Electrothermal Actuator (two point)
for Pressure Independent Control Valve
Model MY4500G_ _ _ _

■ General

The model MY4500G_ _ _ _ electrothermal actuator as a two-point actuator, with “First-Open” function and stroke index. Available as the model closed with current “off”. The actuator can be installed in any position. Simple plug-in connection to valve adapter.

■ Features

- Two point actuator
- Connection thread M 30 x 1.5
- “First-Open” function
- Stroke index
- Normally closed when current “off”
- Can be installed in any position

Safety Instructions

Please read instructions carefully and use the product as specified in this manual. Be sure to keep this manual nearby for quick reference.

■ Usage Restrictions

As an electromagnetic wave equipment for office use (Class A), this equipment is intended to use in other than home area. Sellers or users need to take note of this.
This product is targeted for general air conditioning.
Do not use this product in a situation where human life may be affected. Azbil Corporation will not bear any responsibility for the results produced by the operators.

■ Recommended Design Life

It is recommended that this product be used within the recommended design life.
The recommended design life is the period during which you can use the product safely and reliably based on the design specifications.
If the product is used beyond this period, its failure ratio may increase due to time-related deterioration of parts, etc.
The recommended design life during which the product can operate reliably with the lowest failure ratio and least deterioration over time is estimated scientifically based on acceleration tests, endurance tests, etc., taking into consideration the operating environment, conditions, and frequency of use as basic parameters.
The recommended design life of this product is 10 years.
The recommended design life assumes that maintenance, such as replacement of the limited life parts, is carried out properly.
Refer to the section on maintenance in this manual.

■ Warnings and Cautions

⚠ WARNING	Alerts users that improper handling may cause death or serious injury.
⚠ CAUTION	Alerts users that improper handling may cause minor injury or material loss.

■ Signs

	Notifies users that specific actions are prohibited to prevent possible danger. The symbol inside ⃠ graphically indicates the prohibited action. (For example, the sign on the left means that disassembly is prohibited.)
	Instructs users to carry out a specific obligatory action to prevent possible danger. The symbol inside ● graphically indicates the actual action to be carried out. (For example, the sign on the left indicates general instructions.)

⚠ CAUTION	
	Before wiring, setting, maintenance, or replacement, be sure to turn off the power to this product. Failure to do so may result in electric shock or device failure.
	Provide a circuit protector (e.g., a fuse or circuit breaker) for the power source. Failure to do so may cause a short circuit leading to fire or device failure.
	Install, wire, and use this product under the conditions specified by this manual. Failure to do so may cause fire or device failure.
	Do not put a load or weight on this product. Doing so may damage the product.
	Installation and wiring of the actuator must be performed by personnel qualified to do instrumentation and electrical work. Mistakes in installation or wiring may cause fire or electric shock.
	All wiring must comply with applicable codes and ordinances. Otherwise there is a danger of fire.
	Do not carelessly touch this product when it is used to control hot water. Doing so may result in burns, because the product reaches a high temperature.

■ Model Numbers

Base number	Control	Power supply	Feedback	Cable	-	Description
MY45						Actuator for model VY4511A_ _ _ _ PICV
	00					Two point control
		G				230 V AC
			0			Without position feedback
				1		Cable drawer
					00	Fixed

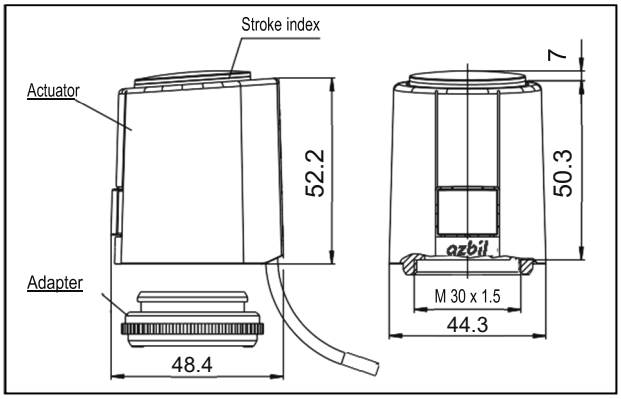
Note: There are only the following 1 model number for electrothermal actuators.

MY4500G0100.

■ Specifications

Item		Specification
Model		Actuator for model VY4511A_ _ _ _ pressure independent control valve
Operating voltage		230 V AC ±10 %; 50/60 Hz
Operating capacity		1 W
Operating characteristic		Normally Closed (NC)
Startup load		< 550 mA for a max. of 100 ms
Continuous current		4.5 mA
Closing/opening time		about 5 min (the time may vary according to the ambient temperature)
Connecting cable		length 1 m
Weight		0.1 kg
Maximum stroke		5 mm
Positioning force		> 90 N
Enclosure protection rating		IP 54 according to EN 60529 in any position
IEC Protection class		II according to EN 60730
Fluid temperature		0 – 100 °C
Ambient temperature	Operating	0 – 60 °C
	Transport / Storage	-25 – +60 °C
Ambient relative humidity	Operating	≤ 85% (Non-condensate)
	Transport / Storage	≤ 85% (Non-condensate)
Installation position		No restriction. But vertical downward installation should be tried to avoid.
Maintenance		Maintenance-free
Installation location		Indoor use Note: Salt air, corrosive gas, flammable gas, and organic solvent must be avoided.
Factory preset position		Closed

■ Dimensions



Dimensions of actuators with connection thread M 30 x 1.5

■ Maintenance space

Install this product in a place where wiring, configuration, and replacement can be done, leaving enough space around the product so that such work can be carried out after installation.

