

Honeywell

SV2 Series Valves Premix Accessories

HEATEXCHANGER-000
FARMODFILTER-000B

FARMODSHOE-000B
V2MUTUBEXX-000B

V2MUFITXXXX-000B

INSTALLATION INSTRUCTIONS

EDITION 07.19 · 32-00180E-03 · EN



SPECIFICATIONS

Heat Exchanger Kit Contents:

Heat Exchanger, 1 pulse line insulation sleeve (1 m/39.4 in each), sealing nut + washer for mounting to V2MU mixing unit, (4) M4 x 54 screws, FARMOD (Fuel/Air Ratio Module) insulating shoe and (4) 4.3 x 8 x 11 spacers.

Preferred Pulse Line Materials and

Dimensions

Air: Aluminum or Stainless steel, 8 mm OD x 1 mm thick

Gas: Polyethylene, 8 mm OD x 1.25 mm thick

Reference: Aluminum or Stainless steel, 8 mm OD x 1 mm thick

Fittings should not restrict the inner pulse line diameter

Air Pre-Filter Kit Contents:

Air Pre-Filter, (4) Plastite #6 x 3/8 screws

NOTE: Fittings and tubing must be ordered separately due to the variety of possible appliance configurations.

The customer must furnish an appropriate filter mounting bracket for their chosen location.

Accessory Kits:

Tubing kit part numbers:

Plastic	V2MUTUBEPL-000B
Metal	V2MUTUBEAL-000B (1000mm/39.4 in long)

Fitting kit part numbers for plastic tubing only:

Straight	V2MUFITPLSTR-000B
90 Degree Swivel	V2MUFITPL90D-000B
Tee Swivel	V2MUFITPLTEE-000B

Fitting kit part numbers for metal tubing only:

Straight	V2MUFITMESTR-000B
90 Degree Swivel	V2MUFITME90D-000B

NOTE: Metal (aluminum) pulse line kits come with straight tubing that can be formed to specific application needs by the customer.

INSTALLATION

When Installing These Products...

1. Read these instructions and the appropriate product literature carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Installer must be a trained, experienced combustion service technician.
3. Check the ratings on the product to make sure the product is suitable for your application.

4. After installation is complete, carry out a thorough checkout of product operation as laid out in this document and documents 32-00018 (SV2 Series safety shut-off valve Installation Instructions) and 32-00040 (FARMOD Installation Instructions).

IMPORTANT:

- The fittings selected by Honeywell from specific brands and types assure free sample flow to and from the SV2 Series fuel/air ratio premix valve.
- If any other fittings are used, the sample flow to and from the valve can easily get obstructed and affect the combustion quality.
- For this reason it is strongly recommended to use the fittings selected by Honeywell.
- The Honeywell fittings for metal tubing are suitable for either aluminum or stainless steel tubing.

NOTE: Aluminum tubing shall preferably fulfill the following requirements to mate with the recommended fittings:

- Diameter and wall thickness: 8 x 1 mm.
- Dimensions and tolerances according DIN EN754-7/8.
- Material AW6063 according DIN EN573.
- Tempering T832 according DIN EN515.
- Mechanical properties according DIN EN754-2.

INSTALLATION CONSIDERATIONS

Pulse Line Assembly

IMPORTANT:

- The Fuel/Air Ratio Module operates properly only if the pulse line fittings are properly tightened and the flow through the pulse lines is un-obstructed.
 - Recommended tightening torque for all fittings is 6 ± 1.2 Nm (53.1 ± 10.6 in-lbf)
 - To assemble the aluminum tube and fitting, first tap the reinforcing sleeve into the tube (with the smooth side of the sleeve ahead). Then fit the tube into the fitting and tighten the nut until you

can feel a contact. Finally tighten with 1.5 turns of the nut.

- Proper measures shall be taken to ensure the pulse lines are not twisted or kinked during connection or that they can be unintentionally kinked after the installation has been taken into operation.
- Protect pulse lines against damage and keep the lines free from any contact to potential vibrating surfaces.
- In all cases, avoid creating a siphon-like shape.
- A wide variety of pulse line slopes and shapes may be needed to fit into a particular appliance; best engineering practice would be '1/2 bubble' on a level (1/4 inch of drop per 1 foot of run or about 6mm drop per 0.31m of run). However, practical limitations may require some deviation from it. Please consult Honeywell Thermal Solutions with your particular geometrical arrangement if at doubt.

