HopperOne S11 Pulse Parallel

Operator's manual

Rev. 1.02

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Pulse Parallel

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NOTICE

This manual has been drafted with the utmost care. Nevertheless, it is not possible to guarantee at all times the absolute correspondence of the descriptions contained therein with the actual characteristics of the product.
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STORICO REVISIONI			
Revisione n°	**Data**	**Modifica**	**Note**
Creazione 1.00	21.09.05	Creazione HopperOne	
Rev. 1.01	16.04.16	Modifica testata e nome S11	
Rev. 1.02	30.01.17	Sensori livello ottici	

1. General description

Congratulations for your purchase of the Alberici ***HopperOne S11!*** This hopper has been designed and realized in the Alberici research laboratory. It fulfils all the requirements of the coin-op market. This belt-drive single-denomination dispensing device makes use of the most modern electronic and mechanical technologies. It is secure, enduring, and reliable.

1.1 Range of use

This hopper can count the amount of coins paid out, and to stop dispensing when empty. To this purpose, it makes use of a significant quantity of control routines for the management of the internal and external events.
It builds-ups easily into Gaming machines, Money Changers, Kiosks and Vending Dispensers.
These features make it easily compatible with all the cards normally available on the market.

1.2 Security

The HopperOne S11 can be connected to and disconnected from its slide connector only when power supply is off. The installation must be carried out as specified in paragraph 2.3. Guarantee shall not apply if such instructions are not complied with.

DANGER!

MECHANICAL PARTS
IN MOTION

This device includes mechanical parts moving fast during operation: ***DO NOT put your fingers inside it while the device is connected to power supply***.

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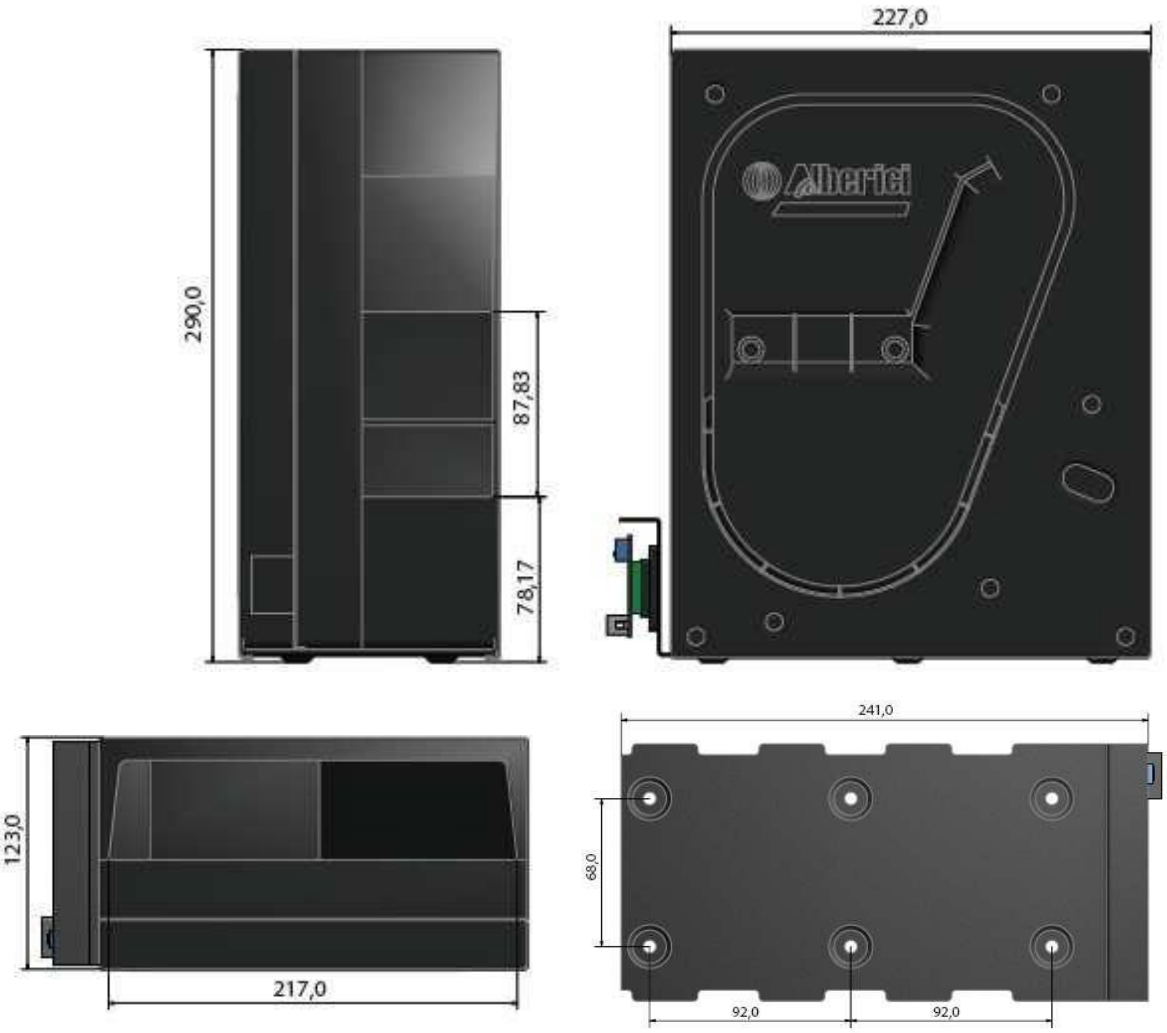
2. Main features

