

Motoric Valve Drive: 24 V 3-Point

The OEM Motoric Valve Drive: 24 V 3-Point is a motor-driven actuator of valves for heating and cooling systems. The area of application is the energy-efficient control of water-bearing valves in the area of building services and automation.

The OEM Motoric Valve Drive: 24 V 3-Point is controlled via a control device with 2- or 3-point control output (e. g. a temperature controller) or a building management system. The actuator is equipped with an LED for function display as well as with a manual valve setting which can be used e. g. for maintenance or for installation purposes.

The actuator has been specially developed for the customer-specific use in OEM businesses. The modular structure offers diverse differentiation possibilities for customer-specific designs.



1.1 Features

- OEM Design
- Stroke 8,5 mm
- Force in the variants 100 N, 125 N, 150 N or 200 N
- Regulating time 30 s/mm (parametrisable in factory also 15 s/mm)
- 2- or 3-Point control operation
- Function display via LED
- Very short response time
- Maximum energy efficiency due to complete motor control via micro controller
- Self- locking gear in all positions, de-energized
- Antitheft function by removable locking latch
- Time-dependent deactivation in case of the final stops
- Manual valve setting
- Very low power consumption
- Valve adapter system
- Simple installation without tools
- 100 %-protection in case of leaky valves (IP54)
- 360° installation positioning
- Low noise and maintenance-free
- Plug-in cable 1 m
- High functional safety and long term expected lifetime

1.2 Variants

In its basic version, the OEM Motoric Valve Drive: 24 V 3-Point is delivered without logo, with fixed connection cable and retracted valve pressure plate. The following variant is available in the basic version

Typ	Operating voltage	Stroke	Force	Regulating time	Scope of supply
M3P 46805-20	24 V AC/DC	8,5 mm	100 N	30 s/mm	<ul style="list-style-type: none"> • OEM Motoric Valve Drive: 24 V 3-Point in individual packaging • Plug-in 1 m connection line, white PVC 3 x 0.22 mm² • Installation instruction in 12 languages
M3P 46825-20	24 V AC/DC	8,5 mm	125 N	30 s/mm	
M3P 46835-20	24 V AC/DC	8,5 mm	150 N	30 s/mm	
M3P 46845-20	24 V AC/DC	8,5 mm	200 N	30 s/mm	
Additional variants:		M3P 468x5-3x = 15 s/mm			

1.3 The following extention possibilities resp. differentiations from basic version are available optionally

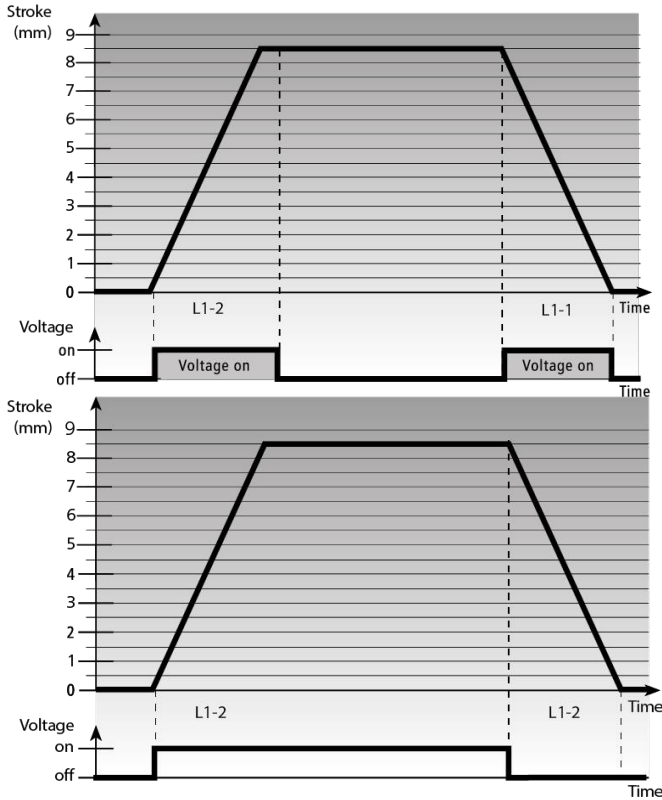
Cable lengths	2 m, 3 m, 5 m, 10 m, 15 m; PVC in white – 3 x 0,22 mm ² – special lengths up to 20 m, plug-in cable
Valve adapter	Available for almost all valves
Packaging	Packaging can be manufactured and printed individually according to requirements.
Imprint on casing	Imprint of the company logo and the individual type designation

Please contact us if you have further wishes.

