



AME 140X

with feedback signal

Description

AME 140X actuator are suitable to operate with VZ or VZL valves whenever feedback signal is required. The actuator can be used in fan coil units, induction units, small reheaters, recoolers, and zone applications in which hot/cold water is the controlled medium.

Features & benefits

- Modulating control (Y)
- Feedback (X) signal
- Force switch-off at stem down position prevents overload of actuator and valve
- No tools required for mounting
- Maintenance free during lifetime
- Low noise operation
- Self-positioning process
- Supplied with 1,5 m cable

Ordering

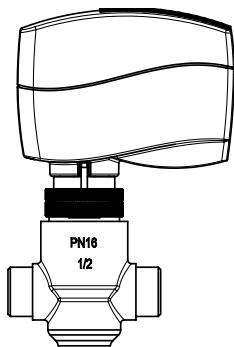
Product code numbers

Type	Supply voltage	Speed	Code No.
AME 140X	24 V~	12 s/mm	082H8065

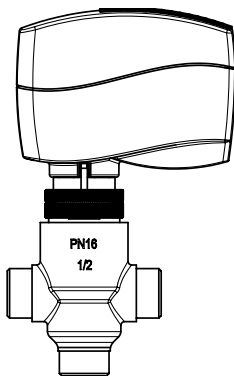
Overview

Product portfolio

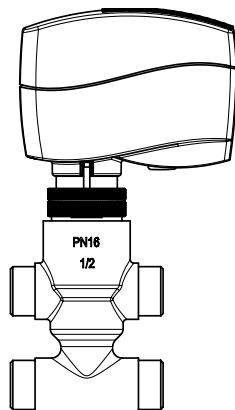
Actuator - valve combinations



AME 140X + VZ 2, VZL 2



AME 140X + VZ 3, VZL 3



AME 140X + VZ 4, VZL 4



Functions

Operation
Commissioning

The factory setting of the spindle is the fully stem up position because of easier mechanical connection of the actuator on the valve.

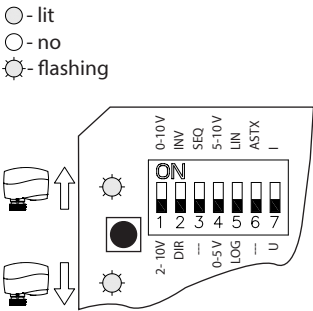
Actuator should be first mechanically connected to the valve because it starts automatically with self stroking procedure when first time connected to power supply.

Do not manually operate the drive if power is connected!

Do not dismount the actuator from the valve when it is in a stem down position!

If dismounted in a stem down position, there is a high risk that the actuator gets stuck.

LED signalisation



LED		Indication type		Operating mode
Green	↕		Constantly lit	Positioning mode - Actuator is retracting the stem
	↕		Constantly lit	Positioning mode - Actuator is extracting the stem
	↕		Flashing (1 s cycle)	Self stroking mode - Actuator is retracting the stem
	↕		Flashing (1 s cycle)	Self stroking mode - Actuator is extracting the stem
Yellow	↕		Constantly lit	Stationary mode - Actuator has reached upper end position (retracted stem)
	↕		Constantly lit	Stationary mode - Actuator has reached bottom end position (extracted stem)
	↕		Flashing (2,5 s cycle)	Stationary mode
Red	↕		Flashing (1 s cycle)	Error Mode
Dark	No indication			No power supply

Manual override (for service purposes only)

