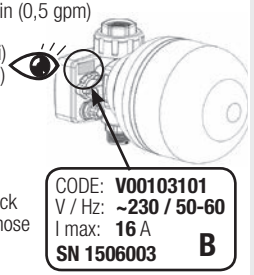
ELECTRONIC PUMP CONTROLLER

PRESFLO MULTI

PRESFLO® is a device that starts and stops the pump to which it is fitted, thus replacing traditional pressure switch / surge tank systems.
The pump is started when, as a tap is turned on, the pressure within the system drops below the “start-up pressure” (Pm), and is stopped when the flow rate required is zero or less than the “shut-off flow rate” (Qa).
The electronics of PRESFLO® protects the pump against abnormal running conditions such as dry running, repeated start-ups due to leaks in the system or overcurrents.

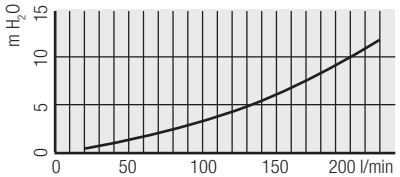
Technical specifications

- Voltage: ~ 230 V / ~ 115 V - Frequency: 50-60 Hz
- Current: 12A, max 16A for 3 sec.
- Protection grade: IP 65
- Start-up pressure (Pm): 1÷5 Bar (15-70 psi)
- Shut-off flow rate (Qa): 2 litres/min (0,5 gpm)
- Connections: 1”M BSP / 1”M NPT
- Operating pressure: 8 bar (120 psi)
- Bursting pressure: 24 bar (350 psi)
- Weight: 1600 g
- Protection against: dry running (automatic restart), repeated start-ups, overcurrents

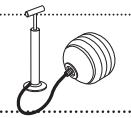


Before installing, the product, check that the RATINGS correspond with those required.

Losses



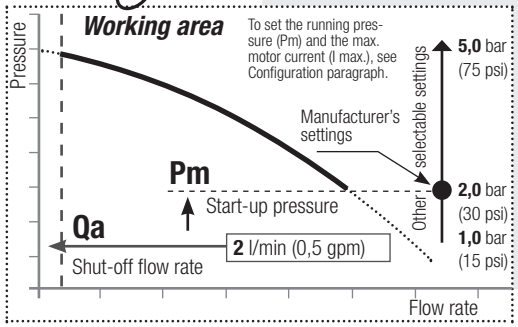
Water accumulator pressure.
Should be inflated to a value 0,5 bar lower than the running pressure.



Operating conditions

A. Compatible/non compatible fluids
PRESFLO® is suitable for use with clean water and chemically non-aggressive liquids. If the fluid contains impurities, a filter should be fitted upstream.
B. Environmental conditions
PRESFLO® should not be used where there is the risk of an explosion. The temperature of the location should range between 0°C and 40°C, and the humidity should not exceed 90%.
C. Power supply
Make sure that the variation in the power supply is never more or less than 10 % of the RATING value.
Higher values may cause damage to the electronic components.
PRESFLO® can only be used with single-phase pumps.

Working area



Safety regulations

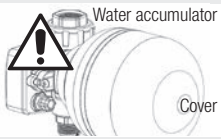
Before installing or using PRESFLO®, read this manual carefully and thoroughly.
The pump should be installed and serviced by qualified personnel, responsible for making the hydraulic and electrical connections in compliance with the relevant regulations.
DGFLOW® shall not be held liable for any damage relating to, or resulting from, an improper use of the product, or for any damage relating to, or resulting from, servicing or repairs carried out by unqualified personnel and/or with non-OEM spare parts.
The warranty, which is valid for 24 months from the date of purchase, will no longer be applicable should the product suffer damage as a consequence of the use of non-OEM spare parts, tampering or improper use.
When starting the installation, check the following:
- the power supply is switched off.
- the power lines can withstand the maximum current.
- the cable bushings and circuit board cover have been properly assembled and secured (see Electrical Connections).
- the power supply is fitted with regulation earthing and safety devices.

When servicing the product, check the following:
- the system is not pressurised (turn a tap on)
- the power supply is switched off.

Emergency Stop
When in use, the pump can be stopped in the event of an emergency:
press STOP/RESTART.

PRESFLO® is put OUT OF SERVICE.

For no reason, disassemble the water accumulator with the system pressurized.



