



# ATS ACTUATORS

MOTORIC ACTUATORS 5 Series

# ATS Motoric Actuator: Proportional 0-10V

If not innovative... It's not ATS

# ATS Motoric Valve Drive: 24 V Proportional

The ATS Motoric Valve Drive: 24 V Proportional is an electromotive actuator of valves for heating and cooling systems.

The control of the ATS Motoric Valve Drive: 24 V Proportional is performed by a 0-10 V DC control signal via a central DDC system or by a room thermostat. The actuator is equipped with a LC display with background illumination for displaying the current stroke, the control voltage, and the operating modes (open/close), as well as for the output of error codes. The actuator is equipped with a plug-in connection line as well as with a manual stroke setting which can be used e. g. for maintenance or mounting purposes. The predominant area of application is the energy-efficient control of water-bearing valves in the area of building services and automation.

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



## 1.1 FEATURES

- ▶ ATS design
- ▶ Operating voltage 24 V, appropriate for AC and DC operation
- ▶ Max. stroke 8.5 mm
- ▶ Max. actuation force 200 N (parametrisable in factory)
- ▶ LC display (stroke, control voltage, error code if necessary)
- ▶ Function display via LED
- ▶ Characteristic linearization - valve opening/flow (optional)
- ▶ Variable, continuous valve positioning
- ▶ Very short response times
- ▶ Maximum energy efficiency due to complete motor control via micro controller
- ▶ Antitheft device with removable locking latch
- ▶ Force-dependent deactivation in case of overload or when the final stop resp. the closing position is reached
- ▶ Manual stroke setting
- ▶ Very low standby power consumption
- ▶ Valve adapter system
- ▶ Simple plug-in installation without tools
- ▶ 100% protection in case of leaky valves (IP 54)
- ▶ 360° installation position
- ▶ Plug-in connecting cable
- ▶ Low-noise and maintenance-free
- ▶ Customer-specific actuation time set in factory
- ▶ Customer-specific valve characteristic curves

- ▶ Control input for 0 - 10 V and pulse width modulation

## 1.2 VARIANTS

The following variants are available in the basic versions.

Types	Operating voltage	Stroke	Actuating force	Actuation Time
MPR 46845	24V AC/DC	8.5 mm (2-8.5 mm can be configured in factory)	200 N (100 - 200 N can be configured in factory)	30 s/mm (15 to 60 s/mm can be configured in factory)

### Scope of supply

- ▶ ATS Motoric Valve Drive: 24 V Pro- portional in individual packaging
- ▶ 1 m connection line (plug-in), white
- ▶ Installation instruction in 12 languages

### Optional available extensions

- ▶ Line lengths Standard : 2 m, 3 m, 5 m, 10 m, 15 m; PVC in white - 3 x 0.22 mm<sup>2</sup>  
(special lengths up to 20 m)

### Accessories

- ▶ A valve adapter suiting your application can be enclosed in the actuator packing

## 2.0 FUNCTION

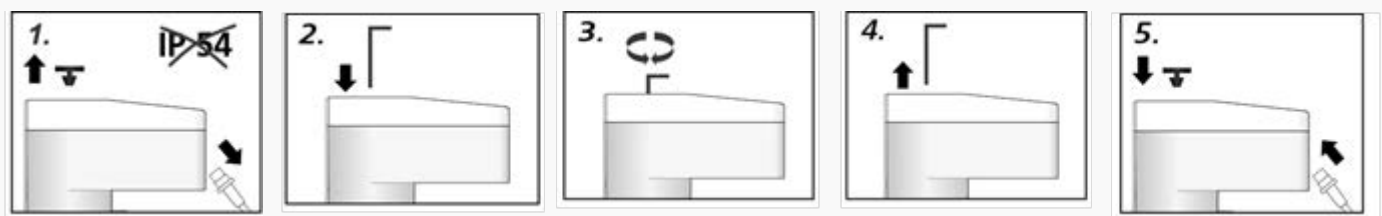
The actuator mechanism of the ATS Motoric Valve Drive: 24 V Proportional works with a stop motor, an intelligent micro controller and a gearing mechanism. The force generated by the movement direction is transferred to the valve pressure plate, thus opening or closing the valve. The actuator is installed directly to the upper part of the small valve. The actuator is supplied with retracted valve pressure plate.

