



## ***B.C.M. WAVE Pump model 30/40 with integrated Inverter***

### **USER HAND BOOK**

B.C.M. PUMP integrated on board of INVERTERS  
For the regulation of flow and capacity

#### **Applications:**

Oenology
Cheese factories
Oil mills
Water
Zootechny
Fish farming
Gardening
Floriculture
Tanks /big reservoirs
...

**“a flexible, high-performance,  
effective and safe product”**



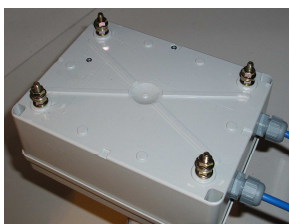
#### **B.C.M. macchine enologiche**

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## **Description and general functioning**

The product **BCM Wave Pump**, mounted on board of a BCM pump through the back fixings shown in the picture, allows the regular control of the capacity thanks to the inverter mounted in the electrical cabinet.



**It also optimizes the performance of the pump because it:**

- **Increases the capacity** of the pump through inverter parameter
- **Protects the motor** against overtemperature and overcurrent
- **Decreases the electrical consumption** through controlled accelerations
- **Protects the membrane** against overtemperature in case of lack of liquid through the connectable optional sensor (see picture below)

It is equipped, on the command panel, with proper rotating potentiometer allowing the manual adjusting of the electrical motor revolutions, therefore controlling the pump capacity.

This feature is very important to avoid the excessive shaking of the transported liquid: for example delicate wines, oil and sweetening thick liquids having high-quality scent and aroma.

With the selector FWD - REV, you can select the rotation direction (forward or reverse) and therefore the flow direction.

The capacity control can be managed remotely through various types of wire control (type A, type B, type C) that can be connected to the proper connector available on the cabinet side: for this function, rotate the selector INT/EXT to position EXT (external control from potentiometer).

The product Pump Wave and all available options can be ordered directly to BCM macchine enologiche.

## **Connections and functioning**

The product BCM Pump Wave must be connected to the electric line at 220 Vac or 380 Vac through the mains cable and jack supplied with the product. As soon as it is connected, the internal display will switch on showing the speed set that the pump will reach once activated.

Now the possible actions are:

- Forward speed with selector on position **“FWD”**
- Reverse speed with selector on position **“REV”**
- Stop of the pump with selector on position **“neutral”**
- Speed regulation through potentiometer **“Capacity”** on the cabinet: the selector must be on position **INT** (internal)
- Remote management with wire control connected to the connector **EXT**: in this case, to activate the remote potentiometer, the selector must be on position **EXT** (external)

**Note:** the minimum settable speed is 12 Hz equal to 190 rpm about.

This speed choice could not be continuative since, being the working condition more critical for the pump, after some hours the protection **“motor electronic thermal sensor”** or **“motor inner thermal sensor”** could occur.

## **Available remote controls**

All remote controls (cable length 10 m) must be connected to the EXT connector on the pump electrical cabinet side.

The remote controls available are:

- **Wire control “A” type (the most complete model available)**

Which allows:

- Speed regulation
- Flow impulse electronic inversion(FWD and REV)
- LED signalling the system is on

In this case both the FWD-REV speed selector on the pump cabinet for a continuative speed and the remote control buttons for a impulse speed are working.

To allow the use of the remote potentiometer, the selector must be on position **EXT**.

➤ **Wire control “B” type**

Allows

- Forward speed FWD and reverse speed REV

In this case the speed regulation is possible only from the pump cabinet with the selectors on **INT** and **neutral position 0**: the rotation will be activated by pressing the buttons mounted on the remote control.

➤ **Wire control “C” type**

Allows

- Speed regulation from potentiometer
- LED signalling the system is on

In this case the speed regulation is possible from the remote control with the selector on **EXT** : the rotation is decided and activated only by the selector FWD-0-REV on the pump cabinet.

➤ **Optional radio control KIT RECEIVER**

## **Product servicing**

The product BCM PUMP Wave **requires no specific maintenance** on the electric part; however, any operation for the mechanical maintenance of the impeller are specified in the pump instruction manual.

Do not insert liquids or foreign bodies into the pump connecting points or input power line.

Do not expose the device to corrosive or under pressure liquids: the product has a IP55 protection degree.

Do not expose the product either to heat or to direct and continuous exposure to the sun (internal protection at 60 ° C).

