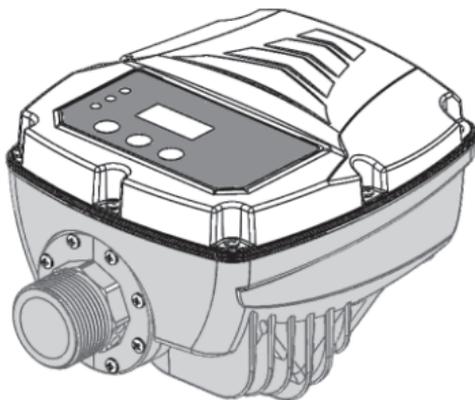


»AVAG-PUMPEN«

BrioTOP



Owner's manual

EN

START-UP

CAUTION: on initial start-up, fill the pump intake line before powering up the system!

After making all the electrical connections and ensuring the correct condition of all components, close the unit cover and power up the system.

Brio Top starts up the pump automatically to enable circuit filling.

If the pump does not start, or anomalous vibrations are detected, ensure correct connection of the pump and relative capacitor.

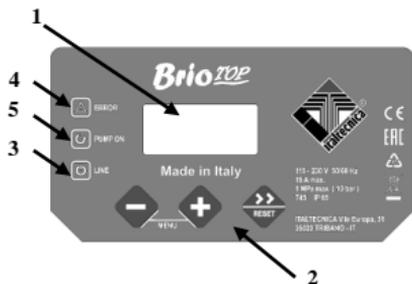
To facilitate filling of the electric pump, **press and hold the “+” key on the main screen to override pump operation without intervention of the dry-running protection (“Manual” mode).**

After setting all data in the device, note them on the relative form found at the end of this manual for future reference and to maintain the guarantee.

PROGRAMMING:

✓ INTERFACE DESCRIPTION

1. Display with digital pressure indicator, error display, configuration menus.
2. Programming keys
3. Green mains power ON indicator light (LINE)
4. Red error indicator light (ERROR)
5. Yellow “pump running” indicator light (PUMP ON)



✓ KEY DESCRIPTION

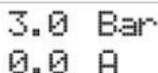
- » Arrow/reset: scrolls forward through menus and performs unit reset in the event of alarms and/or errors
- + “+” key: increments the parameter value currently on display; enables device operation override (starts pump as an override command and temporarily disables the dry-running protection to facilitate loading on initial start-up).
- “-” key: decreases the parameter value currently on display; shows the absorbed current (optional)

✓ DESCRIPTION OF PARAMETERS AND SCREENS

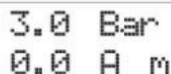
The menu is divided into two levels: the user level and the installer level. The user level is usually visible during normal operation and enables the user to control the system operating status, reset any errors and modify the language. To access the installer level, where the various operating parameters can be set, press keys “+” and “-” simultaneously for 5 seconds.

USER PARAMETERS:

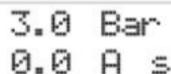
These parameters are normally accessible when the device is powered.



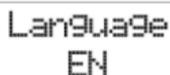
3.0 Bar
0.0 A



3.0 Bar
0.0 A m



3.0 Bar
0.0 A s



Language
EN

Main screen: during normal operation of *Brio Top*, the display shows the device status. The top line displays the pressure measured in the system, while the bottom line shows the motor current absorption. In this screen, press and hold the key “+” to override pump operation also when there is no water, temporarily disabling the dry-running protection to enable the pump to be filled.

When the device is configured to operate as part of an alternating twin pumping unit, the bottom line shows the "master" or "slave" status by means of the letter "m" or "s".

Language: the language of the menus and alarm messages can be personalised as required. Use keys + and – to modify the parameter value.

INSTALLER PARAMETERS:

These parameters are located in concealed screens and are normally only modified during the installation phase. To access these pages, press and hold “+” and “-“ simultaneously for 5 seconds. After accessing the concealed menu, use the arrow key “>>” to scroll through the screens and keys “+” and “-“ to modify the parameters. To return to the main screen, press and hold keys “+” and “-“ simultaneously for 5 seconds.

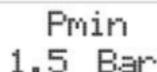


Mode
P+F

Operating mode: this parameter enables the user to set the operating mode implemented by *Brio Top* to control pump start-up and shutdown. In mode **P+F** (pressure+flow) the pump is started up when the pressure falls below the value set in Pmin (start-up pressure) and is stopped when the water flow through the device is virtually zero. In this condition the resulting pressure in the system will correspond to the maximum head of the pump installed. In mode **P+P** (pressure+pressure) the pump is started up at the value set in Pmin and is then stopped when the system pressure reaches the value Pmax (stop pressure). In this mode, the installation of an expansion vessel is essential, sized according to the system specifications.

In both operating modes, the dry-running protection is enabled, and trips when the water flow is zero and the system pressure is below the value Pmin.

Operation within twin booster sets is only admissible in **mode P+P** and consequently, the settings of the parameters “Aux. Con.”, “Pmax” and “Pmin2” depend on the pre-set operating mode.



