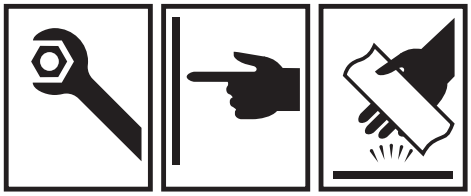
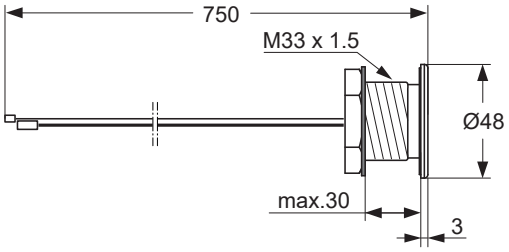


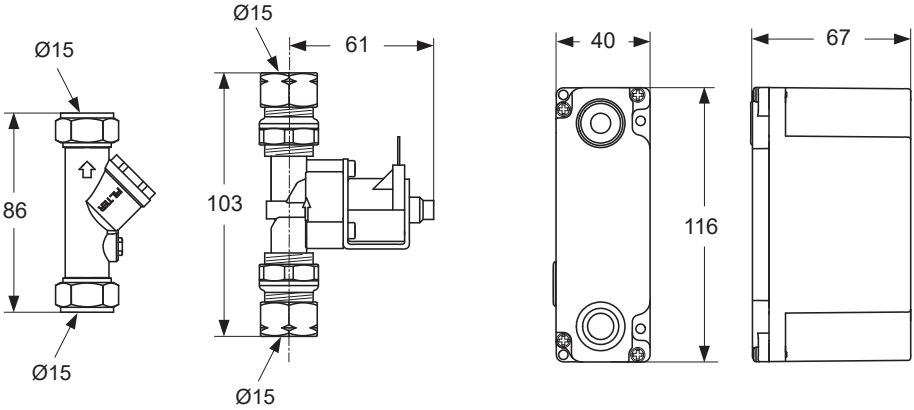
Armitage Shanks

Sensorflow 21 shower – panel mount A4168AA, A4185AA & A4186AA

INSTALLATION INSTRUCTIONS



UK CA



Important:

1. Electrical connection: mains electric powered versions of these products must be connected to a continuous permanent power supply.

2. Sensor protector: this black-out lens cover should only be removed from the sensor after completing installation & at least 20 seconds after powering up.

See page 3 for more details.

IMPORTANT
BEFORE CONNECTION, FLUSH WATER THROUGH PIPEWORK TO REMOVE ALL DEBRIS ETC. WHICH COULD DAMAGE THE VALVE MECHANISM

INSTALLER: After installation please pass this instruction booklet to user

TABLE OF CONTENT

Sensorflow 21 panel mount showering products

These panel mount Sensorflow 21 electronic showering products are designed for water economy & hygienic “no-touch” operation.

The shower is operated by the infrared sensor which detects the presence of the users hand in the sensing region. When activated, water will flow from the shower head for the preset run-time.

These products are intended to be supplied with premixed or cold water.

These products are available in 3 versions: Mains powered (transformed) with option to link up to 5 link units & independent battery powered units:

A4168AA are supplied with **battery unit**
A4185AA are supplied with **mains power unit**
A4186AA are supplied with **link unit** (Link up to 5 per A4185AA)

NOTE: A suitable shower head (or shower kit) should be purchased separately (a shower head is not included with this product). See section 12 for a selection of our fixed shower heads.

1 IMPORTANT PRE-INSTALLATION NOTES

MAINS ELECTRICAL POWER SUPPLY
Mains powered Sensor Operated Products must be connected to a (fused / switched) **continuous permanent power supply**.

Connection to an **interrupted power supply** intended to stop electrical consumption in an unused facility, may adversely affect this sensor product and is therefore not recommended.

Each time the power supply is reinstated the product briefly enters reprogramming mode.

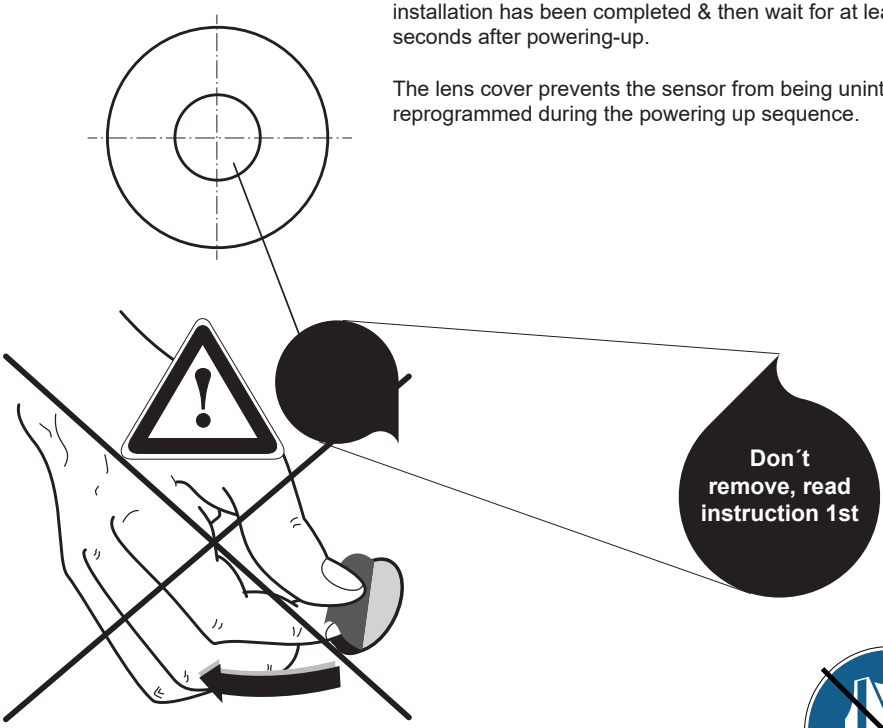
During reprogramming mode, any interaction (passive or active) with the product may alter the sensor settings in respect to range and / or run duration.

No significant savings will be achieved by connection to an interrupted supply. These products are intrinsically economical in terms of both water and electrical energy and will shut down in the event of a sensor being obstructed.

SENSOR PROTECTIVE COVER
This product is supplied with the sensor lens covered over with a black-out material.

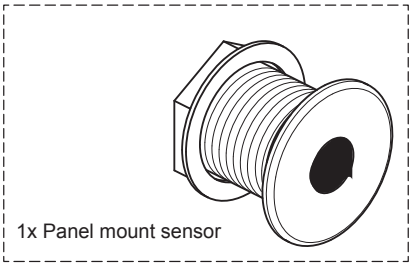
DO NOT REMOVE this lens cover until the product installation has been completed & then wait for at least 20 seconds after powering-up.

The lens cover prevents the sensor from being unintentionally reprogrammed during the powering up sequence.

