WHEN USED WITH SPDT (3 WIRE) CONTROLLER (Figure 8): On a call for heat, the NO thermostat contacts close, the valve opens. When the valve reaches the fully open position, the cam actuated SW1 closes and SW2 opens. When the heat for is satisfied the NC thermostat contacts open, energizing the valve through SW1 to close the valve. When the valve reaches the fully close position, the cam actuated SW1 closes and SW1 opens anticipating the next call for heat cycle.

In a power failure the valve will stay at whatever position it was in when the power was interrupted. When power is restored, the valve will respond to the controller demand.

CHECKOUT
1. Raise the set point of the thermostat above room temperature to initiate a call for heat. Pac valve position lever should move downward to the open position.
2. For auxiliary switch models, observe all control devices. The valve should open and the auxiliary switch (if present) should close and make at the end of the opening stroke to activate auxiliary equipment.
3. Lower the set point of the zone thermostat below room temperature.
4. Observe the control devices. The valve should close and all auxiliary equipment should stop.

SERVICE
This valve should be serviced by a trained, experienced service technician.
1. If the valve is leaking, drain system OR isolate valve from the system.
2. Check to see if the cartridge needs to be replaced.
3. If the motor or other internal parts of the actuator is damaged, replace the entire actuator assembly.

NOTE: Honeywell hydronic valves are designed and tested for silent operation in properly designed and installed systems. However, water noises may occur as a result of excessive water velocity. Piping noises may occur in high temperature (over 212°F [100°C]) systems with insufficient water pressure.

VC2, VC4, VC60, VC8
On-Off Actuator for VC Series Balanced Hydronic Valves

SPECSIFICATIONS
The specifications following are nominal and conform to generally accepted industry standards. Honeywell is not responsible for damages resulting from misapplication or misuse of its products.

Voltage: 100-130 V 50-60 Hz Model Black
200-240 V 50-60 Hz Model Red

Power consumption: 6 Watts Max. at nominal Voltage (during valve position change).

Use 24 V Class 2 transformer. Provide 6 VA per valve for transformer and connection wire sizing.

Maximum Duty Cycle: 15%

When opened in 6 seconds @ 60 Hz (20% longer @ 50 Hz). VC800 Series opens in 12 seconds @ 60 Hz (20% longer @ 50 Hz).

Electrical termination: Available in 3 versions: (1) Molex™ (header # 39-30-1060). Requires mating connector (receptacle/housing # 39-01-2050). OR (2) integral 1 meter (nominal) 18AWG wire. OR (3) 5 feet (1.5 meter) plenum-rated cable per UL94-SV. Includes plastic adapter for use with 3/8" flexible conduit.

End switch rating:
2.2 A inductive from 5 to 110 Vac.
1.0 A inductive above 110 to 277 Vac.

Min. DC switching capability: 5 mA @ 24 Vdc

Honeywell Limited-Limitée
35 Dynamic Drive
Toronto, ON M1V 4Z9
Canada

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U.S.A.

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Toronto, ON M1V 4Z9
Canada

Honeywell
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MODELS:
Actuator Only: VC2, VCO, VC60, VCB (See Table 1)

Bodies (Order Separately): VCC... (See 95C-10919)

Actuators

<table>
<thead>
<tr>
<th>Model No.</th>
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<th>Control input</th>
<th>Auxiliary Switch</th>
<th>Special Features</th>
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### IMPORTANT:
For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (preferably 5 micron) 10% side stream system filter(s). Remove all filters before flushing. Limit flow through the filter to 5–10% of total system flow to prevent 'stairing' the system. Ensure filter cartridge is changed frequently enough to prevent clogging.

Put the VC actuator manifold lever in the manual open or the fully open (down) position to allow initial system flushing with the actuator mounted. This may be done without electrical hook-up. Alternatively, reusable flush caps, part # 272866B, may be purchased separately for use in initial flushing of dirty hydronic systems.

Do not use boiler additives, solder flux and wetted materials which are petroleum based or contain mineral compounds. Suitable for use as 15 mm compression fitting. The actuator can also be installed at right angles to the valve.

### INSTALL ACTUATOR
Installation of the actuator does not require draining the system, provided the valve body and valve cartridge assembly remain in the pipeline. Wiring may be done either before or after the actuator is installed. 1. The actuator head is automatically latched to the valve. Align the motorized valve can be opened by firmly pushing the red manual lever down to midway and in. This holds the valve in the open position. This “manual open” position may be used for fitting, venting, draining the system or for opening the valve in case of power failure. The valve can be restored manually to the closed position by depressing the red manual lever lightly and then pulling the lever out. The valve and actuator will return to the automatic position when power is restored.

**NOTE:** The manual opener can be manipulated only when in the up position. The motorized valve can be opened by firmly pushing the red manual lever down to midway and in. This holds the valve in the open position. This “manual open” position may be used for fitting, venting, draining the system or for opening the valve in case of power failure. The valve can be restored manually to the closed position by depressing the red manual lever lightly and then pulling the lever out. The valve and actuator will return to the automatic position when power is restored.

### PLUMBING
Refer to the VC Series Cartridge Valve Installation and Instruction sheet, form number 95C-10919, for plumbing instructions.

