

# Dupline car park system

## Type GP 6520 2201

### Ultrasonic sensor with green/red LED indication



- Ultrasonic sensor for detection of cars
- Low current consumption
- Self-calibration of sensor can be performed globally or at the individual sensor.
- Wide measuring range
- The sensor is built in to protect it against dust and moisture
- 3-wire system with Dupline and sensor supply
- Programmable using GAP 1605

## Product Description

The ultrasonic sensor is part of the car park system which contains other variants of sensors, passive displays and allocation indicators.

The GP 6520 2201 sensor is installed in the middle of the ceiling above the parking bay and detects whether a car is parked in the bay. The parking bay status is indicated using the green and red LEDs.

A green LED indicates that the parking space is available for parking.

A red LED indicates that the parking space is occupied or booked.

The GP 6520 2201 sensor can use up to 3 Dupline channels (see under general specifications). This means that 42 sensors can be coupled with a DMM, or 127 sensors if using only one Dupline channel for each sensor. Up to 16 DMMs can be connected using a multidrop cable, meaning that 672 sensors (max 2,032) can be connected in a network to a PC via RS485/RS232.

## Ordering key

**GP 6520 2201**

Type: Dupline®

Housing

Input type

Channels

Inputs

Supply

## Type Selection

**GP 6520 2201** Sensor with green/red LED

## Input/Output Specifications

### 3-pin connector

- Pin 1: 24 VDC supply
- Pin 2: Gnd. minus supply or Dupline minus
- Pin 3: Dupline plus connection

RJ45 connector for address programming with GAP 1605

## Supply Specifications

### Power supply:

24 VDC min.; 32 VDC max.  
(Overvoltage category III (IEC60664))

### Consumption from Dupline bus:

150  $\mu$ A

### Max. supply current

### from third wire:

37 mA

### Power consumption:

< 0.72 Watt

## General Specifications

Ultrasonic frequency:	40 kHz
Operating distance:	0.6 to 4 m
Minimum calibration distance:	1.5 m
LED indication:	
Occupied:	Red LED continuously lit
Space available:	Green LED continuously lit

### The sensor uses 3 channels and can be programmed as:

- Channel 1 is the input signal which indicates the status of the parking space
- Channel 5 is the output signal in order to be able to reserve the parking space
- Channel 6: Do not use this address. Only used for GP65202202 and GP65403421 when installed for disabled people
- Channel 7 is sensor common calibration command

Input

Output

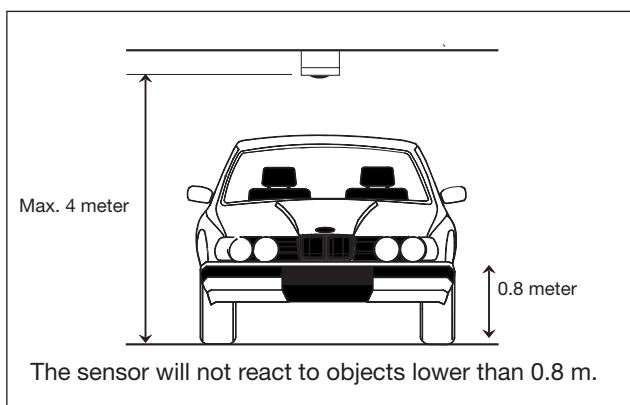
Output

## Mode of Operation

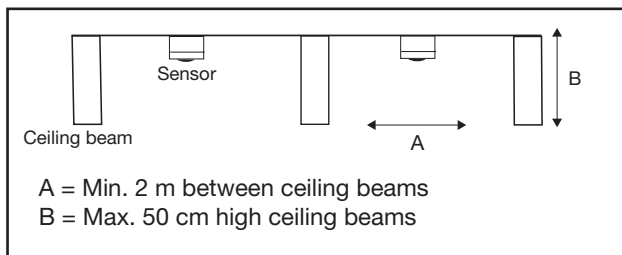
The ceramic sensor emits a signal at a frequency of 40 kHz which is reflected and returned to the sensor. The reflected signal indicates whether the parking space is available or occupied.

When a car enters the parking space and the sensor detects the presence of the car for more than 2 seconds, the LEDs indicate red for occupied, and simultaneously, a signal is sent to the central unit via a dedicated address on the Dupline bus. The sensor will not react to objects lower than 0,8 m.

The sensor is designed to work in an area which is:



The sensor should be placed freely, e.g. in the following way:



## Calibration

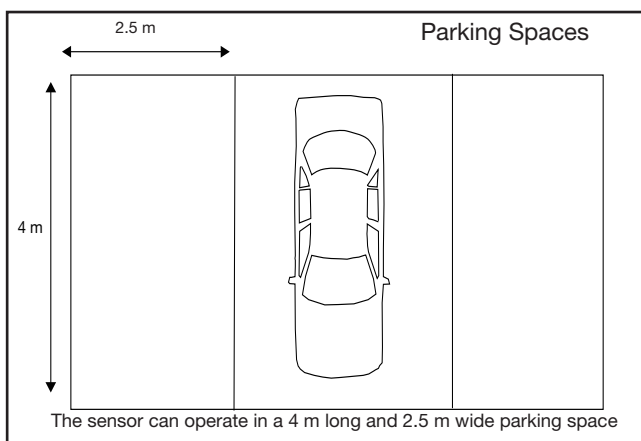
The sensor is self-calibrating. When the parking space is empty, push the sensor reset button. The red sensor LED then blinks slowly for 30 seconds. During this period, the sensor will do nothing. Once it stops blinking, the calibration starts. The calibration lasts 4 seconds. If successful, the sensor acknowledges this by blinking green for 2 seconds. The parking space must be empty during the calibration process.

It is possible to perform a global self-calibration using test unit GTU8 to calibrate all sensors simultaneously. The GTU8 has a built-in calibration function for sensors under the "mode" menu. Before the start of the complex calibration process, the Dupline address which is being used as common calibration channel must be chosen. The calibration signal is performed as a sequence that prevents noise or unmotivated activation of the calibration process.

If a global self-calibration is performed, it is important that all parking spaces are empty, otherwise they will be calibrated incorrectly.

## Reflections and dirt

There are no special requirements for building materials. The best materials are hard, even and flat to give uniform reflections. However, the floor can be sand, gravel or grass. Reflections are reduced, but not to a critical level. The sensor is not critical towards soiling, icing or dusty surroundings. Reflections are reduced, but not to a critical level.



## Environment

- **Protection:** IP 61
- **Operating temperature:** -25°C to 70°C
- **Storage temperature:** -40°C to 85°C
- **Pollution Degree:** 3 (IEC 60664)
- **Dimensions:** 85 x 85 x 50 mm
- **Material:** The case is made of polypropylene. The sensor lid is made of clear Polycarbonate.

## Schematic drawing of switch box