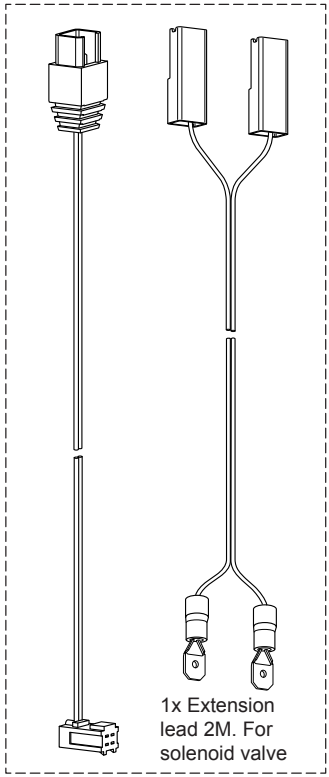


DURING SETTING UP PROCEDURE AVOID WEARING HIGH VISIBILITY CLOTHING IN FRONT OF THE SENSOR

2 PRODUCTBOXCONTENTS

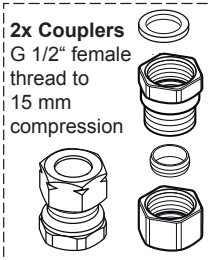


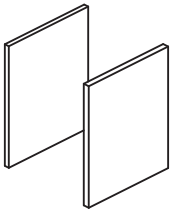
1x Panel mount sensor



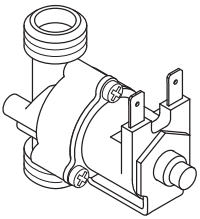
1x Extension lead 2M. For solenoid valve

2x Couplers
G 1/2“ female thread to 15 mm compression

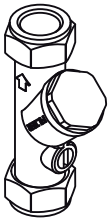




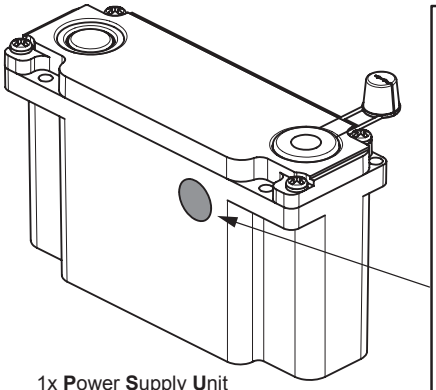
1x Velcro pad set



1x Solenoid valve



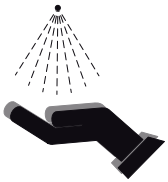
1x Inline service valve with filter



1x **P**ower **S**upply **U**nit

Each type of PSU is identified by this coloured dot system:

RED DOT	MAINS
BLUE DOT	LINK (Supplied with link cable)
GREEN DOT	BATTERY (Supplied with battery)



2x wall / panel stickers

Abbreviations & terminology used

PSU: Power **S**upply **U**nit, either mains, battery or link versions.

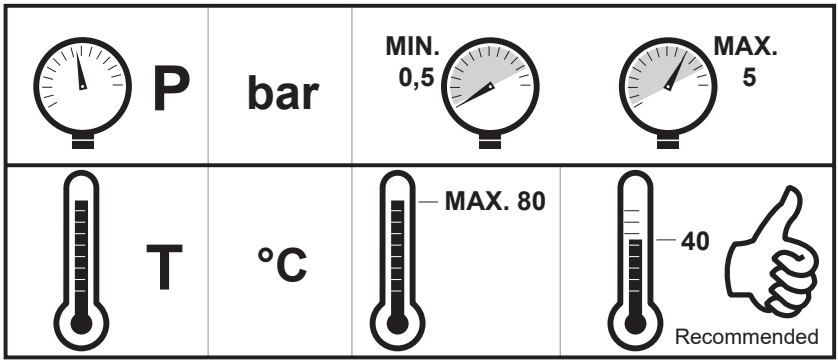
PCB: Printed **C**ircuit **B**oard inside the PSU.

RCD: Residual **C**urrent **D**evice

SELV: Safety **E**xtra **L**ow **V**oltage

LINK PSUs: (up to 5 max) can be connected in series to a single mains PSU. Permitting washroom with multiple products to be run from a single mains supply point.

3 SUPPLY CONDITIONS



This product is designed to be supplied with water at a pre-mixed temperature or with cold water only.

In order to maintain water quality, the hot supply should be stored & distributed at a temperature greater than 55°C.

Use of an appropriate temperature reduction device (e.g. tee pattern thermostat) is recommended to ensure delivery of safe hot water temperatures from the shower head.

Avoid supplying scalding water to the shower head. Hot water temperature supply should be controlled to circa 40°C.

4 WATERREGULATIONS

The fittings covered by this installation and maintenance instruction should be installed in accordance with the water regulations published in 1999*, therefore Armitage Shanks would strongly recommend that these fittings are installed by a professional installer

*A guide to the Water Supply (Water Fittings) Regulations 1999 and the Water Byelaws 2000, Scotland is published by WRAS (Water Regulations Advisory Scheme) Fern Close, Pen-y-Fan Industrial Estate, Oakdale, Newport, NP11 3EH.
ISBN 0-9539708-0-9

5 INSTALLATIONGUIDE

SENSOR POSITIONING:
An example of a typical sensor operated shower installation is shown here.

IMPORTANT:
We recommend the sensor be positioned to one side of the shower outlet & within easy reach of the user.

AVOID positioning the sensor directly beneath the shower outlet.

Sensor range is factory set to approximately 100mm

Sensor height:
The height of the sensor from the floor can be waist height approximately 1M.

Sensor offset:
The sensor centre line should be offset by at least 250mm to either side of the shower outlet centre line as shown. Otherwise the sensor will be triggered repeatedly by the user during showering.

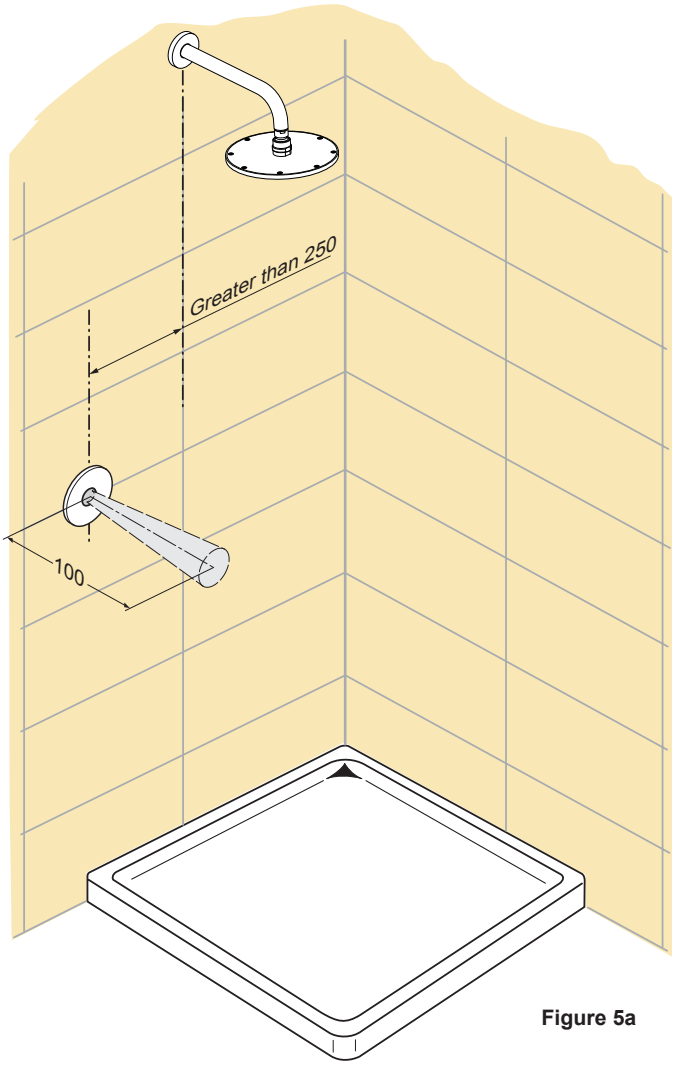


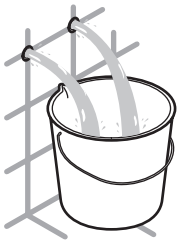
Figure 5a

SENSOR SHOULD NOT BE LOCATED DIRECTLY OPPOSITE A WALL MIRROR.

Ideally pipe-work, cables & electrical parts should be located behind a panel away from the shower water.
ALTERNATIVELY, extension leads are supplied which permit the PSU & solenoid valve to be fitted in the ceiling – up to 2M from the sensor location.

Before connection, flush water through pipe-work to remove all debris etc. to prevent damage to the valve mechanism.

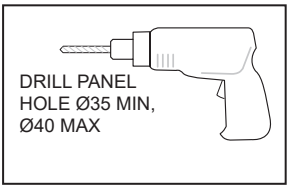
THEN ENSURE WATER SUPPLIES HAVE BEEN ISOLATED.



