Important:

1. **Electrical connection:** 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 section 1 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
Sensorflow 21 compact basin spouts with integral sensor

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

The spout is operated by the integral infrared sensor which is triggered by hand movement in the sensing region. When the hands are moved away, the water will stop automatically within a couple of seconds.

These products are designed to be supplied with pre-mixed or cold water.

These products are fitted with an anti-vandal outlet which is regulated to 3.8 litres per minute and are supplied with copper inlet pipes.
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.

NOTE: An alternative sensor cover is supplied, with A6527AA ONLY, but is intended to be used by cleaning staff. This cover prevents water flow from being triggering during cleaning. This flexible plastic cover can be snapped onto the spout body over the sensor. See section 8.

DURING SETTING UP PROCEDURE AVOID HIGH VISIBILITY CLOTHING
2 PRODUCT BOX CONTENTS

1x Inlet adaptor
8mm to G1/2" male

1x Power Supply Unit

1x Spout mounting kit

Copper pipe pre-fitted to spout

4x Couplers, G1/2 female to G1/2" male with seals

1x Inline service valve with filter

1x Sensorflow 21 compact angled basin spout with integral sensor

Regulated PCA outlet pre-fitted. See section 10

1x Outlet key

1x Velcro pad set

2x wall / panel stickers

1x corrugated black plastic tube (split)

1x cable tie
1x Spout mounting kit
1x Inline service valve with filter
1x Solenoid valve
4x Couplers, G1/2 female to G1/2" male with seals
1x Inlet adaptor 10mm to G1/2" male
1x Sensorflow 21 compact upright basin spout with integral sensor
1x Power Supply Unit
1x Outlet key
1x Velcro pad set
1x corrugated black plastic tube (split)
2x wall / panel stickers
Regulated PCA outlet pre-fitted. See section 10
Sensor cover
1x copper inlet pipe

Fig.2b
Components common to both A6526AA & A6527AA:
Abbreviations & terminology used
PSU: Power Supply Unit, (mains).
PCB: Printed Circuit Board inside the PSU.
RCD: Residual Current Device
SELV: Safety Extra Low Voltage

4   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 spout.

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

5   NATIONAL PLUMBING & DRAINAGE CODE

The products covered by this installation and maintenance instruction must be installed in accordance with the provisions of AS/NZS 3500 & any relevant local regulations. Installations not complying with AS/NZS 3500 may void the product performance & warranty.
Armitage Shanks strongly recommends that this product is fitted by a professional installer.

5.1 Water supply controlling devices (external)
Pressure & temperature ranges of the incoming water supplies should comply with the limits specified above.
NOTE: Maximum recommended static pressure in AS 3500.1.2 is 500 Kpa.
To avoid exceeding this pressure, install a suitable pressure reducing valve - PRV (or pressure limiting valve - PLV) on both hot & cold incoming water supply systems. A suitable location for a PRV on the hot supply may be on the cold inlet to the heating appliance.
Similarly, if the water supply temperature ranges do not conform as above, then suitable temperature controlling devices should be installed to achieve this.
6 INSTALLATION GUIDE

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.

6.1a Mounting A6526AA

1. Remove the spout mounting kit if already assembled to the spout tail. Ensure the basin rubber washer (smaller diameter one) is in place as shown. This seal should locate into the base recess of the spout. Offer the spout towards the basin hole.

Feed the inlet pipe & cables through basin hole. Allow the spout to rest on the basin seated on the rubber washer.

2. Fit the larger rubber washer, brass washer & back-nut onto the spout tail as shown.

3. Hand tighten the nut against the brass washer until the rubber washer makes contact with the underside of the basin. Ensure the spout is positioned correctly, & then tighten the back-nut securely with a basin wrench (36mm A/F).

A black corrugated plastic tube (split) is supplied with this product. The tube can be slid onto the cables & up into the tail of the spout. This will protect the cables from being damaged.

CABLE COLOURS:
The cables emerging from the spout are connected to the integral sensor.
BLACK & RED cables will connect to the solenoid valve.
GREY cable will connect onto the PCB inside the PSU
Do not cut these cables.

DO NOT apply heat near this product. Heat generated by soldering could damage plastic parts and seals.
6 Installation guide continued…

6.1b Mounting A6527AA

1. Remove the spout mounting kit if already assembled to the spout tail. Ensure the basin rubber washer (smaller diameter one) is in place as shown. This seal should locate into the base recess of the spout. Offer the spout towards the basin hole.

Feed the inlet pipe & cables through basin hole. The cables are protected by the black corrugated plastic tubing (split). Locate the spout tail into the basin hole. Allow the spout to rest on the basin seated on the rubber washer. Refit the corrugated tube if it slips off the cables.

2. Partially fit the two screws into the brass clamping ring as shown.
From below the basin, fit the larger rubber washer, brass washer & clamping ring onto the spout tail as shown.

