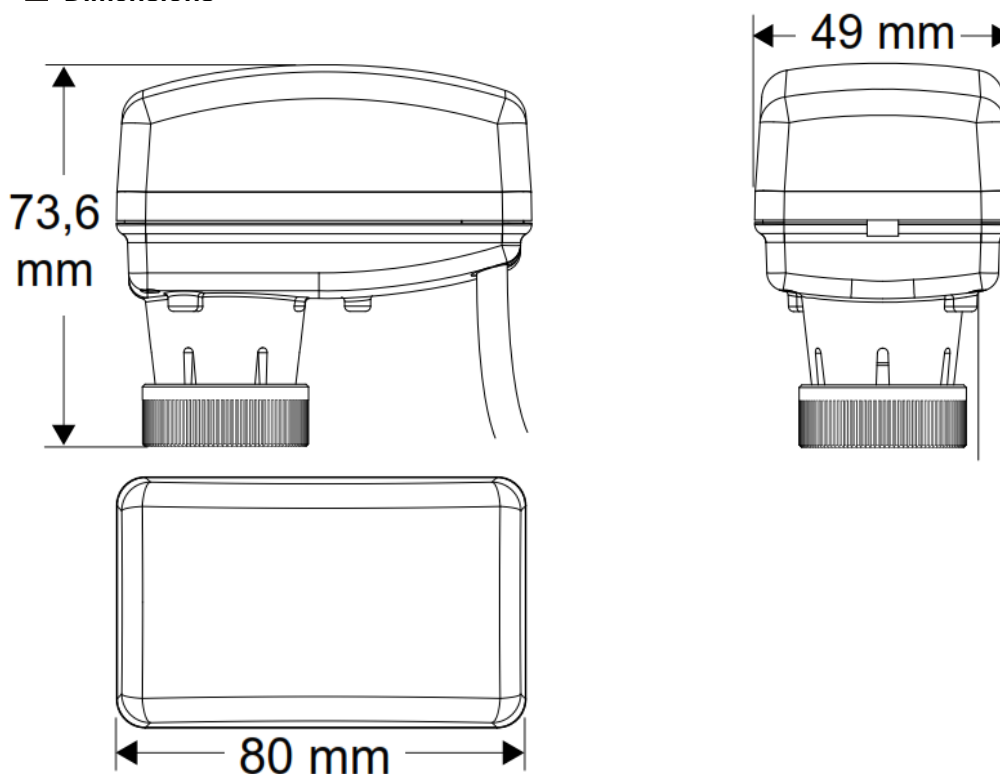


# HERZ Motorised Actuator

Data sheet for **HVACT** Issue 0421

## ☑ Dimensions



## ☑ Models

- |               |                                                                                                                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HVACT24-01    | HERZ Motor Valve Drive, Floating 3-point, M28 x 1.5, 24 V, 50 Hz actuating force 140 N, operating voltage 24 V AC, threaded connection M28 x 1.5, running time 13 sec/mm                                         |
| HVACT230-01   | HERZ Motor Valve Drive, Floating 3-point, M28 x 1.5, 230 V, 50 Hz actuating force 140 N, operating voltage 230 V AC, threaded connection M28 x 1.5, running time 13 sec/mm                                       |
| HVACTMOD24-01 | HERZ Motor Valve Drive, Proportional 0 – 10V, M28 x 1.5, 24 V, 50 Hz normally closed, actuating force 160 N, operating voltage 24 V AC,DC stroke detection, threaded connection M28 x 1.5, running time 8 sec/mm |

☑ **Features and Benefits**

Features	Benefits
<b>Auto-commissioning</b>	Simplifies installation, since models require no adjustments in the field.
<b>Auto-shutoff Actuator Motor</b>	Extends actuator life by reducing drive time and excessive motor wear.
<b>Durable, Heat-stabilized, Plastic Resin Enclosure</b>	Allows the actuator to be used in applications with fluid temperatures up to 203°F (95°C).
<b>Actuator that Can Be Mounted after the Valve Body is Piped</b>	Simplifies installation and provides application flexibility.
<b>Compact Design</b>	Allows for installation in confined locations, such as fan coil applications.
<b>Operating Status LED</b>	Provides direct, visual indication of the actuator operating status.
<b>Actuator That Can Be Rotated after it is Mounted on the Valve Body</b>	Simplifies installation by allowing the actuator wiring entry to be located in any direction.