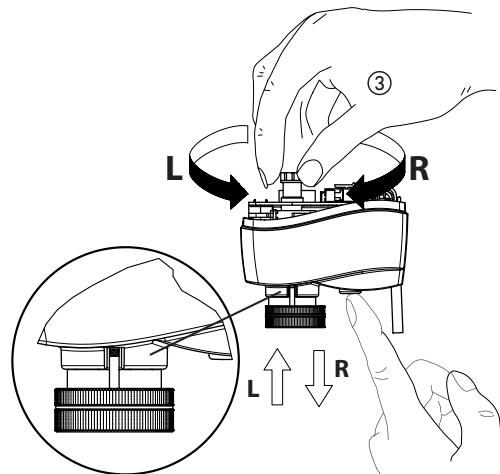
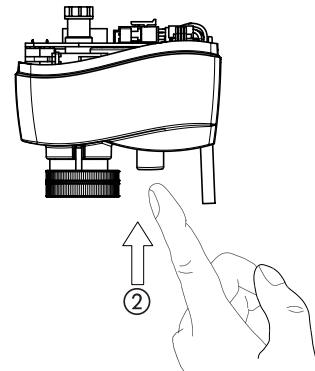
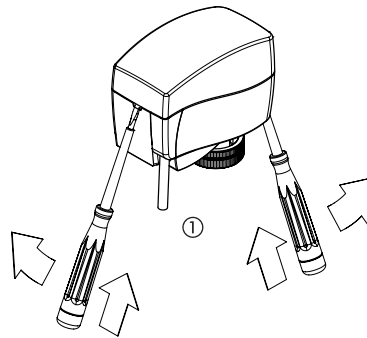


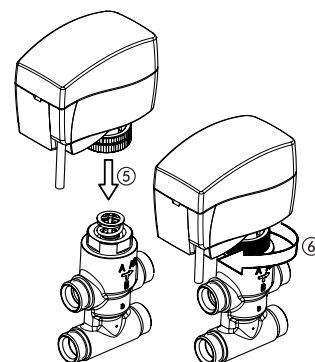
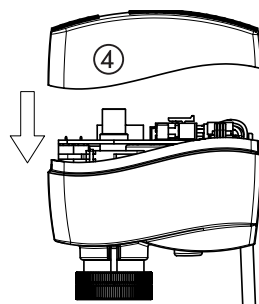
Caution:

Do not manually operate the drive if power is connected!

Do not dismount the actuator from the valve when it is in a stem down position!

If dismounted in a stem down position, there is a high risk that the actuator gets stuck.





- Remove cover ①
- Press and hold the button ② (on the bottom side of the actuator) during manual override ③
- Replace cover ④
- Install actuator on valve ⑤, ⑥

Remark:

A 'click' sound after energising the actuator indicates that the gear wheel has jumped into normal position.

Settings

DIP Switch Setting (for service purposes only)

The actuator has a function selection DIP switch under the removable cover.

The switch provides the following functions:

- SW1: **0/2 - Input signal range selector**

If set to OFF position, the input signal is in the range from 2-10 V (voltage input) or from 4-20 mA (current input).

If set to ON position, the input signal is in the range from 0-10 V (voltage input) or from 0-20 mA (current input).

- SW2: **D/I - Direct or inverse acting selector**

If set to OFF position, the actuator is direct acting (stem lowers as voltage increases).

If the actuator is set to ON position, the actuator is inverse acting (stem raises as voltage increases).

- SW3: **---/Seq - Normal or sequential mode selector**

If set to OFF position, the actuator is working in range 0(2)-10 V or 0(4)-20 mA.

If set to ON position, the actuator is working in sequential range; 0(2)-5(6) V or 0(4)-10(12) mA or 5(6)-10 V or 10(12)-20 mA.

- SW4: **0-5/5-10 V - Input signal range in sequential mode**

If set to OFF position, the actuator is working in sequential range 0(2)-5(6) V or 0(4)-10(12) mA.

If set to ON position, the actuator is working in sequential range; 5(6)-10 V or 10(12)-20 mA.

- SW5: **LIN/MOD - Linear or modified flow through the VZL valves**

If set to ON position, the flow through the LINEAR characterized VZL valve will modify to equal percentage-wise equals the control signal.

If set to OFF position, the flow through the valve VZ or VZL remains same as is valve characteristic in accordance to the control signal.

- SW6: **---/ASTK - Anti-blocking function is not needed to be activated when operation with Danfoss VZ or VZL. To be activated when actuator is used by (competitors) valves which have possibility to be blocked.**

Exercises the valve to avoid blocking in periods when the heating/cooling is off.

