

Fig. 1

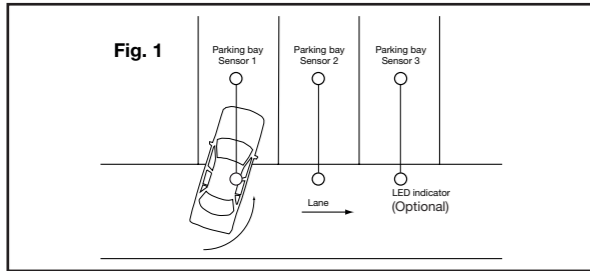
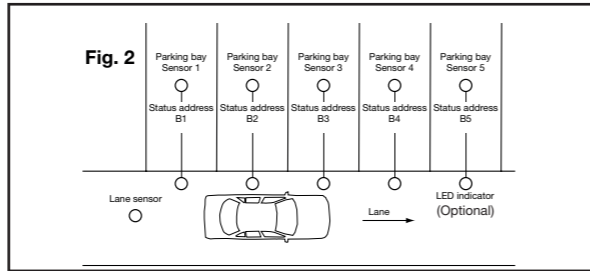
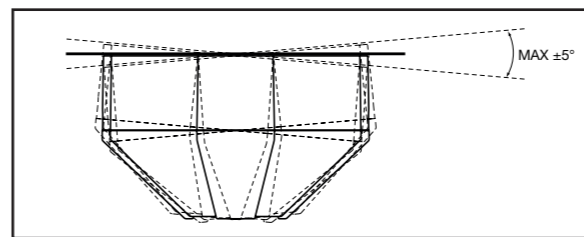


Fig. 2



Sensor Placing

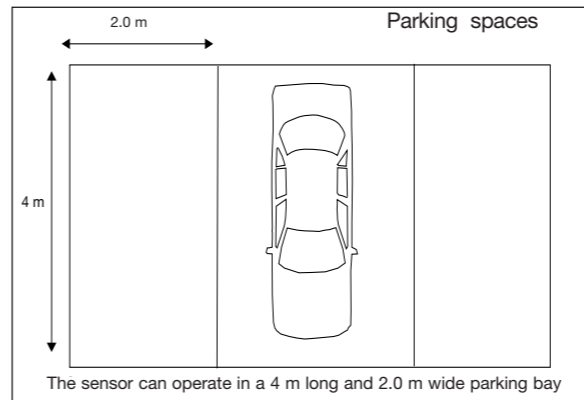
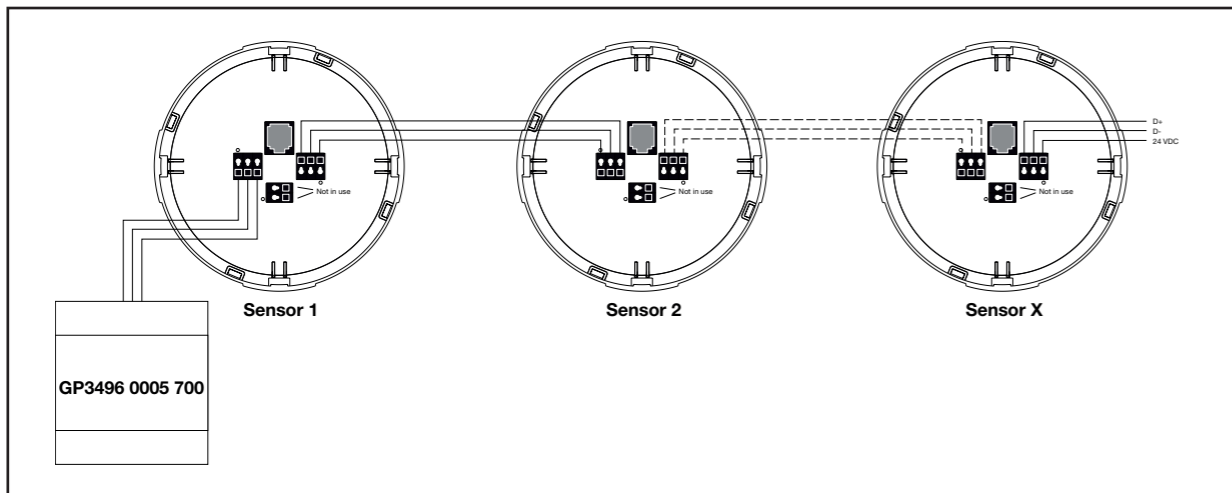


To receive the best signal, the sensor must be installed with an angle on the ceiling of maximum ±5°.