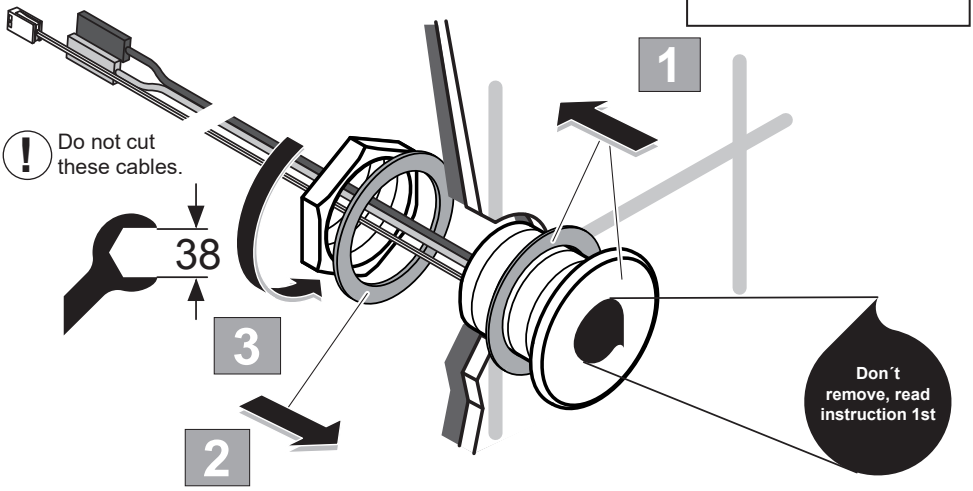
5.1 Mounting the sensors

SENSOR POSITIONING: we recommend the sensor be mounted approximately as illustrated in figure 5a.

1. Remove the sensor mounting kit if already assembled to the sensor housing tail. Ensure the rubber washer is in place behind the flange. Offer the sensor housing towards the panel hole.



Feed the cables & tail through panel hole. Push the sensor housing against the panel & ensure the rubber washer makes contact.



2. Fit the brass washer & back-nut onto the sensor housing tail as shown from behind the panel.

3. Hand tighten the nut against the brass washer until it makes contact with the rear of the panel. Ensure the sensor housing is positioned correctly, & then tighten the back-nut securely with an adjustable spanner - 38mm A/F

CABLE COLOURS: The cables emerging from the rear of the sensor are as follows: BLACK & RED cables will connect to the solenoid valve. GREY cable will connect onto the PCB inside the PSU.

Sensor protective sticker:
RE-AFFIX this sticker IF it has been removed from the sensor housing during fixation.
ONLY remove sticker after installation has been completed & then wait at least 20 seconds after powering up.

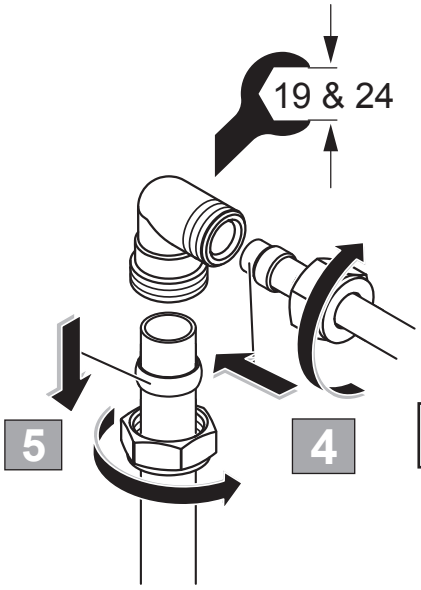
5.2 Plumbing Overview

Once the sensor has been secured to the panel, consideration should be given to installing & positioning of the inline valve.

In the plumbing installation water is being supplied from above (ceiling), but can be from any direction.

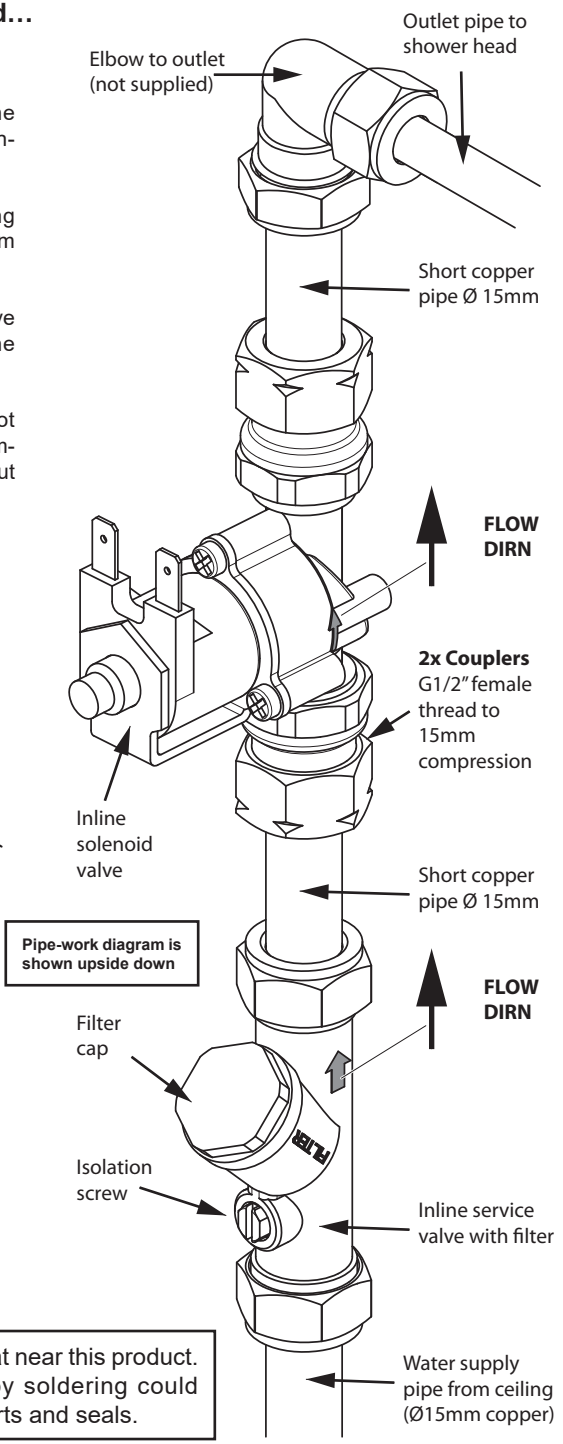
Observe arrow marking on the solenoid valve as shown here. Ensure water flows in the direction indicated.

Short lengths of Ø15mm copper pipe (not supplied) have been used between the components. Copper pipe lengths should be cut to suit the installation.

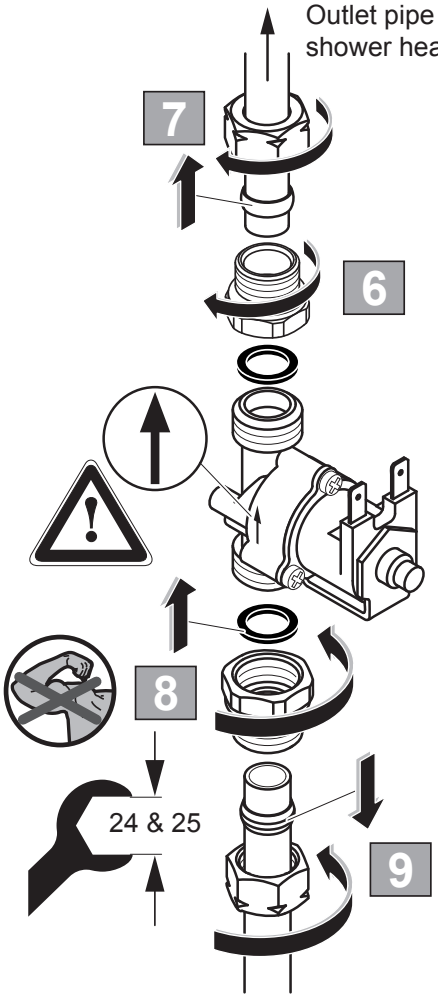


4 & 5. Fit an elbow onto shower outlet pipe (or tail).

