, snow and fog. The internal clock compensates for these effects.

In order to provide all units with the correct date and time under all conditions, there are three possible solutions that can be combined if necessary:

Solution 1:

EVERY COLUMN HAS A SYNCHRONISATION MODULE

If there are no communication lines between the various columns, each one will be equipped with a synchronisation module and an antenna. These modules use an RS485 communication line to synchronise the local date and time of all the Alphatronics units there.


GPS antenna

Synchro module

Entry **Exit** **Entry** **Exit**
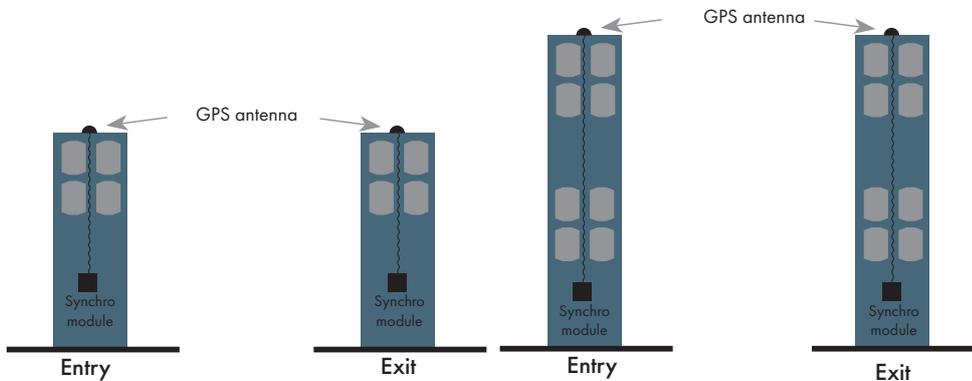
Solution 2:

### ONE COLUMN WITH A SYNCHRONISATION MODULE

If there are one or more modules in a zone where there is poor or no GPS reception, a column with good GPS reception can be equipped with a GPS module and an antenna. This module will us an RS485 connection to synchronise the other units.

For columns close to each other (for example on the same island), it can be more useful to equip only one column with a GPS module and an antenna. The second column, which could also have perfect GPS reception, can be synchronised via the RS485 communication.


GPS antenna

Synchro module

Entry RS485 **Exit**
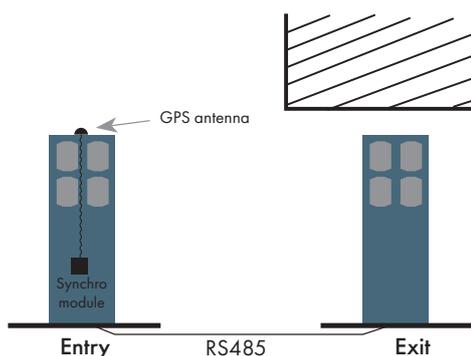
Solution 3:

AN EXTERNAL SYNCHRONISATION MODULE

If all columns have poor GPS reception, for example in an underground garage, the module can be located where there is reliable GPS reception (such as on the roof or on an outside wall). The date and time will be synchronised via the RS485 communication line.

RS485 makes it possible to synchronise the local date and time of all Alphatronics products.

GPS antenna

synchronisation module

RS485

Entry   RS485   Exit
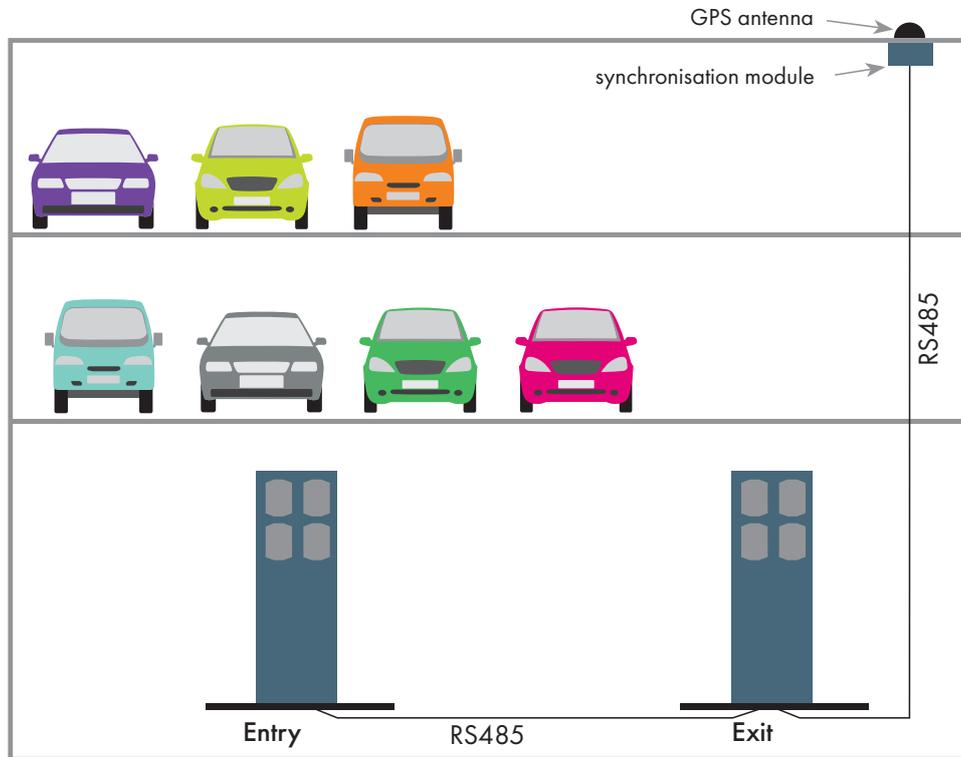
▶ **SYNCHRONISATION MODULE**
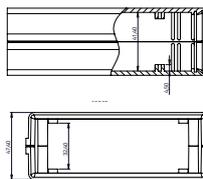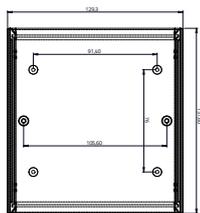
- **Housing:** black plastic
- **Supply voltage:** 12-24Vdc +-10%
- **Mounting:** Din-rail mounting
- **Water resistance:** indoor use
- **Reference:**
  GPS antenna + Synchronization Module
  1-040601-0001-000-000-00

▶ **GPS ANTENNA**
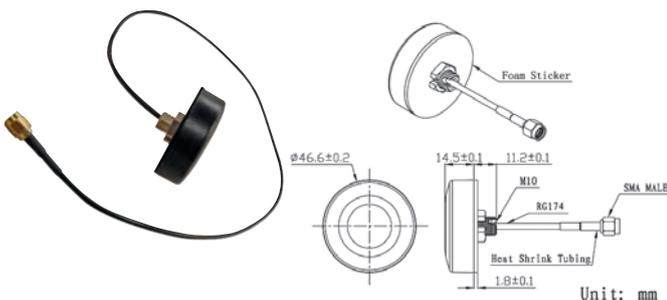
- **Mounting:** Surface mounting
- **Water resistance:** IP67
- **Cable length:** 150 cm
- **Connector:** SMA-male
- **Receiving signals:** GPS
- **Function:** antenna for use in combination with the synchronization module

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