Dupline® Car Park System  
3-Colour Ultrasonic Sensor

Type GP6220 330x 724-US

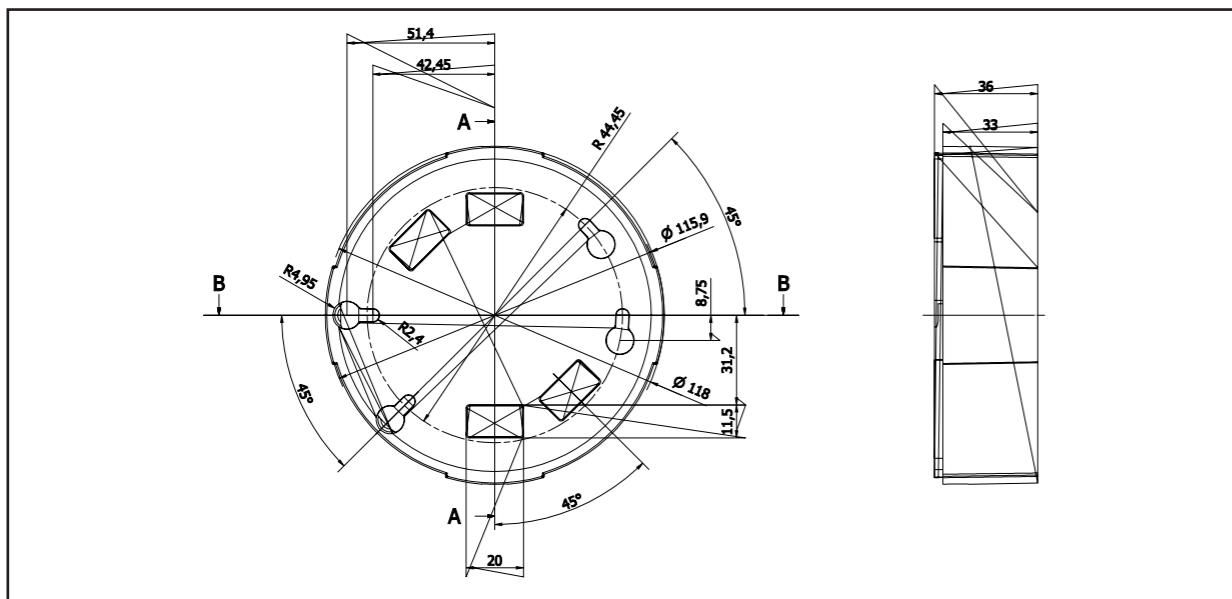
Fig. 3 - Example of Connection



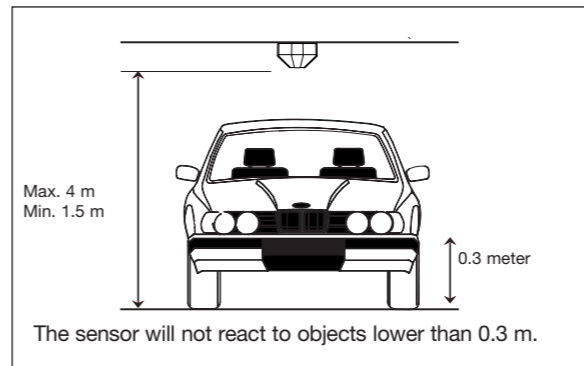
User Manual

CARLO GAVAZZI

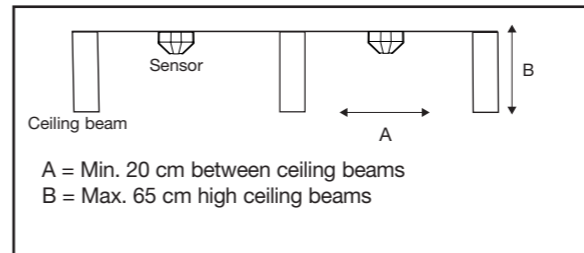
Bottom Part: Mounting in Ceiling



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



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



CARLO GAVAZZI  
www.gavazziautomation.com

CARLO GAVAZZI

Certified in accordance with ISO 9001

## Type Selection GB

GP6220 3301 724-US Sensor with red/green/amber LED  
 GP6220 3302 724-US Sensor with red/green/blue LED  
 GP6220 3303 724-US Sensor with red/blue/amber LED

## Input/Output Specifications

<b>RJ12 connector</b>	for address programming with Carpark Configurator GP7380 0080
<b>2x3-pin connector</b>	<ul style="list-style-type: none"> <li>Printed dot on the sensor is Dupline® +</li> <li>D- or Gnd</li> <li>POW (power from DMM or Coupler). See (System diagram)</li> </ul>
<b>1x2-pin connector</b>	Not in use.

**NOTE:** The sensor connectors are using the “push-wire connection” methode. Use a 1.5 mm<sup>2</sup> single core wire for the sensor installation.

