

BS 9251: 2021 Domestic Fire Sprinkler Pump for Category 1

Complying with and significantly improving on BS 9251 2021

A compact complete fire pump system with tried, tested and improved software.

We believe the new standard requires all buildings to be safe at all times.

That is why we have gone beyond and significantly improved on BS 9251 2021.

Automatic testing is carried out on the pump and its two independent failsafe pressure switches twice a week, offering greater confidence when protecting people and the building itself.

FLOW CONTROLLED™

Reduce the size of the tank, giving the customer their valuable building space back.

The effectiveness of your infill is improved and fire sprinkler system design can be simplified.

INTERACTIVE COOLING

Standard cooling which complies with the Machinery Directive, to ensure safe operation.

Interactive cooling enhances pump cooling, giving improved reliability and continual rating, an essential component of a BS 9251 2021 pump.

We hope that you would want to have our logic fully explained, so that's what we've done, so you can make an informed choice.

No tricks, no marketing nonsense – just the facts that help you save lives.

Our forensic examination of the rules and meticulous testing gives us the confidence to say our product is truly unique.

It exceeds BS 9251 2021 and delivers unmatched protection.

Checks are displayed on an LCD screen, which shows the product status at all times.



A U T O T E S T
P 1 P 2 P 1 H P 2 H
P A S S E D

FLOW CONTROLLED™

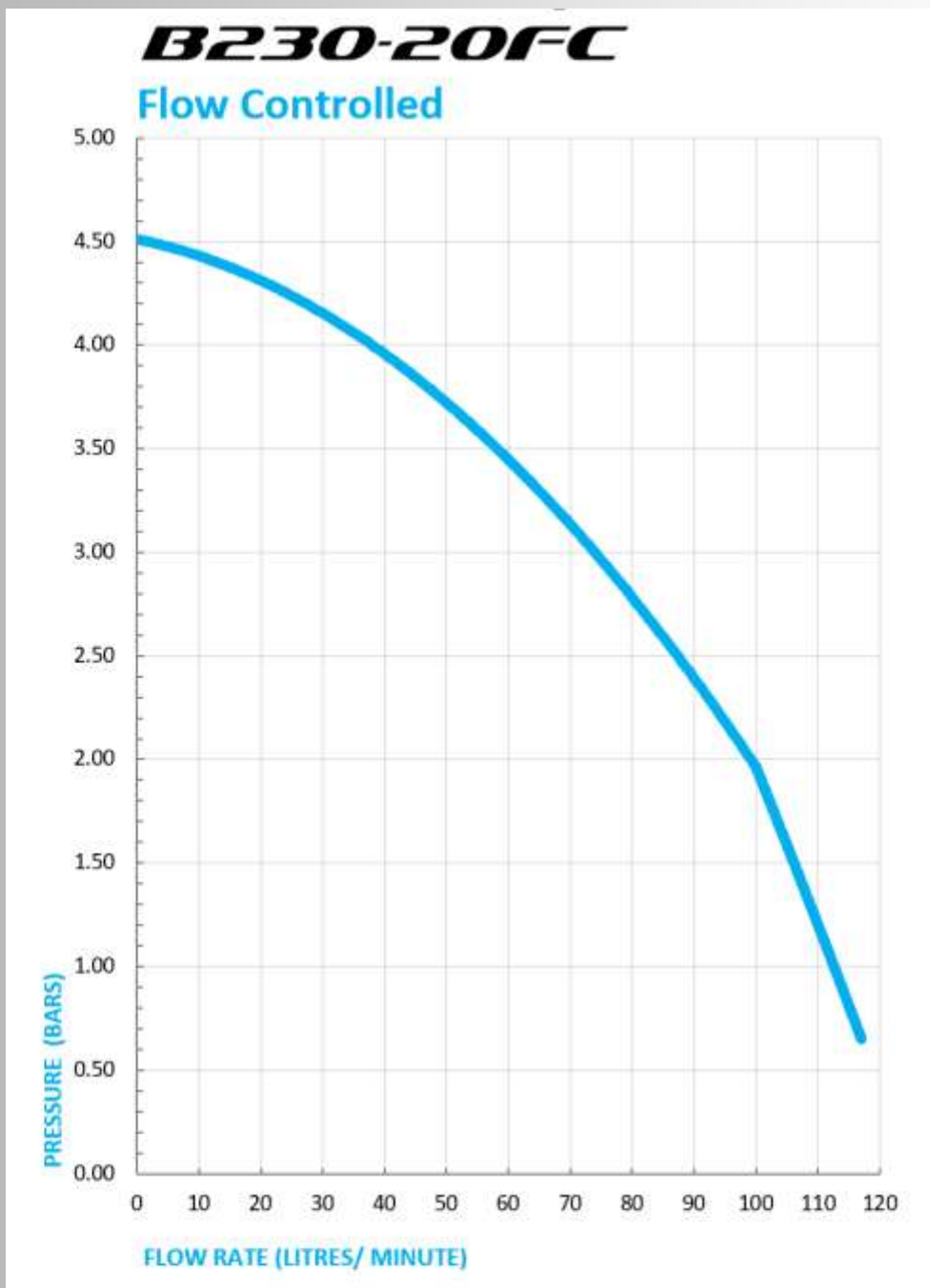
THE FIRE SPRINKLER REVOLUTION

REDUCTION OF TANK SIZE

The innovation changes the pump curve to be much steeper.
The remote area calculation will be very similar to the Q max.

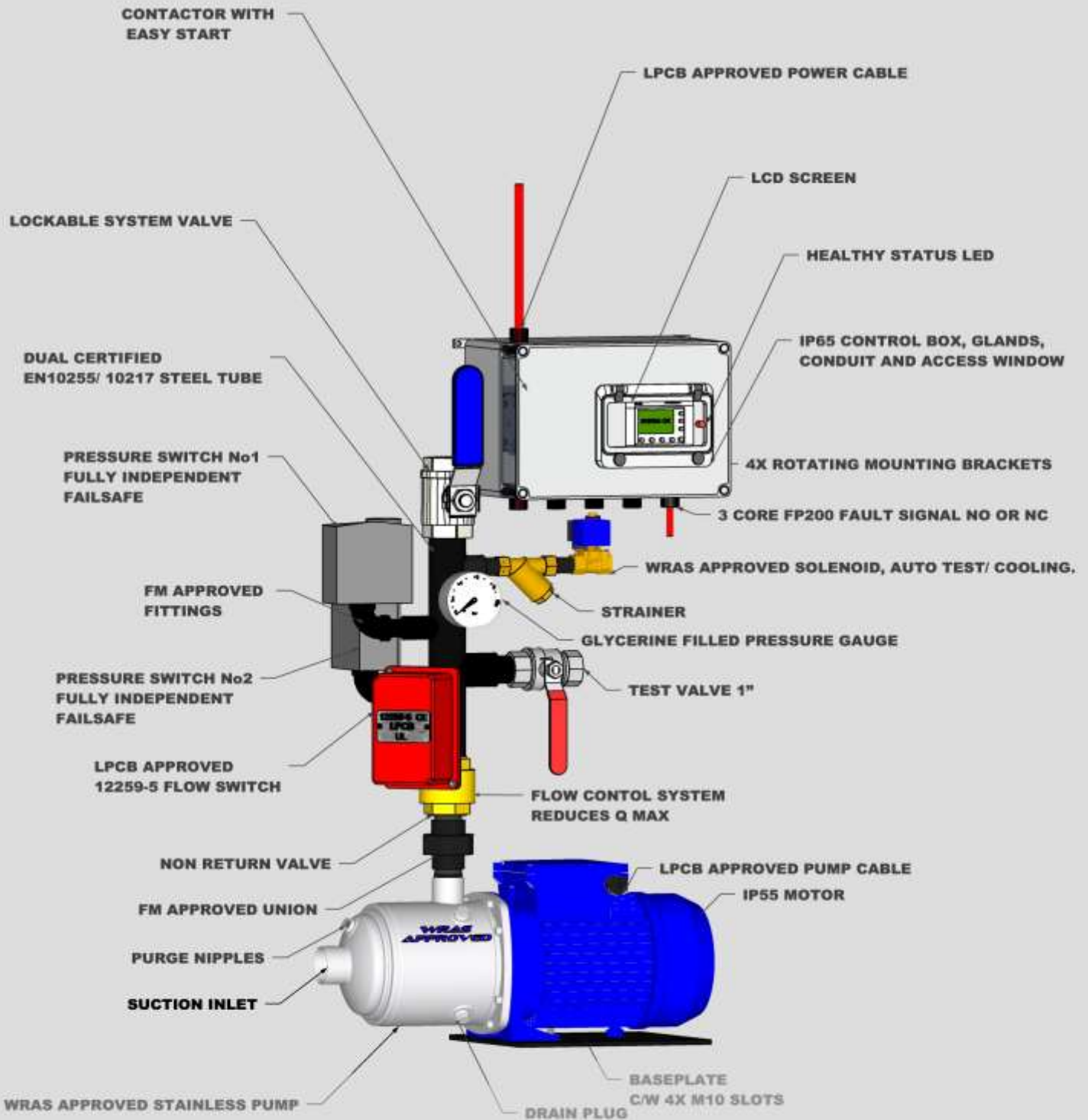
COST AND TIME SAVINGS

- Improves the effectiveness of your infill.
- Fixed maximum tank size.
- Reduce pipe inventory.
- Some pipe sizes may be eliminated altogether.
- Impossible to cavitate pumps.
- Guaranteed low Q max intersect.
- Fixed speed pump – no inverter drive .
- Continually rated – cooled and impossible to get to end of pump curve – this is delivered data.



BOOST8N™ SCHEMATIC

THE CLASS LEADING BS 9251 2021 CAT 1 FIRE SPRINKLER PUMP



CONTINUOUSLY RATED

BS 9251 2021 pumps must be continually rated (5.12.1.e), this is not just a sticker on a pump, it relies on a minimum flow to keep it cool, which GRIFEN have always provided.

People leave their homes for work, holidays etc. If a an uncommanded start occurs the pump must run. GRIFEN ensure the pump and system safety when occupants are away.

STANDARD COOLING

Machinery Equipment Directive is the law, We cool the pump every 10 seconds for 0.25 seconds to comply with it.

The WRAS approved solenoid valve is a slow opening/ closing valve reducing pipe shock.

INTERACTIVE COOLING

8 second on delay, with a 0.4 second cool and 12 seconds off which repeats and immediately resets if a pressure switch goes unhealthy, ensuring all the required flow is available for the fire sprinkler system.

This gives maximum cooling (one or no heads activated) and maximum sprinkler flow when the second heads triggers. Every pump requires cooling, we design ours to give the best of both worlds, the best cooling and the maximum delivered flow when required.