Installation

Preliminary checks

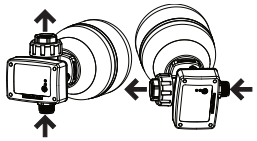
Take the PRESFLO® out of the packaging and check the following:
- check for damage,
- check the RATINGS correspond with those required,
- that the cable bushings and screws are in place,
- that PRESFLO®'s inlets and outlets are clean and free of any packaging materials,
- that the check valve moves smoothly.

Hydraulic connections

the joint in two pieces allows rapid connection to the system. DO NOT apply sealant inside the 2-piece joint because it already has an internal o-ring.

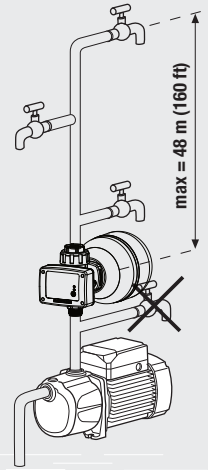
Orientation

PRESFLO® can be installed at any angle depending on the flow direction, as indicated in the diagrams.



Position

PRESFLO® can either be fitted directly to the pump outlet or anywhere along the delivery line. Never install taps between the pump and PRESFLO®. Do not install a non-return valve between PRESFLO® and the taps, meanwhile it is possible, although not necessary, to install a non-return valve on the suction piping of the pump.



Attention

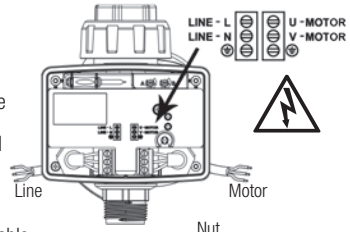
The pressure applied by the water column above PRESFLO® must not exceed that of the pump start-up pressure (Pm). If, for example, PRESFLO® is installed at a height 20 metres (65 ft) below that of the highest tap in the system, the pressure detected by PRESFLO® will be approximately 2 bar (30 psi). A model with Pm = 2.5 – 35 psi bar should, therefore, be installed in order to guarantee that the pump is started when a tap is turned on.

Attention

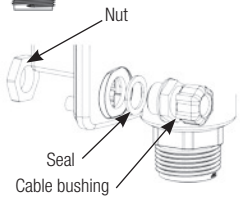
The maximum pressure produced by the pump must be at least 0.5 bar (7 psi) higher than the start-up pressure (Pm). If the pressure produced by the pump is too low, PRESFLO® will stop the pump and indicate a 'dry running' error message.

Electrical connections

The electrical connections should be made as indicated in the diagram which can also be found on the inside of the circuit cover.



Attention! The cable bushings and circuit board cover must be properly assembled and secured in order to guarantee IP 65 grade protection of the electrical components.



First start-up

Priming the pump

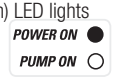
For instructions on how to prime (fill) the pump, see the pump manual.

Attention

PRESFLO® is fitted with a check valve: do not use the PRESFLO®'s outlet to fill the pump for priming.

Switching the pump on

The red (Power On) LED lights up; PRESFLO® instantly detects that there is no pressure within the system and starts the pump (the green 'Pump On' LED lights up). If, within 15 seconds of starting up, PRESFLO® does not detect the correct priming of the pump, it stops the pump and indicates a 'dry running' error message.



Attention

When the pump is started for the first time, it may have to be run for longer in order to complete the priming procedure.

Press the STOP/RESTART button

to restart the pump and complete the priming procedure.

NOTE 1 - DRY RUNNING = there is no flow and the pressure is lower than that of the pump start-up pressure (Pm). It occurs when there is no water. After 15 seconds PRESFLO® stops the pump and indicates an ERROR message. PRESFLO® AUTOMATICALLY tries to resume NORMAL SERVICE at intervals of increasing time (1, 15, 30, 60 minutes and successively once every hour - 24 H for AU/NZ -). If PRESFLO® detects any pressure and/or flow, NORMAL SERVICE is resumed, otherwise, the pump is stopped again until the next attempt is made. A MANUAL attempt to resume NORMAL SERVICE can be made at any time.

NOTE 2 - FREQUENT START-UP = the repeated stopping and starting of the pump at intervals of less than 1 minute from each other. This occurs when the flow rate is less than 2 litres/min. This may cause damage to the pump. In event of small leaks (dripping), PRESFLO®'s water accumulator guarantees that the pump starts/stops at time intervals of over 1 minute (less than 60 starts/hour) and that FREQUENT START-UP errors do not occur. In the event of a major leak or extended use at excessively low flow rates (less than 2 litres/min), the pump may be started/stopped as often as once every few seconds, putting the pump at risk of damage. In this case, after about 40 minutes, PRESFLO® stops the pump for the following 30 minutes (in order to let it cool down) and indicates an ERROR message. If the time interval between the starts-stops is more than 10 seconds (and therefore poses less of a risk to the pump), PRESFLO® will allow the pump to be used for more than 30 minutes. Once that enough time has passed to allow the pump to cool down it is restarted AUTOMATICALLY. The pump may be restarted MANUALLY any time.