2 Function

The actuator mechanism of the OEM Motoric Valve Drive: 24 V 3-Point works with a stop motor, a micro controller and a gearing mechanism. The force generated by the drive motor is transferred to the valve pressure plate, opening or closing the valve.

2.1 Operation



3-point control:

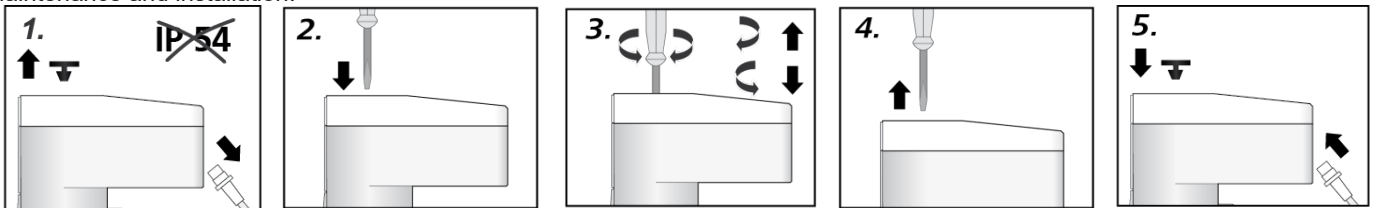
The OEM Motoric Valve Drive: 24 V 3-Point is activated via the two electrical connections L1-1 (open) and L1-2 (closed). The desired moving direction is selected via operation voltage at one of the connection lines, extracting or retracting the valve pressure plate. Operation voltage at L1-2 retracts the valve pressure plate, operation voltage at L1-1 extracts it. After reaching the final positions, the motoric valve drive will switch off, depending on a time-overflow. If the operation voltage is switched-off before reaching a final position, the drive remains in its current position.

2-point control:

The OEM Motoric Valve Drive: 24 V 3-Point can also be used for a 2-point control. For this, a continuous voltage must be applied to the electric connection L1-1. Operation voltage at L1-2 retracts the valve pressure plate to its final position. The valve pressure plate remains retracted until operation voltage is released from L1-2. When there is no activation any more, the valve pressure plate extracts to its final position. After reaching the final position, the motoric valve drive switches off, depending on a time overflow. If both lines are switched off before reaching a final position, the drive remains in its current position.

2.2 Manuel valve setting

The manual valve setting allows to bring the valve pressure plate to the desired position in de-energised status. This facilitates e. g. maintenance and installation.



1. Remove the protective plug and the connection line, or switch off the voltage supply.

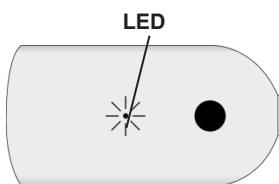
2. Introduce a screwdriver (0.3 x 2 mm) into the manual valve setting device.

3. Turn to the right or left for extracting or retracting, respectively. **Note:** When the stop is reached, turn back by 1/4.

4. Remove the screwdriver after reaching the desired position.

5. Install the protective plug and connect the connection line.

2.3 Function display via LED



The OEM Motoric Valve Drive: 24 V 3-Point is equipped with a multi-coloured LED for the signalling of operating statuses. Green, orange and red are used as signal colours. Signalling is only performed if the valve drive is supplied with operating voltage.

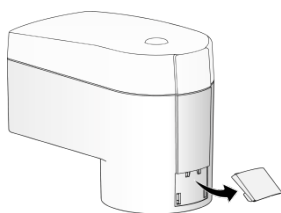
Error conditions are indicated with steady red light, when drive is supplied with 24 V.

Valve pressure plate moves in (retracts): green LED is lightning

Valve pressure plate moves out (extracts): green and red LED are lightning (Light color is orange)

The LED is lighting 3 seconds after power-on, to eliminate a flashing LED when using impulse-control. Moves the actuator against the upper or lower stop, the motor and LED are switching-off after a time-limit.