DO NOT apply heat near this product. Heat generated by soldering could damage plastic parts and seals.



INSTALLATION GUIDE continued…

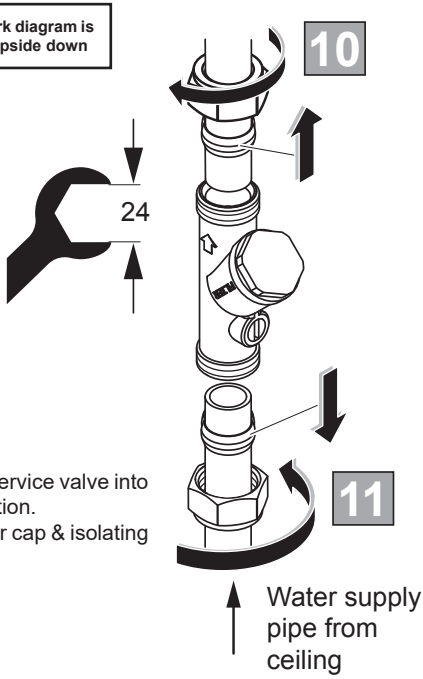


6 & 8. To fit solenoid valve:
The couplers can be screwed onto both sides of the in-line solenoid valve. Ensure the seals provided are fitted as shown. Make good the joints, taking care not to use excessive force. Tighten with an adjustable spanner (25mm A/F).

7 & 9. Slip the compression nuts & olives onto the pipes. Fit the solenoid valve into the pipe-work & make good the joints.
Observe flow direction.

Make sure the solenoid valve is orientated such that the electrical connectors are easily accessible.

Pipe-work diagram is shown upside down



10 & 11. To fit service valve:
Slip the compression nuts & olives onto the pipes. Fit the service valve into the pipe-work & make good the joints. Observe flow direction.
Make sure the service valve is orientated such that the filter cap & isolating screw are easily accessible for future maintenance.

Integral isolating/service valve
When the isolator screw slot is parallel to the valve body, the valve is open & permits water to flow.
To close the valve, rotate the isolator screw 90°.

! Check that all joints are securely tightened, test for leaks.

5.3 Electrical connection

Connection of this product to mains power supply should be undertaken by a competent person and should conform to IEE Wiring Regulations

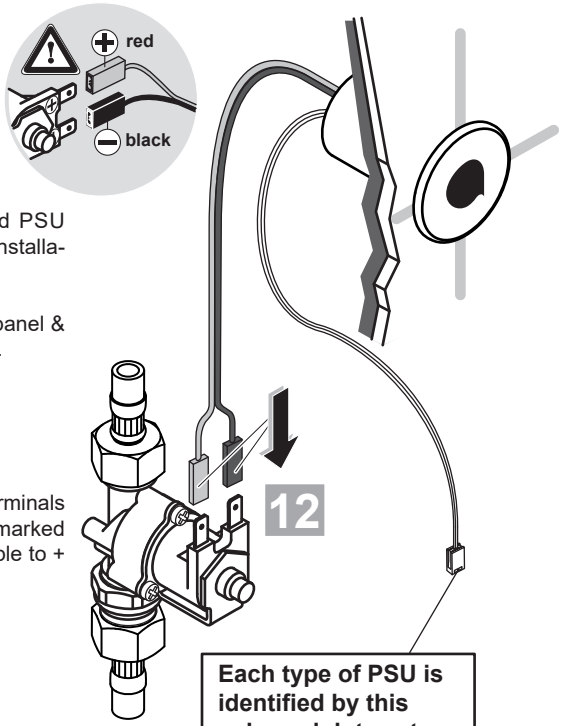
Orientation & position of solenoids, and PSU (**P**ower **S**upply **U**nit) case can differ from installation to installation.

With the product securely mounted to the panel & plumbed-in, electrical work can commence.

12. Locate the end of the red & black cable which emerges from the rear of the sensor. This cable length is approx 750mm.

Connect the cable to the solenoid valve terminals as shown. Observe the + and – symbols marked on the solenoid valves, connect the red cable to + & black to -.

Refer to the diagram in figure 5b for PSU connection options.



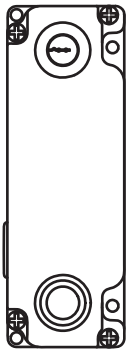
Each type of PSU is identified by this coloured dot system:

RED DOT	MAINS
BLUE DOT	LINK
GREEN DOT	BATTERY

Sensor cables should not be cut or shortened.

Remember pipe-work, cables & electrical parts should be located behind a panel or fitted in the ceiling away from the shower water.

Electrical information & approvals:



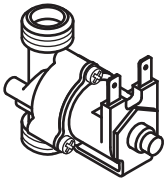
Power: **6W**

Input voltage:
100V - 240V~ 50 - 60Hz

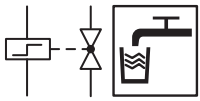
Protection class: **II**

Approval EU:
EN 60950, EN 60335

Approval UL: **UL 1310**



DIN EN 60730-1: Type 1



Additional cable information:
The two cables that emerge from the rear of the sensor both have nominal lengths of 750mm. A separate 2M sensor extension cable is supplied & can be used if necessary.

BLACK & RED cable will plug onto the terminals on the solenoid valve.

GREY cable (with black line) will plug into one of the sockets on the PCB inside the PSU.

Link cable is also GREY (with black line), length is 1.5M (supplied with link product only)

SEE SECTION 8 FOR CABLE EXTENSION DETAILS & FURTHER CABLE NOTES

Remember, connection of this product to mains power supply should be undertaken by a competent person and should conform to IEE Wiring Regulations.

INSTALLATION GUIDE continued…

Electrical connection continued…

ENSURE MAINS POWER SUPPLY IS SWITCHED OFF BEFORE COMMENCING

13. Open the PSU case by unscrewing 4x posi-drive screws.

14. The lid & seal should separate from the PSU case.

15. For battery version, orientate the battery correctly & slide it into the PSU as shown, until it clicks into position
For mains version, slide out **P**rinted **C**ircuit **B**oard (PCB).

16. For mains version, press out the "knock-out" at the base of the PSU case for mains cable entry.

17. For link version, slice the grommets fitted in the side wall of the PSUs to allow entry for the link cable(s).

18. For mains version, fit a grommet into the hole in the base of the PSU. Feed the power supply flexible cable through this grommet & make connections to terminal block on the PCB. Refer to **28.**

19. For link version, feed the link cable through the side wall grommet in the PSU & plug it onto one of the sockets on the PCB. Refer to **28.**

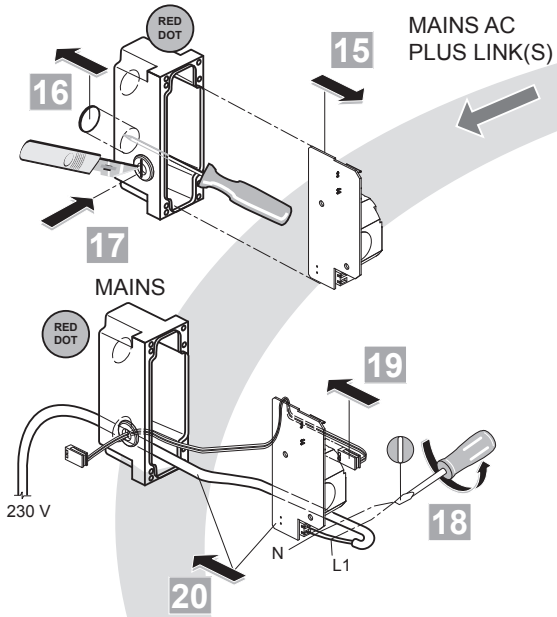
ALTERNATIVELY, the link cable can be routed through the PSU lid as shown in 24, along with the sensor cable.