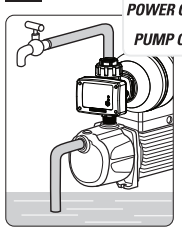
NOTE 3 - OVERCURRENT = electric absorption of the pump (in Ampere) exceeding the max. allowed (I max). By means of the configuration, it is possible to set the max. current allowed (I max). During the start-up phase of the pump PRESFLO® allows for a few seconds the current to exceed the Imax value. If the absorptions remain above the set Imax value, PRESFLO® stops the pump to avoid damaging the motor and signals an anomaly. PRESFLO® will not automatically restart the pump. The pump may be MANUALLY restarted at any moment. Should the problem persist an anomaly will again be signalled. The manual restart can be repeated several times since PRESFLO® does not limit the number of attempts.

NOTE 4 - SHUT-OFF FLOW RATE = Flow rate (Qa) of around 2 litres/min (0,5 gpm) below which PRESFLO® stops the pump.

Operation

○ = Off ● = On ✹ = Flashing

1 No power supply

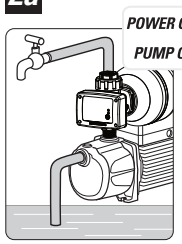


PRESFLO® is switched off.

Press briefly or **hold down** = nothing happens

Power is restored = PRESFLO® resumes NORMAL SERVICE and starts the pump (if necessary).

2a NORMAL SERVICE: the pump is inactive.



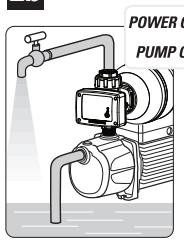
The system is pressurised. All taps are turned off. There is no demand for water. PRESFLO® detects an assembly pressure higher than that of the start-up pressure (Pm) and no flow.

Press briefly = the pump is started manually and runs for a few seconds before stopping again.

Hold down = Ithe pump is put OUT OF SERVICE.
For instructions on how to reactivate the pump, see point 3.

A tap is turned on = as soon as the pressure falls below the start-up pressure (Pm), the pump is started.

2b NORMAL SERVICE: the pump is running

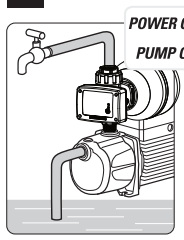


The assembly requires water. One or more taps are turned on. PRESFLO® detects a flow; the assembly pressure is normally higher than the START-UP pressure, but it may also be lower.

Press briefly or **hold down** = the pump is stopped and put OUT OF SERVICE. For instructions on how to reactivate the pump, see point 3.

The taps are turned off = Sif there is no flow for a few seconds, the pump is stopped.

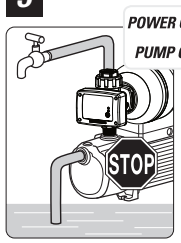
2c NORMAL SERVICE: pump during shutdown



The system has just ceased to require water. All taps are closed. The pump is still in operation. The system is pressurized. PRESFLO® detects a system pressure higher than the start-up pressure (Pm) and no flow.

Press briefly or **hold down** = the pump is stopped and put in STAND-BY. To reset see point 3. If the absence of flow lasts for a few seconds the pump is stopped.

3 OUT OF SERVICE

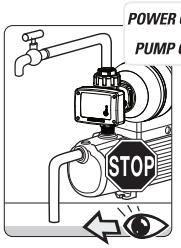


The pump has been stopped manually. The pump will remain inactive until a new command is given.

Press briefly = nothing happens.

Hold down = the pump resumes NORMAL SERVICE. See points 2a - 2b.

4a ERROR: stopped temporarily due to DRY RUNNING

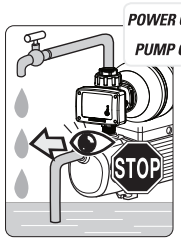


PRESFLO® has detected that the pump is dry running and has therefore stopped it TEMPORARILY.

Press briefly = the pump is started and manually and resumes NORMAL SERVICE. See points 2a - 2b.

