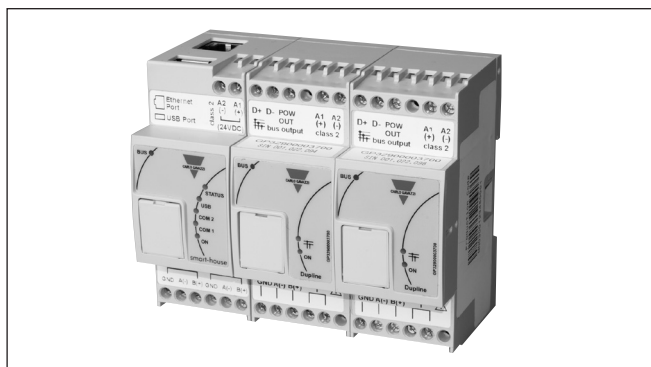


Dupline® Carpark Master Zone Counter (MZC) Type GPMZC-SET (complete)

CARLO GAVAZZI



- Controller in the Dupline® zone counting system
- Micro Linux PC with Ethernet port and Web-server
- Connects up to 120 count sensors via Dupline® L₁ 3-wire bus
- Dupline® ultrasonic carpark sensors can be used directly on the L₁ bus
- Loop detectors or Photoelectric sensors can be used when connected to Dupline® L₁ input module
- Manages up to 3840 parking spaces in multiple zones
- Each zone can have multiple entry and exit points
- Easy configuration, monitoring and count adjustment via web-server
- Mixed systems with zone counting and single space detection possible
- Option to detect the split between handicap and standard spaces occupancy
- Optional PC software for real-time monitoring and historical occupancy data analysis

Product Description

The GPMZC-SET is a programmable integrated unit specially designed for Carpark applications. The GPMZC-SET is a combination of 3 modules, one controller and two channel generators for the L₁ and L₂ bus. The controller includes dedicated functions for counting based on the count sensors connected to the L₁ bus. A web-server in the controller gives the user unique opportunity to modify or mon-

itor the zone count system using a Smartphone or other Ethernet based equipment. The two galvanic separated channels generators supply the two busses L₁ and L₂ with power and Dupline®. The GPMZC-SET can easily be combined with the single spot Detection system. The data from the systems can be monitored and controlled from the Dupline® Carpark Software.

Ordering Key

GPMZC-SET

Type Selection

Housing

2 DIN

Mounting

DIN-rail

Supply: 24 VDC $\pm$ 20%

GPMZC-SET

Count Module: GP32950030700

Supply Specifications

Power supply	Overvoltage cat. II (IEC 60664-1, par. 4.3.3.2)	Reverse polarity protection	Yes
Rated operational voltage	15 to 24 VDC $\pm$ 20%	Connection	A1 (+) and A2 (-)
Rated impulse voltage	500V (1,2/50 μ s) (IEC 60664-1, tab. F.1)	Power off delay	1 s
Rated operational power	5 W		

Main Hardware Characteristics

Memory	Micro SD not in use	Right side	Compatible with GP32900003700
Communication ports		USB ports	
RS485	2 ports	Mini USB	Only for internal use
Ethernet	1 port, for Internet/LAN connection	Host function	Not in use
Auxiliary bus	HS BUS		



RS485 Communications Ports

Number of ports	2	Data format	Selectable: 1 start bit, 7/8 data bit, no/odd/even/ parity, 1/2 stop bit
Purpose	COM1: Modbus slave COM2: Modbus slave	Baud-rate	9600 bits/s
Type	Multidrop, bidirectional	Insulation	See the table "Insulation between inputs and outputs"
Connections	2-wire. Max. distance 1000m		
Protocol	MODBUS RTU		

Ethernet Port

Rated inputs	HTTP	WEB server	80	20
IP configuration	Static IP / Netmask / Default gateway	Connections	RJ45 10/100 BaseTX	
DNS	Primary and secondary DNS as a static or dynamic management (using DHCP server if configured)	Insulation	Max. distance: 100m	See "Insulation between inputs and outputs" table.
	Port _____ N. of connections _____			

HS Bus Specs (right side)

Bus type	RS485 high speed bus	modules which drive the L1 and L2 buses must be connected on the right side of the GP32950030700
Function	Connection to master channel generator module GP32900003700	
Connection	By local bus on the right side	
Note:	The two GP32900003700	