Pmin
1.5 Bar

Pmin : this parameter represents the minimum pressure at which the pump is started. The parameter can be set from 0.5 to 8.0 Bar. The factory setting is 1.5 bar. Use keys “+” and “-“ to modify the set value.

Pmax
3.0 Bar

Pmax : this parameter is only available when the operating mode is set to P+P (pressure+pressure) and represents the electric pump stop pressure. The parameter can be set from 0.8 to 9.0 Bar and in any event at least 0.3 Bar higher than the set value of Pmin. Use keys “+” and “-“ to modify the set value.

Pmin2
1.2 Bar

Pmin2 : this parameter is only available when the operating mode is set to P+P and the parameter Aux. Con. is set to “1” to enable operation of twin booster sets. This parameter defines the secondary (slave) pump start-up pressure when the primary (master) pump can no longer meet the system demands. The parameter can be set from a minimum of 0.5 Bar to a maximum value equal to the pressure Pmin-0.2 Bar. The factory setting is 1.2 bar. Use keys “+” and “-“ to modify the set value.

Reset
30 min

Auto-reset interval: during operation of the pump, if water supply on intake fails temporarily, Brio Top shuts off the power supply to the motor to avoid any damage. This screen enables the user to set after how many minutes the device should auto-reset to check renewed availability of water on intake. If the attempt is successful, *Brio Top* exits automatically from the error condition and system returns to operative status; otherwise another attempt is made after the same time interval. The maximum settable interval is 180 minutes (recommended interval: 60 min.). Use keys + and - to modify the parameter value.

Reset
05 test

modify the parameter value.

N° auto-reset tests: this parameter defines the number of attempts made by *Brio Top* to try and resolve a shutdown caused by dry running conditions. When this limit is exceeded, the system shuts down and user intervention is required. The auto-reset is disabled if this value is set to zero. The maximum admissible number of attempts is 100. Use keys + and - to

Stop
Del. 10

Delay on stop: this parameter enables the user to define after how many seconds the electric pump is stopped following closure of all utilities in mode P+F. At low flow rates, if frequent pump start-ups and shutdowns occur, increase the shutdown delay to render operation more uniform. An increase to this parameter may also be useful to eliminate excessively frequent activation of the dry-running protection, especially in the case of submerged pumps or on those with self-priming problems. The factory setting is 10 seconds, and may be increased to a maximum of 120 seconds. Use keys “+” and “-“ to modify the stop delay.

24hProt.
NO

efficiency.

24H anti-seizure protection this parameter enables the activation of a function that automatically starts up the pump after 24 hours of disuse. If this function is activated, and the pump is not started up for 24 hours, *Brio Top* overrides to a cycle of 15 seconds to prevent system disuse from leading to mechanical seizure of parts (e.g. the seal), maintaining system

4 ° CProt.
NO

4°C ice protection: this parameter enables activation of a function that may help prevent damage due to lowering of ambient temperatures and the risk of ice formation. In particular, if the ambient temperature falls below 4°C, *Brio Top* starts up the pump every 30 minutes for a duration of 15 seconds, to avoid, when possible, the rapid freezing of the water inside the pump. CAUTION: although this function can reduce the risk of damage caused by ice, it is good practice not to use *Brio Top* and the electric pump in environments where temperatures can fall below 4°C. **The activation of this function is not sufficient to guarantee operation and protection of the system if temperatures are close to or below 0°C!!**

I_{max}
OFF

I_{max} : this optional parameter enables entry of the maximum current absorbed by the electric pump in routine conditions, to enable shutdown of the motor in the event of excessive absorption. The motor is also shut down event if the current read during operation is below 0.5 A following interruption of the connection between the motor and *Brio Top*. The trip

time of the current overload safety device is inversely proportional to the entity of the overload in progress; therefore a slight overload will lead to a more delayed trip time while a more significant overload will accelerate the trip time. The parameter is settable from 0.5 to 16 A by means of the keys “+” and “-“. To deactivate the current control protection of the motor, press the key “-“ until the text “OFF” appears on display. CAUTION: the factory setting is OFF and therefore a maximum current value must be set to activate the protection.

Aux. Con.
0

Auxiliary Contact: this parameter enables the user to assign a specific function to the auxiliary contacts available on *Brio Top* according to the scheme below:

Aux. Con.	Description
0	No function activated for auxiliary contacts
1	Enables communication between two <i>Brio Top</i> units within a twin booster set with automatic alternation of pumps
2	Sets up the auxiliary contact for an external enable signal (e.g. float, timer, irrigation controller) and enables the relay output (terminals 5 and 6 on the terminal board) for any error signals. The relay contact closes in the event of an alarm.
3	Sets up the auxiliary contact for an external enable signal (e.g. float, timer, irrigation controller) and enables the relay output (terminals 5 and 6 on the terminal board) for pump operation signals. The relay contact closes while the pump is running.
4	Enables communication between a <i>Brio Top</i> unit and an inverter <i>Sirio</i> within a twin booster set.

