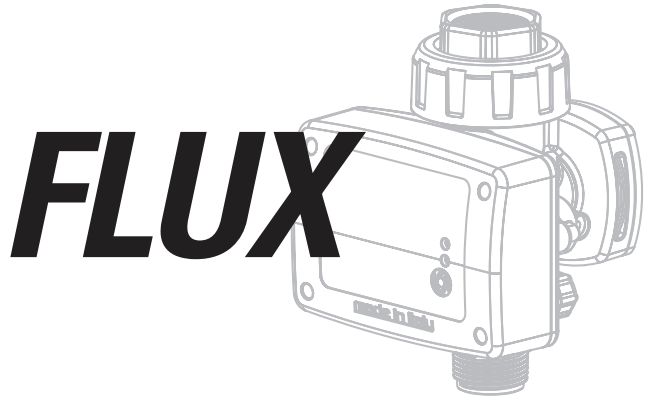
USER MANUAL

IT EN

ELECTRONIC FLOW CONTROL SWITCH

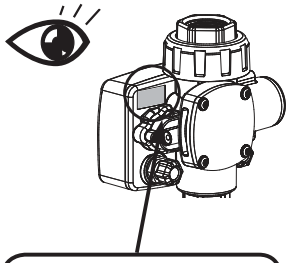
FLUX® is a device that starts and stops the pump to which it is fitted. The pump installed with positive suction head or water supplied with aqueduct is started when a tap is turned on to generate a flow and is stopped when the flow rate required is zero or less than the "shut-off flow rate" (Qa)).



Technical specifications

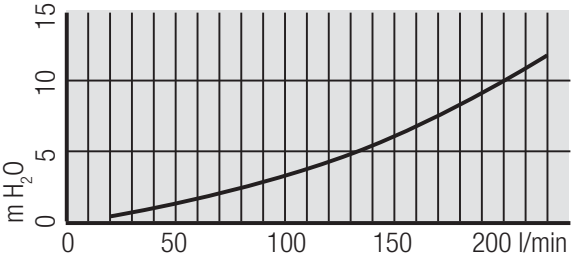
- Voltage: ~ 230 V / ~ 115 V - Frequency: 50-60 Hz
- Current: 12A, max 16A for 3 sec.
- Protection grade: IP 65
- Run/stop flow rate (Qa): = 2 l/min (0,5 gpm)
- Connections: 1"M BSP / 1"M NPT
- Operating pressure: 10 bar (145 psi)
- Bursting pressure: 24 bar (350 psi)
- Weight: 650 g
- Max liquid temperature: 55°C

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



CODE: **50066/115**
V / Hz: **230 / 50 - 60**
I max: **16** A
Year: **2015**
B

Losses



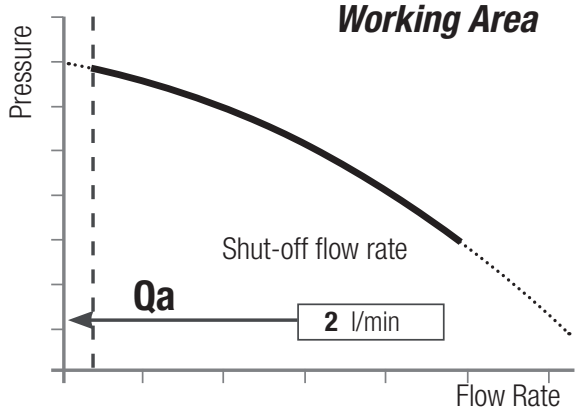
Operating conditions

A. Compatible/non compatible fluids FLUX® 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 FLUX® 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.
FLUX® can only be used with single-phase pumps.

Working Area



Safety regulations

Before installing or using FLUX®, 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

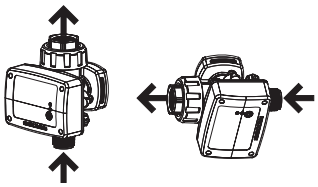
FLUX® is put STAND-BY.

Installation

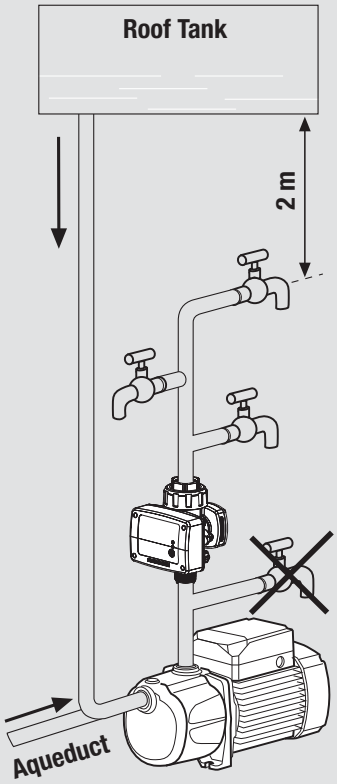
Preliminary checks
Take the FLUX® out of the packaging and check the following:
- check for damage,
- check the RATINGS correspond with those required,
- that the cable bushings and screws are in place,
- that FLUX®'s inlets and outlets are clean and free of any packaging materials,
- that the check 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
FLUX® can be installed at any angle depending on the flow direction, as indicated in the diagrams.