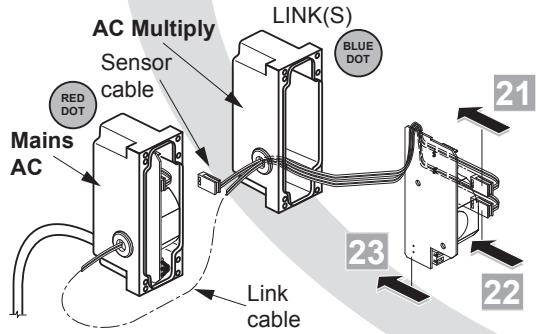
20. Slide the PCB back into the PSU ensuring cables are not trapped.

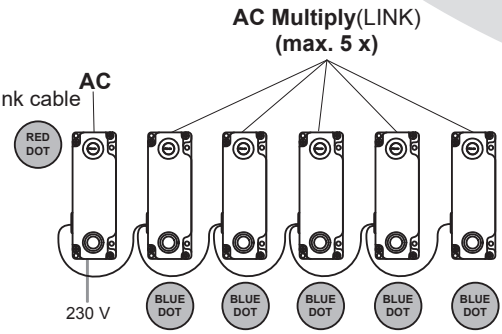
21. For link version, plug the other end of the link cable into the socket on the link PCB.

22. For link versions, plug additional link cables into the sockets on the link PCB.

23. Slide the link PCB back into the PSU ensuring cables are not trapped.







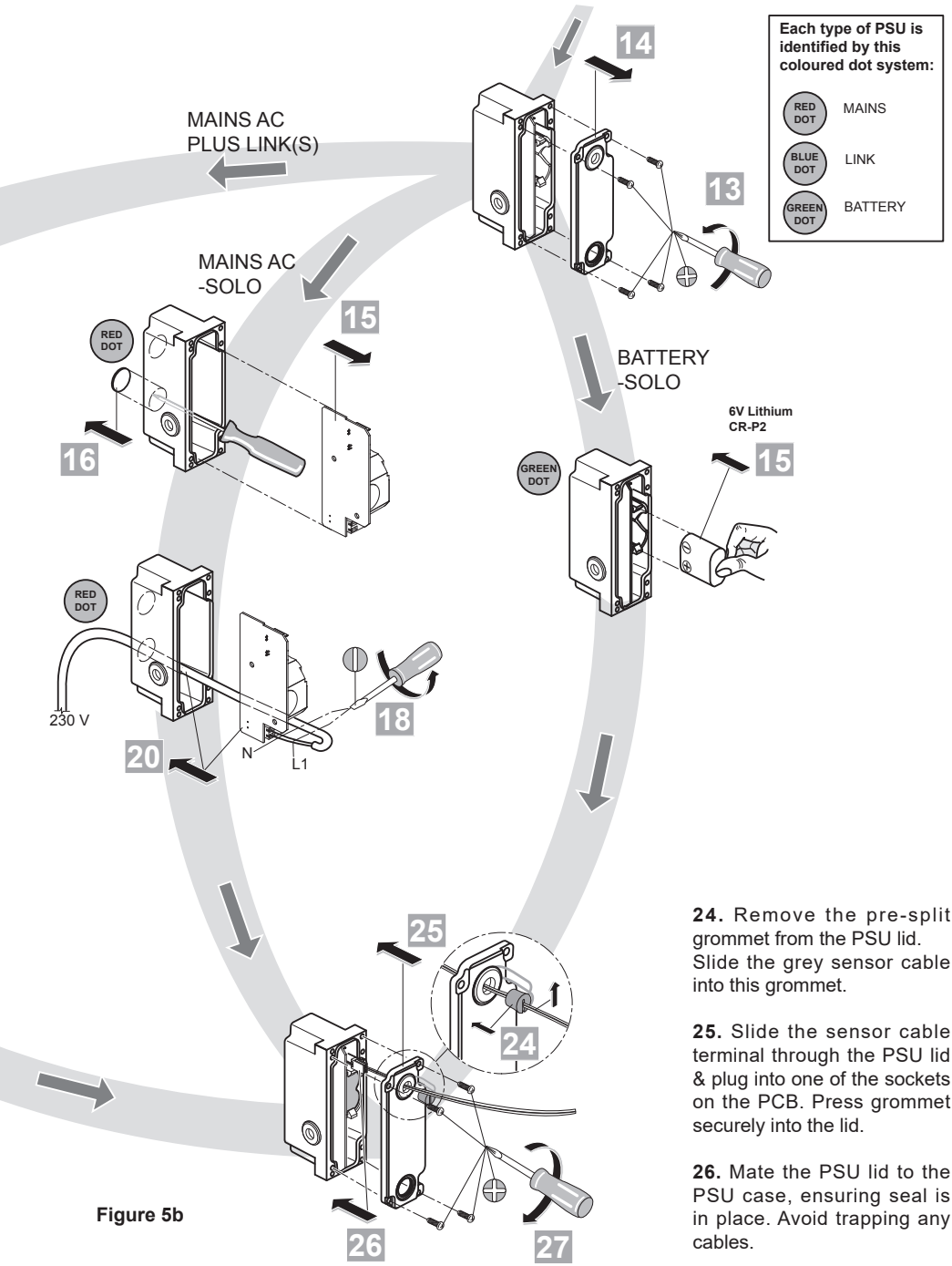


Figure 5b

24. Remove the pre-split grommet from the PSU lid. Slide the grey sensor cable into this grommet.

25. Slide the sensor cable terminal through the PSU lid & plug into one of the sockets on the PCB. Press grommet securely into the lid.

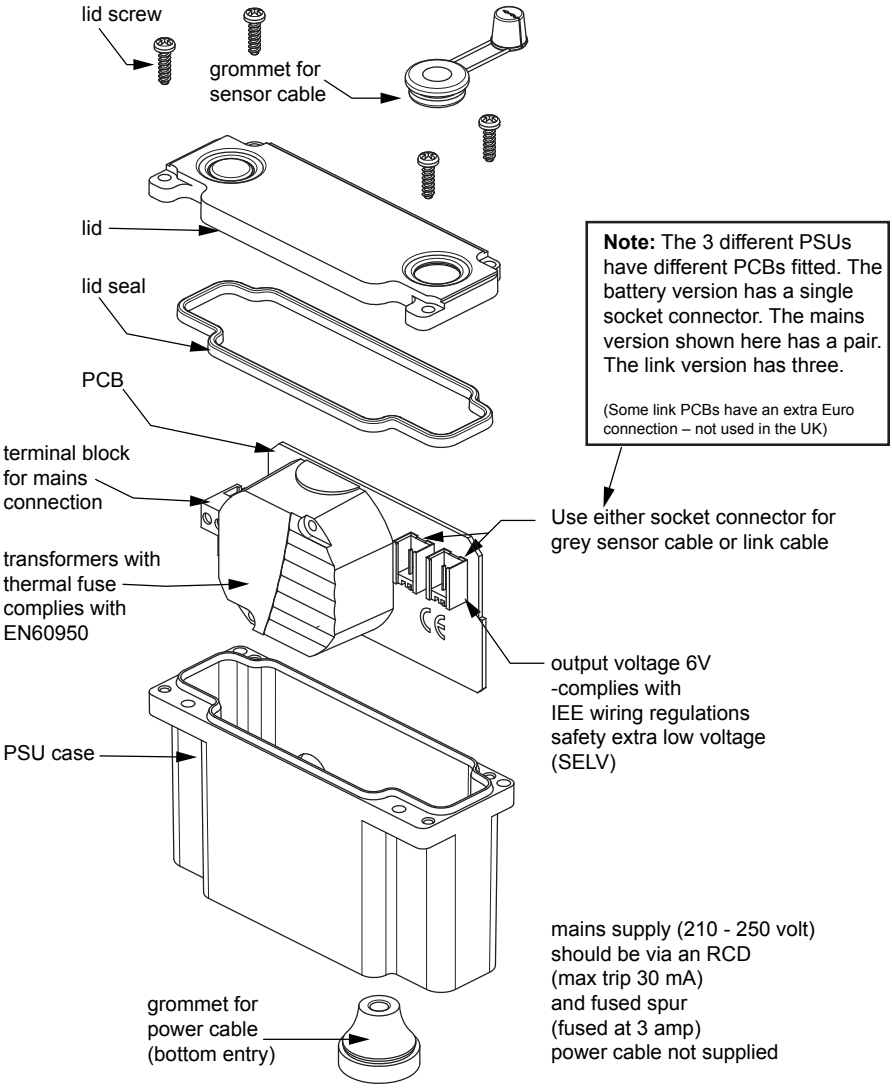
26. Mate the PSU lid to the PSU case, ensuring seal is in place. Avoid trapping any cables.