☑ **Operation HVACT24-01**

When the signal is applied to the black and red wires, the actuator stem extends. When the signal is removed the actuator remains in position. If the signal remains applied to the red wire, the actuator will time out and shut off the motor after approximately 90 seconds.

When the signal is applied to the black and orange wires, the actuator stem retracts. When the signal is removed the actuator remains in position. If the signal remains applied to the orange wire, the actuator will time out and shut off the moto after approximately 90 seconds.

☑ **End of stroke Confirmation HVACT24-01**

When the signal is applied in the same direction, the actuator turns on every 2 hours and drives in the signal direction for approximately 90 seconds to confirm the end of stroke position.

☑ **Operation HVACT230-01**

When the signal is applied to the blue and brown wires, the actuator stem extends. When the signal is removed the actuator remains in position. If the signal remains applied to the brown wire, the actuator will time out and shut off the motor after approximately 90 seconds.

When the signal is applied to the blue and orange wires, the actuator stem retracts. When the signal is removed the actuator remains in position. If the signal remains applied to the orange wire, the actuator will time out and shut off the motor after approximately 90 seconds.

☑ **End of stroke Confirmation HVACT230-01**

When the signal is applied continuously in the same direction, the actuator turns on every 2 hours and drives in the signal direction for approximately 90 seconds to confirm the end of stroke position.

☑ **Operation HVACTMOD24-01**

When the power is applied, the actuator self-calibrates performing a complete cycle to detect the real valve stroke. The actuator moves the stem down for a complete mechanical valve stroke until no stroke changes are detected. Once the lower valve stem position is detected, the actuator moves the spindle of the actuator up until the spindle is fully retracted in the actuator and the microprocessor counts and stores the full stroke of the actuator, then the actuator drives the spindle down in order to detect the upper valve stem position and being able to calculate the real stroke, subtracting the gap value. As soon as the spindle of the actuator touches the valve stem, the actuator leaves the self-calibration procedure (led red blinking) and enter in the operational mode (led green).

☑ **End of stroke Confirmation HVACTMOD24-01**

When the input signal drives the actuator to completely extend the spindle for 2 hours, the actuator turns on the motor and drives the spindle in accordance with the signal for approximately 60 sec. to confirm the end of the stroke position.

☑ **Operating Status Indicators**

The HVACT24-01 & HVACT230-01 are equipped with a green LED that provides information about the operating status.

The HVACTMOD24-01 is equipped with a bi-colour green/red LED which provides information about the operating status and diagnostics.

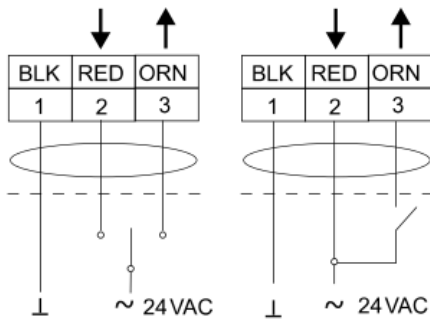
**HVACT24-01 & HVACT230-01 LED Status**

LED Status		Description
Off	●	No Power Supply
Green Blinking	◐	Moving to Position
Green Blinking	◑	End Stroke Confirmation
Green Steady On	☀	End Stroke Reached

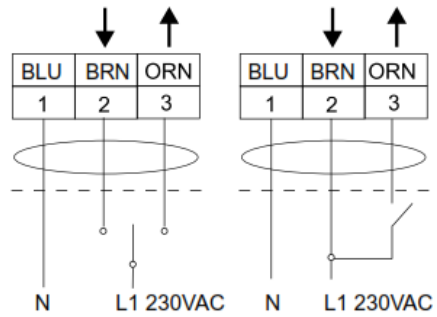
**HVACT24-01 & HVACT230-01 LED Status**

LED Status		Description
Off	●	No Power Supply
Green Blinking	◐	Moving to Position
Green Blinking	◑	End Stroke Confirmation
Green Steady On	☀	Position Reached
Red Blinking	◐	Cycle
Red Steady On	☀	4/20 mA or 2/10 VDC Signal Lost