Hold down = the pump is put OUT OF SERVICE. For instructions on how to reactivate the pump, see point 3.

4b ERROR: temporary shut down due to FREQUENT START UP

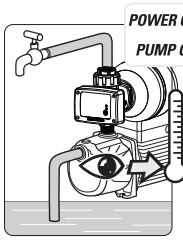


PRESFLO® has detected that the pump starting-up too often and has therefore stopped it TEMPORARILY.

Press briefly = the pump is started and manually and resumes NORMAL SERVICE. See points 2a - 2b.

Hold down = the pump will not restart and goes OUT OF ORDER. The pump is put OUT OF SERVICE. For instructions on how to reactivate the pump, see point 3.

4c ERROR: stop due to overload.



PRESFLO® has detected a current exceeding the max. allowed and has the pump stopped.

Press briefly = the pump is started and manually and resumes NORMAL SERVICE. See points 2a - 2b.

Hold down = the pump is put OUT OF SERVICE. For instructions on how to reactivate the pump, see point 3.

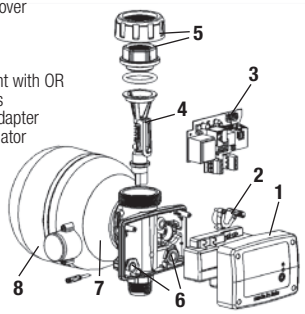
Problems	Signals	Possible causes	Solutions
PRESFLO® will not turn on	POWER ON ○ PUMP ON ○	No power	Check the electrical connections
The pump will not start when a tap is turned on	POWER ON ● PUMP ON ○	PRESFLO® model with an inadequate start-up pressure (Pm) for the chosen application.	Relocate PRESFLO® to another position
			Install a model with a higher start-up pressure (Pm)
	POWER ON ● PUMP ON ●	Faulty electrical connections or pump out of service	Check the electrical connections and that the pump is working
	POWER ON ✹ • • • • • • PUMP ON ○	PRESFLO® "STAND-BY"	Reset PRESFLO® (See Operation, point 3).
	POWER ON ✹ • • • • • • PUMP ON ✹ • •	PRESFLO® in temporary shut down due to "DRY RUNNING" due to lack of water	Wait for the automatic restart or press START to restart manually (See Operation, point 4a)
		Maximum pump pressure is insufficient	Replace the pump with one with more suitable characteristics
			Install a model with a lower start-up pressure (Pm)
	POWER ON ✹ • • • • • • PUMP ON ✹ • • • •	PRESFLO® in temporary shut down due to "FREQUENT START-UP"	Wait for the automatic restart or press START to restart manually (See Operation, point 4b). Remove any cause of leakage from system or install an expansion tank
	POWER ON ✹ • • • • • • PUMP ON ✹ • • • • • •	PRESFLO® stops due to "OVERCURRENT"	Check if the setting of the maximum current (Imax) is congruent with the data of the pumps' rating plate. If after manually restarting the pump after correctly setting PRESFLO®, it again signals an anomaly, check that the motor has no mechanical or electrical problems.
The pump delivers no or low pressure	POWER ON ● PUMP ON ●	Filters or pipes may be partly blocked	Check the water pipes
		PRESFLO®'s valve will not open completely	Check that the valve is not blocked by any foreign objects and clean if necessary
The pump stops and starts repeatedly	POWER ON ● PUMP ON ● ↔ POWER ON ● PUMP ON ○	Leaks within the system (less than the shut-off flow rate Qa)	Check the hydraulic connections and repair any leaks. If a leak cannot be repaired, install an expansion tank
The pump will not stop	POWER ON ● PUMP ON ●	The flow rate is higher than the shut-off flow rate (Qa)	Make sure that all taps are turned off and that there are no leaks within the system
		PRESFLO®'s check valve will not close or is damaged	Check that the valve is not blocked by any foreign objects and clean if necessary

○ = Off ● = On ✹ = Flashing

Exploded view of spare parts

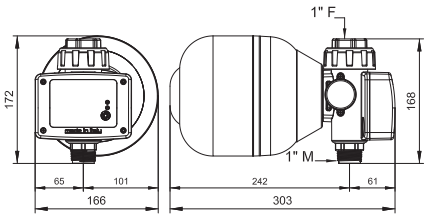
Attention: when ordering spare parts, always state the position n° from the diagram below and the product code number found in the pressure-flow regulator technical data table.