### 2.1 Operation

The control of the ATS Motoric Valve Drive: 24 V Proportional is performed by a 0-10 V DC control signal via a central DDC system or by a room thermostat. Depending on the control signal a precise positioning of the actuator will be performed with respect to the valve. At 0 V the actuator is completely closed, and at 10 V it is completely opened.

### 2.2 Manual stroke setting

The manual stroke setting allows to bring the valve pressure plate to the desired position in de-energised state. This facilitates maintenance and mounting.



1. Remove the connection line and the protector plug.

2. Introduce the 4 mm Allen key into the manual stroke setting de- vice.

3. Turn to the right or left for extracting or retracting, respectively.

4. Remove the 4mm Allen key after reaching the desired position.

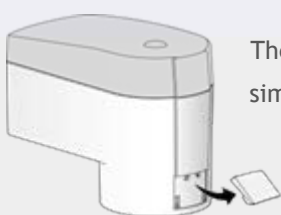
5. Install the protector plug and connect the connection line.

### 2.3 LCD



The LC display of the ATS Motoric Valve Drive: 24 V Proportional alternately serves for displaying the stroke including the current operating mode (opening/closing), the control voltage and well as possible error codes.

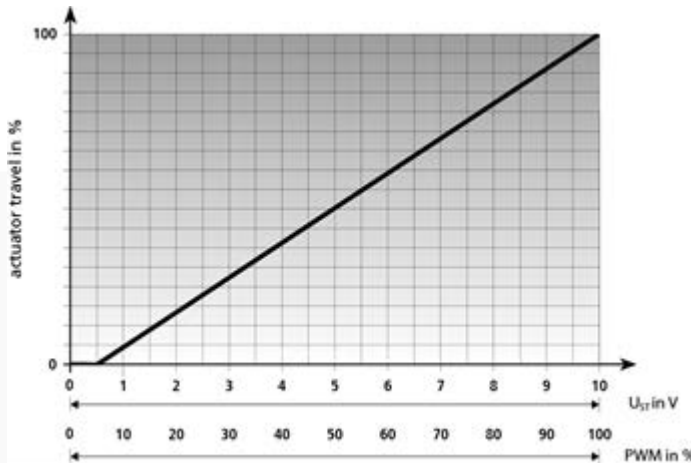
### 2.3 Antitheft device



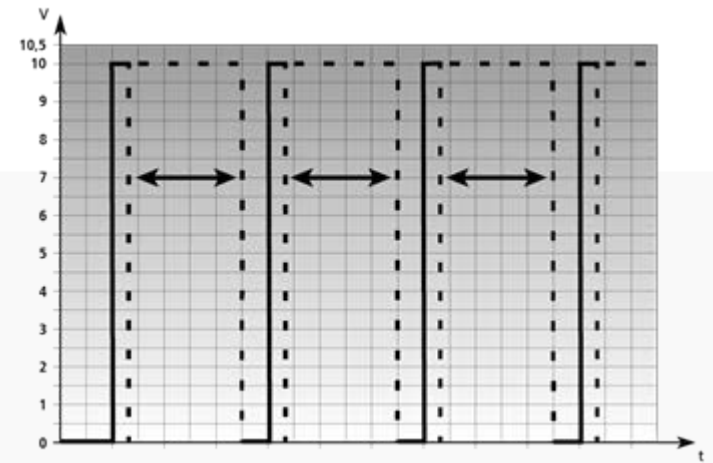
The ATS Motoric Valve Drive: 24 V Proportional can be protected against unauthorized access simply by removing the locking latch.

## 2.5 Control Input

The control voltage input allows a precise control of the ATS Motoric Valve Drive: 24 V Proportional via a 0 to 10 V or a pulse width modulation (PWM) signal. The PWM switching frequency can be configured in the factory between 100 Hz and 1000 Hz. The possibility to choose between different input signals allows an easy integration into building control systems.



Control input: voltage 0 - 10 V / PWM 0 - 100 %



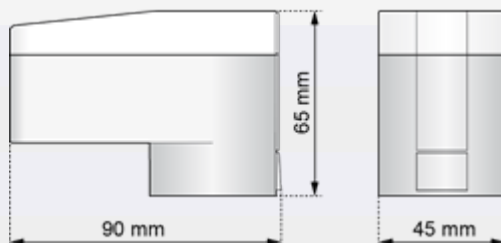
Pulse-width frequency 100 Hz bis 1000 Hz