The HopperOne S11 cctalk is available in 2 different versions, according to the respective positions of the electrical connector and the coins outlet. When they are located at opposite sides, the version is named “STANDARD”; when they are located at the same side, the version is named “REVERSE”.
The standard features of the HopperOne S11 make it interchangeable with similar devices already existing in the market. It can handle any coins whose diameter ranges between16 mm and 32 mm (choose the most convenient belt for your purpose: 16-24mm, or else 22-32mm). Coin thickness can range between 2,0 mm and 3,4 mm.

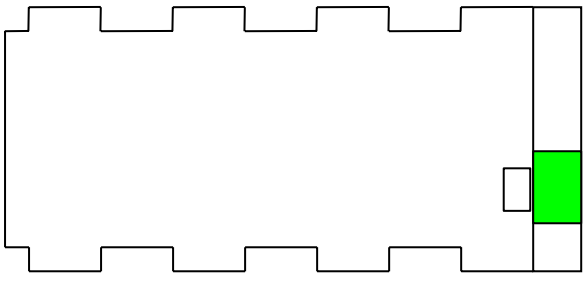
SPECIFICHE TECNICHE TECHNICAL SPECIFICATION

Peso Weight	2 Kg
Alimentazione Operating voltage	24 Vdc
Assorbimento Current draw	1,2A
Temperatura di lavoro Operating temperature	0°C ÷ 50°C
Umidità Humidity	20% ÷ 75%
Protocollo Interface	ccTalk - Aes 256 D.H. ÷ Aes 1024 D.H. (intercon-vertibili interchangable) - Pulse/ccTalk modif.
Capienza Capacity	1.200 monete coins
Velocità Speed	240 monete/min coins/min
Diametro monete Coins diameter	21 ÷ 32 mm, o or 16 ÷ 24 mm
Spessore monete Coins thickness	1,7 ÷ 4,1 mm

2.1 Overall dimensions

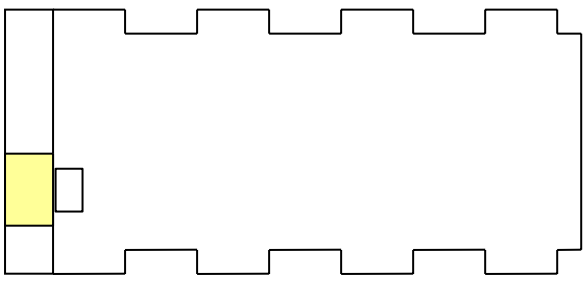


2.2 Position of the Chinch connector



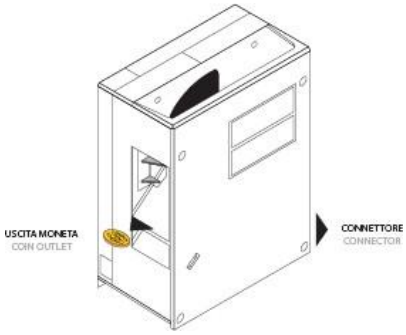
Reverse version

(connector located on the same side of the output of the coins)