---

**Table 1 - VC Actuator Model Identifiers**

**Table 2 - VC Valve Assembled dimensions**

**Table 3 - Flow Fitting Size**

**Figure 1 - Nominal dimensions in inches and millimetres**

**Figure 2 - Latch Mechanism to detach Actuator**

**Figure 3 - Flexible Conduit Attachment**

**Figure 4 - Wire configuration for MOLEX™ models for SPDT controller.**

**Figure 5 - Wire configuration for MOLEX™ models for SPST controller.**

**Figure 6 - Wire configuration for MOLEX™ models for SPST controller.**

**Figure 7 - Wiring color code for cable models for SPDT controller.**

**Figure 8 - Wiring color code for cable models for SPST controller.**
IMPORTANT:
For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (preferably 5 micron) 10% side stream system filter(s). Remove all filters before flushing. Limit flow through the filter to 5-10% of total system flow to prevent ‘starving’ the system. Ensure filter cartridge is changed frequently enough to prevent clogging.

Put the VC actuator manual lever in the manual open or the fully open (down) position to allow initial system flushing with the actuator mounted. This may be done without electrical hook-up. Alternatively, reusable flush caps, part # 272866B, may be purchased separately for use in initial flushing of dirty hydronic systems.

Do not use boiler additives, solder flux and wetted oil, hydrocarbons, or ethylene glycol acetate which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol (antifreeze solutions).

TO INSTALL ACTUATOR
Installation of the actuator does not require draining the system, provided the valve body and valve cartridge assembly remain in the pipeline. Wiring may be done either before or after the actuator is installed. When installing this product:
1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. Always conduct a thorough checkout when installation is completed.
5. While not necessary to remove the actuator from the body, it can be removed for ease of installation. The actuator can be installed in any position to suit the most convenient wiring mode.
6. An extra 1" (25 mm) head clearance is required to remove the actuator.

WHEN INSTALLING THIS PRODUCT:
1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
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6. An extra 1" (25 mm) head clearance is required to remove the actuator.

CAUTION:
Disconnect power supply before connecting wiring to prevent electrical shock and equipment damage.

On 24 V systems, never jumper the valve coil terminals, even temporarily. This may damage the thermostat.

MODELS:
Actuator Only: VC2, VC4, VC60, VC80 (See Table 1)

Bodies (Order Separately): VC2... (See 95C-10919, for plumbing instructions).

PLUMBING
Refer to the VC Series Cartridge Valve Installation and Instruction sheet, form number 95C-10919, for plumbing instructions.

CAUTION:
Discounted power supply before connecting wiring to prevent electrical shock and equipment damage.

When installing this product:
1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. Always conduct a thorough checkout when installation is completed.
5. While not necessary to remove the actuator from the body, it can be removed for ease of installation. The actuator can be installed in any position to suit the most convenient wiring mode.
6. An extra 1" (25 mm) head clearance is required to remove the actuator.

When connecting power supply before connecting wiring to prevent electrical shock and equipment damage.

On 24 V systems, never jumper the valve coil terminals, even temporarily. This may damage the thermostat.

VC2010z00 24V-50Hz SPDT -- Molex
VC2011z00 24V-50Hz SPDT -- Cable
VC2012zzz00 [1] 24V-50Hz SPDT -- Molex
VC2011zzz00 24V-50Hz SPDT -- Yes Molex
VC401zzzz00 200-240V-50/60Hz SPST -- Molex
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VC401zzzz00 200-240V-50/60Hz SPST -- Yes Cable
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VC601zzzz00 200-380V-50/60Hz SPST -- Cable
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VC801zzzz00 200-415V-50/60Hz SPST -- Molex
VC801zzzz00 200-415V-50/60Hz SPST -- Cable
VC801zzzz00 200-415V-50/60Hz SPST -- Yes Molex
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NORTH AMERICA STANDARD MODELS

Table 2 - VC Valve assembled dimensions

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Table 1 - Actuator Model Identifiers

Figure 1 - Nominal dimensions in inches and millimetres
OPERATION

When the thermostat contacts open, RLY1 is de-energized and the valve motor is driven closed through SW1 and the NC contacts of SW3. When the valve reaches the fully closed position, the cam operated SW2 closes and SW1 opens anticipating the next call for heat cycle.

CHECKOUT

1. Raise the set point of the thermostat above room temperature to initiate a call for heat. Pod valve position lever should move downward to the open position.
2. For auxiliary switch models, observe all control devices. The valve should open and the auxiliary switch (if present) should close and make at the end of the opening stroke to activate auxiliary equipment.
3. Lower the set point of the zone thermostat below room temperature.
4. Observe the control devices. The valve should close and all auxiliary equipment should stop.

SERVICE

This valve should be serviced by a trained, experienced service technician.

1. If the valve is leaking, drain the system OR isolate valve from the system.
2. Check to see if the cartridge needs to be replaced.
3. If the motor or other internal parts of the actuator is damaged, replace the entire actuator assembly.

NOTE: Honeywell hydronic valves are designed and tested for silent operation in properly designed and installed systems. However, water noises may occur as a result of excessive water velocity. Piping noises may occur in high temperature (over 212°F [100°C]) systems with insufficient water pressure.

SPECIFICATIONS

These 2-position (open/close) control actuators are used with VC2, VC100, 1100, 6000 and 6100 series hydronic valves in a normal indoor environment to provide quick opening/closing to control the flow of hot and/or chilled water or glycol solution to 60% concentration. They are designed for on-off “zone” control of heating/cooling systems, or to control individual fan coil, baseboard radiator or convectors.

VC80 series valve actuators are designed to be used with hard-wired electronic thermostats with series anticipator or power-stealing thermostats. Recommended control thermostats include T8601D, T8401C, T8380 and T8360 families.

VC actuators use cam-operated cartridge travel to resist water hammer. Internal limit switches prevent motor overrun.

High humidity conditions may have an effect on the actuator. Dehumidification may be required if necessary.