LEDs Indication

Green LED: ON ON: power ON OFF: power OFF	Flashing: 200ms ON 200ms OFF, communications OK	BUS OFF: no communication is present on the HS BUS ON: communication error on HS BUS Flashing: communication OK on HS BUS	Blue LED: USB Not in use
Yellow LEDs: COM 1 OFF: no communications on RS485 A Flashing: 200ms ON 600ms OFF, no answer from the slave	COM 2 OFF: no communications on RS485 B Flashing: 200ms ON 600ms OFF, no answer from the slave Flashing: 200ms ON 200ms OFF, communications OK		Red LED: STATUS Not in use

GP32950030700 Based Insulation between Inputs and Outputs

Type of input/output	DC Power supply	RS485 - COM 1	RS485 - COM 2	Ethernet	USB port "H"
DC Power supply	-	2kV	2kV	0.5kV	0kV
RS485 - COM 1	2kV	-	0.5kV	2kV	2kV
RS485 - COM 2	2kV	0.5kV	-	2kV	2kV
Ethernet (LAN/Internet)	0.5kV	2kV	2kV	-	0.5kV
USB port "H" (Host)	0kV	2kV	2kV	0.5kV	-

0kV	Inputs / outputs are not insulated
2kVrms	EN61010-1, IEC60664-1 - over-voltage category III, pollution degree 2, double insulation on systems with max. 300Vrms to ground
0.5kVrms	The insulation is functional type

General Specifications

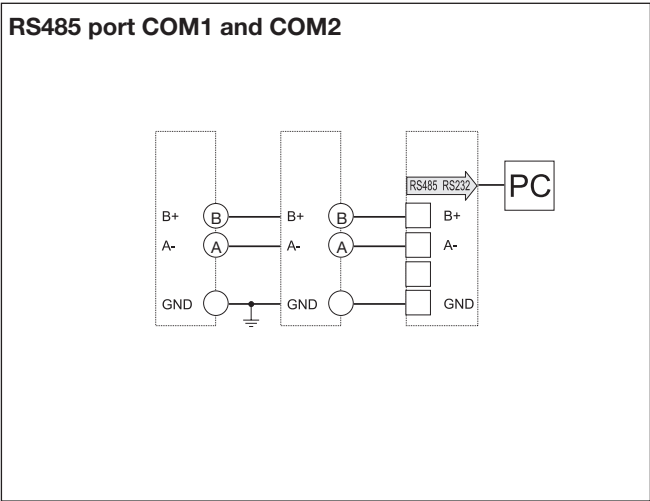
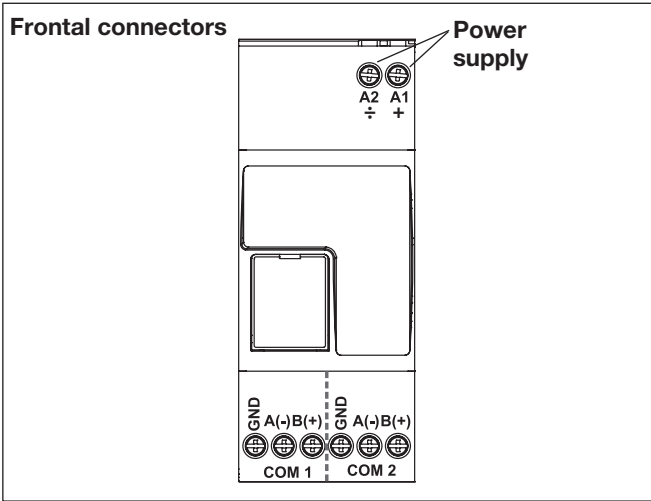
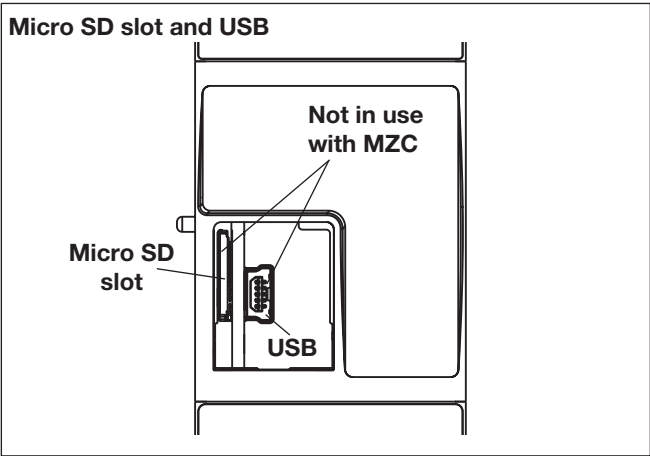
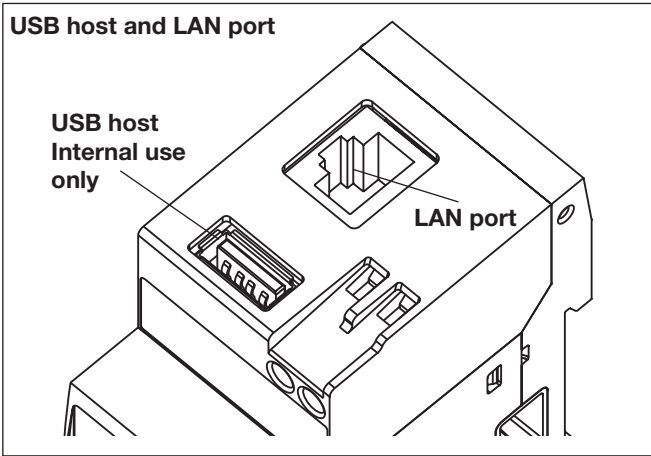
Operating temperature	-20 to +50°C (-4°F to 122°F) (R.H. < 90% non-condensing @ 40°C)	Weight	Approx. 150 g (packing included)
Storage temperature	-30 to +70°C (-22°F to 158°F) (R.H. < 90% non-condensing @ 40°C)	Mounting	DIN-rail
Over voltage category	Cat. III (IEC 60664, EN60664) For inputs from string: equivalent to Cat. I, reinforced insulation.	Approvals	cULus, according to UL60950 UL notes: Max room temperature:
Dielectric strength	4000 VAC RMS for 1 minute	40°C Equipment must be supplied by a separately certified NEC class 2 (LPS) power unit.	
Noise rejection CMRR	65 dB, 45 to 65 Hz	CE Marking	Yes
Standard compliance Safety	IEC60664, IEC61010-1 EN60664, EN61010-1	EMC	
Protection degree Front Screw terminals	IP40 IP20	Immunity - Electrostatic discharge - Radiated radiofrequency - Burst immunity - Surge - Conducted radio frequency - Power frequency magnetic fields - Voltage dips, variations, interruptions Emission - Conducted and radiated emissions - Conducted emissions - Radiated emissions	EN 61000-6-2 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN 61000-4-11 EN 61000-6-3 CISPR 22 (EN55022), cl. B CISPR 16-2-1 (EN55016-2-1) CISPR 16-2-3 (EN55016-2-3)
Housing Dimensions (WxHxD)	35 x 90 x 63.5 mm (2-DIN module)		
Material	Noryl, self-extinguishing: UL 94 V-0		