27. Refit the 4 lid screws securely.

INSTALLATION GUIDE continued…

Electrical connection continued…

28. Mains power cable (not supplied) should be flexible 3A rated (multi-strand) 2 core cable. Prepare the cable for connection into the PCB by carefully stripping back the outer sheath by about 100mm. Strip the wire ends back by about 5mm.
PCB connection: the appropriate wires of the mains cable should connected to the appropriate terminal on the block. The PCB is marked L1 for the live wire & N for the neutral wire. Earth connection is not required.
IMPORTANT: Ensure terminal block screws are firmly tightened & clamp the wires securely.



Shown above: Mains Power Supply Unit (PSU)

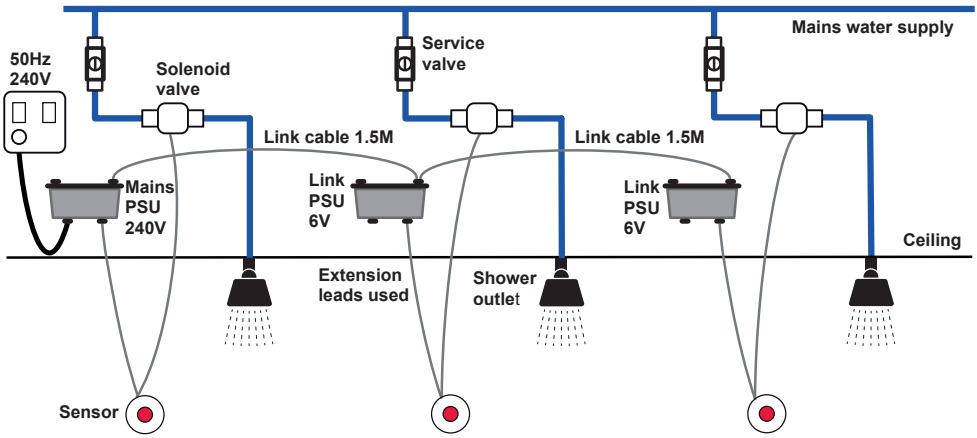
INSTALLATION GUIDE continued…

Electrical connection continued…

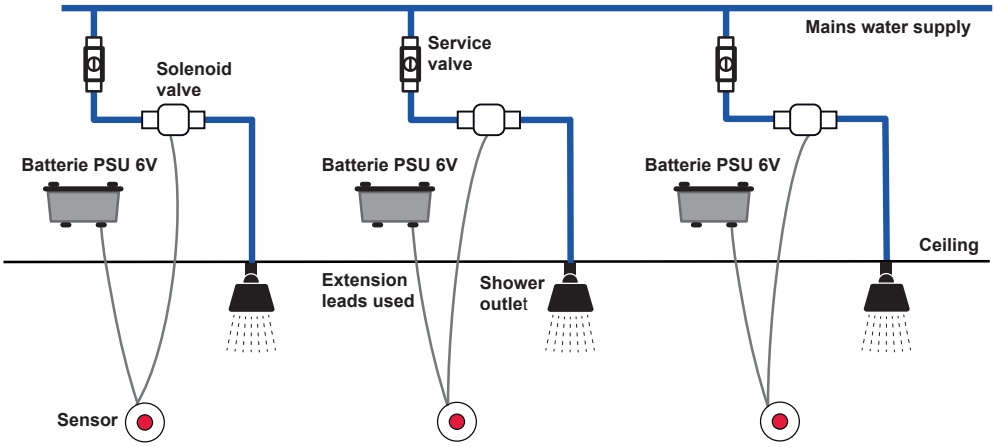
A pair of self-adhesive Velcro-type pads are provided. Attach one to the side of the PSU case & the other to a suitable location on the rear of the mounting panel.

Ensure the selected location does not stretch/stress the cables. Consideration should also be given to keeping the PSU case within easy reach/access for maintenance staff.

IMPORTANT:
Leave the sensor protective sticker in place for at least 20 seconds after powering-on the product. See section 7 regarding sensor ranging. Then sticker can be peeled off.

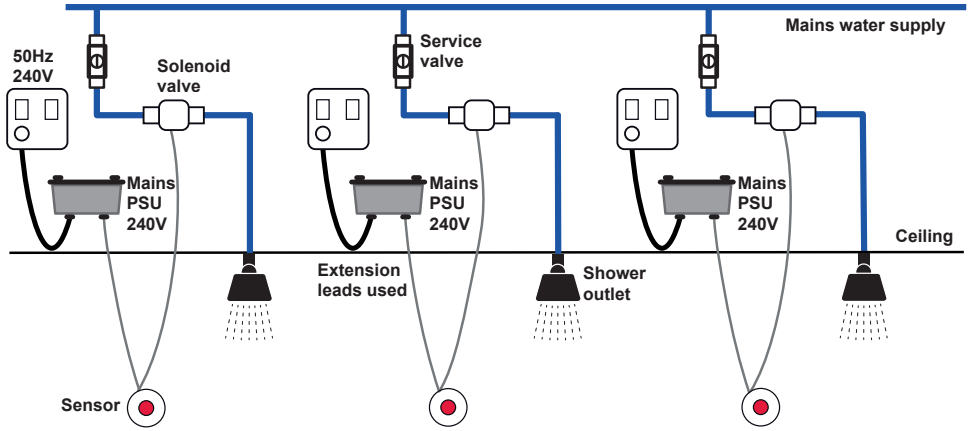


Example above of a shower installation where 1st PSU is mains plus 2x link PSUs

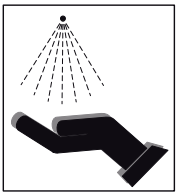


Example above of a shower installation where PSUs are all battery versions.

Electrical connection continued…



Example above of a shower installation where PSUs are all mains versions.

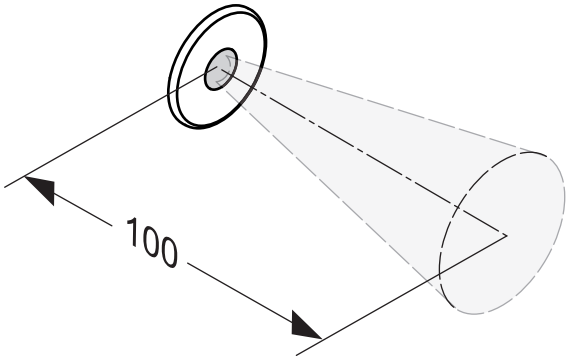


Sensor taps stickers: To complete the installation, 2 stickers are provided which can be stuck onto a wall or panel in close proximity to this product to advise the end user that this product sensor operated.

6 SHOWEROPERATION

Sensorflow 21 products use an Infrared Sensor to activate the system.The sensor is triggered by something reflective (normally the user's hand movement) in the Sensing Region.

User should stand under shower outlet & move a hand aross the sensor within a 100mm or so. The shower will turn on & run for a **default run-time of 30 seconds** … then turn off.



If user moves hand across the sensor whilst water is running, the shower will turn off (toggle On-Off).

The default run time & sensor range can be adjusted, see section 7.