1 - Circuit board cover
2 - Sensor kit
3 - Circuit board
4 - Valve kit
5 - Two-pieces joint with OR
6 - Cable bushings
7 - Accumulator adapter
8 - Water accumulator



CODE: **V00103101** ← **Article**
V / Hz: **~230 / 50-60**
I max: **16** A
SN 1506003 **B** ← **Version**

Dimensions



Configuration

Settable parameters:

- Running pressure.
When the pressure in the system falls below the Pm, PRESFLO® starts-up the pump. **The Pm should always be higher by at least 0.2 – 0.3 bar of the pressure generated by the column of water overlooking PRESFLO®.** The Pm value can be carried in the field between 1 bar and 5 bar.

- Maximum current allowed.
PRESFLO® is fitted with a current sensor, which continually detects the absorption of the pump. If the current remains above the set Imax value for a significant period of time, PRESFLO® stops the pump to protect it from damages (LOCK condition for OVERCURRENT). PRESFLO® nevertheless allows the Imax to be exceeded for short periods during the pump start-up phase. **For correct functioning, the Imax should be set at a value higher by approx. 10 – 20% to the maximum absorption of the pump** (normally indicated on the rating plate of the motor).

If this rating value is not known, it s better to leave the standard Imax value (16A) to avoid that the pump stops also in normal absorption conditions.

The Imax value may be varied in the field between 4A and 16A.

Manufacturer's setting:

PRESFLO® is supplied with the following STANDARD CONFIGURATION:
- Running pressure
  Pm = 2 (bar)
- Max. current allowed
  I max = 16 (A)

Configuration

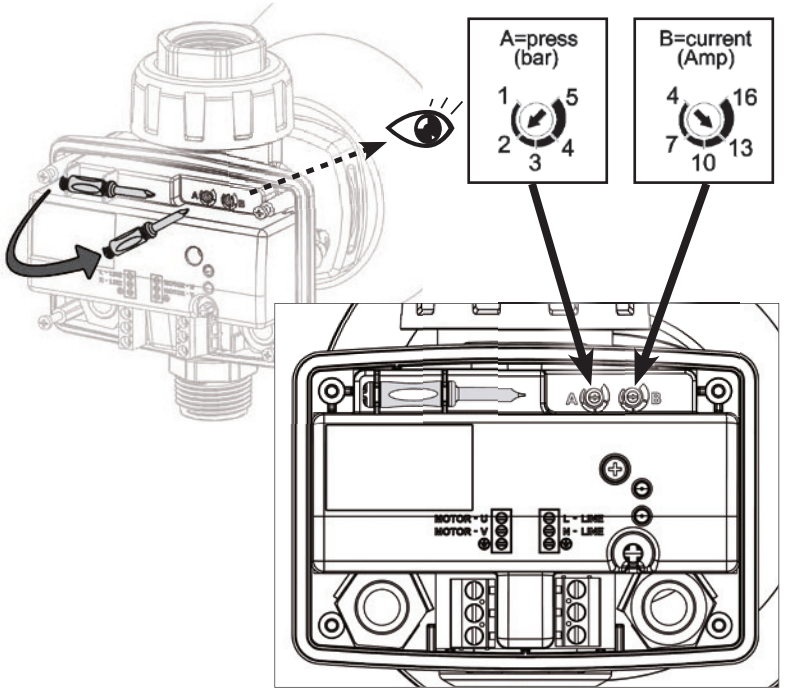
The adjustment of the starting pressure (Pm) and the maximum permissible current (I max) is done by means of two trimmers shown in FIG.

1. Remove the small screwdriver and adjust the trimmer on the desired limits, according to the values shown on the plate located under the screwdriver.

2. The start-up pressure can be adjusted continuously from 1 to 5 bar (trimmer A)

3. The maximum permissible current can be adjusted continuously from 4 to 12 A (trimmer B)

4. When you finish adjustment close the cover



Disposal
When disposing of any PRESFLO® parts, adhere to the relevant laws and regulations in force in the country in which the equipment is being used. Do not dispose of any polluting parts in the environment.

Statement of Compliance: we declare, under our own responsibility, that the product in question is in compliance with the following European Directives and national implementation provisions

2006/95/CEE Low Voltage Directive
2002/95/CEE (RoHS)
2002/96/CEE - 2003/108/CEE (WEEE)
2004/108/CE Electromagnetic Compatibility Directive (EMC)
EN 60730-2-6
EN 61000 6-3

Bigarello 27.05.15

DGFLOW S.r.l.
President
Stefano Concini

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