CarPark 3

Trouble–shooting guide

Rev. 1.2, 18/12/2018

1 INDEX

2 BEFORE SET UP AND ADDRESSING

2.1 Wiring

2.1.1 Cable

Use two 1.5 mm^2 (14-16AWG) single core wires for the sensors and LED indicators in the system. If the installer uses multi-core or stranded, the wires must be mounted with ferrules because of the push connectors in the sensor. If ferrules or single core cables are not used, the wires must be stripped correctly to avoid short circuits between them. Avoid stripping them too much.

Wrong wiring examples
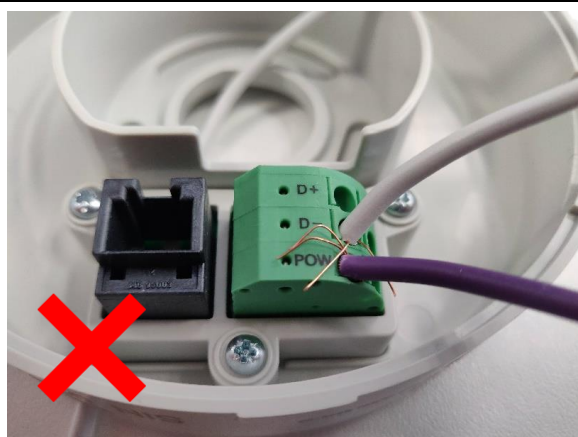
Right wiring indications
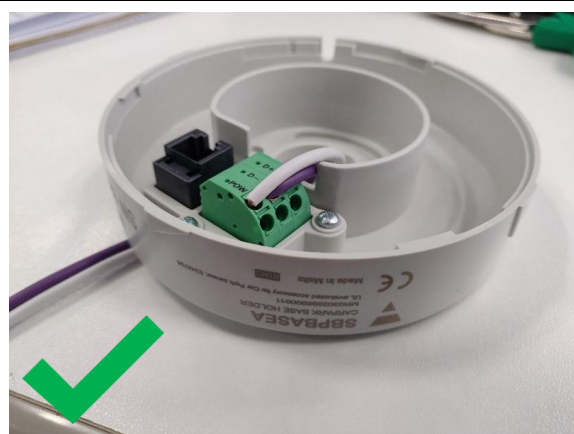
Leave some spare cable for each sensor (2/3 cm) in order to have enough cable to make the connection with the sensors connectors easier.

It is best to use 3-wire cables in order to decrease the possibility of mismatching the wires between sensors and between sensors and cabinet.

The good condition of the connectors must be maintained: if one connector is damaged, you must replace it. To disconnect wires from the connector, you should keep the connector on the base and press it with a screwdriver to release the wires.

2.1.2 Start-up conditions

- Impedance can be measured on the bus without connecting to the SBP2MCG324 module: between D-/POW and D+/POW there should be MOhm impedance, between D-/D+ there should be KOhm impedance. If this is not so, it means that some of the wiring is not correct. It could be a short circuit between the bus wires or their mismatching.

- The voltage output of the Dupline can be measured on the SBP2MCG324 and at the end of the lines: between D-/POW there should be 27/28 VDC and between D-/D+ there should be 6/8 VDC. If this is not so, it means that some of the wiring is not correct.

- Check that the HS-BUS and RS485 for displays are on two separate wires.

Possible wrong connections:

Connection	Terminals			Result
Correct Connection A	POW	D-	D+	Dupline communication works
Wrong connection 1	POW	D+	D-	Dupline communication does not work
Wrong connection 2	**D+**	**POW**	**D-**	**!!The sensor will burn out and it will be unusable!!**
Wrong connection 3	D+	D-	POW	The sensor does not work, but it will not break. (the sensor's LEDs are a weak red)
Wrong connection 4	D-	D+	POW	The sensor does not work, but it will not break
Wrong connection 5	D-	POW	D+	The Master Channel Generator goes into protection mode. There is no more communication, but nothing will break.

Note: If a cable with more than three wires is used, the probability of having wrong voltages on the plugs is higher.

2.1.3 Diagnostic of LEDs of the SBP2MCG324

In normal operating conditions, both the LEDS are steady. The table below shows the error conditions that can be identified by the LEDs:

LED	N° blink	Fault	Condition
Green	1	Controller hardware error	The SBP2MCG324 is damaged
Green	2	D+ voltage higher than expected	Voltage D+>9,5V, D+ could have been connected to POW
Yellow	1	D+/D- short circuit	/
Yellow	2	Pull down voltage high	One module could be missing the D-connection
Yellow	3	Dupline bus voltage error	Vdup<6V or Vdup > 9,5V
Yellow	4	Dupline bus overload	Dupline current is too high
Yellow	6	Module inverted	One module could be connected with D+/D-inverted

Example

If one of the conditions above is verified, to find the sensor or the sensors that are causing the problem, we suggest that you do the analysis by bisection. The procedure below shows an example:

Step	Action
a	The entire line of sensors connected to the channel generator is faulty Entire line faulty
1	Disconnect the second half of the line. If the first half is still faulty on the channel generator, then the problem must be on the first half Half line faulty
2	Split the second half into two segments and keep only the first one connected. The first half is working Quarter of line OK
3	Add one sensor to the other segment. If the line returns to faulty, then the sensor with the wrong connection has been identified Found

2.1.4 No Dupline signal (or voltage drop exceeded)

1. If the D+ is not connected or the voltage drop on the Dupline bus exceeded, the LEDs of the sensor are white and stay white.

2. If the voltage drop is exceeded on the POW bus, the software tool will show voltage drop error on its interface; in this case the functionality of the sensor is not guaranteed and usually the LEDs of the sensor remain off.

2.2 General trouble-shooting

LEDs behaviour	How to solve the issue
Sensors flashing yellow	The addressing procedure has not been ended.
Sensor LEDs off	If the cables have already been checked, the problem could be a faulty base. Replace the actual sensor with a working one: if the new sensor is not working, the base is faulty.

3 AFTER COMMISSIONING

3.1 General trouble-shooting

This part of the manual deals with common problems the user can encounter during the project configuration or sensor calibration and, as shown below, possible solutions are suggested:

Problem	Solution
The sensor remains green and does not react	The sensor needs to be calibrated
The sensors respond too slowly or too quickly (unstable)	On the calibration window of the configuration tool *set the proper filter*
Display not showing anything	Before working correctly, the display needs to be set up on the controller by means of the software tool and also set on the webserver interface
The sensor is not installed between 2.2m and 2.4m	On the calibration window of the configuration tool set the *Near End Position* field using the following formula: *Near End position = [Height of the sensor – 0.2 m]*
The bay is narrower than 2.5m	On the calibration window of the configuration tool set the *Total Peak Out* field = 3
The bay is long, but without adjacent bays	On the calibration window of the configuration tool set the *Far End Position* field > 3.68m
Crosstalk	Identify the sensor which is creating crosstalk and modify its address *Note: See CarPark manual section 15.7*