



Pump B.C.M. model 50/60 /70 with integrated Inverter



GUIDE FOR USE AND ACTIVITY

Applications :

Oenology

Daery

Oil Mill

Water

Zootechny

Ichthyobreeding

Gardening

Floriculture

Tanks / Big basins

...

“a flexible product, with high performances, efficacious and sure”

Planned and built
For membrane pump



BCM macchine enologiche

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Description and general working

The produced item through the use of inverter allows the control of motor speed of a pump and as a consequence of its capacity.

Thanks to calibration parameters accessible through panel of supervision both the acceleration ramps have managed and its highest speed.

All of drives of gear are available on drives boards.

This inverter is a drive with particularly high efficiency, it is planned for pump field, protection degree IP55, EMC included line trap, ready for using through previously predisposed power connections, it is built with “long life” technology “**capacitor less**”, that is devoid electrolytic capacitors of power subject to a time degrade.

This product, assembled over a BCM pump, allows the regular control of capacity through an appropriate board of control placed at the edge of the pump.



Potenzimeter graduated and counted from 1 to 10 available on a board of inverter

It optimizes standard pump performances :

- **It increases pump capacity** thanks to parameterization
- **It protects the engine** from overtemperatures and overcurrent
- **It reduces electric consumption** through controlled accelerations
- **It increases mechanical endurance of the pump** because of exclusion of strong starts of motor.

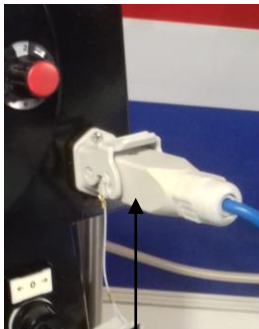
It disposes on the control board of an appropriate graduated and rotating potenziometer with numeration through that it will be possible to rule physically electric engine revolutions and to control pump capacity (see photo).

This peculiarity is very important when it would be important to avoid the excessive shaking of transported liquid : the function interests particularly precious wine, oil and generally sweetener and dense fluids with high peculiarity of aroma and fragrance.

Through FWD - 0 - REV selector it is possible to select the sense of gear forward and reverse and so to select the flow direction.

Through the edge connector standard series planned it is possible the use of pump in a remote way through the drive winding connection and standard radiocommand for BCM products.

It is possible to order Pump WAVE item with all optional available by “ BCM macchine enologiche”



EXT Connector for wire and radiocommand

Display of programming



Selector Int/EXT
For connection
remote controls



Connections and working

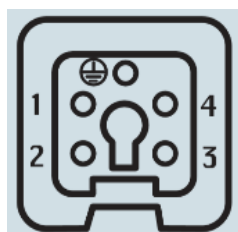
The product have to be connected to the electric line 380 Vac through the line cord and the plug provided with item.

Just after the connection of the control board assembled in the pump the green led "POWER" signaller will turn on denoting voltage presence.

The pump through its plug connection have to be linked in an appropriate electric frame provided of fuse and a differential magnetothermal of protection.

At this point the available operations are :

- Gear forward with selector in **FWD** position
 - Gear reverse with selector in **REV** position
 - Stop of the pump with selectore in **neutral** position
 - Regulation of the speed through graduated potenziometer on the frame: the selector have to be in interior **INT** position
- This potenziometer is provided with graduated indicator and with numeration denoting the planned speed in % from 1 to 10.
- Remote operation with drive winding connection or radiocommand connected to **EXT** connector : for the activation of the remote potenziometer the selector have to be in external **EXT** position (see photo to the left)



| | 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 |

Note: the smallest speed, it is possible to plan, is 5 Hz relating to about 30 revolution membrane per minute.

This choice of speed would to be not continuative as the more serious condition of work for the pump; it would be possible under particular critical environment condition, after some hour, to provoke the intervention of the "thermal electronic motor" protection or " thermal internal engine probe.

Alarm reset: the product is provided of a AUTO RESET (n°3 times). Reset button in available push-button control placed on the side of the control board to allow the reset of eventual not persistent anomalies.

It is necessary the use of this function in case of temporary stop of the system with ignition of a red ALARM led .

Selector of direction
FWD -0- REV



Available remote controls

All the remote line controls (length cable 10mt) and radiofrequency have to be linked to the EXT connector, assembled to the to side of the electric frame of the pump (see photo).

The possibilities of the remote controls can be:

Optional
drivewinding



➤ **Drivewinding kind “A” (all-round available pattern).**

It provides for the possibility of

- turns rules
- electronic reversing swith of strobe flux (FWD e REV)
- LED marker of working system

In this case the operational control of the gear selector **FWD-0-REV** placed on the pump frame have to be zero to allow activity strobe controls of drivewinding.

Put selector in **EXT** position to allow the use of remote potenziometer.