Not only is the pump cooled by water flow, the motor itself is cooled dramatically by the cool pump end, preventing thermal runaway and mechanical seal damage.

Plastic pipe systems have thermal expansion limitations, we ensure you have total system efficacy.

The pump is immediately protected should an uncommanded start occur when the home is unoccupied. This feature has saved countless systems, leaving the pump available for the fire sprinkler system if required. We are constantly replacing pumps of competitors who do not cool / inadequately their pumps.

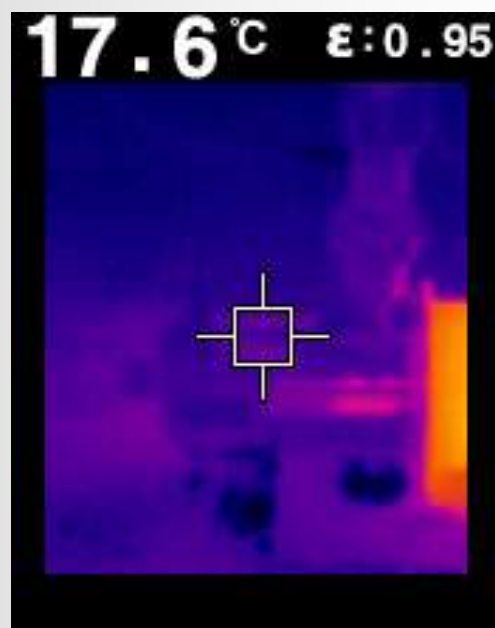


Other Manufacturers - No / Inadequate Cooling

This image shows a pump with no cooling, reaching dangerous temperatures after only 1 hour.

Pipe efficacy is exceeded with a delta temperature outside plastic pipe system limits.

Putting a pump in an enclosure risks thermal runaway and will accelerate failure risk.



GRIFEN Pump Cooling

The same test running with GRIFEN cooling with normal temperatures.

Product and costs protected and operating safely as required by law.

Efficacy is guaranteed.

EASY START™

Every time the pump starts the solenoid is opened for 2 seconds to reduce the starting load. This is designed to minimize stresses, ensuring longevity of the product.

ALARM TEST WITH NO TOOLS

BS 9251 2021 allows the alarm test to be carried out at the pump.

The solenoid can be used to drop the pressure with the press of a button.

The pump will react and enable the alarm test to be carried out through a 10mm orifice, mimicking a sprinkler head, while viewing the events on the LCD screen.



Controller with LCD, fault healthy LED logo and screen printed instructions for life

FAMILIAL OPERATION

Our domestic and residential pumps

BOOST8N™, **FLOWST8N™** and **DUPLIC8™** now have familial operation.

This enables engineers to operate Cat 1, 2, 3 and 4 pump systems with incredible ease.

FEATURE	BUTTON	TIME	FAULT STATUS
SOLENOID DRAIN	LEFT ◀	Hold for 8 SECONDS to open, Immediate close on release	NONE (IN FAULT ON LATCH)
FORCE AN AUTO TEST	UP ▲	8 SECONDS	NONE
FORCE A SERVICE	PLUS +	8 SECONDS	IN FAULT
SILENCE A SERVICE	MINUS —	4 SECONDS	CLEARs FAULT (FOR 1 WEEK)
STOP PUMP (for 20 seconds)	ESC	2 SECONDS	IN FAULT

Key instructions and functions can easily be identified on the product, staying with it for life.

To clear a service is a simple procedure and it is detailed in the O&M.

EFFECTIVE FILTERING

Our 1/2" Y-strainer on **BOOST8N™** models allows tank detritus to be captured effectively. This protects the WRAS approved solenoid from soft seat damage and ensures effective cooling at all times.

FLOWST8N™, **DUPLIC8™** and **AMAQ DUPLIC8™** for Cat 2, 3 and 4 systems have even more features, allowing for the increased risk they are protecting.

As your business grows you will find comfort in the ease of operation, allowing engineers to seamlessly adapt to the more complex pump systems.

BOOST8N™ APPROVALS

Flow switch 2 x SPDT c/w time delay for Fire & PDV EN 12259-5 LPCB approved, UL listed	Yes
2 fully independent failsafe pressures switches (separate devices as per the rules)	Yes
EN 733 Stainless pump, stainless shaft/ impeller/ casing	Yes
Glycerine filled pressure gauge 1.6 %, 50mm BS EN 837-1	Yes
Pump power cable Prysmian FP200 LPCB approved	Yes
Coupling LPCB, VdS and FM approved (BH230-28FC only)	Yes
Power in cable Prysmian FP200 LPCB approved	Yes
Pump/ motor IP55 , BSEN 60529 & ISO 9906	Yes
Small bore fittings FM approved	Yes
Conduit glands IP65 UL listed	Yes
Cable glands IP65 UL listed	Yes
PLC UL listed	Yes
Access window IP67	Yes
WRAS approved pump	Yes
IP54 minimum EN 60529	Yes
Solenoid WRAS approved	Yes
Control box IP65 UL listed	Yes
Panel wire Tri rated/ UL listed	Yes
Conduit 105°c rated IP66 EN50086, UL listed	Yes
Welded manifold dual certified EN10255/10217 with dip process protection	Yes
Fault relay SPDT, visible contacts, LED; Power failed, Auto Test Failed, Pump Latched, Service Due UL listed	Yes

CE Marked for low voltage directive and machinery equipment directive. The product complies with the pressure equipment directive, yet falls under the standard engineering practice due to the low temperature and pressure and is therefore not CE marked for the pressure equipment directive.



OPERATIONAL FEATURES

JOCKEY FUNCTION

The pump runs for 16 seconds to top up system pressure loss. A pre start check time of 4 seconds occurs and a post run check of 6 seconds. This prevents pump hunting and confirms the signal. If a pressure switch remains unhealthy after the 6 second monitoring time PUMP LATCHED will occur. We only rely on pressure switches, there are no overrides, exactly as the standard requires.

INFORMATIVE & INSTRUCTIONAL

If an auto test does not pass, the screen will display the most common issues related to your system. The screen will remember all the successful test parameters prompting you to check devices that did not trigger. If a service is due the screen will display the action you need to take.

LOST CLOCK

Our auto test requires a time stamp. If the clock is lost after delivery, the system warns and alarms.

ALARMS

BS9251 2021 common fault alarm is provided as both normally open and normally closed and is volt free, offering total flexibility.

An LED confirms the LCD information status to assist the fire alarm engineer

(our illuminated Logo fault healthy—right)



FAULT ALARM

Auto test fail - All conditions not met, remembered after power fail. Requires a passed test to clear.

Power failed

Pump Latched - Pump run until manually switched off following pressure switches remaining unhealthy at the end of jockey run.

Service due - Keeping you in compliance every year, the screen displays your company name and phone number.

Clock Check - Alarms after 1 hour of power resumption. (following 6 weeks of loss of power down & power resumption).

FIRE ALARM

The EN12259-5 approved flow switch can be used for

Time delayed PDV - Enabling a low level to be interfaced to close a PDV.

Time delayed Fire alarm



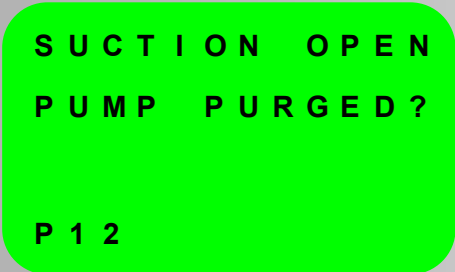
LISTENING, LEARNING & DEVELOPING. THEN SMASHING IT OUT OF THE PARK

We design our products with an emphasis on improving all fire sprinkler systems.

STATUS INDICATION

Our system is designed to monitor the pressure switches at all times, indicating the status on the LCD. The bottom row indicates real time status, with any device that is active currently unhealthy/operating.

BOOST8N™ monitored devices are: Pressure Switch 1&2 (**P1, P2**), Solenoid (**SOL**)



A screen warning is given when switched on.

A jockey pump run will occur if needed.

P1 Indicates pressure switch No 1 is unhealthy

P2 indicates pressure switch No 2 is unhealthy

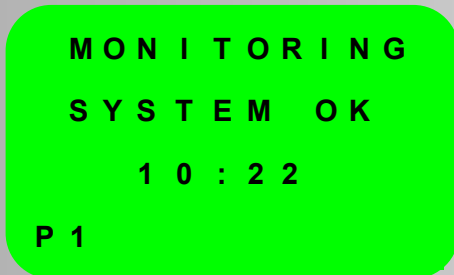
THE JOCKEY PUMP

The pump is also the fire pump, the system will always inform you what it is doing at all times.

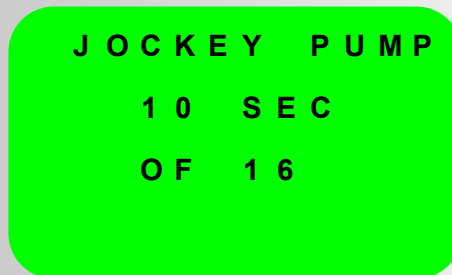
Soft seat valves such as solenoids and non return valves can be affected by tank detritus.

In the event this causes repeated jockey runs, we start a 10 minute auto resetting run that offers cooling and can self clear and reset.

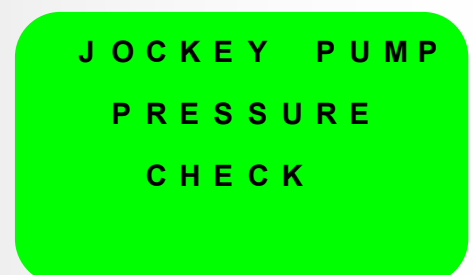
The fire alarm can trigger if required and the pump can latch in this mode (see below).



Pre start check
System ok with 1 switch
healthy



The jockey pump is running for
10 of the 16 second run time.



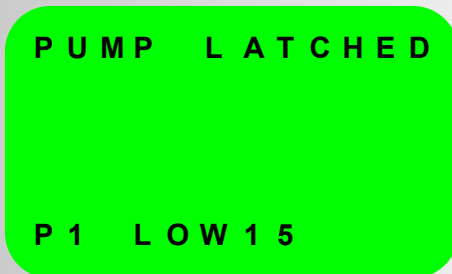
When the jockey pump
run ends, it indicates it is
checking the pressure.

PUMP LATCHED

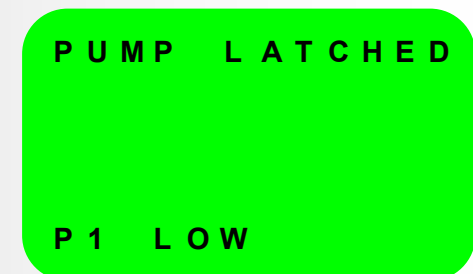
There are two ways the pump can latch, and it will run until manually shut down.