### 3.0 TECHNICAL DATA

Operating Voltage	24 V AC, -10 % ... +20 %, 50-60 Hz	
	24 V DC, -20 % ... +20 %,	
Operating power	2.4 W	
Max. power consumption	< 100 mA	
Stand by power consumption	< 10 mA	
Resistance of control voltage input	100 kΩ	
Stroke	8.5 mm	
Actuation force	200 N +10 %	
Actuation time	30 s/mm	
Fluid temperature	0 °C to +100 °C <sup>1)</sup>	
Storage temperature	-20 °C to +70 °C	
Ambient temperature	0 °C to +50 °C	
Degree of protection	IP 54 <sup>2)</sup>	
Protection Class	III	
CE conformity according to	EN 60730	
Casing	material	Polyamide
	color	white
Casing cover	material	Polycarbonate
	color	transparent
Connection line	type	3 x 0.22 mm <sup>2</sup> PVC
	color	white
	length	1 m
Weight with connection cable (1 m)	155 g	
Overvoltage strength according to EN 60730-1	1 kV	

- 1) or higher, depending on the adapter  
2) in all installation positions

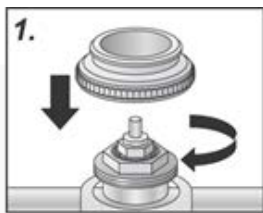
### 3.1 Dimensions



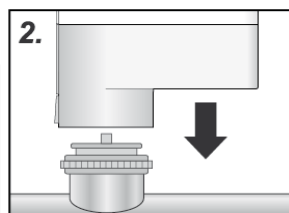
## 4.0 INSTALLATION NOTES

### 4.1 Installation with valve adapter

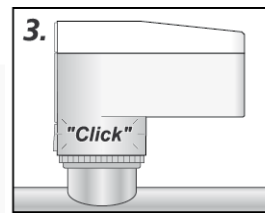
The valve adapter assortment guarantees a perfect mechanical match of the actuator to almost all valve bottoms and heating circuit distributors available on the market. The ATS Motoric Valve Drive: 24 V Proportional is simply plugged onto the valve adapter previously installed manually. The fact that the valve pressure plate is retracted in factory, allows for easy installation.



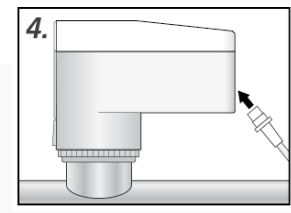
1. Screw the valve adapter manually onto the valve.



2. Position the ATS Actuator manually in vertical position to the valve adapter.

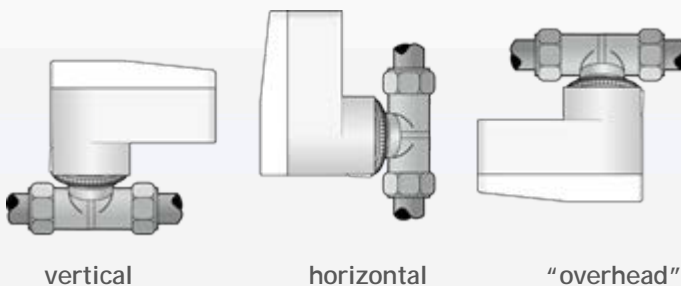


3. Simply latch the ATS Actuator to the valve adapter manually by applying vertical pressure; a clicking sound can be heard.



4. Connect the connection line to the ATS Actuator.

### 4.2 Installation position



vertical

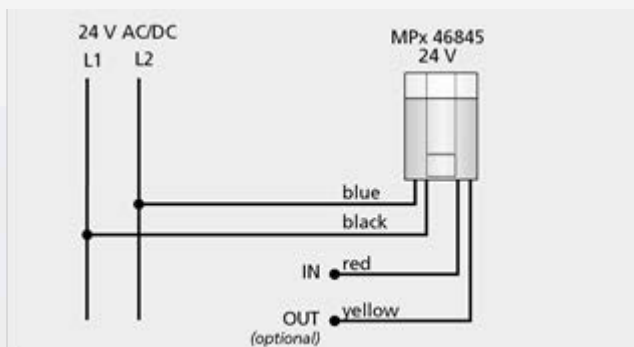
horizontal

"overhead"

The ATS Motoric Valve Drive: 24 V Proportional can be operated in every installation position.

The horizontal or vertical installation position should be preferred. In case of "overhead" installation, special circumstances (e.g. drain water) can reduce the lifetime of the actuator.