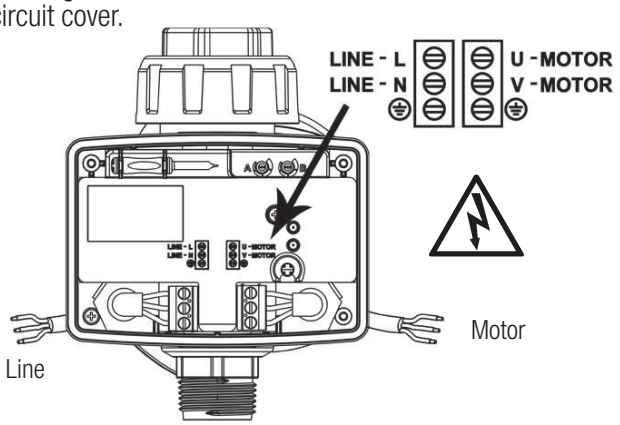


Position
FLUX® can either be fitted directly to the pump discharge or anywhere along the delivery or suction line, but in any case upstream outlet network .
No taps have to be installed between the pump and FLUX®.

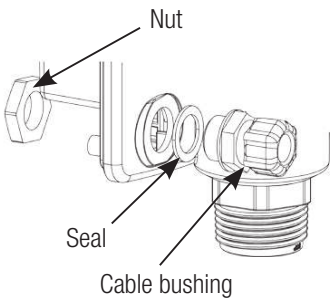


Attention
FLUX® has to be used with a pump installed with positive suction head or water supplied with aqueduct. In such conditions the priming starts automatically at the opening of any tap, shower, washing machine etc. When the pump is turned off the system must be able to guarantee a flow not lower than 3 liters/min, even when we use a tap at the highest level in the system.

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.

Switching the pump on

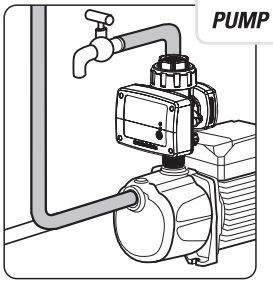
The red (POWER ON) LED lights up; FLUX® instantly goes in standby and at the request of water starts the pump (the green "PUMP ON" LED lights up).

15 seconds after the flow has become zero or got under the value 1-2 liters/min FLUX® stops the pump and goes in standby (only the red (POWER ON) LED is on)

NOTE 1 - DRY RUNNING = there is no flow. It occurs when there is no water. After 15 seconds FLUX stops the pump. If FLUX detects flow, NORMAL SERVICE is AUTOMATICALLY resumed.

Operation

1 NO POWER SUPPLY

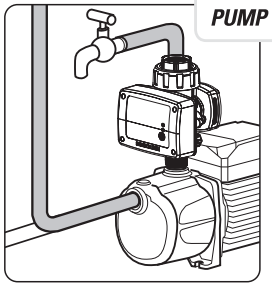


POWER ON ○
PUMP ON ○

• FLUX® is switched off.
• **PRESS BRIEFLY** or **HOLD DOWN** = nothing happens.

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

2a NORMAL SERVICE: the pump is inactive.



POWER ON ●
PUMP ON ○

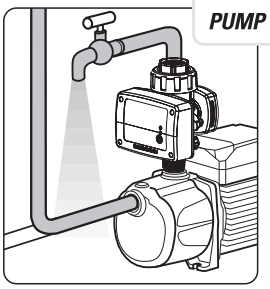
• All taps are turned off. There is no demand for water. FLUX® detecs no flow.

• **PRESS BRIEFLY** = the pump is started manually and runs for a few seconds before stopping again.

• **HOLD DOWN** = the pump is put STAND-BY. For instructions on how to reactivate the pump, see point 3.

• **A tap is turned on** = as soon as the flow goes over the shut off rate the pump is started.

2b NORMAL SERVICE: the pump is running.



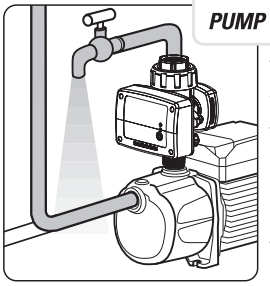
POWER ON ●
PUMP ON ●

• The assembly requires water. One or more taps are turned on. FLUX® detects a flow higher than the shut off rate.

• **PRESS BRIEFLY** = the pump is stopped and put STAND-BY. For instructions on how to reactivate the pump, see point 3.