P.Limit
OFF

Limit pressure: this parameter defines a pressure threshold over which the overpressure protection is activated. The factory setting is OFF, to indicate that the protection is disabled. To set a limit pressure, use keys “+” and “-“. To disable the function, press the “+” key until the text OFF is displayed.

Start/H
max. OFF

Maximum starts per hour: sets the maximum start limit in one hour of the pump. To disable the protection, press the button - until the word "OFF" appears.

DR OP
00 00

Alarm log "1" : in this screen the user can read the number of alarms that have tripped due to activation of the dry-running protection (DR) and the pressure overload device (OP). These data can be checked in the event of a malfunction.

OL IP
00 00

Alarm log "2" : in this screen the user can read the number of alarms that have tripped due to activation of the current overload protection (OL) and the ice protection (IP). These data can be checked in the event of a malfunction.

HCounter
000000

Hour counter: this screen displays the total operating hours of *Brio Top* (in terms of the time for which the device has been connected to the electric power supply). If the key "+" is pressed on this page, the number of pump operating hours is displayed.

✓ ALARMS

Dry
running

Dry running: this message appears when the system is shut down following absence of water on pump intake. If the auto-reset function is enabled, *Brio Top* automatically attempts to restart and check for renewed availability of water. To remove the error message from the display immediately, simply press the central key "reset".

Over
Load

Current Overload: this alarm is displayed when electric pump absorption exceeds the maximum set current as entered in the parameter I_{max}; this may occur following intensive use of the electric pump, continuous restarts at close intervals, problems with the motor windings, seizure of the pump rotor or following problems with the electrical connection between the motor and *Brio Top*. If this alarm trips frequently, arrange for the system to be checked by the installer. To remove the error message from the display immediately, simply press the central key "reset".

Over
Pressure

Overpressure: when this alarm trips, this means that *Brio Top* has detected a system pressure value over the value set in the parameter "Plimit". This may occur in applications with the pump under load conditions, i.e. when the pump pressure is added to the filling pressure on inlet. If the error occurs frequently, try to increase the parameter Plimit or contact the installer for assistance. To remove the error message from the display immediately, simply press the central key "reset".

? TROUBLESHOOTING

✓ **When one of the system valves is opened the pump does not start or starts only after a few seconds.**

The set Pmin value is too low, or a check valve has been fitted downline of the device. Check the setting of the parameter Pmin.

If the parameter "Aux. Con." is set to "2" or "3" and an electric float is used, check to ensure correct operation. If no electric float is used, check that the jumper is wired on the relative terminals.

Ensure correct connection between *Brio Top* and the electric pump

✓ **The pump does not stop**

The check valve inside *Brio Top* may be blocked in the open position; ensure correct valve movement and remove any foreign bodies by means of compressed air if necessary.

The sensor reading the valve position is faulty; arrange for the device to be checked by the manufacturer.

✓ **On closure of the valves, the pump stops but restarts after a few seconds without any leaks from the system.**

The difference between the values Pmin and Pmax is too small, and the pressure drop that occurs on pump shutdown is sufficient to enable restart. Increase the value Pmax or reduce the value Pmin. Increase the size of the expansion vessel installed.

✓ **The pump starts and stops continuously.**

There are leaks from the system. Check the various hydraulic connections. Check on display if there are any pressure drops when the valves are closed. Check for the possible presence of dirt in the check valve of *Brio Top* preventing total closure, and if necessary clean by means of a compressed air jet. Install a small expansion vessel on outlet from *Brio Top*.

✓ **The device frequently signals dry running conditions.**

The pump intake hose, during periods of system disuse, drains preventing pump filling and subsequent restart. Check sealing efficiency of the base valve (if fitted).

✓ **With very low water flow rates, pump operation is irregular.**

The water flow rate is too low, and is thus not detected by the device, with consequent pump shutdown. Install a small expansion vessel (1-2 litres) to enhance system flexibility and reduce the number of restarts.

✓ **The system pressure has risen above the set value in Pmax.**

If the ice protection or mechanical seizure protection devices have triggered, pressure may increase over the set values as the pump is operated in override for 15 seconds, regardless of the values set in Pmax and Pmin.

✓ **The device does not turn on**

The electronic board may be damaged; arrange for the device to be checked by the manufacturer.

MAINTENANCE:

Brio Top has been designed to reduce maintenance requirements to a minimum. Always observe the following instructions to ensure prolonged efficiency of the device:

- never allow the device to reach temperatures below 4° C; if this is not possible, ensure that all the water in the circuit is drained to prevent damage to the plastic housing of the device if ice forms;
- if the pump is equipped with filters on intake, check their condition periodically;
- always ensure that the cover is closed properly to avoid the ingress of water from outside;
- disconnect the power and drain water from the system when the system is not to be used for a prolonged period;
- before using the device with liquids other than water, contact the manufacturer for further information;
- never perform work with the device open;
- before removing the device cover, wait for 3 minutes to enable discharge of the capacitors.

 CAUTION: the device does not contain components that may be repaired or replaced by the final user. Therefore do not remove the protection cover of the electronic board to avoid rendering the guarantee null and void.