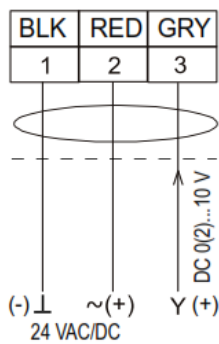
☑ HVACT24-01 Wiring Diagram



HVACT230 -01 Wiring Diagram

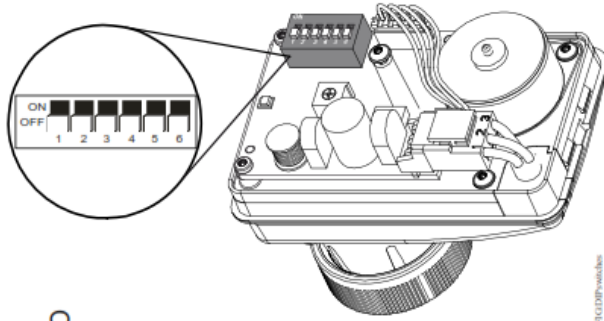


☑ HVACTMOD24-01 Wiring Diagram



**HVACTMOD24-01 DIP Switch Settings**

The proportional model has six DIP switches that allow the user to configure the actuator in the field. The actuator is shipped from the factory with all the DIP switches in OFF position apart from DIP switch 4 which is set to ON (RA), required for PICVs.



1	<input type="checkbox"/> OFF <input checked="" type="checkbox"/> ON	<input type="checkbox"/> 0...10VDC <input type="checkbox"/> 0...20mA	<input type="checkbox"/> 0...5VDC	<input type="checkbox"/> 5...10VDC	<input type="checkbox"/> 2...10VDC <input type="checkbox"/> 4...20mA
2					
3					
4		<input type="checkbox"/> DA	<input checked="" type="checkbox"/> RA		
5		<input type="checkbox"/> LIN	<input type="checkbox"/> Eq%		
6		<input type="checkbox"/> VDC	<input type="checkbox"/> mA		

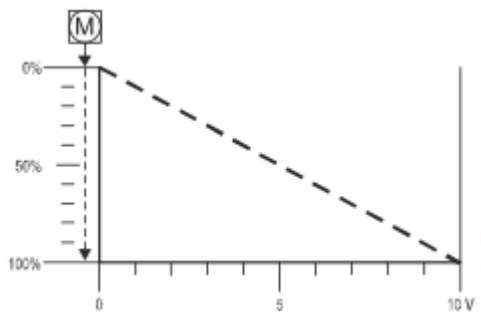
1:	CONTROL SIGNAL	4:	ACTION
2:	RANGE	5:	CURVE
3:		6:	SIGNAL TYPE

**DIP Switch 1, 2, 3 and 6**

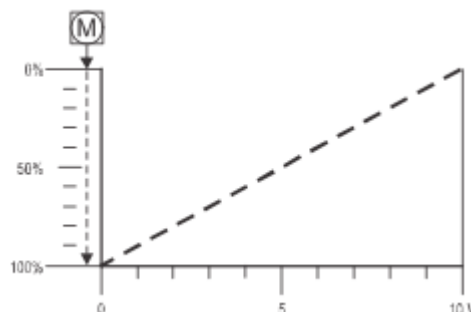
DIP switch 1, 2, and 3 allow the user to change the analogue input ranges. To change from voltage analogue input to current analogue input set DIP switch 6 accordingly.

**DIP Switch 4**

DIP switch 4 allows the user to change the action of the actuator in relation to the analogue input. DIP switch 4 is off (DA) when the signal increases and the actuator stem extends.



DIP Switch 4 off (DA)



DIP Switch 4 On (RA)

**DIP Switch 5**

DIP switch 5 allows the user to change the control characteristic of the actuator in order to obtain a combination of valve and actuator Linear or Almost Equal Percentage.

**DIP Switch 5 OFF (Linear)**

When DIP switch 5 is set to off, we recommend you use the valve with the linear or equal percentage control characteristic.

**DIP Switch 5 ON (Almost Equal Percentage)**

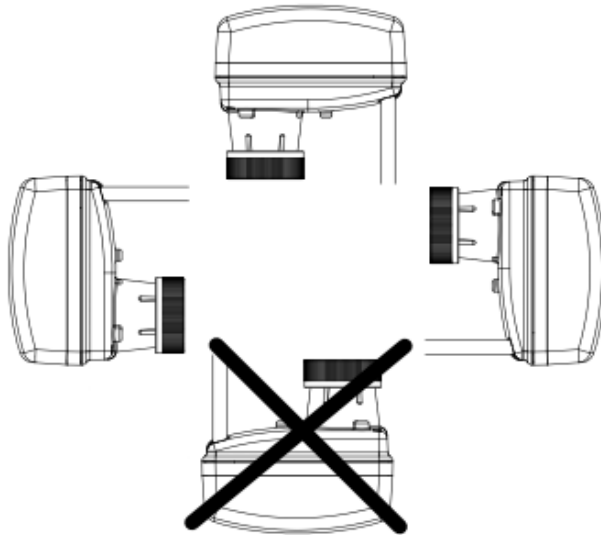
When DIP switch 5 is set to on, we recommend you use the valve with the quick opening or on/off control characteristic.