### 4.3 Electric connection



#### Connection line

We recommend the following cable lengths for installing a 24 V system:

Cable	Section	Length
Standard DDC line	0.22 mm <sup>2</sup>	20 m
J-Y(ST)Y	0.8 mm	45 m
NYM / NYIF	1.5 mm <sup>2</sup>	136 m

#### Transformer/power supply:

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

The dimensioning of the transformer or the switching power supply results from the maximum Operating power of the ATS Actuators.

Rule-of-thumb formula:  $P_{\text{transformer}} = 3 \text{ W} \times n$   
 $n = \text{Number of ATS Actuators}$



# ATS Motoric Actuator: 230 V 3-Point

## ATS Motoric Valve Drive: 230 V 3-Point

The ATS Motoric Valve Drive: 230 V 3-Point is an electromotive actuator of valves for heating and cooling systems.

The ATS Motoric Valve Drive: 230 V 3-Point is controlled via a corresponding room thermostat or via the building management system. The actuator is equipped with a fixed connection line, an LED for function display as well as with a manual stroke setting which can be used e. g. for maintenance or for dismantling purposes. The predominant area of application is the energy-efficient control of water-bearing valves in the area of building services and automation.

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



### 1.1 FEATURES

- ▶ ATS Design
- ▶ Max. stroke 8.5 mm
- ▶ Max. actuation force 200 N (parametrisable in factory)
- ▶ Function display via LED:
- ▶ Very short response times
- ▶ Maximum energy efficiency due to complete motor control via micro controller.
- ▶ Self-locking gear (de-energized) in all positions
- ▶ Force-dependent deactivation in case of overload or when the final stop resp. the closing position is reached
- ▶ Manual stroke setting
- ▶ Valve adapter system
- ▶ Simple plug-in installation without tools
- ▶ 100% protection in case of leaky valves (IP 54)
- ▶ 360° installation position
- ▶ Low-noise and maintenance-free
- ▶ High functional safety and long expected service life
- ▶ Customer-specific actuation time set in factory

## 1.2 VARIANTS

The following variants are available in the basic versions.

Types	Operating voltage	Stroke	Actuating force	Actuation Time
M3P 27845	230V AC	8.5 mm	200 N (100 - 200 N can be configured in factory)	30 s/mm (15 to 60 s/mm can be configured in factory)

### Scope of supply

- ▶ ATS Motoric Valve Drive: 230V 3-Point in individual packaging
- ▶ 1 m connection line (plug-in), white PVC 3x0.75 mm<sup>2</sup>
- ▶ Installation instruction in 12 languages

### Optional available extensions

- ▶ Line lengths Standard : 2 m PVC in white - 3 x 0.75 mm<sup>2</sup>

### Accessories

- ▶ A valve adapter suiting your application can be enclosed in the actuator packing

## 2.0 FUNCTION

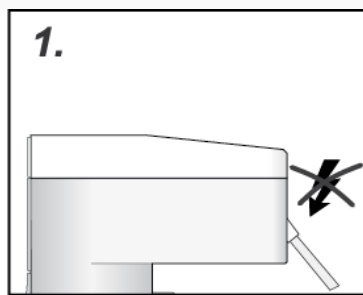
The actuator mechanism of the ATS Motoric Valve Drive: 230 V 3-Point works with a stop motor, a micro controller and a gearing mechanism. The force generated by the drive motor is transferred to the valve pressure plate, thus opening or closing the valve. The actuator installed directly to the upper part of the small valve. The actuator is supplied with retracted valve pressure plate.

### 2.1 Operation

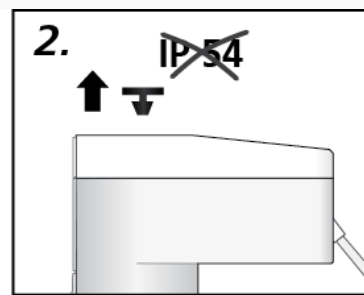
The motor-driven actuator ATS Motoric Valve Drive: 230 V 3-Point is controlled via two electric connections L1-1 (open) and L1-2 (close), realizing the desired movement direction of the motor. This moves the valve pressure plate in the desired direction for opening or closing. If the control signal L1-1 (open) is applied, the valve opens. The control signal L1-2 (close) closes the valve. After reaching the final stop resp. the closing position, the motor switches off. This also applies in case of overload. If the voltage is switched off, the valve remains in its current position.