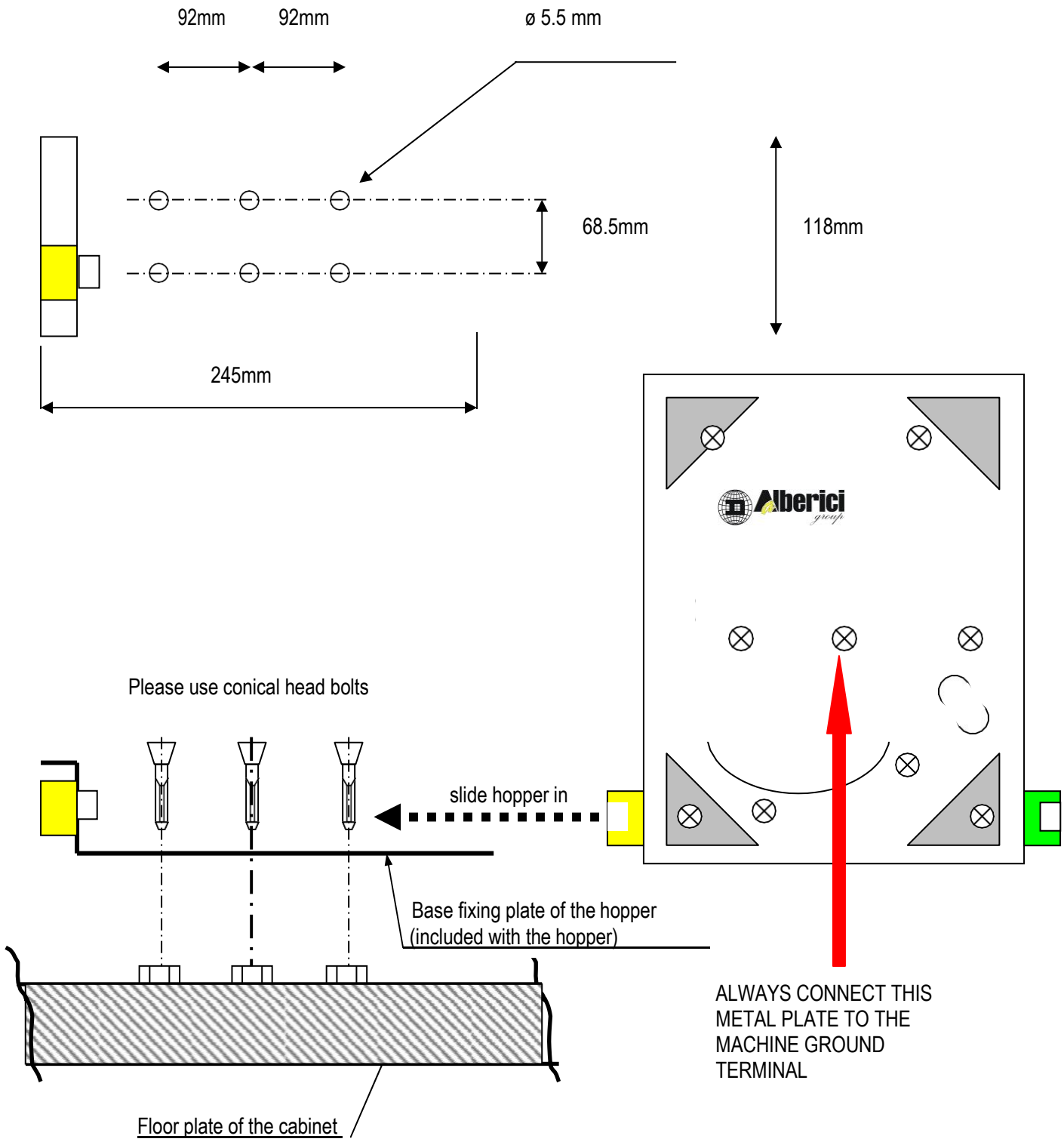
Standard version

(connector located on the opposite side of the output of the coins)



2.3 Installation

- *fasten the slide support,*
- *slide the hopper in*
- *for electrical connections, please see chapter 3*

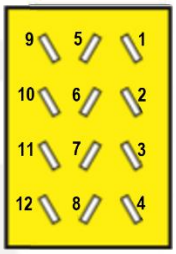


3. *Electrical Features*

All the signals handled by the hopper are by negative logic: signal is active when its voltage is LOW (GND).

3.1 CINCH connector Pin-Out

12 PIN PULSE cinch			
GND motor	1	2	VOID
OUT 1	3	4	IN 1
ERROR	5	6	Livello alto High level
Livello basso Low level	7	8	IN 2
+24V	9	10	VOID
OUT 2	11	12	IN 3



View from the front of the cable plug

Standard version: connector located opposite to the coin outlet; **Reverse version:** same side as the coin outlet

The pcb of the model with metal level sensors is different from the pcb of the model with optic level sensors. When the hopper level controls are made through optic sensors, do connect the electrode plates to the machine ground terminals.

3.2 Power Supply

This equipment must be operated by +24V direct voltage. **Pin 9** is where the **+24Vdc** must be supplied to the motor. The 24 V voltage allows to dispense 240 pcs. per minute.

DO ALWAYS CONNECT THE PINPOINTED METAL PLATE OF THE HOPPER TO THE MACHINE GROUND TERMINAL, TO PREVENT ANY DAMAGE CAUSED BY HEAVY ELECTRO-STATIC CHARGE INTRODUCED WITH THE COINS.