3. Hand tighten the clamping ring onto the tail so that the screws contact the brass washer which in turn pushes the rubber washer until it makes contact with the underside of the basin. Ensure the spout is positioned correctly, & then tighten the screws securely with a posi drive screw driver.

CABLE COLOURS:
The cables emerging from the spout are connected to the integral sensor.
BLACK & RED cables will connect to the solenoid valve.
GREY cable will connect onto the PCB inside the PSU
Do not cut these cables.
6.2 Plumbing Overview

Once the spout has been secured to the basin, consideration should be given to installing & positioning of the inline valves.

A typical plumbing installation example is shown here. The water is being supplied from below, but can be from any direction.

Short lengths of Ø12.7mm copper pipe (not supplied) have been used between the components. Copper pipe lengths should be cut to suit the installation. Note the Ø8/10mm inlet pipe (fitted to spout) can be trimmed if necessary.

Compression nuts & olives to suit Ø12.7mm (1/2”) pipe are not supplied.

Observe arrow markings on the valves as shown here. Ensure water flows in the direction indicated.

4. To fit inlet adaptor: Slip the small compression nut & olive onto the Ø8/10mm inlet pipe. Push the adaptor onto the inlet pipe up to the shoulder. Slide the olive up to the adaptor & tighten the compression nut (17mm A/F) with an adjustable spanner. Hold the adaptor steady with 22mm A/F spanner.
5. **To fit inlet adaptor cont:** Slip a suitable compression nut & olive onto a short length of Ø12.7mm supply pipe. Push the supply pipe into the adaptor up to the shoulder. Slide the olive up to the adaptor & tighten the compression nut with suitable spanner. Hold the adaptor steady with a 22mm A/F spanner.

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.

10 & 11. **To fit service valve:**
Fit the couplers to both sides as 6 & 8 above.
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.

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.**
6.3 Built-in box option

The components of these products can be installed into a built-in box fitted into the wall below the basin. The box would need a suitably easy to remove lid for gaining access to the components for future maintenance.

Shown below is an example where the pipe work has been taken into a built-in box. The solenoid & service valves have then been plumbed inline.

Depth inside the box should be a lease 80mm to accommodate the solenoid valve in the orientation shown.

This layout permits access to the screws of the solenoid valve allowing diaphragm to be cleaned or replaced.

Similarly, the service valve should be orientated as shown to allow access to the isolating screw & the filter cap.

The power supply unit & cables should be mounted high inside the box in case water accumulates within the box.

Ideally a drain off point at the bottom of the box onto the washroom floor will prevent water accumulating & serve as warning for maintenance.

In this example, the built-in box size is approximately 300x175x80mm. This is the minimum size considered to be practical.

The space allowed between valves is 25mm.

Consideration should be given to allow spanners to be rotated within the box during maintenance. Allow for cable entry points into the built-in box (not shown).
6.4 Electrical connection

Connection of this product to mains power supply should be undertaken by a competent person and should conform to local Wiring Regulations - AS3000 Wiring Rules

Orientation & position of solenoids, and PSU (Power Supply Unit) case can differ from installation to installation.

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

12. Locate the end of the red & black cable which emerges from the spout tail (attached to the rear of the sensor). This cable length is nominal 800mm.

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 -.
6 INSTALLATION GUIDE continued…

6.4 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. Slide out Printed Circuit Board (PCB).

16. Press out the “knock-out” at the base of the PSU case for mains cable entry.

17. Fit a grommet into the hole in the base of the PSU.

18. Feed the power supply flexible cable through this grommet & make connections to terminal block on the PCB. Refer to 24.

19. Slide the PCB back into the PSU ensuring cables are not trapped.
6 INSTALLATION GUIDE continued…

6.4 Electrical connection continued…

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

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

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

23. Refit the 4 lid screws securely.

Example above of an installation where PSUs are all mains versions.

CABLES SHOULD NOT BE CUT (OR SHORTENED), AS THIS WILL INVALIDATE WARRANTY.
6 INSTALLATION GUIDE continued…

6.4 Electrical connection continued…

24. 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.

![Diagram of Mains Power Supply Unit (PSU)](image)

Shown above: Mains Power Supply Unit (PSU)

Other cable information:
Two cables emerge from the spout tail these are connected to the integral sensor. Both cables have nominal lengths of 800 mm.

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.

Extension cables
If the installer wishes to position the PSU in the ceiling area for example, then cable extensions are available:

SENSOR & SOLENOID EXTENSION LEADS: A963703NU: (Pair, 2M long). Containing grey power lead for sensor & black/red lead for solenoid.
6 INSTALLATION GUIDE continued…

6.4 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.

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.

7 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.
Sensorflow 21 products use an Infrared Sensor to activate the system. The sensor is triggered by something reflective (normally hand movement) in the Sensing Region. Sensor is located at the base of the spout & is forward facing.