## General Specifications

<b>Ultrasonic frequency</b>	40 kHz
<b>Max. distance between ceiling and floor</b>	4.0 m
<b>Min. distance between ceiling and floor</b>	1.5 m
<b>Min. calibration distance</b>	1.5 m
<b>Hysteresis</b>	±30 cm
<b>Sensor in “Normal” mode</b> Sensor activations time	3 sec. See fig. 1 (Default)
<b>Sensor in “Lane” mode</b> Sensor activations time	0.4 sec. with a max car speed on 20 km/hour. See fig. 2
<b>Programming unit</b>	GP7380 0080
<b>Sensor temperature compensation</b>	The built-in temperature compensation makes the sensor stable and reliable without any calibration

**The sensor uses one Dupline® input address**  
 • Status address  
 is used to transmit the status of the sensor on the bus A1  
 Default address

**The sensor uses 3 Dupline® output addresses**  
 • Calibration address  
 is used for global calibration. Common address for all the sensors on the bus  
 These two addresses are used for control of the LED colour.  
 LED CH1 = A1  
 LED CH2 = A2

• LED CH1, LED CH2  
 Default address

<b>LED colour coding</b>	
GP6220 3301 724-US	
LED CH1, LED CH2 = 0,0	Green LED ON
LED CH1, LED CH2 = 0,1	Amber LED ON
LED CH1, LED CH2 = 1,0	Red LED ON
LED CH1, LED CH2 = 1,1	No LED ON
GP6220 3302 724-US	
LED CH1, LED CH2 = 0,0	Green LED ON
LED CH1, LED CH2 = 0,1	Blue LED ON
LED CH1, LED CH2 = 1,0	Red LED ON
LED CH1, LED CH2 = 1,1	No LED ON
GP6220 3303 724-US	
LED CH1, LED CH2 = 0,0	Blue LED ON
LED CH1, LED CH2 = 0,1	Amber LED ON
LED CH1, LED CH2 = 1,0	Red LED ON
LED CH1, LED CH2 = 1,1	No LED ON

**Approval**  
 In case of a Dupline® fault the sensor’s red LED will start flashing at 1 second intervals.

## Supply Specifications

<b>Power supply</b>	21 VDC min.; 30 VDC max. (Overvoltage category III (IEC60664))
<b>Max. supply current</b>	20 mA
<b>Nominal Supply</b>	28 VDC / 19 mA 0,53 W

## Environment

- Protection: IP 34
- Operating temperature: -40°C to 70°C
- Storage temperature: -40°C to 85°C
- Pollution Degree: 3 (IEC 60664)
- Dimensions: Ø118 x 76 mm
- Material: The case is made of polypropylene. The sensor lid is made of clear Polycarbonate.

## Mode of Operation

The ceramic sensor emits an acoustic signal at a frequency of 40 kHz. The signal is reflected when it hits the floor and returned to the sensor. The reflected signal indicates whether the parking bay is available or occupied.

### Sensor addresses

- Status Dupline® address  
The Dupline® bus address used by the sensor to transmit the status of the parking bay.
- Calibration Dupline® address  
This address is used to trigger the sensor to perform a self calibration. Several sensors can be given the same calibration address, thereby making it possible to calibrate multiple sensors at once by sending a single trigger signal on that address. The programming unit GP73800080 is used to send out the trigger signal.

### Modes

The sensor has two modes. Normal mode or Lane mode.

**In Normal mode**, the sensor is designed to be mounted in the ceiling directly above the car in the Carpark bay. The sensor detects the presence or no presence of a car and sends a signal on the Dupline® bus to the Carpark Monitor and Master module. Through the RS485 modbus interface of the Carpark Master Module GP34960005 the PC/PLC can control the status of the two Dupline® bit-addresses (LED CH1, LED CH2) assigned to the sensor. Each of the four bit-combinations will result in a specific indication as shown above under “LED colour coding”.

The sensors will not react to objects lower than 30 cm. To avoid a weak signal, the sensor must be installed pointing directly at a hard surface, as for instance concrete. A soft or uneven surface will reduce the signal.

**In Lane mode**, the sensor is designed to be mounted in the ceiling above the lane. The sensor is able to detect moving cars with a maximum speed of 20 km/hour. See fig. 2.

When the sensor detects a moving car it sends a signal to the Carpark system that reduces the total amount of free places. The reduced amount is shown on the local display - but also on the display that shows the total amount of free places.

This is to prevent to many moving cars in a specific carpark area. The sensor does not show the actual status on the LEDs. The LEDs only work as feedback during calibration, startup and show the fail status.

## Programming the Sensor

The programming of the GP6220330x724 is described in the “Carpark Design and Installation Guide”.

The manual is available on the CG Products Online homepage together with the data sheets etc.

## Calibration

The sensor is self-calibrating. It is important to perform the calibration when the parking bay is empty. There are two ways of calibrating a sensor.

**Manual calibration** is a local calibration of the single sensor.

- Push the button on the outside of the sensor.
- The LED flashes green for 30 seconds with 1 Hz (The electrician has time to get clear of the sensor before the calibration starts).
- The calibration starts when the LED flashes green for 6 seconds with 4 Hz.
- If the calibration is OK, the LED will respond with a constant green light.

**Automatic calibration** with the Carpark Configurator GP 7380 0080 is a global calibration of all connected sensors. The parking bay must be empty during the calibration process.

### Error messages:

- If the calibration fails, the LED will respond with a constantly flashing red light.
- If the LED flashes red, the sensor could be out of range or the sensor is not correctly aligned.
- Adjust the sensor into the sensing area and recalibrate the sensor.
- If Dupline® is not connected/defect the LED will flash red.
- If Dupline® is short circuit the LED will flash red.
- Sensor first time start up. The sensor LED will flash red because it needs calibration.

## Dimensions