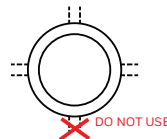


Fig. 1. V2MU mixing unit pulse line connections.

- (Refer to Fig. 1) To avoid condensate from back draft entering any pulse line of the Fuel/Air Ratio Module, downwards pointing pressure ports on the V2MU mixing unit or any other device shall not be used.
- Partial blockage of the air intake of the V2MU mixing unit can potentially influence the air pressure signal to the valve.
 - Proper measures shall be taken to avoid the (partial) air intake blockage of the V2MU mixing unit. Inspection of the V2MU air intake shall be part of the annual maintenance of the appliance.

Air Pre-Filter

The air pre-filter is included with every premix valve and is available as a field replacement part as well. The air pre-filter **MUST** be installed in every premix system, regardless of whether the Heat Exchanger is used.

The filter must be mounted between the

V2MU mixing unit and the valve FARMOD in the air pulse line.

IMPORTANT

- The filter should be mounted as close to the valve FARMOD as possible.
- Replacement of the filter shall be included in the annual appliance maintenance procedures.



Fig. 2. Pre-Filter installation.

Outdoor Air Installations



WARNING

Direct water ingress (e.g. from mist, rain or pressure wash) into the pulse lines should be avoided or prevented

IMPORTANT:

- When the valve is installed in an area with a temperature continuously lower than the combustion air intake temperature, a risk of condensate formation in the air pulse line is present, which can affect the fuel/air ratio control, depending on the appliance and permanently damage the FARMOD and the system.
- In this case it is strongly recommended to install the Honeywell SV2 Series HEATEXCHANGER-000 kit for a complete condensation/dehumidification solution to avoid permanent damage to the FARMOD and the system.
- When using the Honeywell HEATEXCHANGER-000 kit, the valve + FARMOD may be installed above or below the mixing unit + Heat Exchanger, but above is preferred.
- If the potential for condensation exists and the full Honeywell dehumidification system is not used, Honeywell cannot provide any guidance regarding the valve/FARMOD position versus the mixing unit as this configuration has not been designed or tested.
- To prevent condensation formation due to back draft, it is recommended to

purge the application after each burner operation.

- If there is never a risk of condensation, meaning the ambient room temperature is above the combustion air dew point at all times, the SV2 Series Heat Exchanger kit is not needed. In this case the valve + FARMOD can be mounted above or below the mixing unit.

NOTE: The Heat Exchanger and the filter must be mounted between the V2MU mixing unit and the FARMOD in the air pulse line, with the Heat Exchanger first and the filter mounted as close to the FARMOD as possible

NOTE: The Heat Exchanger may be remote mounted instead of direct V2MU mounted. To do so, Honeywell suggests using the following components to ensure system integrity. The selected fittings, thread lengths and seals ensure proper sealing.

- Aluminum tubing, 14 mm OD x 1 mm thick
- Straight male adapter (parallel) from Aignep, ordering number 10485 00 010
 - Remove the flat seal provided with the fitting. There is already a seal inside the nut of the Heat Exchanger, which needs to be present while fixing this fitting inside the Heat Exchanger.
- Straight female adapter from Aignep, ordering number 10500 00 015
 - To avoid leakage between the fitting and the V2MU, add a 18.6 mm OD, 11 mm ID x 1.5 mm thick flat seal constructed of Klingerit, fiber or equivalent material suitable in water applications (rubber is NOT allowed).
- For the assembly of the fittings and aluminum tubing, follow the recommended procedure of the fitting manufacturer.
- The shape of the aluminum tubing MUST allow for continuous drainage of the condensate over the entire length from the Heat Exchanger to the V2MU.

INSTALLATION SEQUENCE



WARNING

Explosion or Fire Hazard Can cause severe injury, death, or property damage.

- Turn off gas supply before starting installation.
- Disconnect power supplies before beginning installation.
- More than one disconnect can be involved.

The heat exchanger can be directly mounted to the V2MU mixing unit as shown in Fig. 3–Fig. 4 and can be mounted in either a vertical or horizontal position, depending on the appliance configuration and available space.