**A6526AA**

Move hands towards the spout: Water will flow.

Move hands away from the spout: Water will continue to flow for a second or two, and then turn off.

Sensor is factory set to **Proximity Mode**, & is designed to trigger the water flow **only when a hand (or similar) is in the Sensing Region** – just in front of the sensor / outlet.

For this range of products, the sensor is located near the flow outlet and faces downwards, towards the basin.

![Fig.8a](image1)

**A6527AA**

Move hands towards the spout: Water will flow.

Move hands away from the spout: Water will continue to flow for a second or two, and then turn off.

Sensor is factory set to **Proximity Mode**, & is designed to trigger the water flow **only when a hand (or similar) is in the Sensing Region** – just in front of the sensor / outlet.

**NOTE:** If the plastic cover (supplied) is fitted over the sensor, water flow will stop & thus allow the product to be cleaned without triggering the sensor.

![Fig.8b](image2)
9 SENSOR RANGING

If the Sensor detects a strong reflection (or similar), the spout will turn on and off intermittently with no one present (Pulsing On / Off). In the unlikely event that this does happen, the Sensing Range must be reduced.

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

Default factory range setting is 75mm

A. Manually Changing Sensor Range
1. Turn Power to sensor OFF.
2. Wait 30 seconds, turn power ON . . .
3. Red light in sensor flashes for 5 seconds
4. While light is flashing, move hand very close to sensor (A) (palm towards sensor)
5. When light goes SOLID RED move hand to Position (B) 75mm from sensor (This will set the Sensing Range)
6. When light starts to flash again, Move hand away from Sensor / Tap.
7. Wait 5 seconds for sensor to store data.
8. Sensor Range is now set.
9. Check tap works properly by bringing hand towards spout.

(Total range is from 50mm to 250mm).

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 13).

See maintenance section for a quick overview of how to use this unit to evoke the optional hygiene flush function.
If water continues to flow when the tap 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.

To replace/clean/service the outlet, use the outlet key supplied with the product to unscrew the AV housing.

1. Using the side of the key marked “junior” locate the key into the inner ring of the housing.

2. Unscrew housing. Change the outlet & re-secure the housing with the key, ensuring the seal is in place. Ensure the outlet housing is adequately tightened to prevent leaks & run back.

11 MAINTENANCE

11.1 SOLENOID VALVE

If water continues to flow when the tap 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:

10 OUTLET DETAILS

This product is factory fitted with a laminar PCA regulated outlet which is secured with an anti-vandal (AV) housing.

Table 3 shows the flow rate performance for the flow regulator outlet

Table 3 Flow rate data (Q=flow rate)

<table>
<thead>
<tr>
<th>Flow Rate</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8 L/min</td>
<td>300 KPa</td>
</tr>
</tbody>
</table>

To replace/clean/service the outlet, use the outlet key supplied with the product to unscrew the AV housing.

1. Using the side of the key marked “junior” locate the key into the inner ring of the housing.

2. Unscrew housing. Change the outlet & re-secure the housing with the key, ensuring the seal is in place. Ensure the outlet housing is adequately tightened to prevent leaks & run back.
11  Maintenance continued…

• 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.

11.2  Hygiene flush (Automatic)

This hygiene flush is an important optional function of these products which can be enabled by the installer or maintenance staff using the optional remote programming unit (for part number see sect.13).

The hygiene flush is used to combat periods of stagnation due to low usage of the product. The function activates the spout 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.

Keep hand unit away from the water flow, avoid getting it wet.
11 Maintenance continued…

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 4.1 HAND-WASH (Enter)

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

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

12 CLEANING CHROME SURFACES

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.

Outlet cleaning. On a regular basis the outlet should be inspected & cleaned. To unscrew and remove the outlet, see section 10. In areas where lime scale build-up is prevalent this should be avoided by regular cleaning. If it should build up, it will have to be removed. An inhibited proprietary scale solvent can be used such as a kettle de-scaling solvent but it is important to follow the manufacturer’s guidelines. After de-scaling it is important to rinse the parts thoroughly in clean water. Clean carefully and do not use abrasive materials or scrapers.
Spare parts common to both A6526AA & A6527AA

A 861 078 NU
Sensor complete

A 962 478 NU
Solenoid complete

A 960 219 NU
Sensor complete

A 961 182 NU
O-ring only (x2)

A 960 224NU
Diaphragm (10 pk)

A 860 970 AA
Areator complete with AV key

A960 402 NU
Legend plates

A 861 077 NU

A 960 704 NU
Velcro pads

Fig.13c

FOR LONGER CABLE OPTIONS, REFER TO SECTION 6.4

Armitage Shanks pursues a policy of continuing improvement in design and performance of its products. This right is therefore reserved to vary specification without notice.

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