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

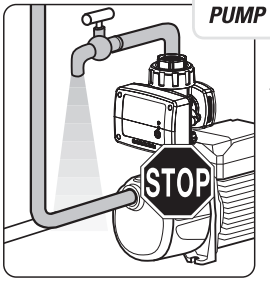
2c NORMAL SERVICE: pump during shutdown



POWER ON ●
PUMP ON ☼ • • • • • •

The system has just ceased to require water. All taps are closed. FLUX detects the absence of 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 STAND-BY



POWER ON ☼ • • • • • •
PUMP ON ○

• 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.

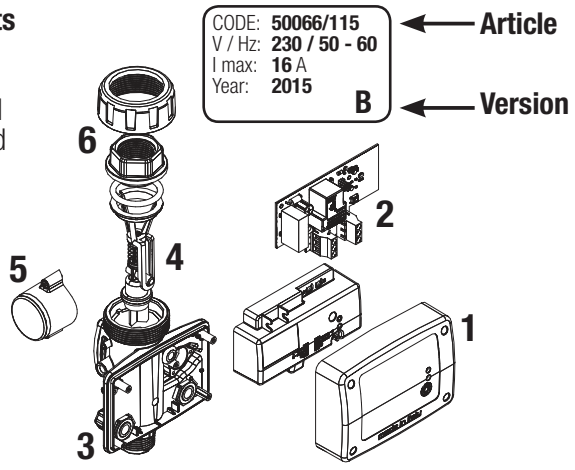
○ = Off ● = On ☼ = Flashing

Problems	Signals	Possible causes	Solutions
FLUX® will not turn on	POWER ON ○ PUMP ON ○	**A** - No power	**A** - Check the electrical connections
The pump will not start when a tap is turned on	POWER ON ● PUMP ON ○	**B1** - The pump will not start when a tap is turned on	**B1-1** - Check whether there is incoming water in the suction pipes
			B1-2 - Open the tap more
			B1-3 - Modify the system so that even when the pump stops, flow rates higher than 3 liters/min can be generated at the opening of a tap
	POWER ON ● PUMP ON ○	**B2** - FLUX® does not detect a flow even when replace the circuit board	**B2-1** - Change circuit board
	POWER ON ● PUMP ON ●	**B3** - Faulty electrical connections or pump out of service	**B3-1** - Check the electrical connections and that the pump is working
	POWER ON ☀ ····· PUMP ON ○	**B4** - FLUX® is in STAND-BY state	**B4-1** - Turn on FLUX® again (see Operation, point 3)
	POWER ON ● PUMP ON ☀ ·····	**B5** - FLUX® is near to stop because of insufficient flow	**B5-1** - None; restore the flow
The pump delivers no or low pressure	POWER ON ● PUMP ON ●	**C1** - Filters or pipes may be partly blocked	**C1-1** - Check the water pipes
		C2 - FLUX®'s valve will not open completely	**C2-1** - Check that the valve is not blocked by any foreign objects and clean if necessary
The pump will not stop	POWER ON ● PUMP ON ●	**D1** - Leaks in the system are higher than the shut-off flow rate (Qa)	**D1-1** - Make sure that all taps are turned off and that there are no leaks within the system
		D2 - FLUX®'s check valve will not close	**D2-1** - Check that the valve is not blocked by any foreign objects and clean if necessary

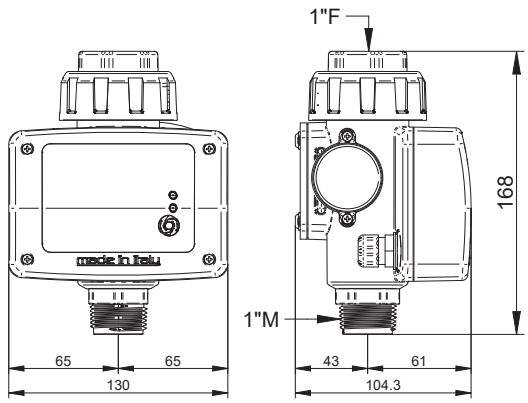
○ = Off ● = On ☀ = Flashing

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 flow regulator technical data table.

1 - Circuit board cover
2 - Circuit board
3 - Cable bushings
4 - Valve kit
5 - Pressure gauge
6 - 2 pieces-joint



Dimensions



Disposal
When disposing of any FLUX® 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

2014/35/CE Low Voltage Directive
2002/95/CEE (RoHS)
2002/96/CEE - 2003/108/CEE (WEEE)
2014/30/CE Electromagnetic Compatibility Directive (EMC)
EN 60730-2-6
EN 61000 6-3

Bigarello 06.02.15

DGFLOW S.r.l.
President
Stefano Concini

Made in Italy by

DGFLOW srl Via Emilia, 5
46030 Bigarello (Mantova) Italy
tel. +39 0376 340922
fax. +39 0376 249525
info@dgflow.it - www.dgflow.it