For remote mounting the heat exchanger, the customer must provide the appropriate bracket and/or install and connect as part of their appliance offering. Pulse line tubing and fitting between the mixer and heat exchanger is then required. The inner diameter of the connection between the heat exchanger and the mixer shall not be smaller than 9mm at any point.

NOTE: The Heat Exchanger must always be mounted in a position that allows condensate to drain to the mixing unit. Accordingly, ensure that the mixer connection on the heat exchanger is the lowest point in regards to the heat exchanger mounting, otherwise water will be trapped inside the heat exchanger and will not drain appropriately. When mounting the heat exchanger vertically, orient its port C facing upwards. Refer to Fig. 3– Fig. 4.

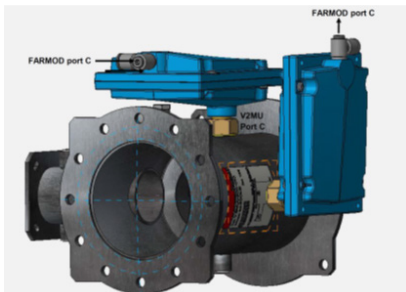


Fig. 3. Heat exchanger mounting example with horizontal mixing unit orientation (shown with 300kW Mixing Unit).



Fig. 4. Heat exchanger mounting example with vertical mixing unit orientation (shown with 300kW Mixing Unit)

IMPORTANT:

- The SV2 series premix valve and its accessories have been developed to provide an optimum fuel-air ratio performance.
- Honeywell cannot guarantee the valve or mixer performance, operation, efficiency or reliability if any non-Honeywell accessories are used with the SV2 Series premix platform.

Excessive moisture can partially or fully clog the pulse lines between the mixing unit and the FARMOD and damage the FARMOD. In this case, the system will fail safely by causing a flame out, a valve lockout and/or may render the FARMOD unusable. Note that the FARMOD is field replaceable should this last instance occur.

A. FARMOD Insulation Installation

1. Take care that dirt does not enter the gas valve or pulse lines during handling.
2. Remove the original four (4) torx screws as shown in Fig. 5 and completely remove the Fuel Air Ratio Module from the valve body.

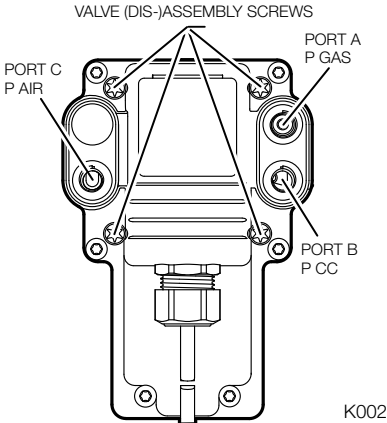


Fig. 5. FARMOD pulse line connections/ mounting.

3. Place the FARMOD into the insulation shoe and thread the long screws provided with the kit through the combination. Refer to Fig. 6.

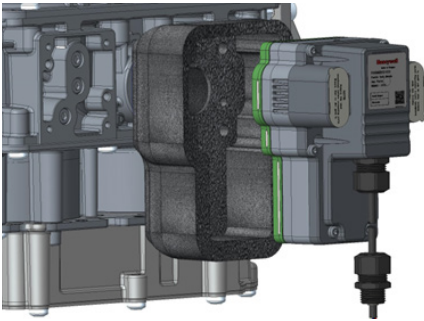


Fig. 6. FARMOD with insulation shoe.

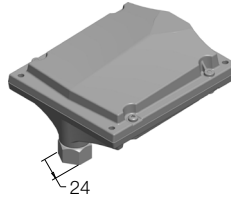
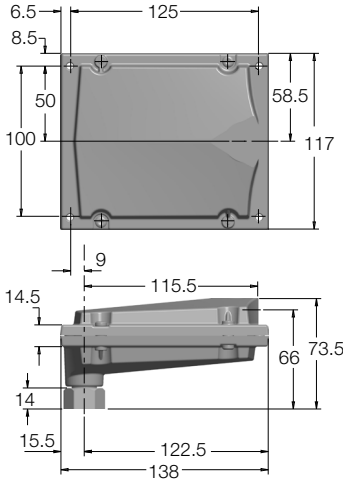
4. Inspect/clean the sealing and mating surfaces.
5. Attach the combination to the valve body using the (4) M4 x 54 screws and (4) 4.3 x 8 x 11 spacers provided. Verify the insulated FARMOD is flush against the valve casting. The maximum tightening torque is 2 ± 0.2 Nm (18 ± 2 in-lbf).

