

*We care for actuation.*



# PS-AMS

The All-In-One Actuators

**PATENTED!**

# PS-AMS The All-In-One Actuators

PS-AMS is the patented smart actuator solution of PS Automation GmbH for linear actuators up to 25 kN thrust and quarter-turn actuators up to 1000 Nm torque. The new generation PS-AMS11/12/13 was developed from the proven PS-AMS01/02/03, is available for various voltages, and mechanical adaptation to most types of valves can be done.

## Speed-controlled actuation

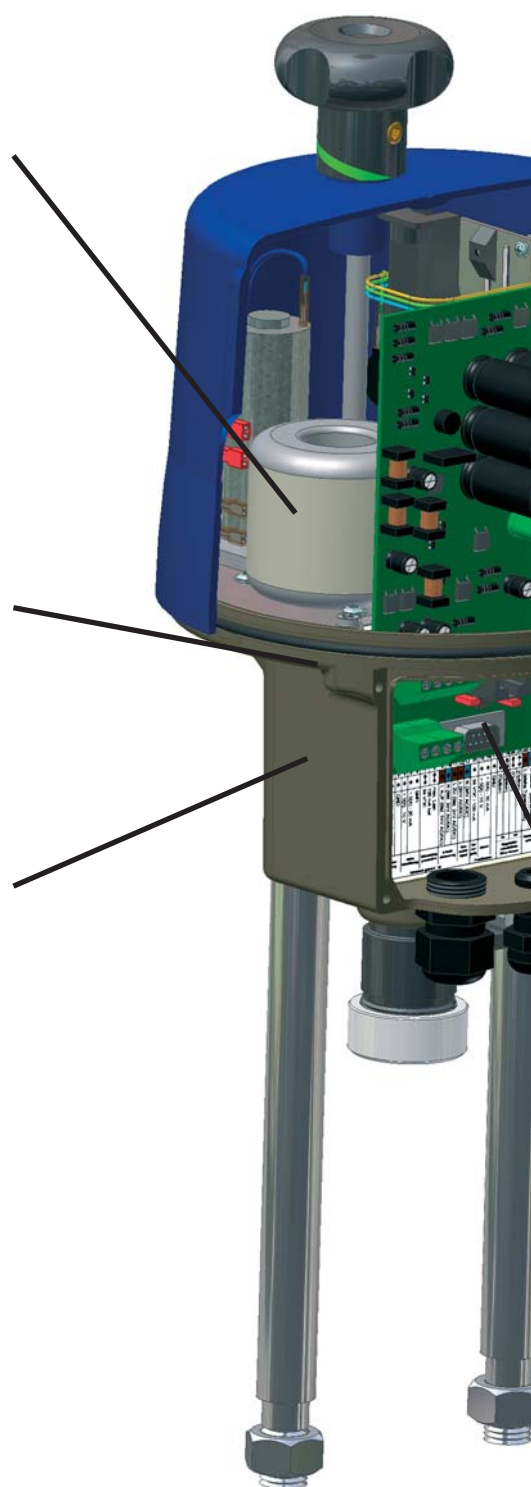
The output is generated by a 24 VDC motor, which is controlled by the electronics via pulse width modulation (PWM), i.e. it is operated at variable speed. Absolute-coded feedback is done with a precision potentiometer. PS-AMS standard equipment comprises positioner and active feedback function, automatic commissioning as well as comprehensive diagnostics functions.

## Mechanical design

The mechanical part of the PS-AMS actuator consists of the components of PS Automation's standard actuators with their well-proven components, namely a robust spur gear with trapezoidal thread in PSL-AMS, and a high-reduction planetary differential gearbox with a handwheel permanently engaged via a worm gear in PSQ-AMS. All PS actuators are lubricated for life and therefore maintenance-free.

## Electrical connection

The electrical wiring of PSL-AMS is done directly to terminal blocks in the integrated terminal box. PSQ-AMS uses a plug-and-socket system with robust screw clamps in a separately attached housing. The plug can be removed without interfering with any existing cables, e.g. for maintenance or exchange of the actuator.



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PS-AMS actuators include enhanced electronics with an embedded micro-controller with flash memory that controls and monitors the entire actuator function. Summarizing all functions on a single circuit board makes the PS-AMS actuators extremely safe in operation and easy to assemble. As a result, production costs are low and the value for money is outstanding.

### Parameterisation by Software

Our concept of monitoring current and voltage permits adaptation of the actuator functions to the process conditions in many ways. Via our communication software PSCS it is possible to adjust valve-specific details, actuation thrust/torque and speed, to configure alerts, and to do a freely programmable valve curve correction.



### Diagnostics function

The diagnostics function of the communication software PSCS allows to retrieve counting values (such as operating hours, number of start-ups and running time of motor) and sets of running parameters (such as the analogue set value input, actual position value, currently required motor torque and inside temperature of the actuator). The actual values can be graphically displayed and analysed using the monitor function. Thus the PS-AMS concept allows pro-active maintenance and as a result an increase in process safety. We are currently preparing a combined monitoring system which will also give a trend prognosis of the wear situation of the PS-AMS actuator.



### Wireless communication

Due to the continual further development and optimising of the electronics and the communication protocol, the signal processing inside the actuator and the communication to the outside are now designed to work even faster and more reliably. Communication is feasible via special communication software PSCS from the PC or wireless via Bluetooth protocol from PC or PDA.



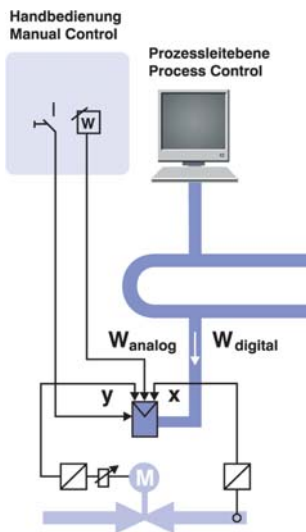
### Status indication & Automatic commissioning

The permanent optical status signalled by two LEDs was revised in order to make the indicated messages even clearer. All operating conditions or fault functions are now uniquely signalled by specific optical sequences. Automatic adjustment is started in a user-friendly way by a pushbutton.

## Optional Accessories

### Local control PSC.2

The optionally available lockable local control box PSC.2 allows on-site operation and can also be used to set most of the actuator-specific values. The display of actual position, messages and parameters of the actuator is in full text.



### Integrated process controller PSIC

The integrated process controller PSIC, available as optional accessory, reads the signal of a process sensor as actual value of the process and then positions the actuator according to either a modulating process set value, or a programmed fixed value. The concept of PS-AMS using an electric motor with 24 VDC supply voltage facilitates a simple power supply to the actuator via photovoltaic cells, allowing to install a full control loop at remote locations independently of supply and signal lines which may be difficult to lay.

### Fieldbus / Bluetooth interfaces

The main board is prepared for the optional installation of modules for all common field bus interfaces or Bluetooth protocol, which enables wireless parameterisation and read-out of diagnostics of the actuator at distances of up to 10 m.



### Fail-safe unit PSEP

The fail-safe device PSEP is based on an accumulator with controlled charger, so that a safety position in case of loss of power supply can be freely defined without any mechanical alterations to the actuator.

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