If set to ON position (ASTK), the valve motion is switched on. The actuator opens and closes the valve every 7 days.

If set to OFF position (---), the function is disabled.

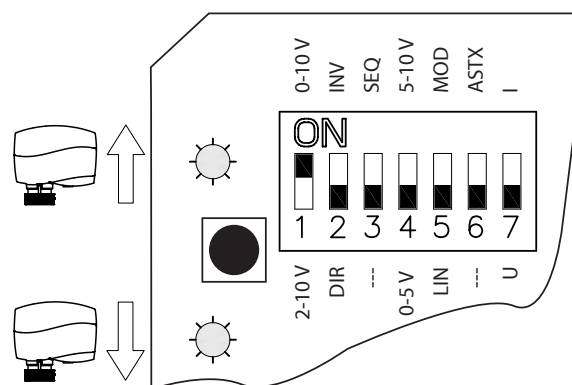
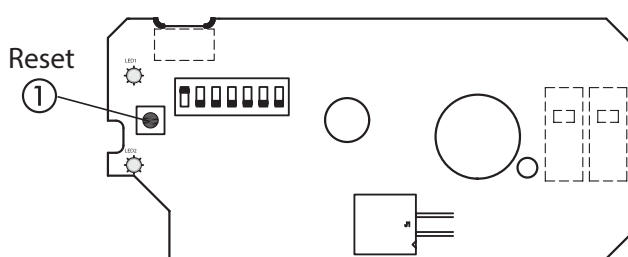
- SW7: **U/I - Input signal type selector**

If set to OFF position, voltage input is selected.

If set to ON position, current input is selected.

- **Reset button**

Press the reset button ① will cause the actuator to go through a self stroking cycle (press it for 2 s).





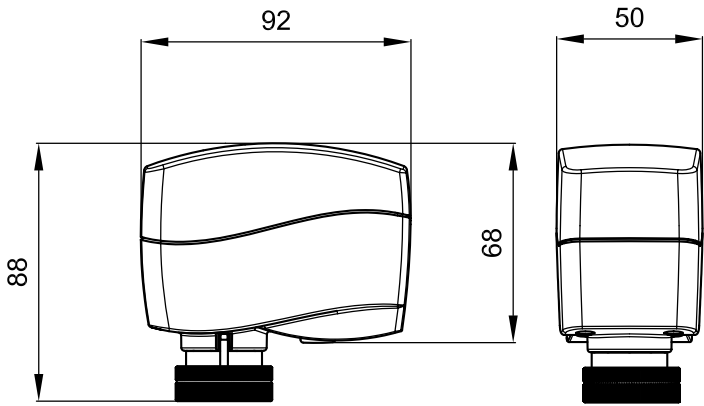
Product details

General data

Technical data

Power supply		V	24; ±20%; AC
Power consumption	running	VA	1,5
	standby	W	1,0
Frequency		Hz	50/60
Control input Y		V	0-10(2-10); Ri=200 kΩ
		mA	0-20(4-20); Ri=500 Ω
Control output X		V	0-10(2-10); Ro _(min) =38 kΩ
Closing force		N	200
Max. stroke		mm	5,5
Speed		s/mm	12
Max. medium temperature			130
Ambient temperature		°C	0 ... 55
Storage and transport temperature			-40 ... 70
Protection class			III safety extra-low voltage
Grade of enclosure			IP 42
Weight		kg	0,3

Dimensions



Installation

Mechanical

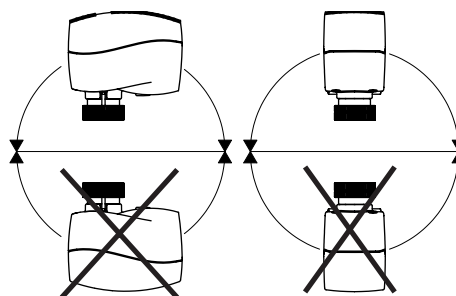
The actuator should be mounted with the valve stem in either horizontal position or pointing upwards.