A pressure drop has occurred
within 6 seconds of a jockey
run ending.
The pump will not switch off.



A count will occur up to 20
seconds, displaying the
elapsed time that a switch
has been unhealthy during
HIGH ALERT.



During HIGH ALERT, over
20 seconds of continuous low
pressure have occurred, the
elapsed count will no longer
display.

MONITORING

This is the default mode, awaiting auto tests or to react to pressure switches/ user inputs.

MONITORING

NO CLOCK

During commissioning if the clock has been lost (6 weeks after production powered down) the system will warn you to re-enter it.

MONITORING

SYSTEM OK

10:22

The system will tell you it is OK.

The backlight will illuminate if any devices become unhealthy.



Our logo illuminates in red at the side of the LCD

Confirmation the fault relay is healthy.

HIGH ALERT

We know that alarms can be ignored, so we actively protect your pump if multiple potentially damaging jockey runs occur.

If 4 jockey starts occur in 30 minutes the system enters HIGH ALERT, protecting the motor from potential damage.

The system will attempt to rectify itself, flushing detritus, preventing multiple pump starts and motor damage. The system can auto reset after 10 minutes, unless low pressure persists.

HIGH ALERT
CHECK FOR LE

18:40

The system has a scrolling message prompting engineers to check for possible causes.

AUTO RESET
AKS, VENT AIR

The system informs you it will auto reset, after 10 minutes.

HIGH ALERT
FROM SYSTEM

18:40

P1 LOW 12

If a pressure switch stays low, a low count of up to 20 seconds will start.



ACTIV8™

Local mist fire protection for CAT 2 systems and above. Available on **FLOWST8N™** and **DUPLIC8™** models, offering even greater protection as your business grows.

THE INCREDIBLE AUTOMATIC TEST

SIMPLY ASTOUNDING PROTECTION, SUPASSING BS 9251: 2021

Having been the only manufacturer that has performed these drop tests for over 15 years, we have perfected it.

The test has been improved for BS 9251: 2021 to give even more features.

Our drain sequence is interactive, adapting to the size of the fire sprinkler system.

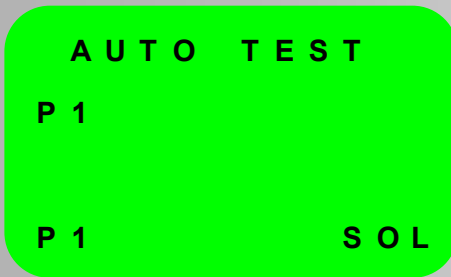
The pump will then start and attempt to make both pressure switches healthy again.

Tested automatically twice a week at 10am, it can also be manually forced at any time.

Two fully independent failsafe pressure switches are tested to achieve low pressure and return to high pressure again. (devices as defined in BS 9251 2021 ie two totally separate entities)

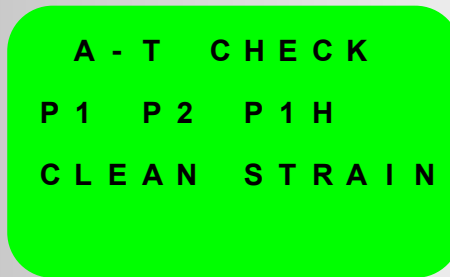
Alarm in failure (the cause will be recorded until a new test starts, even after a power failure).

Test taking place



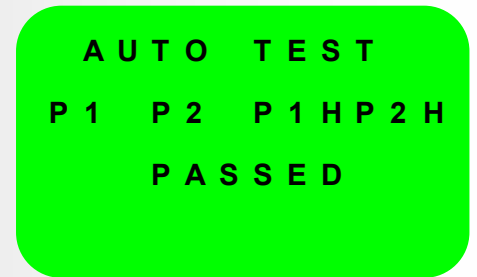
For the test to pass — Both P1 & P2 must go below the set pressure and then return to healthy again.

Items that passed/ to check



The Auto test didn't pass. The screen records the events that did occur. P2 hasn't returned healthy.

Confirmed pass



All checks passed and the system is healthy.

If the auto test fails, a message instructs engineers what to check for (full message for clarity below).

VENT AIR FROM SYSTEM, PURGE PUMP, CHECK FOR LEAKS

It will only be displayed if there are no other priorities occurring, e.g. jockey run / high alert, as soon as they are cleared the A -T CHECK will display.

If P1H and P2H are displayed at the end of the test, the pump must be functional and it's the drain sequence that failed.

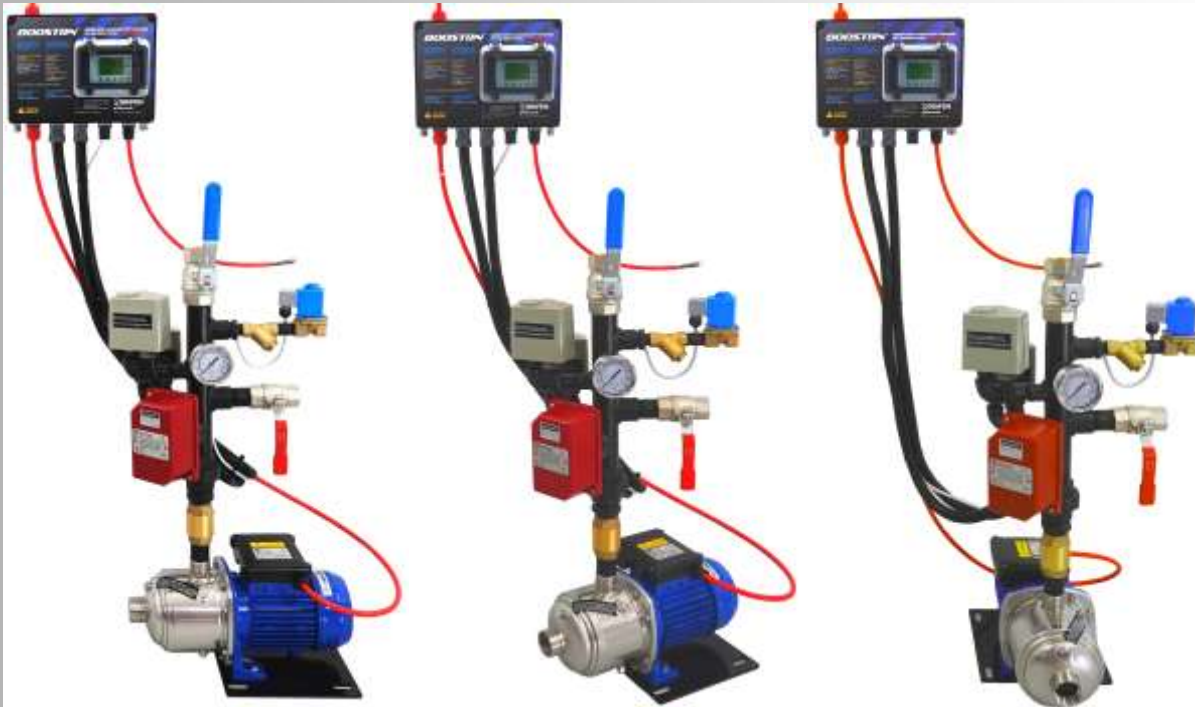
If either P1 or P2 are not healthy at the end of the test, there is a likely pressure switch issue. Monitoring will start and a jockey run will try and boost the pressure.

If both P1 and P2 have failed to return healthy then it could be a more serious issue. The pump will run in HIGH ALERT, giving someone the opportunity to investigate while the pump is running.

INTERACTIVE COOLING activates in HIGH ALERT, protecting the pump from overheating.

No guessing No messing No stressing

SIMPLE TO ADAPT TO SITE



The BOOST8N pump can be turned on the FM approved union or LPCB, VdS and FM approved coupling to change the pump orientation. This saves suction work and enables the use of 45 degree elbows for better suction design.

The controller can also be rotated to suit the best viewing/ access.

CONTINUING COMPLIANCE

BS 9251 2021 requires annual services to be performed.

BOOST8N™

Reminds end users with an alarm and on screen message displaying your name and company number.

The end user is prompted to call the installation company.

As end users may need time to organise the service, they can simply silence the alarm for one week by pressing the MINUS for 4 seconds.

The message below scrolls when a service is due, displaying your company name and phone number, essentially turning the product into a simple instruction manual.

TEL 0161 874
SERVICE DUE
CLEAN STRAIN

CLEAN STRAINER, FLOW PUMP, SOUND FIRE ALARM, CHECK FAULT ALARM

WE GO THE EXTRA MILE

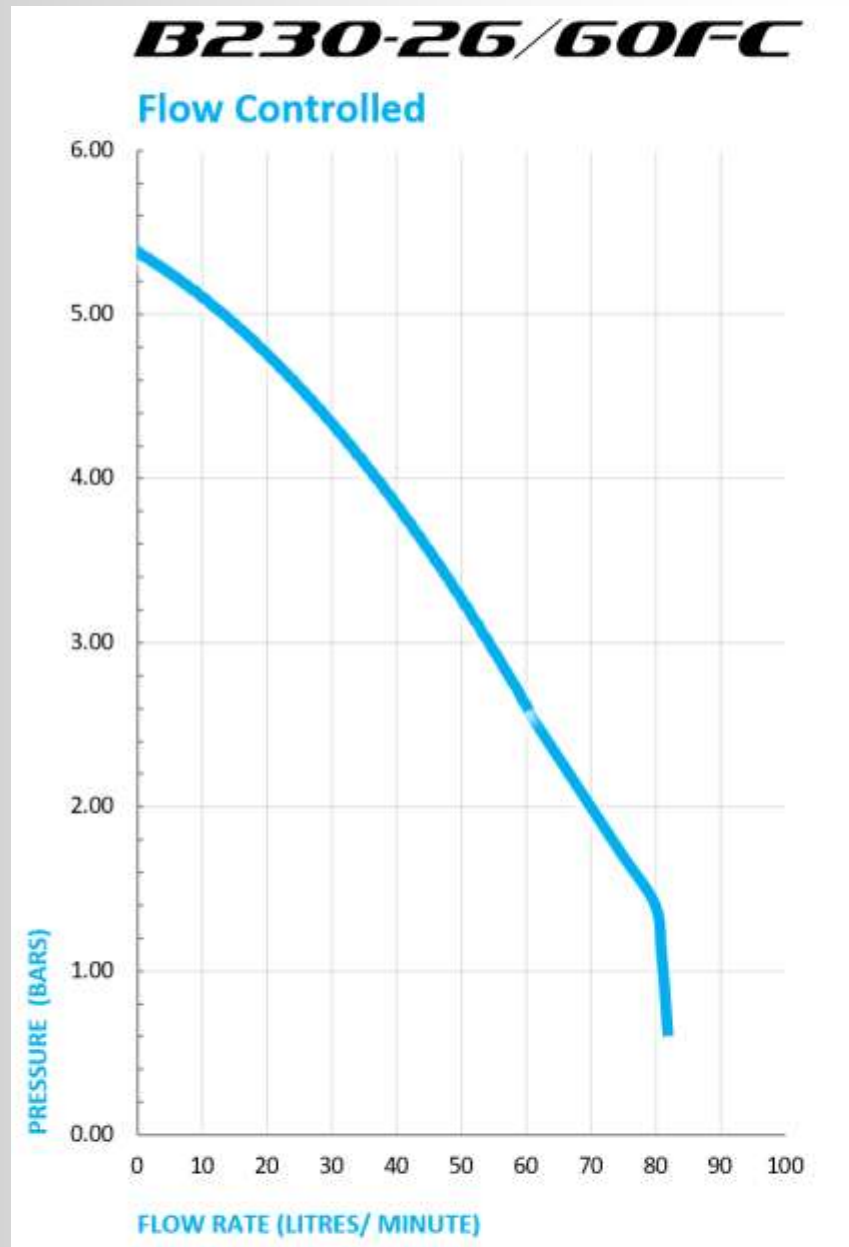
Labels spell out critical tasks, leaving nothing to chance.