## **Warranty**

The product **PUMP Wave BCM** has a **2-year warranty** covering any bad functioning due to a failure of the device.

The warranty expires in case of inappropriate handling, connections to unstable power grids or unauthorized tampering on the product including the mechanical braking of the housing or connections to the mains.

### **Terms of use of the product**

**IMPORTANT:** We remind that, since the pump has a rubber impeller, it is absolutely forbidden the use without liquid.

The use without liquid introduces high friction in the impeller speeding up the derating process and the normal consumption of the same: the same metal structure covering the impeller will be subject to an abnormal heating. The system, in this case, through an estimation of the applied load that will exceed the limits of the product, will work only for a few minutes.

#### **PROLONGED INACTIVITY:**

As a result of a prolonged inactivity, it is usually done a hardening of the impeller: the system in this case will allow the rotation only in the direction facilitated by the position of the fins.

It will be necessary to introduce some liquid and run the pump for a few minutes in the only direction allowed: once done (**we remind you this action has to be performed with the presence of liquid**), the impeller will be returned to its original condition allowing the change of direction.

Since electronics dedicated to his functions is present for a proper and safe use, the product PUMPWAVE:

- **MUST NOT** be placed close to heat sources
- **MUST NOT** be continuously exposed to solar radiation
- **MUST NOT** work with ambient temperature above 35°C
- **MUST NOT** be sprayed with pressured water
- **MUST NOT** be subjected to mechanical shocks due to impacts, accidental falls or improper transportation.

We remind the system has IP 55 protection degree, so it is protected against accidental sprinkling of water not under pressure.

The BCM PumpWave also has internal protection against cabinet over temperature (60 °C): This protection will automatically stop the pump if used in critical working conditions not foreseen.

Furthermore, the product:

- **MUST BE** connected to a stable supply line
- **MUST BE** connected to a proper electrical cabinet equipped with the adequate protection (thermal sensor, differential and fuses)

The compliance with the above conditions will ensure the proper functioning of the product in all working conditions as well as a longer life of the entire system.

The non-compliance could cause the temporary stop of the pump or, in the worst conditions, the out of service of the product.

### **Technical features**

- Mains input supply: 220 / 380 Vac single-phase and three-phase, frequency 50 and 60 Hz
- Power: BCM pump model 30/40, motor 900W/4,2Arms/1000Rpm
- Speed regulation from 13Hz to 70 Hz for all models
- Flow capacity regulation from 5 hl/h (with by-pass) to 130 hl/h
- Run commands electrically optocoupled on the power section
- Remote commands electrically optocoupled in any function
- Protection degree IP55
- Thermal motor protection and estimation of applied load
- Over temperature protection of electrical cabinet (above 60°C)
- Optional radio control with a range of 200 m available for 2 models

FOR ADDITIONAL INFORMATION ABOUT PRODUCT, COMMISSIONING, FURTHER APPLICATIONS, PLEASE CONTACT:



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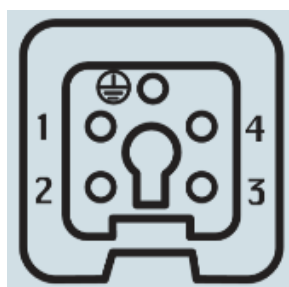
## CONNETTORE EXT POMPE AD INVERTER





### Collegamenti personalizzati al connettore EXT

In caso di collegamento personalizzato al connettore EXT (da eseguirsi solo con personale specializzato) la piedinatura del connettore è sotto riportata.

Tutti i contatti di marcia verso l'inverter devono essere considerati contatti puliti (dry contact) come indicato dalla tabella a fianco nella voce "modalità del comando e note"



	Segnale	Funzione	Modalità del comando e note
Pin 1	Avanti	Abilita marcia avanti	Contatto pulito tra pin1 e pin 3
Pin 2	GND	GND riferita all'alimentazione	
Pin 3	+15	Alimentazione +15 V	(max 50 mA) riferita a GND
Pin 4	Rifer ext	Ingresso riferimento velocità da esterno	Analogica 0-10V tra GND e pin 4
	indietro	Abilita marcia indietro	Contatto pulito tra  e pin 3

PER INFORMAZIONI ULTERIORI SUL PRODOTTO, SULLA SUA MESSA IN SERVIZIO, ULTERIORI E SPECIFICHE APPLICAZIONI POTETE CONSULTARE e CONTATTARE:



### BCM Macchine Enologiche

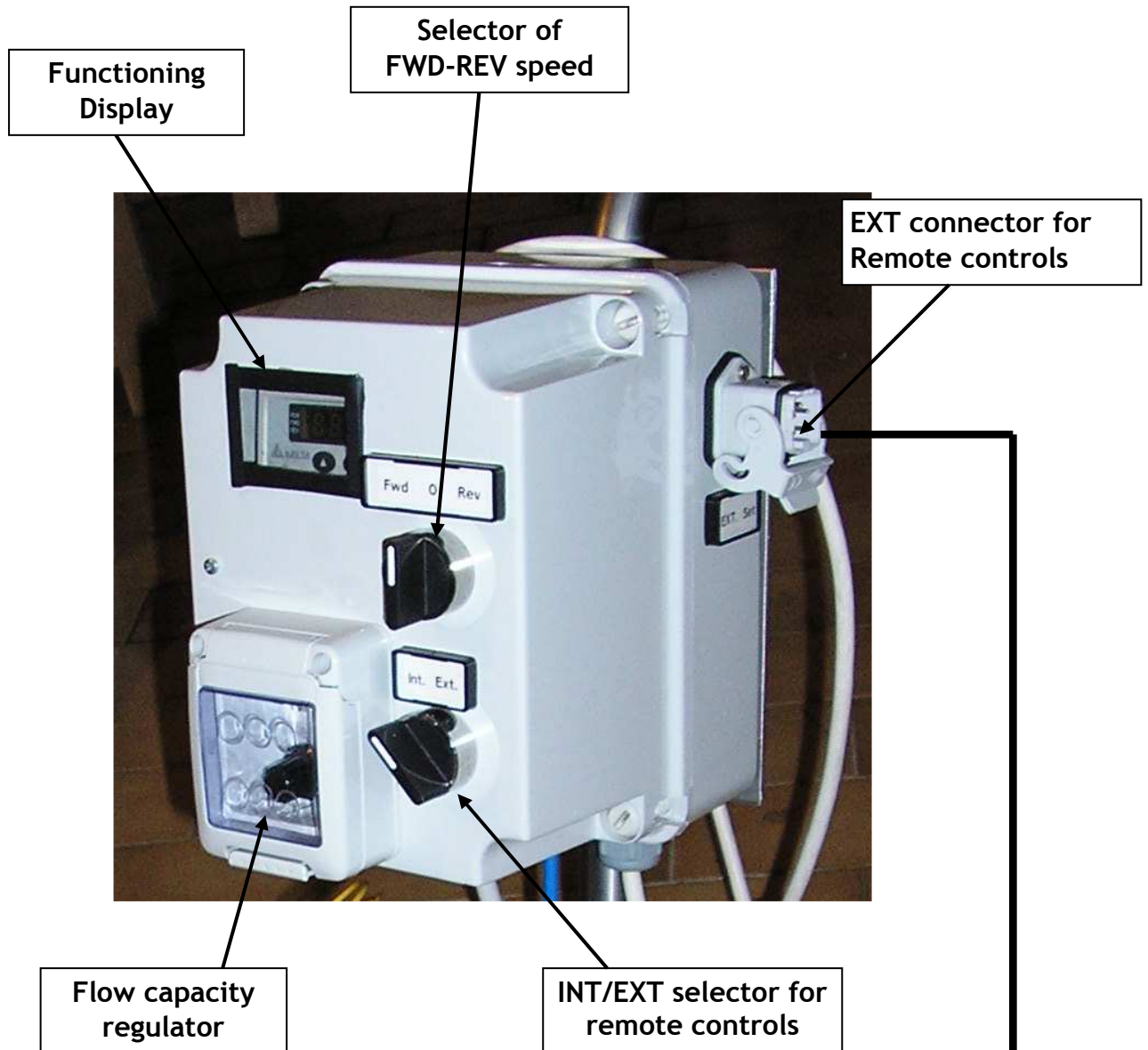
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# Control Cabinet of BCM PumpWave mod. 30/40



Model "A": flow regulation + FWD / REV rotation

Model "B": only FWD / REV rotation with flow regulation from the pump

Model "C": only flow regulation with run/direction from pump cabinet

Optional radio control KIT RECEIVER

**Universal connection for remote controls of models:**  
**A B C type**  
**And optional radio control**