The actuator is fixed to the valve body by means of a mounting ring which requires no tools for mounting. The ring should be tightened by hand.

Electrical

Important: It is strongly recommended that the mechanical installation is completed before the electrical installation.

Each actuator is supplied with the connecting cable for the controller.



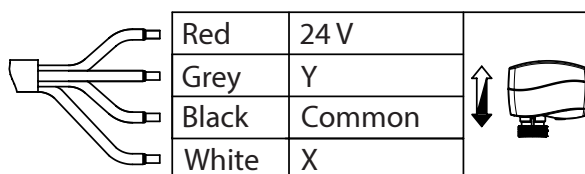
Wiring



AC 24 V

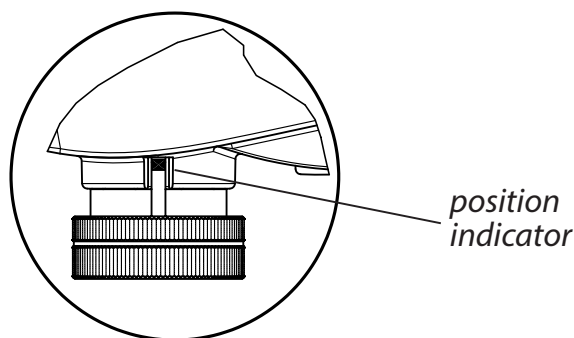
Connect via safety isolating transformer.

Y	V	0-10(2-10); Ri=200 kΩ
	mA	0-20(4-20; Ri=500 Ω
X	V	0-10(2-10); Ro _(min) =38 kΩ



Installation procedure

1. Check the valve's neck. The actuator should be in steam up position (factory setting). **Ensure that the actuator is mounted securely on valve body.**
2. Energise the actuator according to the wiring diagram - see wiring.
3. The direction of stem movement can be observed on the position indicator.



Auto sleep mode

1. If actuator is not mounted to the valve but connected to the power supply, it will first run to its extracted end position (buzz noise from the motor will appear). This behavior will last for max 3 minutes when power supply will be automatically cut off from electro motor and LED indicators.
2. It is mandatory to drive the spindle of the actuator to upper position before it will be installed on valve (please refer to manual override drawings)!
3. Auto sleep mode switches back to learning mode by pressing RESET button or by cycling power supply.

Contact details

Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



The Danfoss Design center

Discover the Design Center, our advanced digital platform that streamlines product selection. With integrated tools and enhanced type pages, it's simpler than ever to access product information and documentation, and to select the right products. Check the availability of Danfoss products at partner locations and enjoy seamless transitions from selection to purchase with our basket-to-basket functionality. Whether you're buying from our distributors or directly from the Product Store, the Design Center simplifies your experience. Learn more at: designcenter.danfoss.com.



The Danfoss product store

The Danfoss Product Store is a one-stop shop available 24/7 for our customers, no matter where you are in the world or what area of industry you work in. Browse our catalog, check product details and documentation, view your prices and product availability, and quickly finalize your purchase. Start browsing at: store.danfoss.com.



Danfoss Partner Portal/Product Data tool

Designed to support you with easy access to product data extracts, essential resources, tools, and information. The Partner Portal provides a centralized hub for product documentation, training materials, marketing assets, and technical support, ensuring you have everything you need to succeed and grow your business with Danfoss. The Partner Portal is available 24/7 at: partner.danfoss.com and is ready to support your business.



Find technical documentation

Find technical documentation you need to get your project up running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more. Start searching now at: documentation.danfoss.com.



Danfoss Learning

Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications industry topics, and trends that will help you do your job better. Find your local Danfoss website here: learning.danfoss.com.



Get local information and support

Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert - all in your own language. Find your local Danfoss website here: danfoss.com.

Danfoss A/S

Climate Solutions . danfoss.com . +45 7488 2222

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues description, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the products. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.