Connections

Ethernet	RJ-45 connector (10/100Base-T)	Power supply Cable cross-section area Screws tightening torque	2 screw terminals 1.5 mm ² max Min. 0.4 Nm, Max. 0.8 Nm
USB	High speed USB 2.0		
RS485 Cable cross-section area Screws tightening torque	3 screw terminals per port 1.5 mm ² max Min. 0.4 Nm, Max. 0.8 Nm		



Connections



Channel Generator for Dupline® bus L₁ and L₂: GP32900003700

Supply Specifications

Power supply	Overvoltage cat. II (IEC 60664-1, par. 4.3.3.2)
Rated operational voltage	24 VDC ± 20%
Rated impulse voltage tab. F.1)	500V (1,2/50µs) (IEC 60664-1,
Rated operational power	6.5 W
Protection for reverse polarity	Yes
Connection	A1 (+) and A2 (-)
Power on delay	Typ. 20 s
Power off delay	1 s

Voltage	8.2 V
Maximum Dupline® voltage	10 V
Minimum Dupline® voltage	4.5 V
Maximum Dupline® current	450 mA
Maximum current on pow	< 3.0 A
Terminal	D+, D- and pow out
Note: The Dupline® bus is located on the upper connector and also on the local bus connector on the right side of the module.	

General Specifications

Installation category	Cat. II	Housing	
Dielectric strength Power supply to Dupline® and Dupline® to Output	500 V AC for 1 min. 500 V impulse 1.2/50µs (IEC60664-1, TAB. A.1)	Dimensions (WxHxD)	35 x 90 x 63.5 mm (2-DIN module)
Fail-safe condition	If the GP32900003700 loses the communication with the GP32950030700, the Dupline® output will be switched off. In this situation all the modules connected to the bus will go into the fail-safe output status.	Material	Noryl
Environment Degree of protection Front Screw terminal Pollution degree Operating temperature Storage temperature Humidity (non-condensing)	IP 50 IP 20 2 (IEC 60664-1, par. 4.6.2) -20° to +50°C (-4° to 122°F) -50° to +85°C (-58° to 185°F) 20 to 80% RH	Weight	150 g
LED's indication BUS Power Dupline®	1 yellow LED 1 green LED 1 yellow LED	Approvals	cULus, according to UL60950 UL notes: Max ambient temperature: 40°C Equipment must be supplied by a separately certified NEC class 2 (LPS) power unit
Connection Terminal Cable cross-section area Tightening torque	12 screw-type Max. 1.5 mm² 0.4 Nm / 0.8 Nm	CE Marking	Yes
		EMC Immunity - Electrostatic discharge - Radiated radiofrequency - Burst immunity - Surge - Conducted radio frequency - Power frequency magnetic fields - Voltage dips, variations, interruptions Emission - Conducted and radiated emissions - Conducted emissions - Radiated emissions	EN 61000-6-2 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN 61000-4-11 EN 61000-6-3 CISPR 22 (EN55022), cl. B CISPR 16-2-1 (EN55016-2-1) CISPR 16-2-3 (EN55016-2-3)