### 2.2 Manual stroke setting

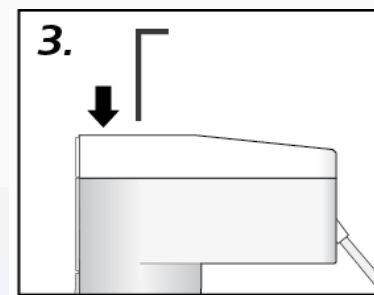
The manual stroke setting allows to bring the valve pressure plate to the desired position in de-energized state. This facilitates maintenance and dismantling



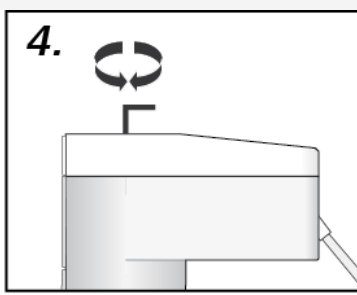
De-energize the ATS Actuator



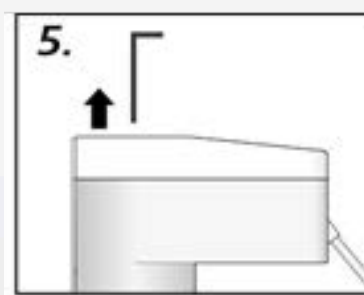
Remove the protector plug.



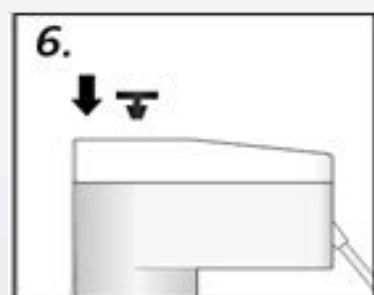
Introduce the 4 mm Allen key into the manual stroke setting de vice.



Turn to the right or left for extracting or retracting, respectively.



Remove the 4mm Allen key after reaching the desired position.



Install the protector plug and connect the connection line.

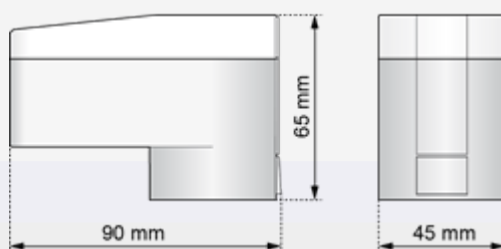
ATS® reserves the right to change any product specifications without prior notice

### 3.0 TECHNICAL DATA

Operating Voltage	230 V AC, -10 % ... +10 %, 50 Hz	
Operating power	3.5 W	
Max. power consumption	< 20 mA	
Stand by power consumption	< 5 mA	
Stroke	8.5 mm ( minus 0.5mm over elevation)	
Actuation force	200 N +10 % ( parametrisable in factory)	
Fluid temperature	0 °C to +100 °C <sup>1)</sup>	
Storage temperature	-20 °C to +70 °C	
Ambient temperature	0 °C to +50 °C	
Degree of protection	IP 54 <sup>2)</sup>	
Protection Class	III	
CE conformity according to	EN 60730	
Casing	material	Polyamide
	color	white
Casing cover	material	Polycarbonate
	color	transparent
Connection line	type	3 x 0.75 mm <sup>2</sup> PVC
	color	Light grey (RAL 7035)
	length	1 m
Weight with connection cable (1 m)	155 g	
Overvoltage strength according to EN 60730-1	2.5 kV	

- 1) or higher, depending on the adapter  
2) in all installation positions

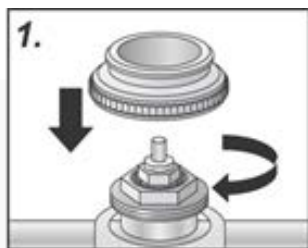
#### 3.1 Dimensions



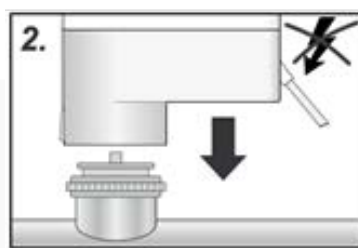
## 4.0 INSTALLATION NOTES

### 4.1 Installation with valve adapter

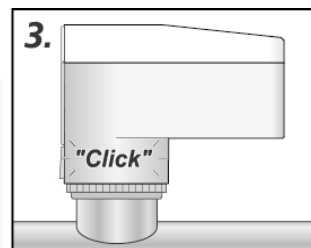
The valve adapter assortment guarantees a perfect mechanical match of the actuator to almost all valve bottoms and heating circuit distributors available on the market. The ATS Motoric Valve Drive: 230 V 3-Point is simply plugged onto the valve adapter previously installed manually. The fact that the valve pressure plate is retracted in factory, allows for easy installation.