Current draw:

		Stand-by	No load	Normal operation	Stuck motor (*)
Board	(+24Vdc)	20mA/0,24W	20mA/0,24W	40mA/0,48W	40mA/0,48W
Motor	(+24Vdc)	0mA/0m W	70mA/1,4W	1,2 A/28.8W	1,5mA*/30W
Total		20mA/0,24 W	90mA/1,64W	1,24A/29,28W	1,54 /30,48W

*The motor overload current draw shall always be limited by the electronic circuit. The 1 A draw, corresponding to hold-up of the motor, will therefore be reached only for a few msec.

3.3 Input signals

There are three available input signals: IN1 IN2 IN3 .
Using these signals, it is possible to determine the mode of operation (see chapter 4), to reset the hopper and to start the dispensing.

The equivalent pins are	IN1	pin4	To select the type of operation
	IN2	pin8	To select the type of operation
	IN3	pin12	To start the dispensing (requires GND signal)

3.4 Output signals

There are 5 output signals, that can perform 3 functions:

OUT1 , OUT2 , (See here below)

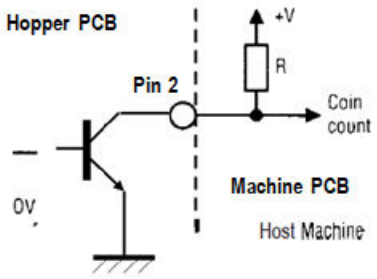
HIGH LEVEL SIGNAL (LH) , (See paragraph 3.5)

LOW LEVEL SIGNAL (LL), (See paragraph 3.5)

ERROR.

OUT 1 and 2 :

The function performed by these outputs is to communicate (by a low signal) the dispensing of each coin. The quantity of the impulses sent out is directly proportional to the number of tokens paid out by the hopper.
OUT1 and OUT2 are practically identical: they can be used for sending the return signal to the game pcb, or to possibly connect a counter or relay.
Such signals are open collector type. When the transistor is not in conduction, a pull up resistor (not included in the hopper, it must be provided by the OEM) will pull the output high (5 V or 12 V or 24 V).
The open collector provides for a simple interface to TTL and CMOS input devices.
Pin3 corresponds to **out1** and **pin11** corresponds to **out2**.



3.5 Level signals

Low level signal (LL) pin 7:

For all those systems where it is important to monitor the level of coins remaining in the hopper, a low level signal is transmitted as long as there are coins in the hopper, and an high level signal gets triggered as the hopper gets empty or in reserve.
The high level of the signal is produced by a pull-up resistance, while the low level signal is kept by the presence of the of the coins, whose metallic body is electrically connected to GND.

High level signal (HL) pin 6:

The same as in previous paragraph, but this time the high level signal corresponds to “coins in the hopper”, whilst the low level signal corresponds to “empty hopper”.

4. Operation

Determine in advance how your hopper must operate, since it will be necessary for you to choose the type of operation best suitable for your requirements.

This hopper can work in three different modes, ***Type0 Type1 Type2 …***

4.1 Selection of conditions

The logic state of these inputs, that is, the operation mode that the hopper will be using, is detected only at power up or reset.
The selection of conditions can be made by IN1 and IN2 inputs (pin 4 and pin 8). The following table shows all the possible combinations to this purpose.

	IN1	IN2
Type 0	**1** (+24Vdc)	**1** (+24Vdc)
Type 1	**0** (GND)	**0** (GND)
Type 2	**1** (+24Vdc)	**0** (GND)
RESET	**0** (GND)	**1** (+24Vdc)

4.2 Type 0

By this operational mode the hopper dispenses continually the coins. Both pin 4 and pin 8 must be left blank.
The control of the hopper is exclusively made by powering the hopper motor by 24 Vdc through pin 9 (+) and pin 1 (0), and by stopping it when pin 9 is reset to 0.

4.3 Type 1

Both pin 4 and pin 8 must be set down to GND potential (0 V).
The + 24 Vdc must always be present between pin 9 and pin 1 for the hopper motor; the dispense control is made by applying a Low Level (GND) signal to IN3 (pin12). The motor stops when IN3 goes back to High Level.
This is the method commonly used.

4.4 Type 2

Pin 4 must be +24 Vdc powered, while pin 8 must be set to GND (0 V). The host must send to IN3 as many GND signals as the tokens / coins to be paid out.
The 16-bit register in the hopper board counts the LL signals received through IN3. Then the hopper will dispense as many coins as the registered pulses.
The 16-bit register counts up to 65535 coins. If the power fails during pay-out, it will be resumet when power is restored, until the internal register corresponds to 0 coins still to be paid.

4.5 Reset

The reset simulates the switching-off, so it is not a functional condition but a command that can be activated at any time.
It allows to **restore correct operation, after an error occurred**.
After an error the device can be either reset or switched off and on again.

The reset also allows to modify the type of operation on condition that IN1 and IN2 are re- configured within **one second** from the removal of the signals that produce the reset.
This command and the control of IN1 and IN2 must be managed by the machine pcb (host).

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