B. Heat Exchanger Mounting

NOTES:

- V2MU0300-010: If mount the Heat Exchanger directly to the V2MU, rotated inwards and aligned with the V2MU body, there is not enough room to assemble the recommended metal reference pulse line tubing + fitting on the same side of the mixing unit, unless the Heat Exchanger is slightly rotated out of the way.
- V2MU0500-010, V2MU0800-010 and V2MU1000-010: Can mount the Heat Exchanger in this location/orientation. if a 90 degree metal fitting is used and rotated slightly sway from the Heat Exchanger.

1. Remove the selected mixing unit port "C" plug (refer to Fig. 3 and Fig. 4). Refer to the Installation Considerations section for appropriate mounting location selection.
2. Mount the Heat Exchanger to one of the V2MU mixing unit "C" ports using the included union nut and washer. Refer to Fig. 3, Fig. 4, and Fig. 7. The recommended tightening torque is 1.5 Nm (13.3 in-lbf). Ensure the seal is in place.



K003

Fig. 7. Heat Exchanger mounting hardware.

NOTE: DO NOT connect the Heat Exchanger to a downwards pointing port C on the Mixing Unit! Refer to Fig. 1.

- Use the tubing and fittings (purchased as separate kits) to connect the Heat Exchanger to the pre-filter "In" port (see section C).
- Attach the 2 remaining pulse lines to the FARMOD ports A (gas) and port B (reference), following the instructions of the burner or boiler manufacturer. Refer to Fig. 5. Attach each pulse line to its corresponding fitting on the mixing unit or burner to the FARMOD.
- Use the pulse line insulation sleeve included with the Heat Exchanger kit to insulate the air feedback line(s) for the system.

C. Air Pre-Filter Mounting

- Select the appropriate mounting location, as close to the FARMOD as possible.

NOTES: The customer must furnish an appropriate mounting bracket for their chosen location.

Maximum screw length is bracket thickness plus 9mm. Preferably use the Honeywell provided screws.

Recommended torque 0.8 ± 0.05 Nm (7.1 ± 0.44 in-lbf)

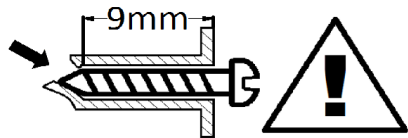


Fig. 8. Maximum screw length.

- Use the tubing and fittings (purchased as separate kits) to connect the pre-filter "Out" port to the valve FARMOD port C (air). Refer to Fig. 2 and Fig. 5.
- If using the Heat Exchanger, use the pulse line insulation sleeve included with the Heat Exchanger kit to insulate the air feedback line(s) for the system.

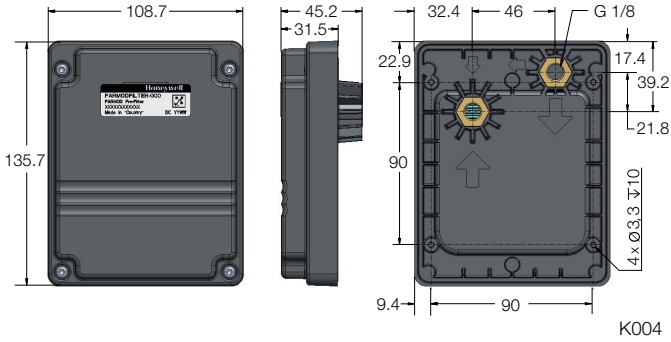


Fig. 9. FARMODFILTER dimensions and mounting.

IMPORTANT:

- Replacement of the filter shall be included in the annual appliance maintenance procedures.
- The FARMOD is standard equipped with a heating device. The heater will be powered whenever the valve electronics are powered. The FARMOD will feel warm after 1 hour of being powered. This is normal.
- As part of the appliance adjustments during commissioning, the site-specific calibration of the SV2 Series valve/appliance should be performed when the valve/appliance has reached a typical operating temperature for its installation/application in order to minimize the impact of component temperature changes on the fuel/air ratio.

For more information on this product and the entire SV2 Series product line, please refer to the SV2 Series User Guide located on our website at <https://combustion.honeywell.com/sv2>

For More Information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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