1. Screw the valve adapter manually onto the valve.

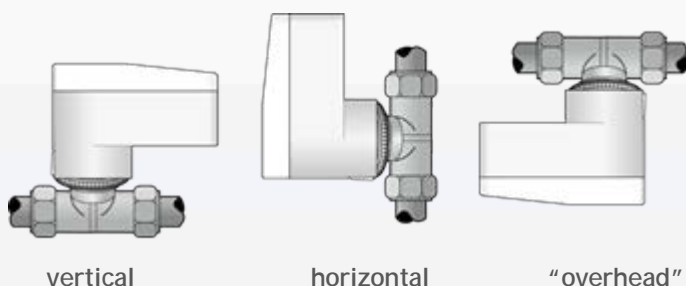


2. Position the ATS Actuator in de-energized state manually in vertical position to the valve adapter.



3. Simply latch the ATS Actuator to the valve adapter manually by applying vertical pressure; a clicking sound can be heard. Switch on the power supply in the connection

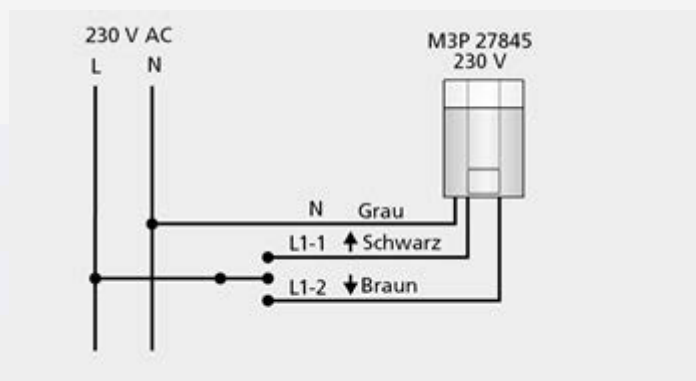
### 4.2 Installation position



The ATS Motoric Valve Drive: 230 V 3-Point can be operated in every installation position.

The horizontal or vertical installation position should be preferred. In case of "overhead" installation, special circumstances (e.g. drain water) can reduce the lifetime of the actuator.

### 4.3 Electric connection



#### Connection line

We recommend the following cable lengths for installing a 230 V system:

Light plastic-sheathed cable: NYM 1.5 mm<sup>2</sup>  
Flat webbed building wire: NYIF 1.5 mm<sup>2</sup>

Voltage at L1-1: ATS Motoric Valve Drive: 230 V 3-Point opens  
Voltage at L1-2: ATS Motoric Valve Drive: 230 V 3-Point closes  
No voltage at L1-1/L1-2: ATS Motoric Valve Drive: 230 V 3-Point remains in its current position

# ATS Motoric Actuator: 24 V 3-Point

## ATS Motoric Valve Drive: 24 V 3-Point

The ATS Motoric Valve Drive: 24 V Proportional is an electromotive actuator of valves for heating and cooling systems.

The ATS Motoric Valve Drive: 24 V 3-Point is controlled via a corresponding room thermostat. The actuator is equipped with a plug-in connection line, an LED for function display as well as with a manual stroke setting which can be used e. g. for maintenance or for mounting purposes. The predominant area of application is the energy- efficient control of water-bearing valves in the area of building services and automation.

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



### 1.1 FEATURES

- ▶ ATS design
- ▶ Operating voltage 24 V, appropriate for AC and DC operation
- ▶ Max. stroke 8.5 mm
- ▶ Max. actuation force 200 N (parametrisable in factory)
- ▶ LC display (stroke, control voltage, error code if necessary)
- ▶ Function display via LED
- ▶ Very short response times
- ▶ Maximum energy efficiency due to complete motor control via micro controller
- ▶ Self-locking gear (de-energized) in all positions
- ▶ Antitheft device with removable locking latch
- ▶ Force-dependent deactivation in case of overload or when the final stop resp. the closing position is reached
- ▶ Manual stroke setting
- ▶ Very low standby power consumption
- ▶ Valve adapter system
- ▶ Simple plug-in installation without tools
- ▶ 100% protection in case of leaky valves (IP 54)
- ▶ 360° installation position
- ▶ Low-noise and maintenance-free
- ▶ High functional safety and long expected service life
- ▶ Customer-specific actuation time set in factory



## 1.2 VARIANTS

The following variants are available in the basic versions.