We know instructions get lost, instructions not only appear on screen but also all over the product to ensure the best possible outcome throughout the products life.

Instructions to carry out the weekly test, force a service, silence the fault alarm are all permanently attached to the product.

Minimum and maximum fuse ratings along with other important information are also provided to further assist the engineer.

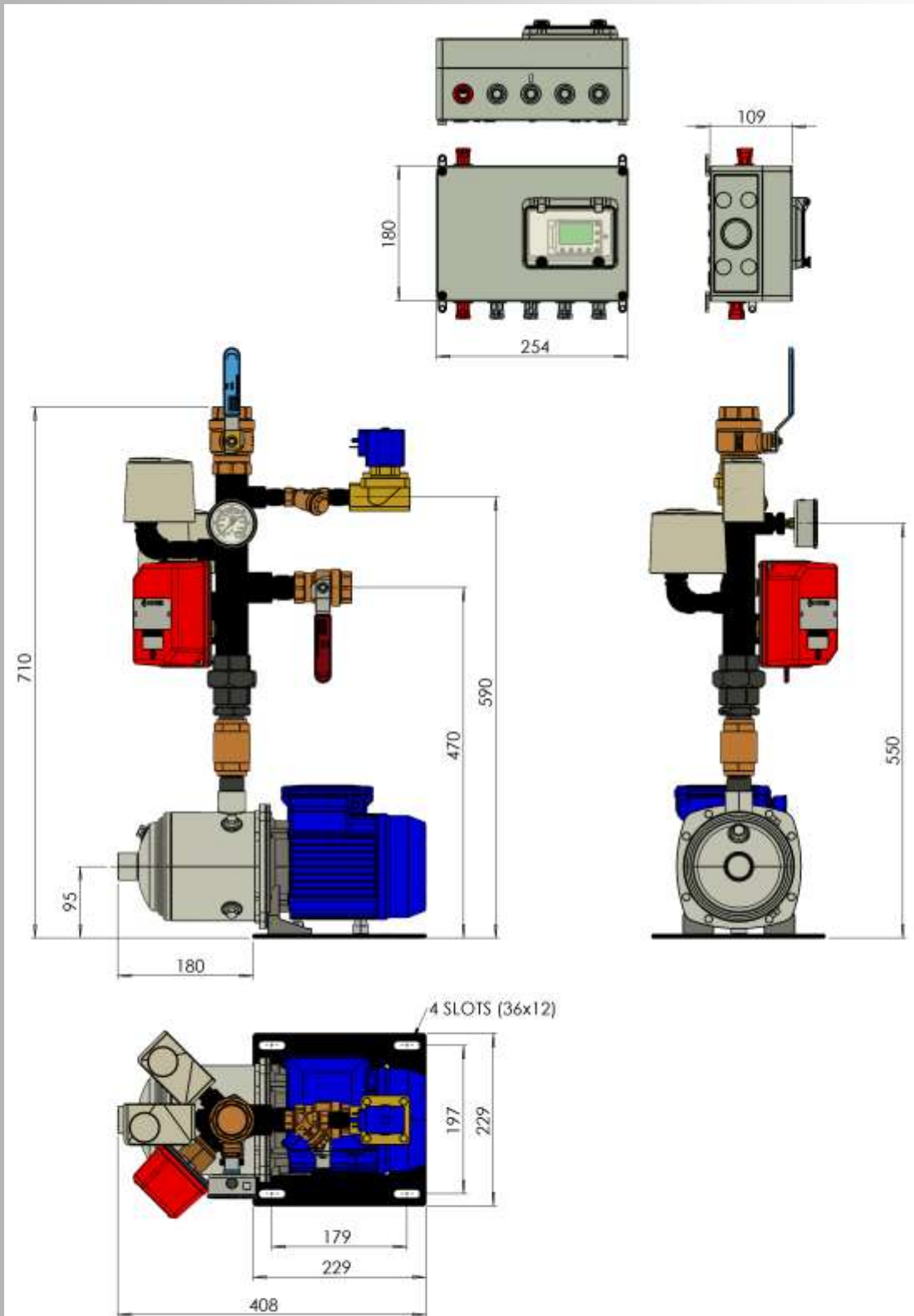
H max	5.6 bars
P max	10 bars
Inlet	1" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor IE2	0.75 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	5.4 Amps
Locked rotor	26.5 Amps
Start Current	26.5 Amps DOL
Isolator (required)	25 Amps
Min recommended Fuse (required)	13 Amps (motor rated)
Max recommended Fuse (required)	16 Amps (motor rated)
Power cable CSA FP200 2Core +E	2.5mm 300mm long
Power cable CSA FP200 2 Core +E	2.5mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm

FLOW CONTROLLED™**60 L/MIN
AT 2.6 BARS**

Fire Alarm (in Flow switch with time delay set to 20 seconds)

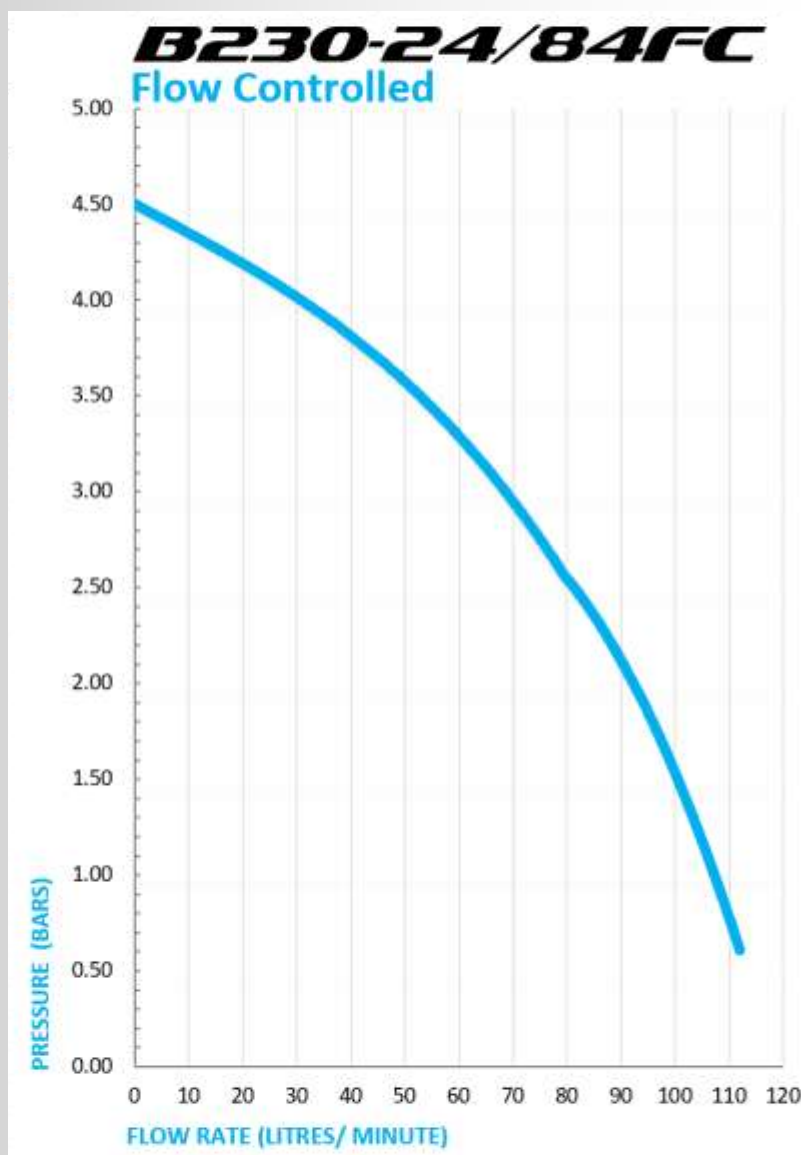
1 SPDT contact Fire
1 SPDT contact PDV

A Flow Controlled pump duty is measured at the system valve, after the flow switch, non return valve and manifold



Flow Rate (Litres/minute)	0	20	40	60	80	82
Total Head (Bars)	5.4	4.7	3.9	2.6	1.4	0.6
Weight	22.0	kg				

H max	4.6 bars
P max	10 bars
Inlet	1 1/4" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor	0.9 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	5.7 Amps
Locked rotor	21.7 Amps
Start Current	21.7 Amps DOL
Isolator (required)	25 Amps
Min recommended Fuse (required)	13 Amps (motor rated)
Max recommended Fuse (required)	16 Amps (motor rated)
Power cable CSA FP200 2Core +E	2.5mm 300mm long
Power cable CSA FP200 2 Core +E	2.5mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm

FLOW CONTROLLED™**84L/MIN
AT 2.4 BARS**

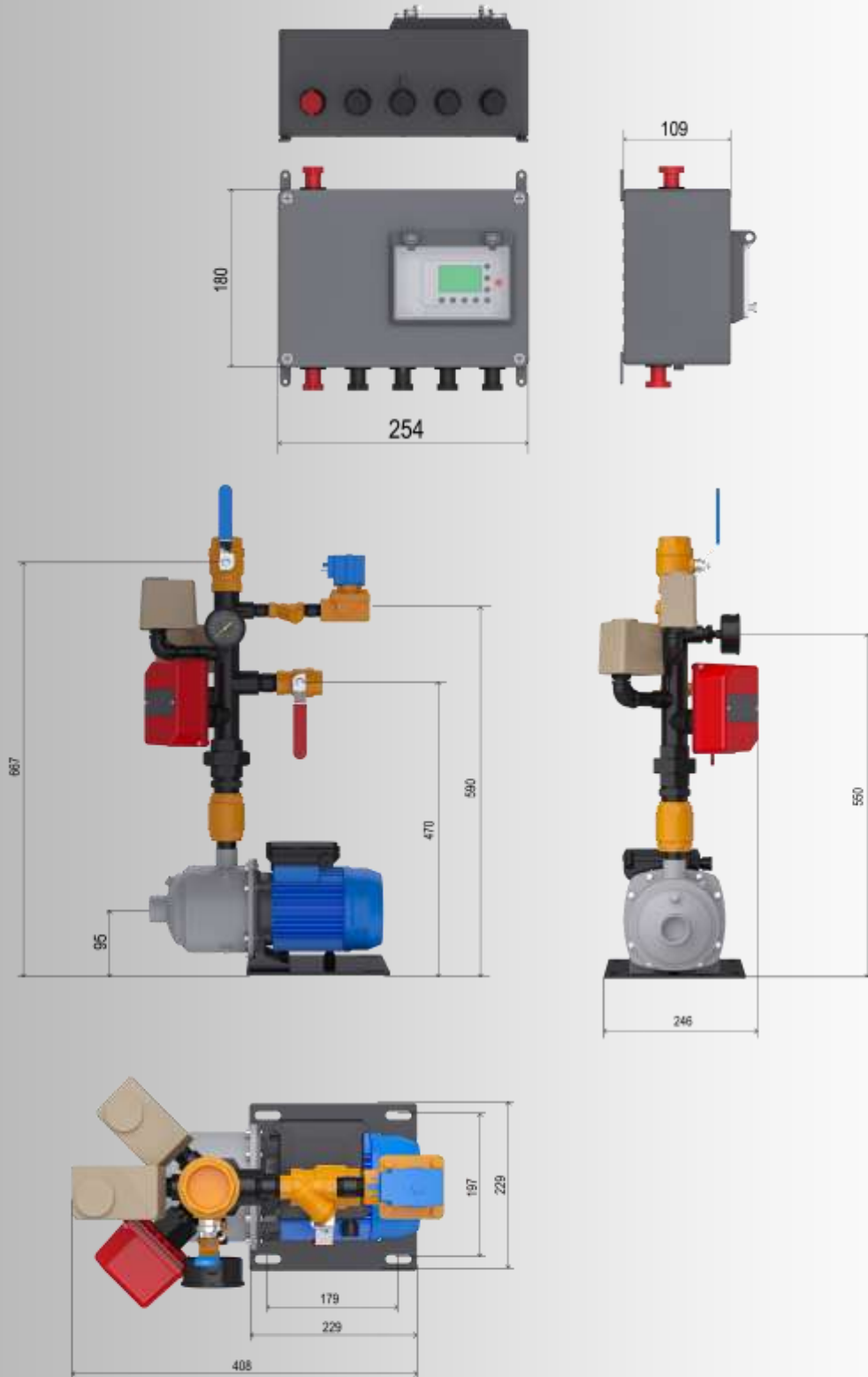
Fire Alarm (in Flow switch with time delay set to 20 seconds)

1 SPDT contact Fire
1 SPDT contact PDV

A Flow Controlled pump duty is measured at the system valve, after the flow switch, non return valve and manifold

BOOST8N™

B230-24/84FC



Flow Rate
(Litres/minute)

0 20 40 60 80 84 100 112

Total Head
(Bars)

4.5 4.1 3.8 3.3 2.5 2.4 1.6 0.6

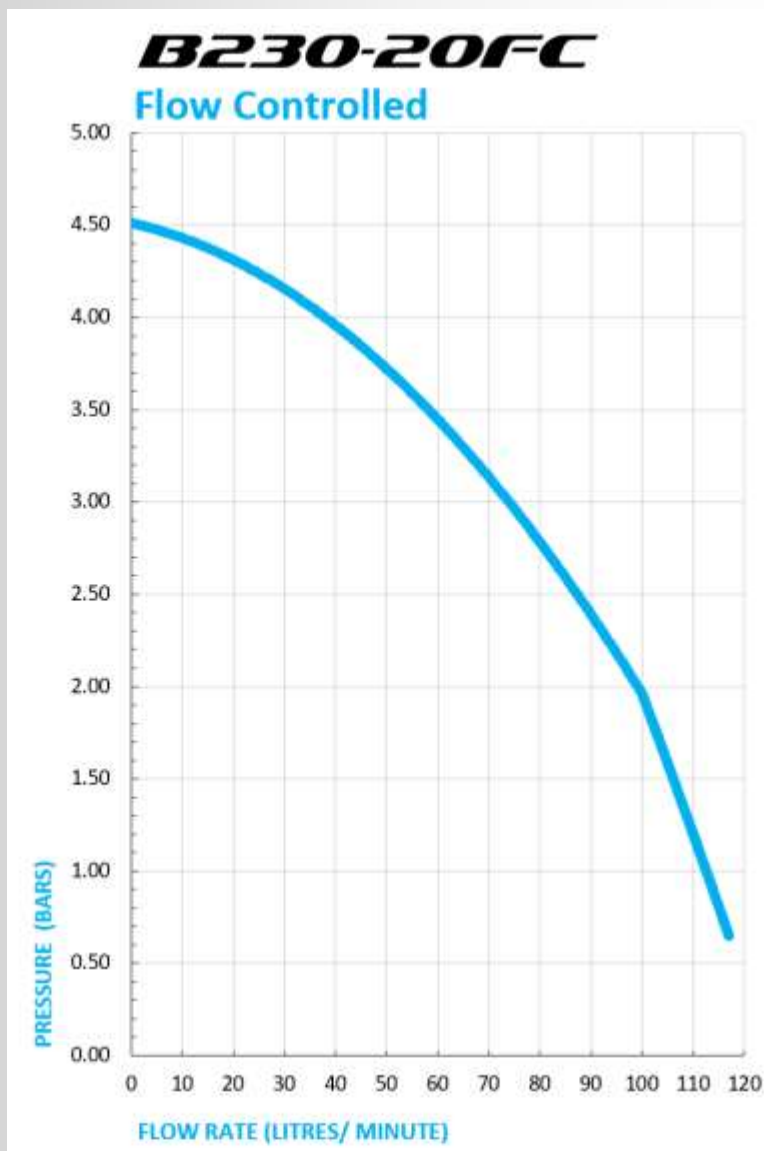
Weight

21.7 kg

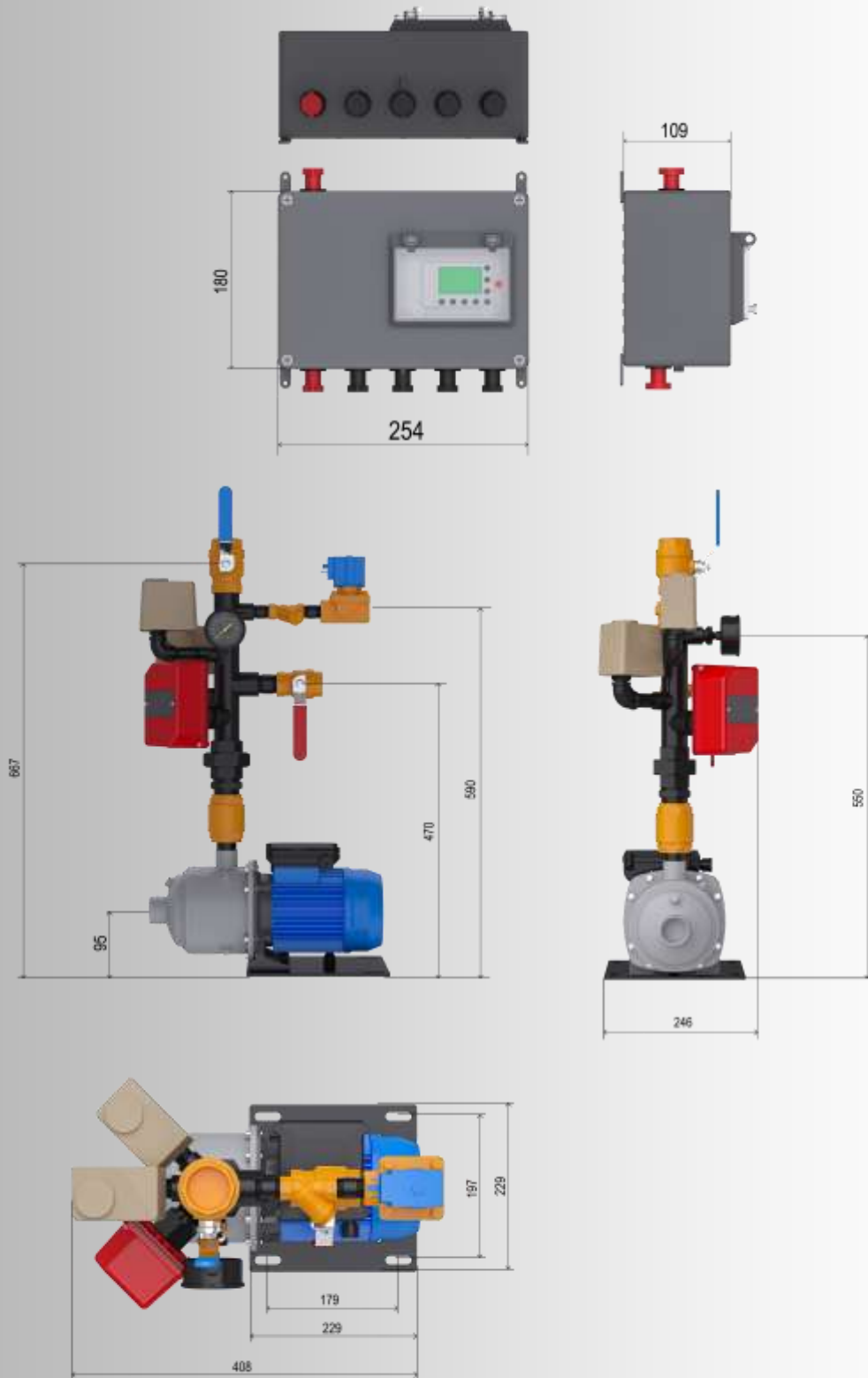


B230-20FC

H max	4.6 bars
P max	10 bars
Inlet	1 1/4" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor	0.9 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	5.7 Amps
Locked rotor	21.7 Amps
Start Current	21.7 Amps DOL
Isolator (required)	25 Amps
Min recommended Fuse (required)	13 Amps (motor rated)
Max recommended Fuse (required)	16 Amps (motor rated)
Power cable CSA FP200 2Core +E	2.5mm 300mm long
Power cable CSA FP200 2 Core +E	2.5mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm
Fire Alarm (in Flow switch with time delay set to 20 seconds)	1 SPDT contact Fire 1 SPDT contact PDV