■ Function

The model MY4500G_ _ _ _ electrothermal actuators work with an expansion type working element which is heated electrically by a PTC heating element. A silent operation and low power consumption are thus guaranteed.

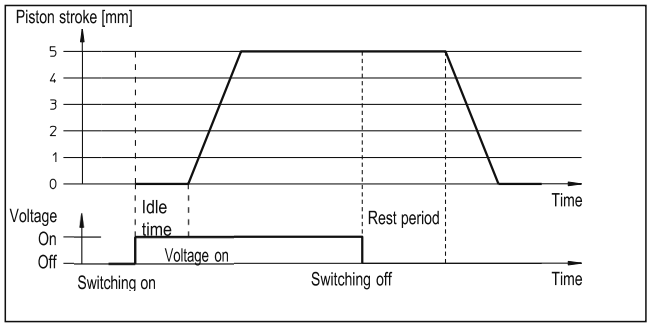
As for the model of electrothermal actuator closed with current “off”, the valve is opened constantly by the lift of the push rod each time the operating current is switched on

– after termination of the idle time (stroke index in extended position). By switching off the operating current and after termination of the rest period, the valve is closed constantly by the closing pressure of the pressure spring (stroke index in retracted position).

Due to the First-Open function, the actuators are opened with the current “off”. This allows for the heating system’s operation during construction work even if the individual room temperature control’s electric contact has not yet been terminated. During commissioning, the First-Open function is released automatically by switching the operating current on (more than 6 min.) and the actuator is ready for operation.

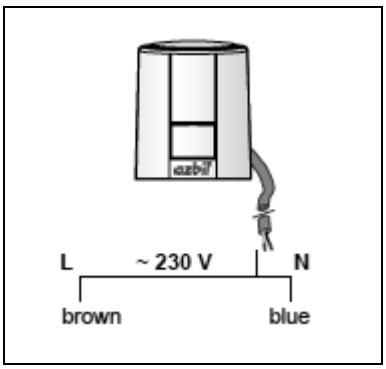
If the electrothermal actuators are used for room temperature control, it is recommended to carry out the room temperature setback via the room thermostat.

If for some reason a setback of the flow temperature is required during night hours or at other times, a setback of the room temperature via the room thermostat should be carried out additionally.



Characteristic line, closed with current “off”

■ Connecting



Note: Connect the brown wire to the live (L) side.

■ Installation and fitting

Electrical connections must be carried out in accordance with the requirements of the local Electricity Board.

Please observe: The brown cable must be connected to phase (L). It is recommended to fuse the electric circuit. The connecting cable must not contact with hot pipes or similar as excessive heat will accelerate the ageing of the cable insulation. When choosing the switching contacts or network fuses, the startup load of the heating element must be taken into consideration. The loss of potential must not exceed 10 % so that the indicated operating time is kept.

Max. length of cable for 1 actuator, with given wire cross sections (indication with a voltage drop of about 5 %, with 230 V voltage drop about 11.5 V).

Wire cross section [mm^2]	230 V max. length [m]
2 x 0.75	1051
2 x 1.00	1402
2 x 1.50	2102
2 x 2.50	3504

When installing several actuators, the indicated length of cable must be divided by the number of connected actuators. Dimensioning of the transformer is determined by the startup load of the actuators.

Rule-of-thumb: $P_{Transformer}$ = 7.2 W x n

n = Number of actuators

The actuator is mounted with the help of the valve adapter, no tools are required. The valve adapter is manually screwed onto the valve and the actuator is fixed to the adapter by use of the plug-in connection.

The model MY4500G_ _ _ _ electrothermal actuator can be installed in any position but a vertical (stroke index pointing upwards) or horizontal installation is preferable. In the case of vertical downward installation, special circumstances (e.g. dirt water) may reduce the service life.

■ Application

The electrothermal actuators with two point control are used for heating, ventilation and air-conditioning. The actuators are activated through controls with two point output or pulse-width modulation and can be combined with the model VY4511A_ _ _ _ PICV with connection thread M 30 x 1.5.

■ Disposal

Dispose of this product as industrial waste in accordance with your local regulations.

Do not reuse all or any part of the product.

■ Related documents

AB-7642 Pressure Independent Control Valve
Model: VY4511A_ _ _ _ Specifications/Instructions

Refer also to the following documents that are included with the product.

AX-384E Electrothermal Actuators (two point)
Model: MY4500G0100
Installation instructions

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■ 基于 SJ/T11364-2014「电子电气产品有害物质限制使用标识要求」的表示式样

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
产品主体及电缆	×	○	○	○	○	○
适配器	○	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。
○: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。
×: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

CE

This product complies with the essential requirements of the Electromagnetic Compatibility Directive (EMCD) and the Low Voltage Directive (LVD)
EMCD: EN 60730-1, EN 60730-2-14
LVD: EN 60730-1

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Specifications are subject to change without notice.

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Rev. 0.0 Apr. 2023