Types	Operating voltage	Stroke	Actuating force	Actuation Time
M3P 46845	24V AC/DC	8.5 mm	200 N (100 - 200 N can be configured in factory)	30 s/mm (15 to 60 s/mm can be configured in factory)

### Scope of supply

- ▶ ATS Motoric Valve Drive: 24 V 3-Point in individual packaging
- ▶ 1 m connection line (plug-in), white PVC 3x0.22 mm<sup>2</sup>
- ▶ Installation instruction in 12 languages

### Optional available extensions

- ▶ Line lengths Standard : 2 m, 3 m, 5 m, 10 m, 15 m; PVC in white - 3 x 0.22 mm<sup>2</sup>  
(special lengths up to 20 m)

### Accessories

- ▶ A valve adapter suiting your application can be enclosed in the actuator packing

## 2.0 FUNCTION

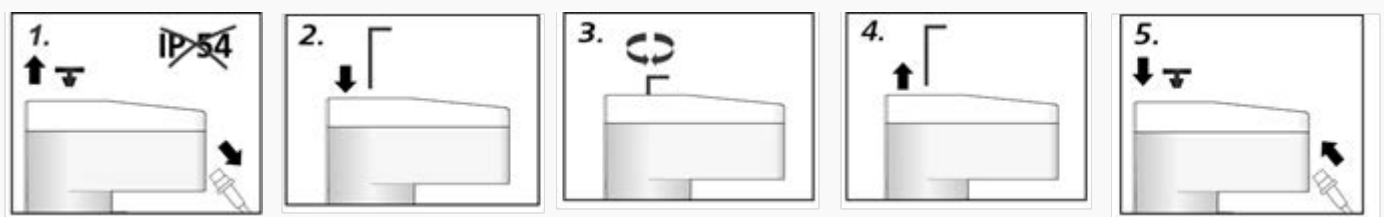
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### 2.1 Operation

The motor-driven actuator ATS Motoric Valve Drive: 24 V 3-Point is controlled via two electric connections L1 (open) and L2 (close), realizing the desired movement direction of the motor. This moves the valve pressure plate in the desired direction for opening or closing. If the control signal L1 (open) is applied, the valve opens. The control signal L2 (close) closes the valve. After reaching the final stop resp. the closing position, the motor switches off. This also applies in case of overload. If the voltage is switched off, the valve remains in its current position.

### 2.2 Manual stroke setting

The manual stroke setting allows to bring the valve pressure plate to the desired position in de-energised state. This facilitates maintenance and mounting.



1. Remove the connection line and the protector plug.

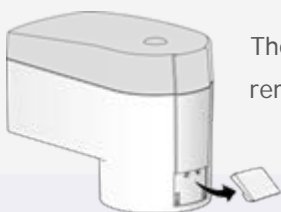
2. Introduce the 4 mm Allen key into the manual stroke setting de- vice.

3. Turn to the right or left for extracting or retracting, respectively.

4. Remove the Allen key after reaching the desired position.

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

### 2.3 Antitheft device



The ATS Motoric Valve Drive: 24 V 3-Point can be protected against unauthorized access simply by removing the locking latch.

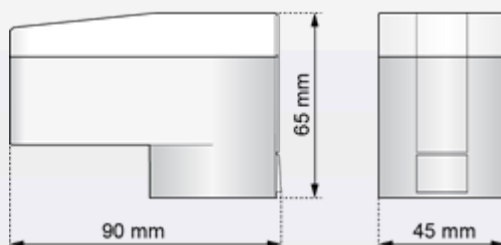
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### 3.0 TECHNICAL DATA

Operating Voltage	24 V AC, -10 % ... +20 %, 50-60 Hz	
	24 V DC, -20 % ... +20 %,	
Operating power	2.4 W	
Max. power consumption	< 100 mA	
Stand by power consumption	< 10 mA (in final stop)	
Stroke	8.5 mm	
Actuation force	100 to 200 N +10 % (can be configured in factory)	
Actuation time	15 to 60 s/mm (can be configured in factory)	
Fluid temperature	0 °C to +100 °C <sup>1)</sup>	
Storage temperature	-20 °C to +70 °C	
Ambient temperature	0 °C to +50 °C	
Degree of protection	IP 54 <sup>2)</sup>	
Protection Class	III	
CE conformity according to	EN 60730	
Casing	material	Polyamide
	color	white
Casing cover	material	Polycarbonate
	color	transparent
Connection line	type	3 x 0.22 mm <sup>2</sup> PVC
	color	white
	length	1 m
Weight with connection cable (1 m)	155 g	
Overvoltage strength according to EN 60730-1	1 kV	