FLOW CONTROLLED™**100L/MIN
AT 2.0 BARS**

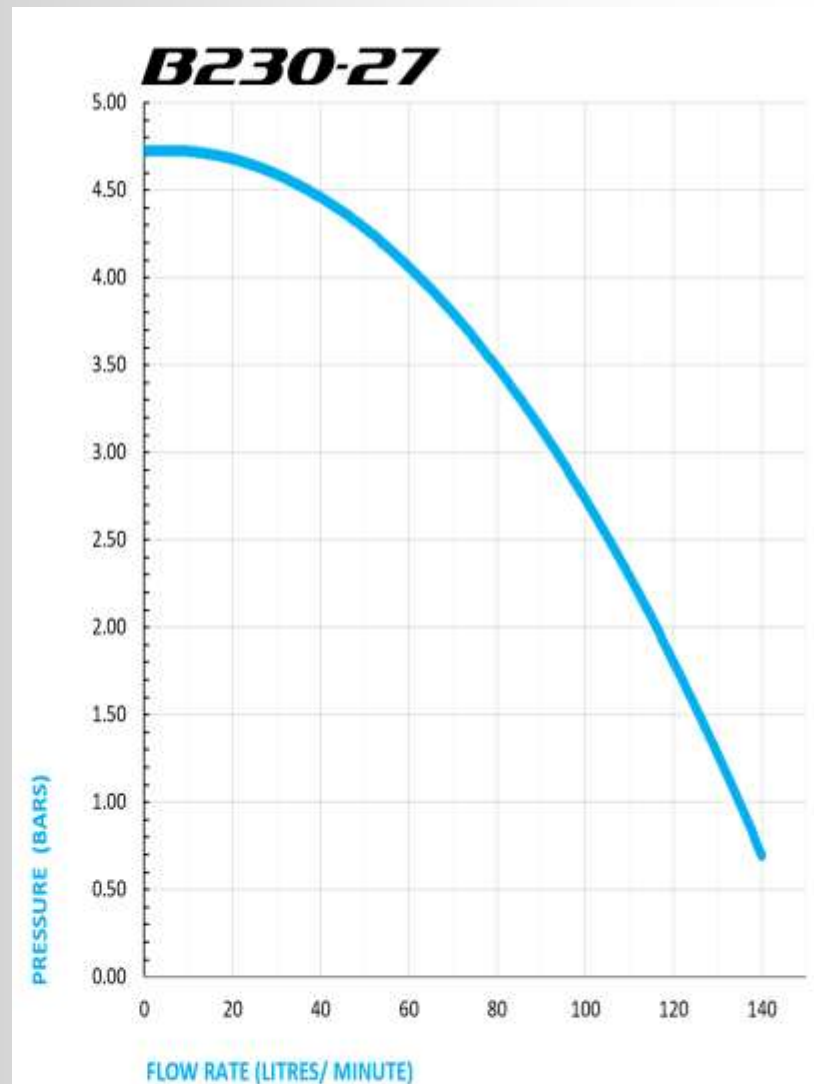
A Flow Controlled pump duty is measured at the system valve, after the flow switch, non return valve and manifold



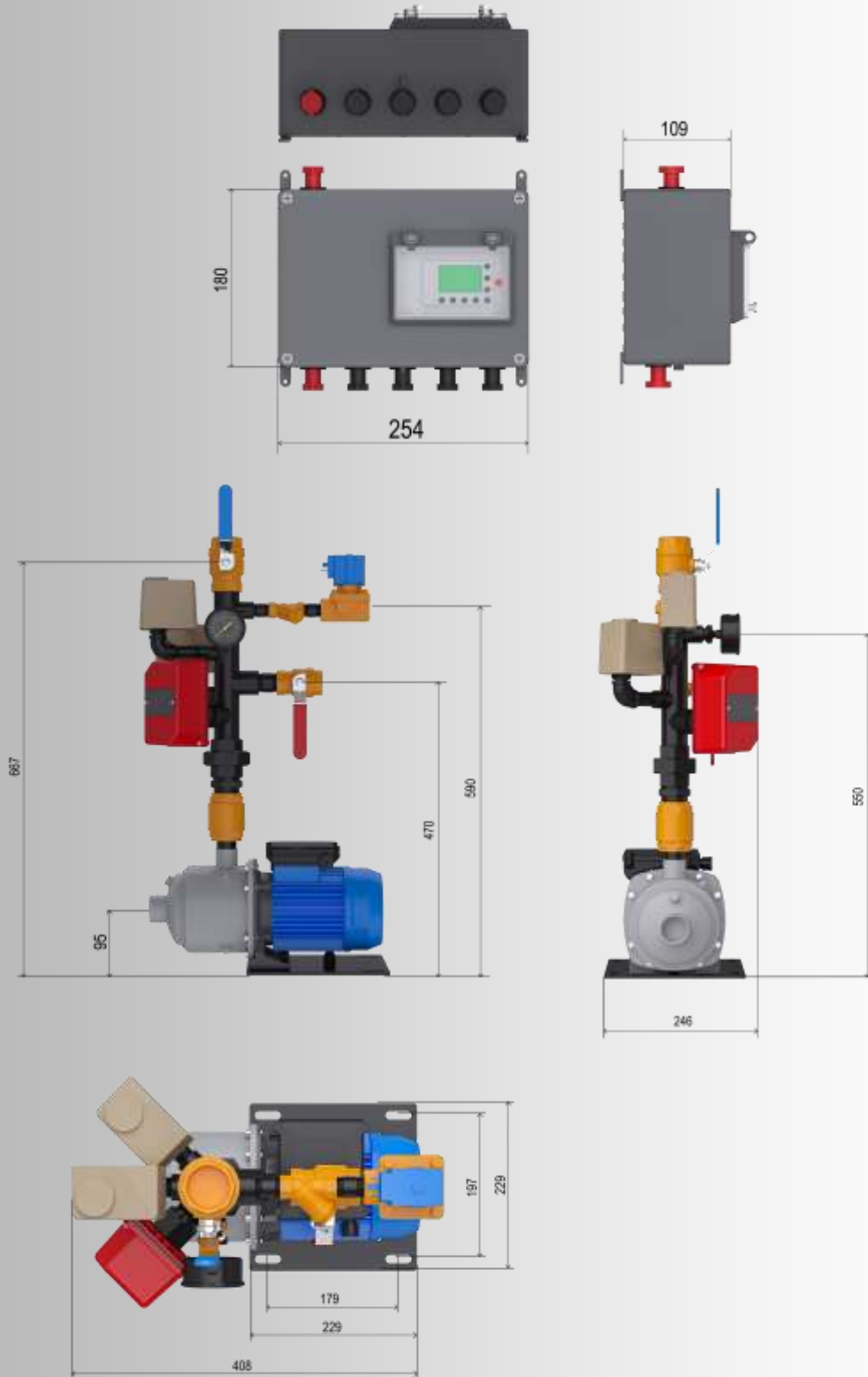
Flow Rate (Litres/minute)	0	20	40	60	80	100	110	118
Total Head (Bars)	4.5	4.3	3.9	3.6	2.5	2.0	1.1	0.7
Weight	21.7	kg						

H max	4.6 bars
P max	10 bars
Inlet	1 1/4" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor	0.9 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	5.7 Amps
Locked rotor	21.7 Amps
Start Current	21.7 Amps DOL
Isolator (required)	25 Amps
Min recommended Fuse (required)	13 Amps (motor rated)
Max recommended Fuse (required)	16 Amps (motor rated)
Power cable CSA FP200 2Core +E	2.5mm 300mm long
Power cable CSA FP200 2 Core +E	2.5mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm
Fire Alarm (in Flow switch with time delay set to 20 seconds)	1 SPDT contact Fire 1 SPDT contact PDV

**100L/MIN
AT 2.7BARS**

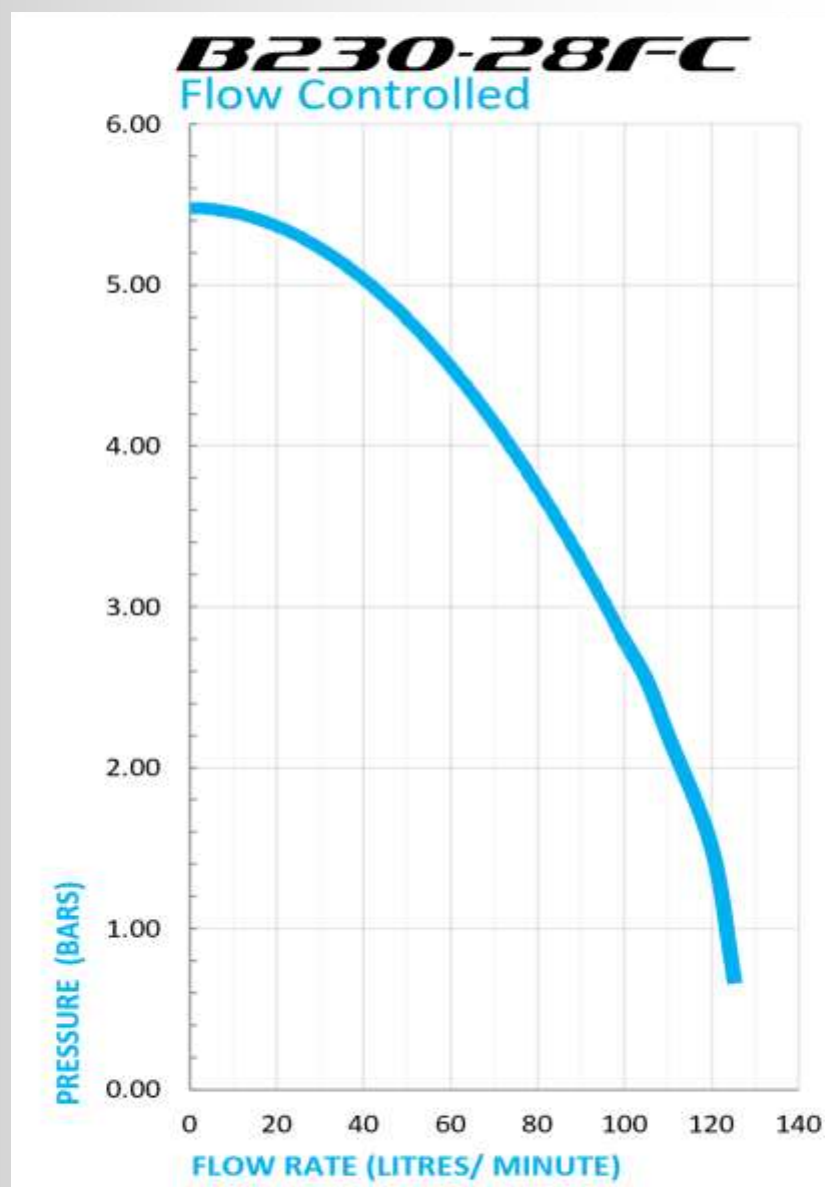


Duty is measured at the system valve, after the flow switch, non return valve and manifold