**☑ Mounting Instructions**

When mounting the actuator on terminal unit valves, follow these instructions:

Never use the actuator as a mounting lever.

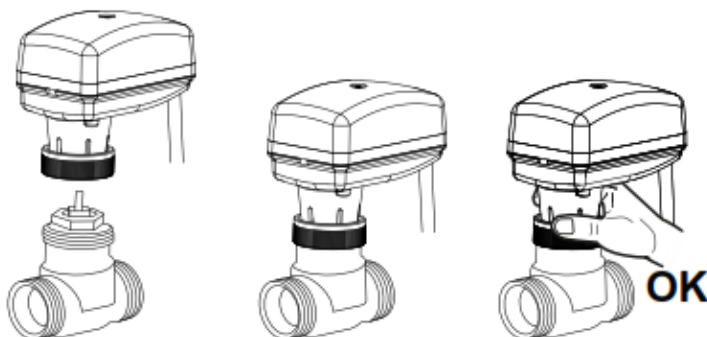
It is recommended that the valves be mounted upright or at angles not greater than 90° in an easily accessible location. Do not mount the actuator upside down to avoid dripping water, as this could enter the housing and damage the mechanism or motor.



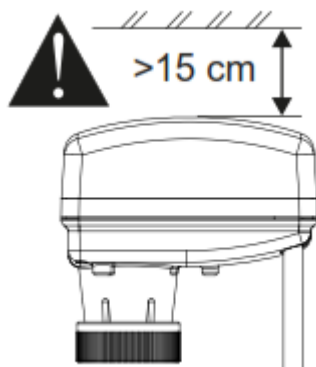
Do not cover with insulating material.

Hand tighten only. Do not over tighten. When mounting the actuator on the valve, only hand tighten the brass threaded coupling. Using a wrench to tighten the coupling will damage the actuator, cause it to fail, and will void the warranty. Position the actuator on the valve before tightening by hand.

Never grab the actuator and forcibly turn it. To reposition the actuator on the valve, loosen the coupling, reposition the actuator and then retighten the brass coupling by hand.



Sufficient clearance must be allowed for actuator removal



Check to be sure the actuator spindle is in its full retracted position as received.

Do not connect the power supply before mounting the actuator on the valve.

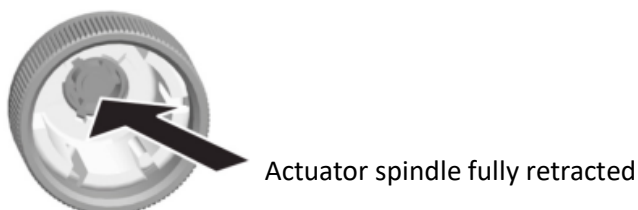


**Removing the actuator from the valve**

**IMPORTANT:** Do not remove the actuator without switching off its power supply  
 In some situations, you may need to mount the actuator to a new valve with different closing dimensions. For example, if a Pressure Independent Control Valve (PICV) needs to be repositioned with a new stroke setting to suit new flow requirements, or a new valve with different closing dimensions replaces the old one.

To safely mount the actuator to the new valve, complete the following steps:

1. Set the input signal to the actuator, to move the valve stem to the max extended position of fully open (the actuator spindle will move to the retracted position)
2. Switch off the power supply on the actuator
3. Remove the actuator
4. Check that the actuator spindle is in the retracted position (see images below)
5. Set the new valve position (for PICV) or replace with a new valve
6. Refit the actuator to valve
7. Switch on the power supply on the actuator
8. The actuator will perform the standard or auto stroke detection cycle again to reposition itself based on the new valve setting.



All specifications and statements within this document are according to information available at the time of printing and meant for informational purpose only. Herz Armaturen reserves the right to modify and change products as well as its technical specifications and/or its functioning according to technological progress and requirements. It is understood that all images of Herz products are symbolic representations and therefore may visually differ from the actual product. Colours may differ due to printing technology used. In case of any further questions don't hesitate to contact your closest HERZ Branch-office.