2.4 Antitheft device



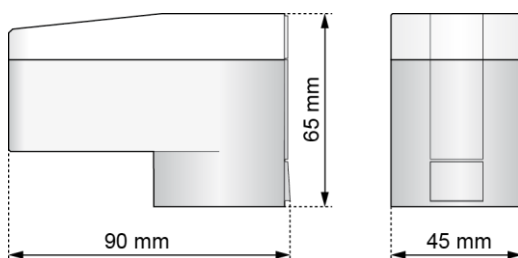
The OEM Motoric Valve Drive: 24 V 3-Point can be protected against unauthorised access by a simple removal of the locking latch.

3 Technical Data

Type	M3P 468x5	
Operating voltage	24 V AC, -10 %... +20 %, 50-60 Hz 24 V DC, -20 %... +20 %	
Operating power	2,6 VA/1,4 W	
Power consumption	Stand-by	< 10 mA (end position)
	Operation	AC: < 110 mA DC: < 60 mA
Stroke	8,5 mm	
Force	Standard	100 N -20 ... +40%
	Variants	125 N/150 N/200 N -20 ... +40%
Speed	Standard	30 s/mm
	Variants	15 s/mm
Control system	3-point/ 2-point	
Minimum runtime	≥ 2 sec	
Function display	Multicoloured LED	
Fluid temperature	0 °C bis +100 °C	
Storage temperature	-20 °C bis +70 °C	
Ambient temperature	0 °C bis +50 °C	
Degree of Protection	IP 54 ¹⁾	
Protection class	III	
CE-conformity according to	EN 60730	
Casing	material	Polyamide
	colour	White (RAL 9003)
Casing cover	material	Polycarbonate
	colour	Transparent
Cable	type	3 x 0,22 mm ² PVC
	Colour	white
	Length	1 m
Dimensions (H x W x D)	65 x 45 x 90 mm	
Weight with connection cable (1 m)	155 g	
Surge strength according to EN 60730-1	1 kV	

1) in all installation positions

3.1 Dimensions



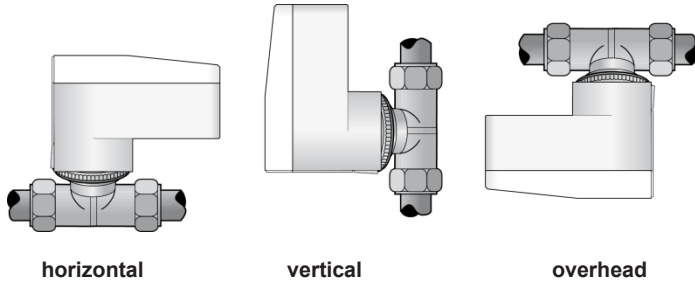
3.2 Certificates



Additionally, Motoric Valve Drive: 24 V 3-Point 24 V is certified according to NRTL by TÜV Süd.

4 Installation notes

4.1 Installation positions



The OEM Motoric Valve Drive: 24 V 3-Point can be operated in every installation position.

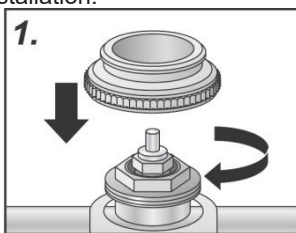
4.2 Installation with valve adapter

ATTENTION!

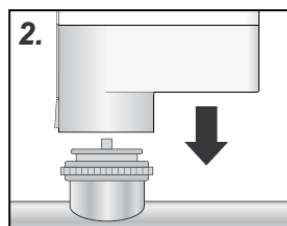
Installation with extracted valve pressure plate leads to actuator damage.

- Only install the actuator with completely retracted valve pressure plate.
- Retract an extracted valve pressure plate with the manual valve setting, or electrically.

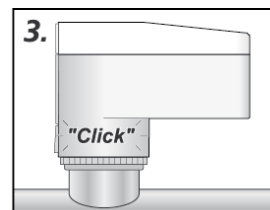
The OEM Motoric Valve Drive: 24 V 3-Point is installed to the valve with a valve adapter. An extensive valve adapter assortment guarantees a perfect mechanical match of the actuator to almost all valves available on the market. The actuator is simply plugged onto the valve adapter previously installed manually. The fact that the valve pressure plate is retracted in factory, allows for easy installation.