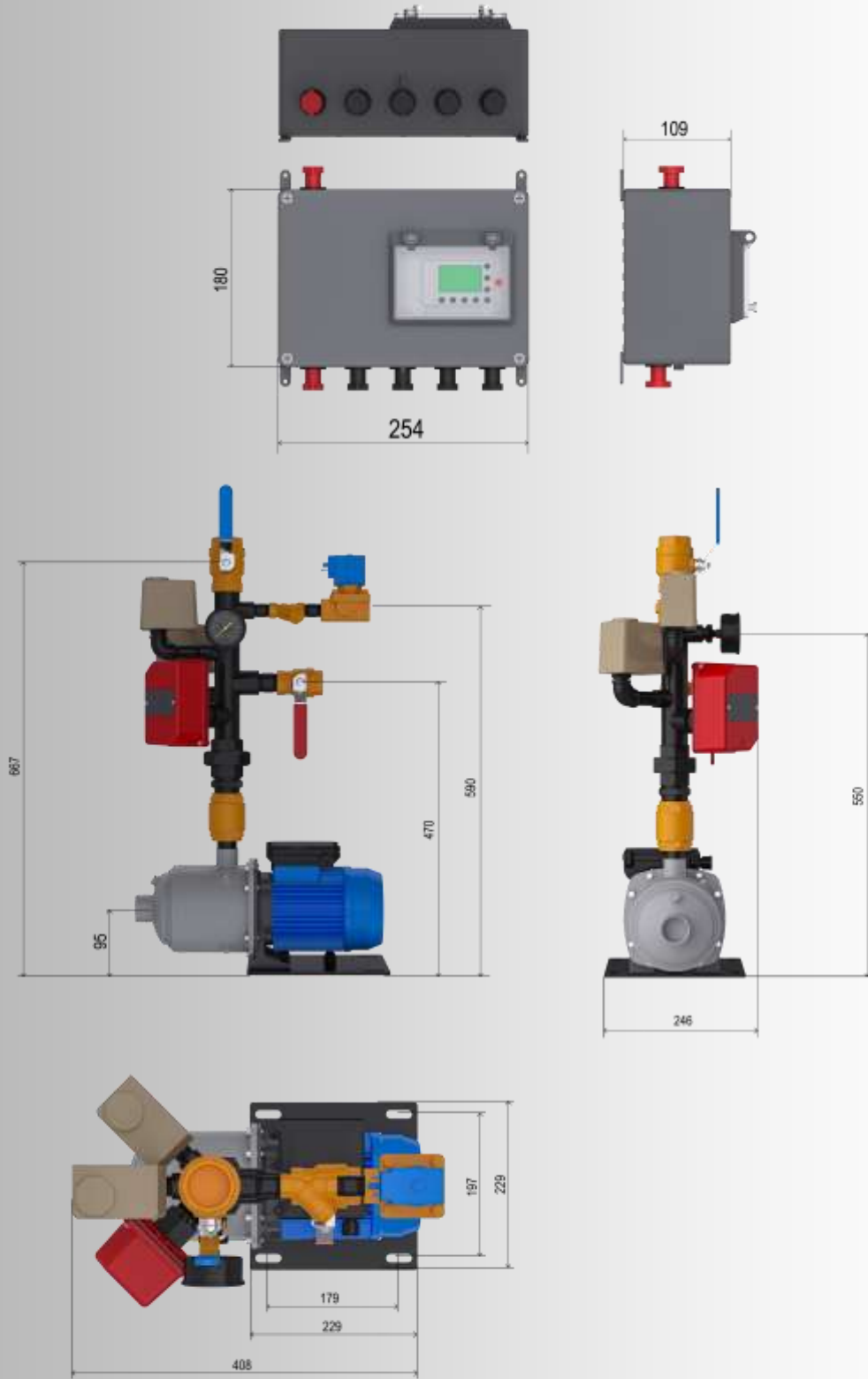


Flow Rate (Litres/minute)	0	20	40	60	80	100	120	130	140
Total Head (Bars)	4.5	4.3	3.8	3.4	3.3	2.7	1.8	1.1	0.7
Weight	21.7	kg							

H max	5.7 bars
P max	10 bars
Inlet	1 1/4" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor IE2	1.3 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	7.5 Amps
Locked rotor	51 Amps
Start Current	51 Amps DOL
Isolator (min required)	25 Amps
Min recommended Fuse (required)	13 Amps (motor rated)
Max recommended Fuse (required)	16 Amps (motor rated)
Power cable CSA FP200 2Core +E	2.5mm 300mm long
Power cable CSA FP200 2 Core +E	2.5mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm
Fire Alarm (in Flow switch with time delay set to 20 seconds)	1 SPDT contact Fire 1 SPDT contact PDV

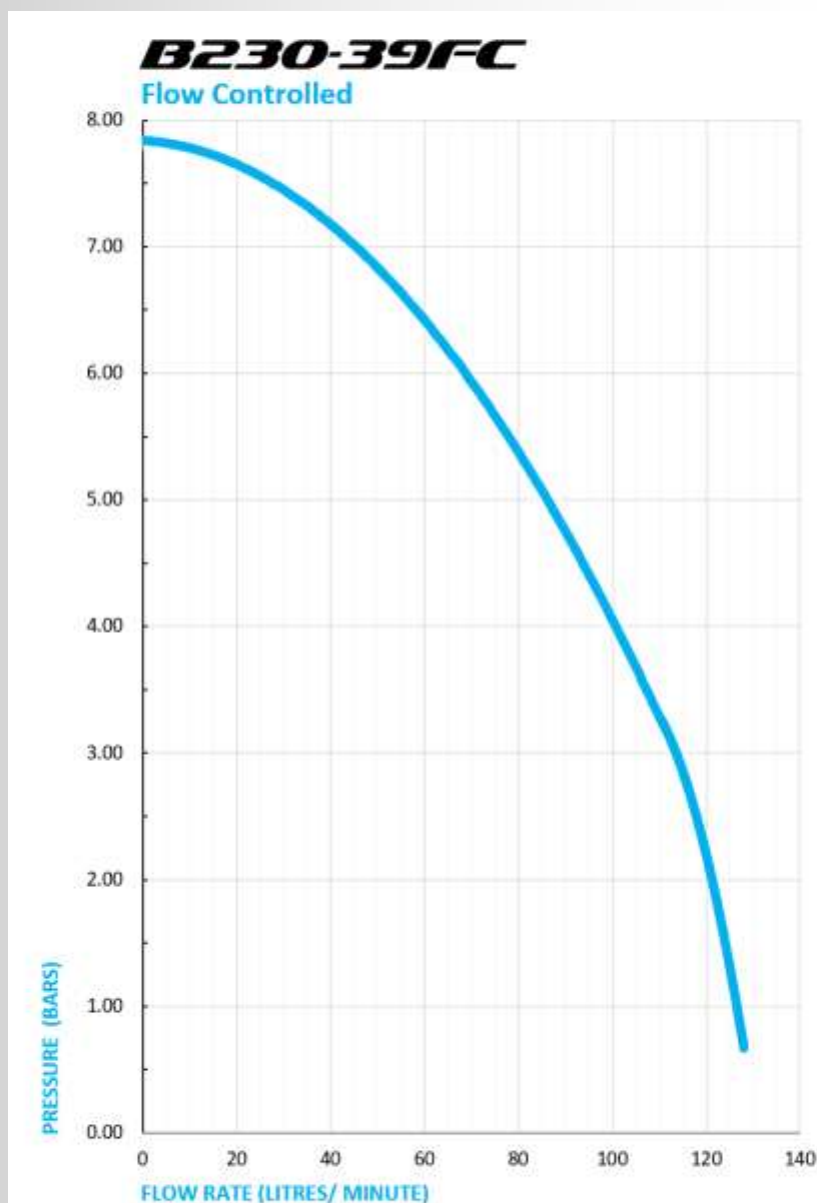
FLOW CONTROLLED™**100L/MIN
AT 2.8 BARS**

A Flow Controlled pump duty is measured at the system valve, after the flow switch, non return valve and manifold



Flow Rate (Litres/minute)	0	20	40	60	80	100	110	120	125
Total Head (Bars)	5.5	5.4	5.1	4.5	3.7	2.8	2.2	1.4	0.7
Weight	25.3	kg							

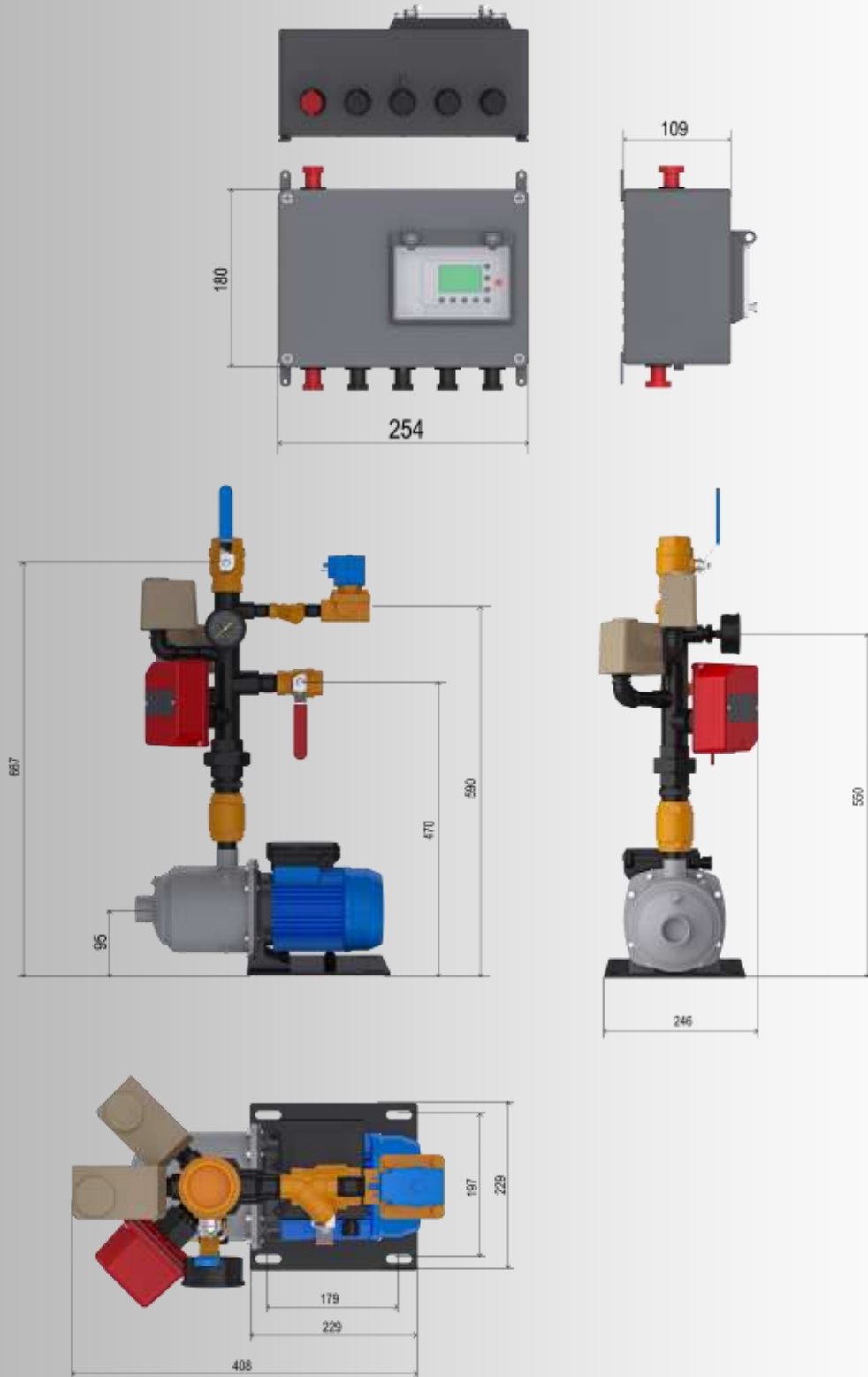
H max	8.0 bars
P max	10 bars
Inlet	1 1/4" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor IE2	1.5 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	9 Amps
Locked rotor	65 Amps
Start Current	65 Amps DOL
Isolator (required)	25 Amps
Min recommended Fuse (required)	16 Amps (motor rated)
Max recommended Fuse (required)	20 Amps (motor rated)
Power cable CSA FP200 2Core +E	2.5mm 300mm long
Power cable CSA FP200 2 Core +E	2.5mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm

FLOW CONTROLLED™**100L/MIN
AT 3.9 BARS**

Fire Alarm (in Flow switch with time delay set to 20 seconds)

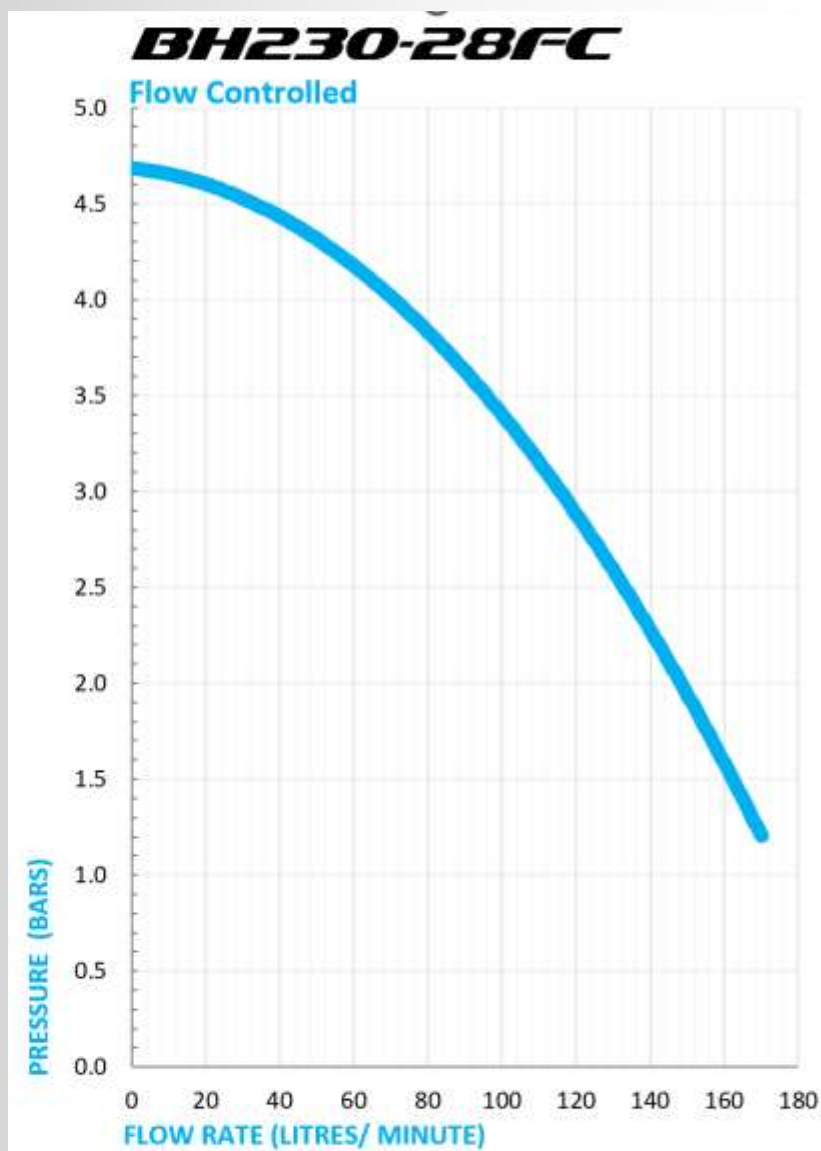
1 SPDT contact Fire
1 SPDT contact PDV

A Flow Controlled pump duty is measured at the system valve, after the flow switch, non return valve and manifold



Flow Rate (Litres/minute)	0	20	40	60	80	100	110	120	128
Total Head (Bars)	7.8	7.6	7.0	6.4	5.4	3.9	3.3	2.4	0.7
Weight	27.8	kg							

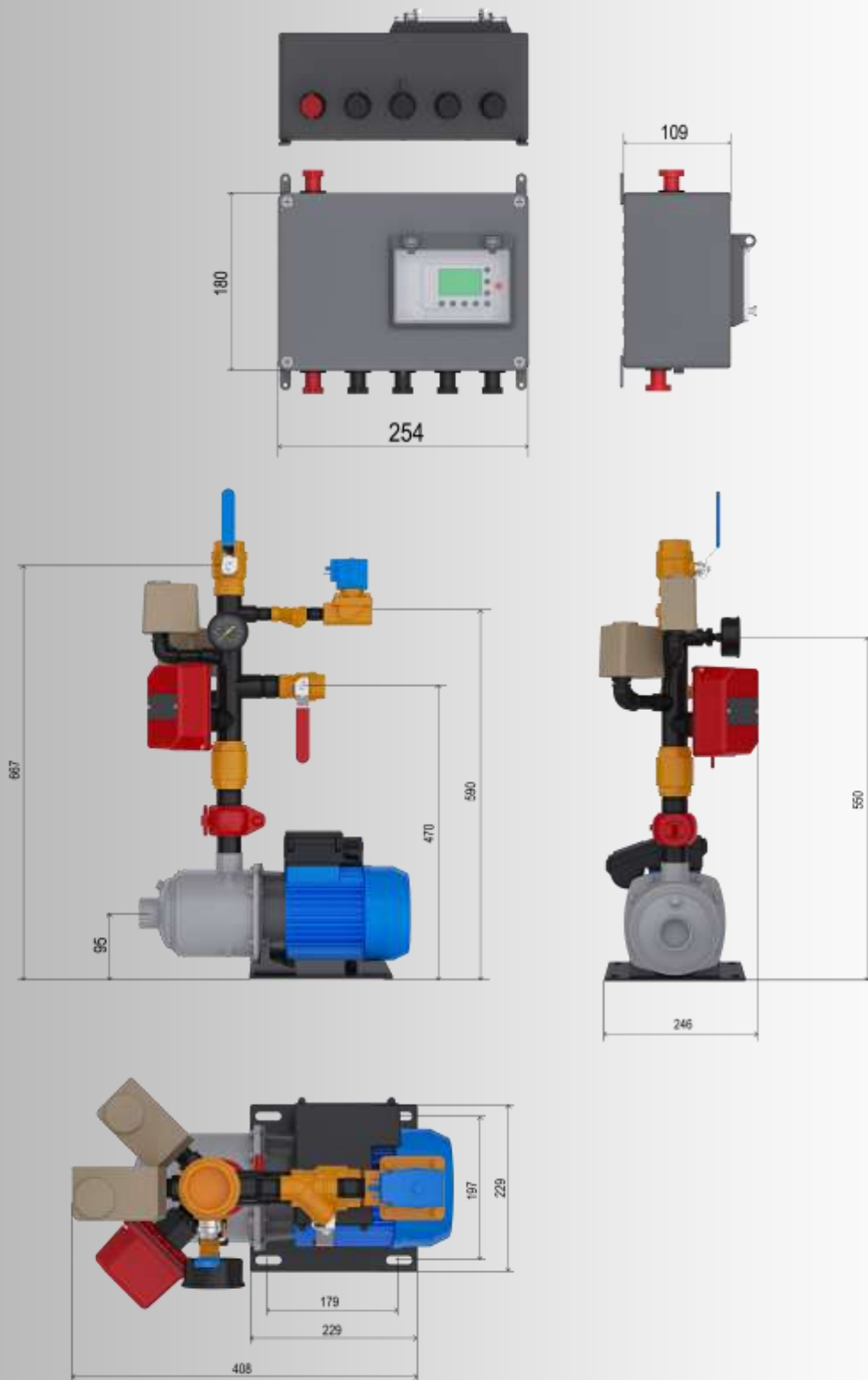
H max	4.7 bars
P max	10 bars
Inlet	1 1/4" BSPP Female
Delivery Valve Lockable handle	1 1/4" BSPP Female
Cooling/ weekly test	1/2" BSPP Female
Test Valve	1" BSPP Female
Motor IE2	1.5 kW
Supply (required)	230Vac 50Hz Single Phase
Full load current	9 Amps
Locked rotor	65 Amps
Start Current	65 Amps DOL
Isolator (required)	25 Amps
Min recommended Fuse (required)	16 Amps (motor rated)
Max recommended Fuse (required)	20 Amps (motor rated)
Power cable CSA FP200 2Core +E	4mm 300mm long
Power cable CSA FP200 2 Core +E	4mm
Fault Alarm CSA FP200 3 core+ E SPDT	1.5mm
Fire Alarm (in Flow switch with time delay set to 20 seconds)	1 SPDT contact Fire 1 SPDT contact PDV

FLOW CONTROLLED™**120L/MIN
AT 2.8 BARS**

A Flow Controlled pump duty is measured at the system valve, after the flow switch, non return valve and manifold

BOOST8N™

BH230-28FC



Flow Rate (Litres/minute)	0	25	50	75	100	120	125	150	160	170
Total Head (Bars)	4.7	4.5	4.2	3.8	3.2	2.8	2.7	2.0	1.5	1.2
Weight	25.4	kg								