➤ **Drivewinding tipo “B”**

It disposes of functions:

- Gear forward FWD and gear reverse REV

In this case the speed regulation takes place only on pump frame with

INT selector and gear **neutral 0 position**: the gear will be activate only from the controls assembled on remote command.

➤ **Drivewinding tipo “C”**

It disposes of functions:

- Speed regulation of potenziometer
- LED signaling of activity system

In this case the regulation of speed takes place from the remote command with **EXT** selector : the gear will be decided and put in action only from **FWD-0-REV** selector present on pump frame.

Optional
Radiocommand
Connected



➤ **Radio - command KIT - Receiver**

It disposes of functions:

- Gear forward and gear reverse through the FWD and REV push-button
- capacity 200mt, air /80mt with interposed infrastructure

In this case the speed regulation takes place only from the pump command frame and it is not necessary to put **EXT** selector.

In this case the activity command of the gear selector **FWD-0-REV** placed over pump frame have to be put to zero to allow the activity of the radio-command keys.

Display
Inverter



Diagnostics of the product

The product has explicit diagnostic indicated display through clear and multilingual messages.

In the event of an alarm the system stops indicating the problem on the display
The set speed is indicated by the potentiometer with a scale numbered from 1 to 10 (1 = 10% speed ... 5 = 20% speed ... 10 = 100% speed) and can be viewed on the keypad on the inverter.

Maintenance of the product

This product doesn't ask for any kind of specific maintenance relating to electric side; some possible operations relating to mechanical maintenance of the impeller are forecasted and clear explained in the use handbook .

Not introduce any liquid or extraneous things in the pump connection points or the entry of the electric line.

Not expose the device to any liquid with pressure and nor corrosive: it has a IP55 protection degree

Not expose the product to any heat source nor to continuous and direct solar exposition (internal protection at 60°C).

Guarantee

The BCM product is guaranteed one year (1) against every kind of dysfunction that could be attributable and linked to a dispositive breakdown.

The guarantee decays if any improper actions take place: any connection to unstable electric line, any violation not permitted over the product included the mechanical break of box holder or electric line connections.

Product use conditions

Since there is the presence on the item of particular electronics functions, for a correct and sure use, the product :

- it must not be placed in proximity of sources of heat.
- it must not be exposed to continuous solar radiation
- it must not work to an environment temperature superior to 35°C.
- it must not be feed off and connected to the electric line before its definitive turning off (to wait for few minutes).
- it must not be invest from water pressure throws.
- it must not suffer due mechanical shock to bumps, accidental falls or improper transports

We remember that the system is IP 55, and so it implies protection from accidental water sprays and not in pressure.

The product has an internal protection for overtemperature of control board: such protection will effect the automatic arrest of the pump if it is used under critical conditions of work (temperature superior to 60°C).

Besides the product:

- **MUST BE** connected collegato to a stable feeder
- **MUST BE** connected to an appropriate electric frame provided of suitable protections (thermal , differential and fuse)

The respect of all previous conditions could assure the correct working of the described product in in the whole field of applications of work and it could assure a longer system term.

The lack of this respect could provoke the temporary stop of the pump or in the worst situation the out of use of product.

Pump BCM model 50/60/70 with inverter

Display for Diagnostics and operation

Graduated and numbered potentiometer from 1 to 10 for flow rate adjustment



Drive alarm reset button
(the drive must first be disabled)

InT / EXT selector for internal
INT speed reference or from EXT
remote control

Selector
FWD -0 -REV
Forward-stop-reverse

EXT connection connector
for remote commands:
- wired remote control
- Kit Receiver radio control
- interconnection with other machines
- level sensor
- + 24 / + 15V available (500mA)

Technical characteristic of the pump

- Feed: threephase 380/440 Vac, frequency 50 and 60 Hz
- Inverter FLEXIMOVA H.E. (Higt Efficiency) IP 55 ,“long life” with capacitor-less technology, included class A line trap.
- Power: BCM pump three-phase model 50 / 60/ 70
- Speed regulation from 5Hz to 100 Hz for all models

Note: the work condition of larger capacity to 100 Hz (about 950 turns/min of the impeller) accelerates inevitably the impeller degrade; to increase the term of this device it is advisable a proper use with presence of liquid.

- Regulation of capacity until 10l/minute
- Commands elettricai optoinsulated power side
- Remote commands elettricai optoinsulated for every function
- Degree of protection with liquids IP55
- Thermal protection of the engine (I2t and thermal paste to 130°C)
- Protection over temperature elettric frame (over 60°C)
- Connection through EXT connettor with all drivewinding and radio-command of BCM.

FOR FURTHER INFORMATION ON THE PRODUCT, ON ITS ACTIVITY, ON MORE AND PECULIAR APPLICATIONS DON'T HESITATE TO CONTACT :



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