The sensor is factory set to **timed flow mode.**

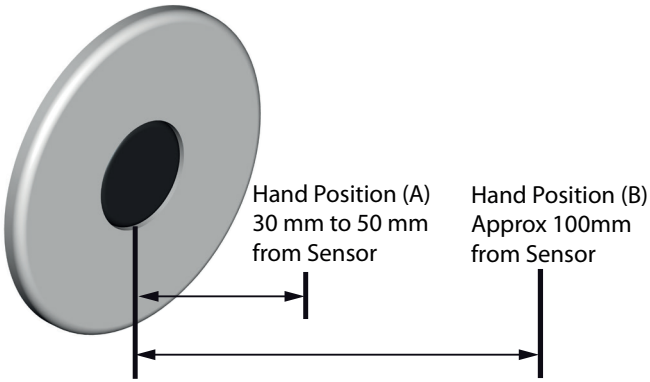
7 SENSOR RANGING & RUN TIME ADJUSTMENT

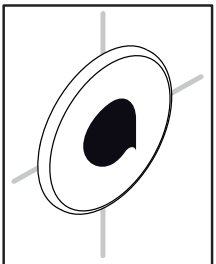
(SENSOR SHOULD NOT BE LOCATED DIRECTLY OPPOSITE A WALL MIRROR.)

The sensing range & run time can both be adjusted.

Default factory settings are 100mm range & 30 seconds run time.
Run time of 30 is considered satisfactory for most applications. Too short a run time will increase the frequency of the user's interactions with sensor.
A long run time can increase water consumption.

This can be done in one of two ways: (A) manually or by (B) using a remote sensor programming unit with some manual actions.





Ensure sticker over sensor face is removed before programming

A. Manually Changing Sensor Range

1. Turn power to sensor OFF. Wait 60 secs, turn power back ON.
2. Red light in the sensor flashes quickly for 5 secs (approx 2 flashes per sec).
3. While the light is flashing, move a hand close to sensor (30 to 50mm).
4. When the light stops flashing, it goes to solid red (stays ON).
5. Move hand to approximately 100mm (to set the sensing range between 50 to 250mm)
6. Wait 5 seconds until sensor light starts to flash again. (Range is now set).

Manually changing run time (with run times restricted)

If required to change run time, carry out steps 1 to 6, then

7. IMMEDIATELY move hand very close to the sensor.
8. After 5 secs., the fast flashing red light in the sensor will flash slowly (1 flash every 2 secs.).
9. Count slow flashes; take hand away from sensing region after required number of flashes:

No of LED Flashes	1	2	3	4	5	6	7	8
Run Time (seconds)	3,25	7,5	15	30	60	120	240	0

i.e.: By taking hand away after 7 slow flashes, the run time will have been set to 240 seconds

DURING SETTING UP PROCEDURE AVOID WEARING HIGH VISIBILITY CLOTHING IN FRONT OF THE SENSOR

B. Remote sensor programming unit is a hand held unit which can be used to change sensor range & other functions if required. Detailed instructions for using this unit are provided with the unit.
(This unit can be purchased separately, for spares code see section 11).

See section 9.2 for a quick overview of how to use this programming unit to adjust the hygiene flush settings.

8 EXTENSION CABLES

To permit the installer to position the PSU in the ceiling area for example, a pair of cable extensions are supplied.

For reference, the spares codes are as follows:

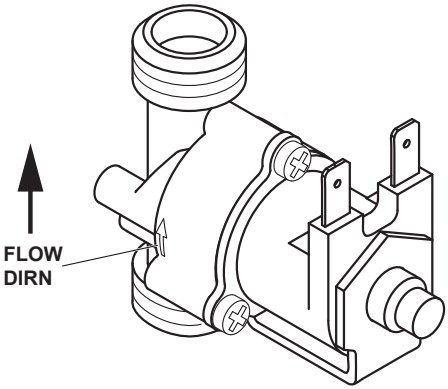
SENSOR & SOLENOID EXTENSION LEADS: A963703NU: (Pair, 2M long).
Containing grey power lead for sensor & black/red lead for solenoid.
(Note: This extension cable is supplied with these products).

LINK CABLES:
A962281NU (1.5M),
A962282NU (3M) &
A960707NU (10M).
(For connecting link a PSU to the mains PSU or another link PSU).

CABLES SHOULD NOT BE CUT (OR SHORTENED), AS THIS WILL INVALIDATE WARRANTY.

9 MAINTENANCE

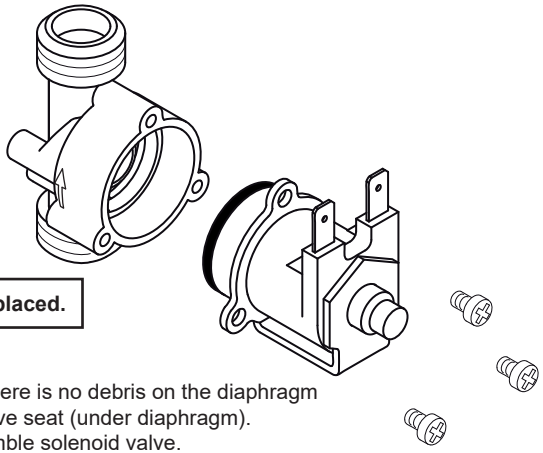
9.1 SOLENOID VALVE



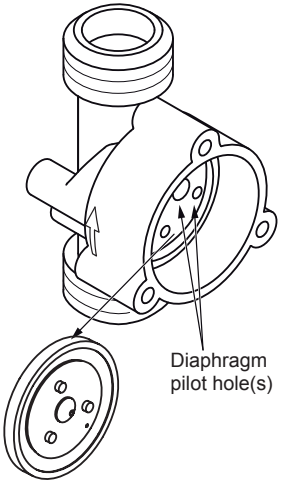
If water continues to flow when the valve should be off, and if the sensor is correctly ranged, then the solenoid valve may have debris lodged in the diaphragm pilot hole or on the valve seat:

- Locate the solenoid valve.
- Isolate the water supplies.
- Disconnect the solenoid valve cables.

- Remove the 3 screws holding the coil.
- Lift off the coil assembly.
- Locate the diaphragm (inside the valve body).
- Clean out the pilot hole(s) – use a thin gauge fuse wire (or similar).

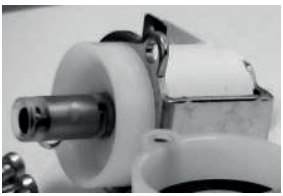


If diaphragm is damaged it should be replaced.



- Ensure there is no debris on the diaphragm or the valve seat (under diaphragm).
- Re-assemble solenoid valve.
- Reconnect water supply, check there are no leaks.
- Reconnect the solenoid valve cables.
- Test the solenoid valve & ensure it is working correctly.

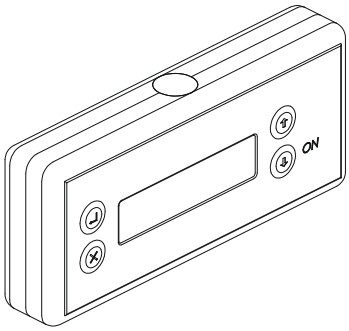
If the solenoid plunger becomes dislodged from its bore, **ensure it is refitted correctly. The end with the small black insert should face towards the diaphragm.** Incorrect assembly will cause continual running.



9.2 Hygiene flush (Automatic)

This hygiene flush is enabled on the urinal products and can be adjusted by the installer or maintenance staff using the optional remote programming unit (for part number see sect.11).

The hygiene flush is used to combat periods of stagnation due to low usage of the product. The function activates the flush (or discharge to auto cistern) automatically if it hasn't been used for a set time period. This function ensures regular movement of water combating bio film growth and bacteria colonisation.



The programming unit should be held pointing towards the sensor at distance of approx. 100mm.

Once enabled, this function will automatically turn the water on for a duration of 1 to 240 seconds if the product has not been used for a period of 6, 12, 24, 48, or 72 hours.

For full details on how to enable this function, refer to the programming instructions supplied with programming unit.