HS Bus Specifications

Bus type	RS485 high speed bus
Protocol	Internal proprietary protocol
Connection	By local bus (left and right connectors) or terminals GND, A(-), B(+). T1, T2: termination inputs. They have to be short-circuited on the last module of the network. See wiring diagrams.

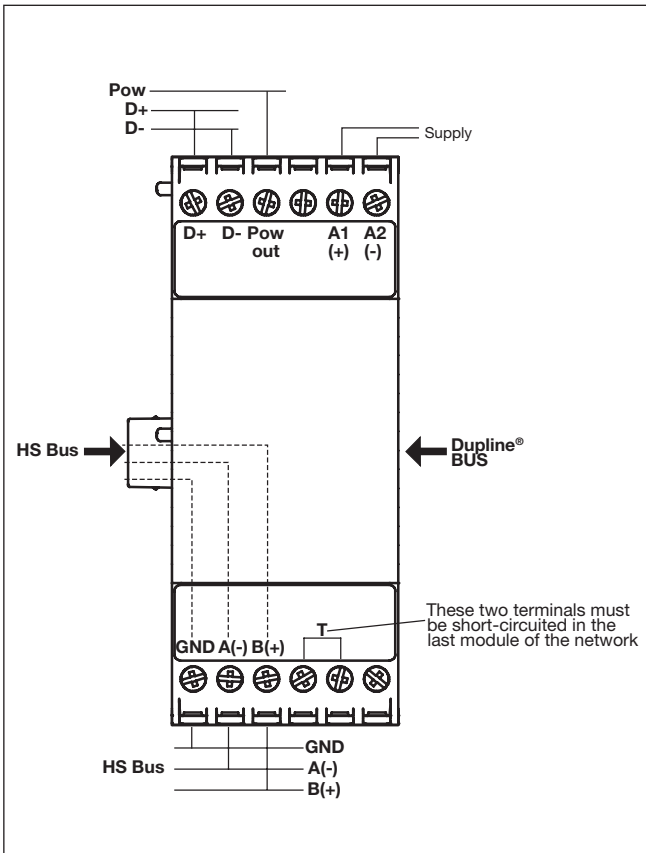
LEDs Indication

Green LED: ON.
ON: Supply ON
OFF: Supply OFF

Yellow LED Dupline® bus
ON: the Dupline® bus is working properly
Flashing: there is a fault on the Dupline® bus
OFF: the Dupline® bus is OFF or not connected.

Yellow LEDs Bus
OFF: no communication is present on the HS bus
ON: communication error on HS bus
Flashing: communication OK on HS bus

Wiring Diagrams



For both GP32900003700 and GP32950030700

Mode of Operation

The GPMZC-SET is a dedicated unit for Dupline® Zone Counting.

The unit consists of 3 modules

- 1 x GP3295 0030 700 - Carpark counter
- 1 x GP3290 0003 700 - Carpark master channel generator (CMCG) for L₁
- 1 x GP3290 0003 700 - Carpark master channel generator (CMCG) for L₂

The counter is the intelligent part where all the programming takes place. The two Master channel generators supply the L₁ and L₂ bus respectively with Dupline® and 24VDC power. The Master channel Generators are not galvanically separated so it is essential to use individual supplies to power the modules. See MZC installation manual for further information on this topic.

The counter module can be programmed by any kind of PC connected to LAN or WAN by using a standard browser like Explorer or Mozilla Firefox. Refer to the MZC installation manual for further information on accessing and programming the Counter module.

The GPMZC-SET can be used as a stand-alone counting system. The Stand-alone solution can count up to 3,840 places and is able

to use any counting sensor e.g. ultrasonic, optical and loop detectors. The master-zone countersystem (MZC) combined with the Dupline® Spot detection system can monitor and control more than 50,000 places using the Dupline® Carpark Software. Refer to the Carpark Installation Manual for more information on this subject.

Dimensions