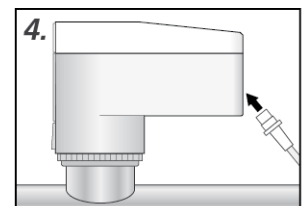
1. Screw the valve adapter manually onto the valve.



2. Position the actuator manually in vertical position to the valve adapter.



3. Simply latch the actuator to the valve adapter manually by applying vertical pressure; a clicking sound can be heard.



4. Connect the connection line to the actuator.

4.3 Electric connection

The OEM Motoric Valve Drive: 24 V 3-Point is controlled via control device with 2- or 3-point control output (e. g. room thermostat) or a building management system.

Attention

Provided by the customer, the supply line must be adequately suppressed.

Connection line

We recommend the following cables for installing a 24 V system:

Cable	Section	Max. length
Standard line	0.22 mm ²	20 m
J-Y(ST)Y	0.8 mm	45 m
NYM / NYIF	1.5 mm ²	136 m

Transformer/power supply:

A safety isolating transformer according to EN 61558-2-6 (for AC supply) or a switching power supply according to EN 61558-2-16 (for DC supply) must always be used.

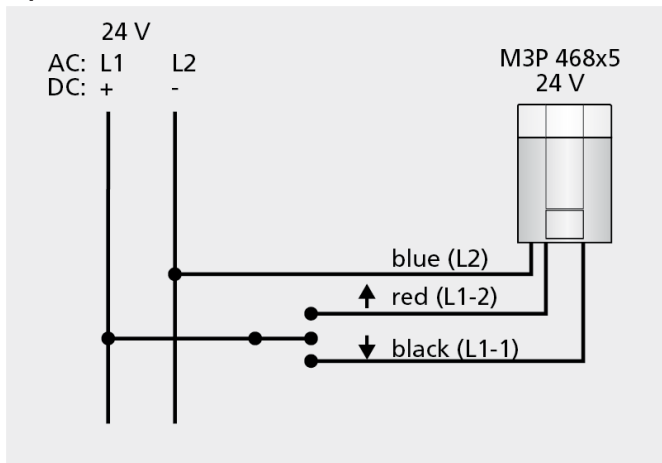
The dimensioning of the transformer, or the switching power supply, results from the maximum operating power of the OEM Actuators.

Rule-of-thumb formula:

$$P_{\text{transformer}} = 3 W \times n$$

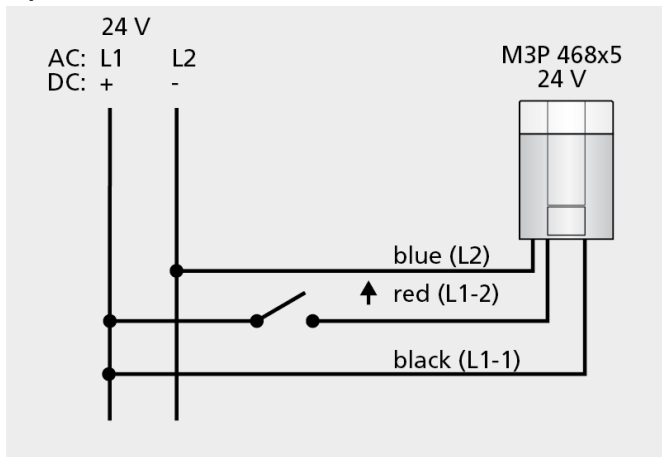
n = Number of OEM Actuators

3-point control



Function	Description
Blue (L2)	Ground
Voltage to red (L1-2)	The valve pressure plate retracts
Voltage to black (L1-1)	The valve pressure plate extracts
No voltage to red/black	The valve pressure plate remains in its current position

2-point control



Function	Description
Blue (L2)	Ground
Voltage to red (L1-2)	The valve pressure plate retracts until the end position
No voltage to red (L1-2)	The valve pressure plate extracts until the end position
Black (L1-1)	Permanent 24 V supply

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