A brief summary of how to navigate the programming unit is as follows:

a) Hand unit ON

b) Navigate to Menu ***4 PARAMETER***

c) ***SENSOR 2013*** (Enter)

d) ***MENU 4.3 ON / OFF*** (Enter)

e) ***AUTO-RINSE FREQUENCY: OFF***
ARROW UP (To required Delay time) (Enter). Recommended: 6 or 12 hours.

f) ***AUTO-RINSE DURATION:*** (15 sec default)
ARROW UP or DOWN (To required Run Time). Recommended: 60sec (max).

g) Point towards Sensor (approximate distance 100mm)

h) Press ENTER

i) ***TRANSMISSION OK*** - if successfully programmed;
ERROR COMMUNICATION 2– if programming failed

j) Press ESCAPE (X) to get ***BACKUP FUNCTION***

k) With BACKUP FUNCTION, previous settings are 'Remembered'
- just point at next Tap / Sensor and press ENTER to repeat.

l) Hand unit turns itself off after 2 minutes of non-use.

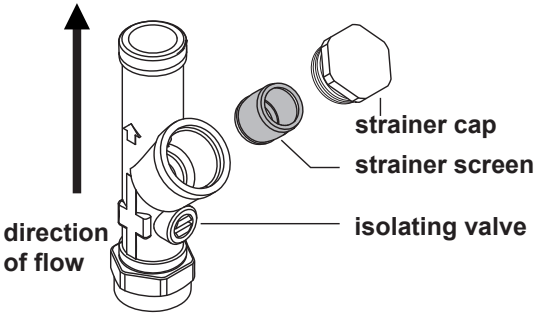
Note: Older handset units will display (c) **SENSOR 2008** (or 2003) by default.
Failed program output message will be (i) **ERROR COMMUNICATION 3.**
Latest handset can program all previous sensor versions 2013, 2008 & 2003.

! Keep hand unit away from the water flow, avoid getting it wet.

9.3 Isolating valve

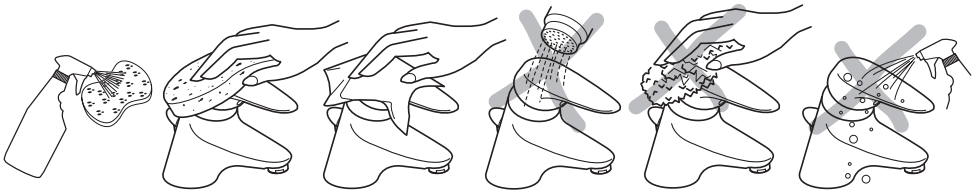
Isolation valve (supplied with this product) MUST be fitted to permit future maintenance of the product. A strainer (filter) is built into this valve.

Isolation valve should be installed in an easily accessible location.



When the isolator screw slot is parallel to the valve body, the valve is open & permits water to flow. To close the valve, rotate the isolator screw 90°.
The filter can be checked & cleaned by unscrewing the cap using a 22mm A/F spanner. Expect some water to escape. The isolating valve can be closed to permit servicing of the solenoid valve, or to remove the product completely.

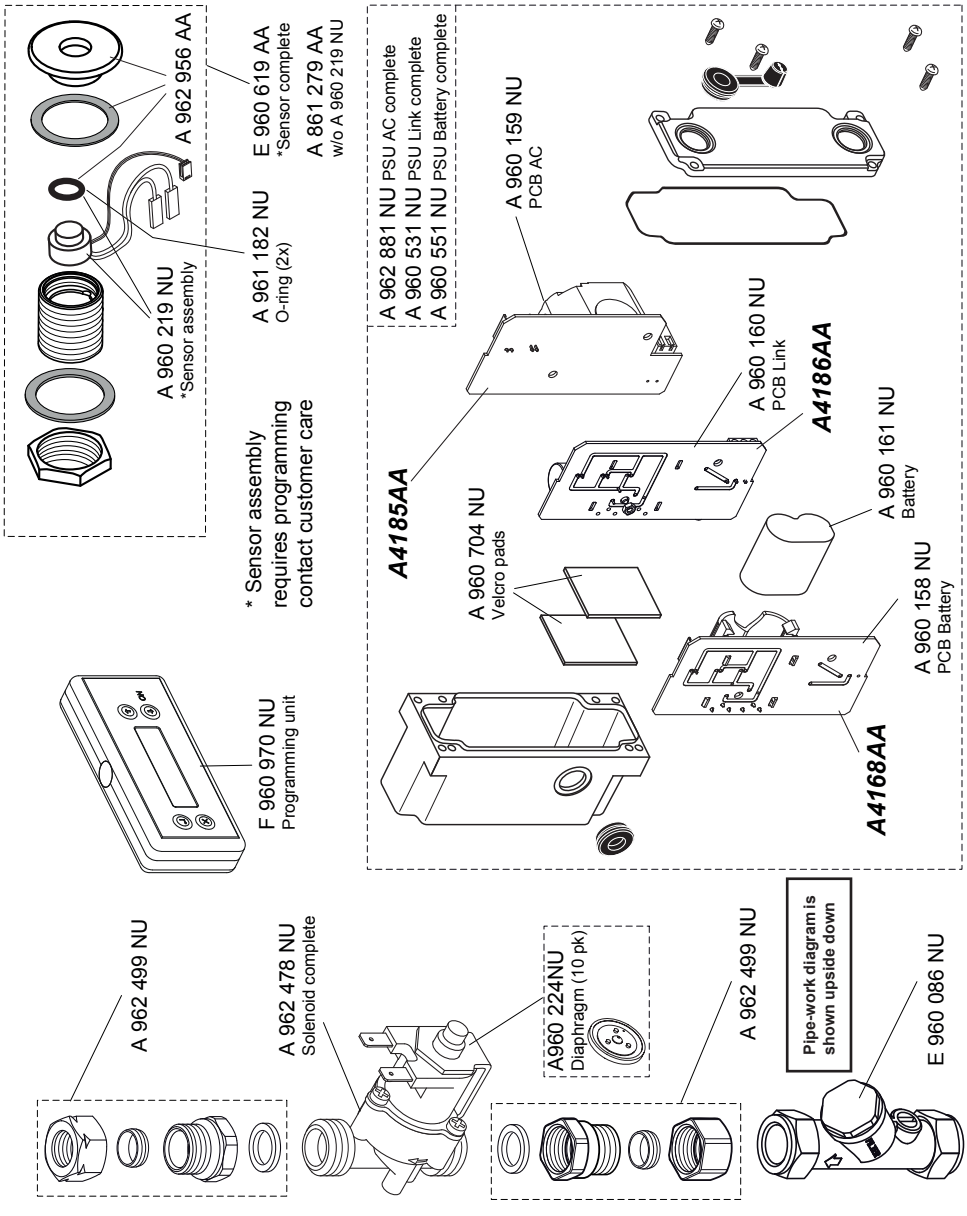
10 CLEANINGCHROMESURFACES



When cleaning chromed products use only a mild detergent, rinse & wipe dry with a soft cloth. Ideally clean after each use to maintain appearance.

Never use abrasive, scouring powders or scrapers. Never use cleaning agents containing alcohol, ammonia, hydrochloric acid, sulphuric acid, nitric acid, phosphoric acid or organic solvents. Use of incorrect cleaning products / methods may result in chrome damage which is not covered by the manufacturer's guarantee.

11 SPAREPARTS



FOR LONGER CABLE OPTIONS, REFER TO SECTION .8

fast part

For more information on spare parts why not visit our spare website:
www.fastpart-spares.co.uk. Or contact customer care

12 SELECTION OF OUR FIXED SHOWER HEADS

B9436AA
Idealrain S1 Rainshower with angled arm & swivel Shower Head

B9437AA
Idealrain M1 & L1 Rainshower with wall arm & swivel shower head

B9441AA
Idealrain M1 & L1 Rainshower with ceiling arm & swivel shower head

B0024AA
Idealrain Cube M1 & L1 Rainshower shower head (arm not included).

B0024AA
Trevi traditional shower head with arm

A5452AA
Anti vandal shower head

NOTE: Some products have alternative shower head diameters & alternative shower arm lengths available.

For more information about our products, visit our websites (See back page for details). Or contact customer care.

For more information about our products visit our websites:
www.armitage-shanks.co.uk
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www.fastpart-spares.co.uk

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