- 1) or higher, depending on the adapter
- 2) in all installation positions

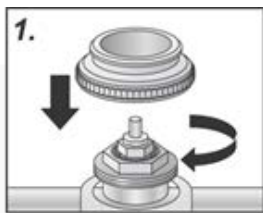
### 3.1 Dimensions



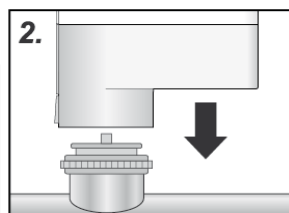
## 4.0 INSTALLATION NOTES

### 4.1 Installation with valve adapter

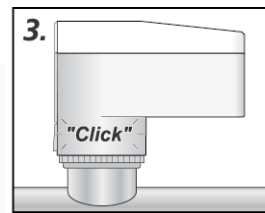
The valve adapter assortment guarantees a perfect mechanical match of the actuator to almost all valve bottoms and heating circuit distributors available on the market. The ATS Motoric Valve Drive: 24 V 3-Point is simply plugged onto the valve adapter previously installed manually. The fact that the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



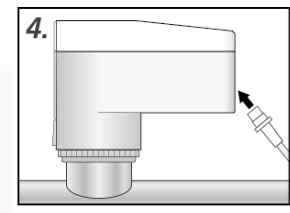
1. Screw the valve adapter manually onto the valve.



2. Position the ATS Actuator manually in vertical position to the valve adapter.

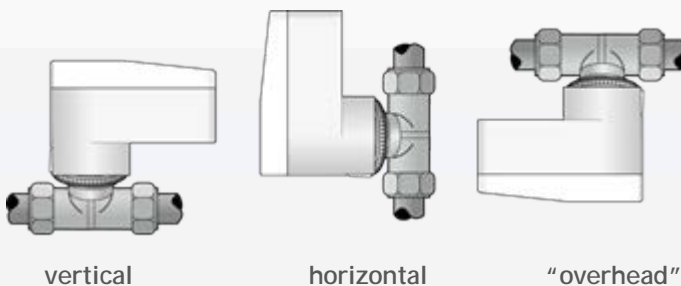


3. Simply latch the ATS Actuator to the valve adapter manually by applying vertical pressure; a clicking sound can be heard.



4. Connect the connection line to the ATS Actuator.

### 4.2 Installation position



vertical

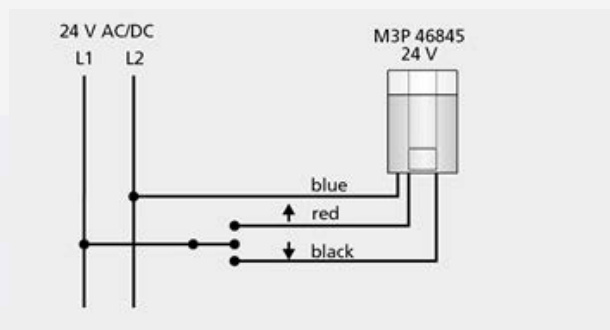
horizontal

“overhead”

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

The horizontal or vertical installation position should be preferred. In case of “overhead” installation, special circumstances (e.g. drain water) can reduce the lifetime of the actuator.

### 4.3 Electric connection



Voltage at red: The ATS Motoric Valve Drive: 24 V 3-Point opens  
 Voltage at black: The ATS Motoric Valve Drive: 24 V 3-Point closes  
 No voltage at red/black: The ATS Motoric Valve Drive: 24 V 3-Point remains in its current position

#### Connection line

We recommend the following cable lengths for installing a 24 V system:

Cable	Section	Length
Standard DDC line	0.22 mm <sup>2</sup>	20 m
J-Y(ST)Y	0.8 mm	45 m
NYM / NYIF	1.5 mm <sup>2</sup>	136 m

#### Transformer/power supply:

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

The dimensioning of the transformer or the switching power supply results from the maximum Operating power of the ATS Actuators.

Rule-of-thumb formula: