

ENGINEERING  
TOMORROW

*Danfoss*

## Infographic

Explore the evolution  
in actuation:

a **hands-on comparison**  
**of the 1st and 2nd**  
**generation AME 110NL/X**  
modulating actuators  
for AB-QM 4.0 PICVs



Continue



# Products

## Digitalization of analog actuators

The 2nd generation of Danfoss AME 110NL/X modulating actuators brings improved accuracy and efficiency through the integration of a step motor, converting analog signals into precise digital positions. This results in better indoor comfort, enhanced HVAC system performance, and reduced energy consumption. With a robust design and increased durability, the new generation ensures long-lasting reliability while supporting sustainability goals.

Continue reading to find out the most relevant technical differences.

Continue for a detailed comparison by clicking the buttons:

Electrical >

Mechanical >

Performance >

Other >

### 1st generation AME modulating actuators

- AME 110 NL | 24V AC with 24 s/mm
- AME 110 NLX | 24V AC with 24 s/mm + X-signal
  
- AME 120 NL | 24V AC with 12 s/mm
- AME 120 NLX | 24V AC with 12 s/mm + X-signal



### 2nd generation AME modulating actuators

- AME 110 NL | 24V AC/**DC** with **12 or 3** s/mm
- AME 110 NLX | 24V AC/**DC** with **12 or 3** s/mm + X-signal





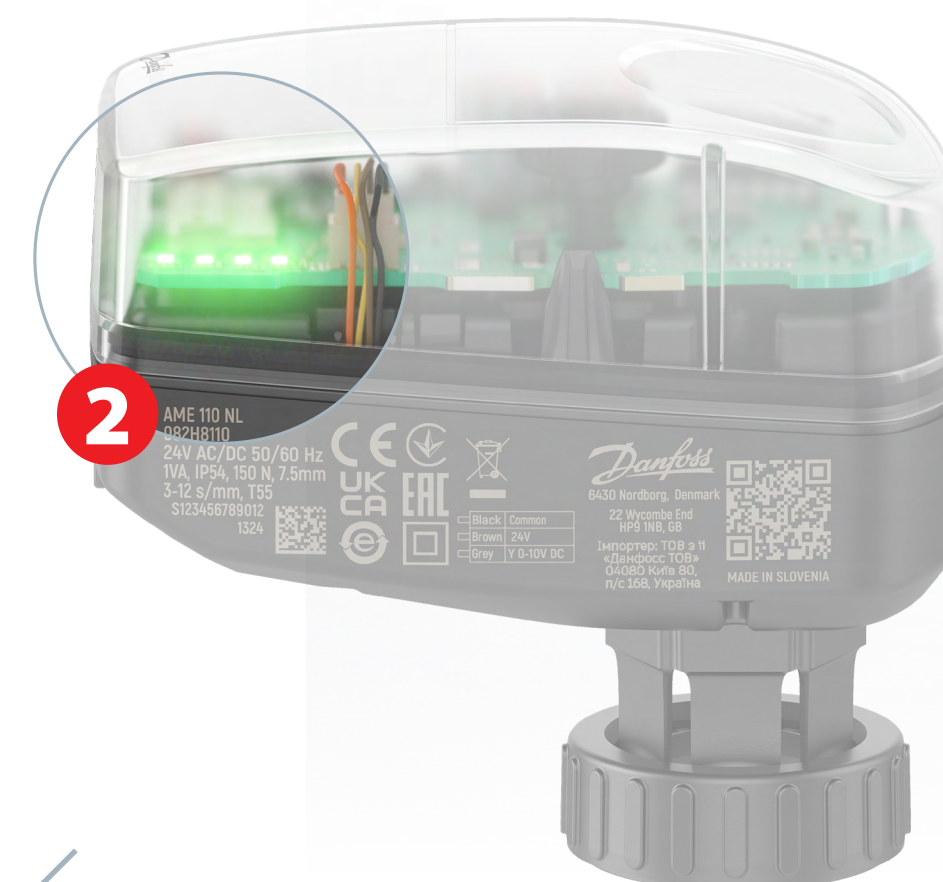
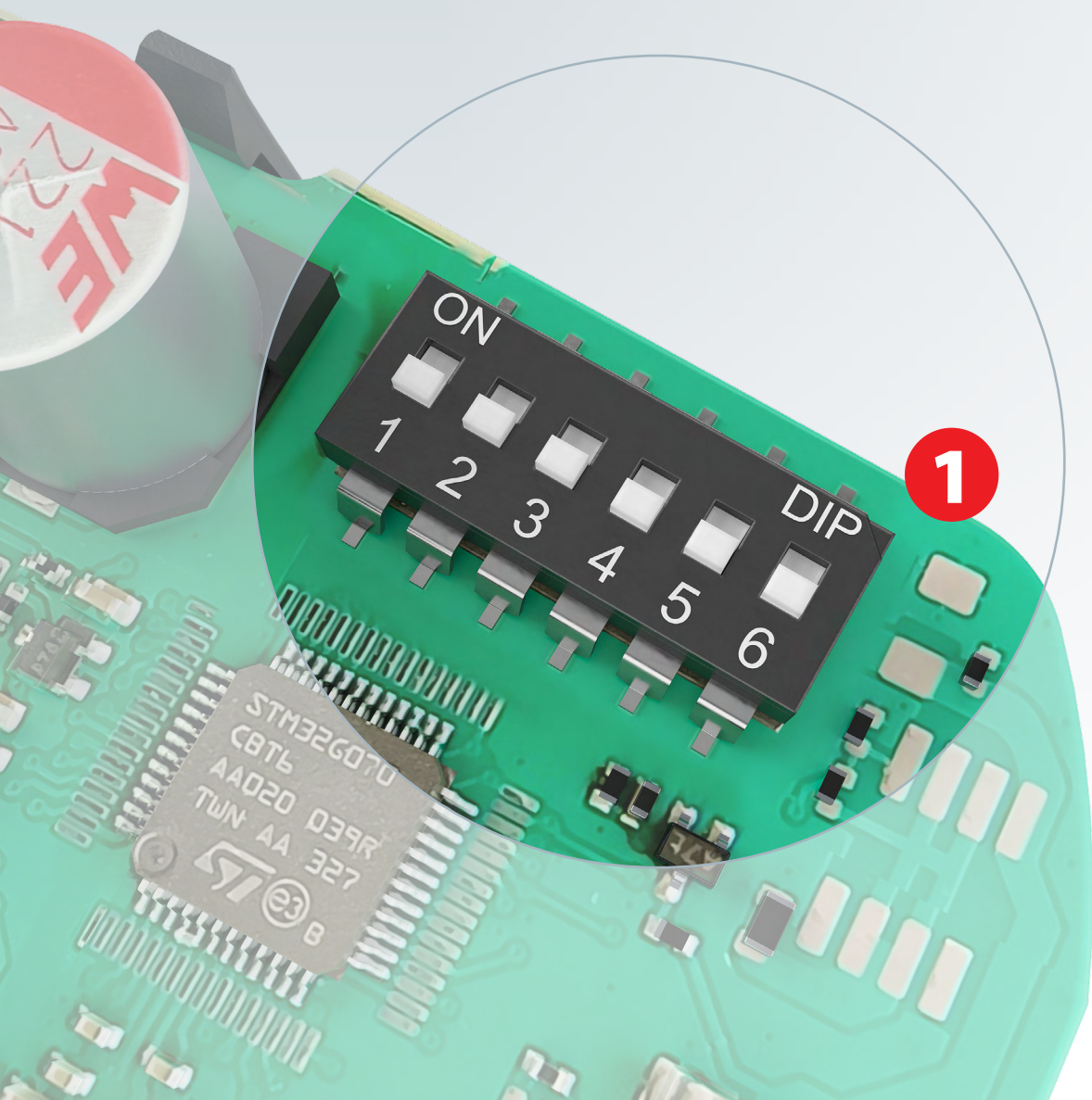
# Electrical

## 1st Gen.

<b>Motor type</b>	Asynchronous motor
<b>Power supply</b>	24V AC +20% to -15%, 50/60Hz
<b>Power consumption</b>	2VA (AC)
<b>Selectable control signal</b>	0-10V, 2-10V, 0-20mA, 4-20mA
<b>X-signal (feedback on NLX version)</b>	0-10V for 0-10V or 0-20mA control signal 2-10V for 2-10V or 4-20mA control signal
<b>DIP switch</b>	8 function selections
<b>Position indicator</b>	Mechanical
<b>Warnings/alarms</b>	Simple 1x LED (red)

## 2nd Gen.

<b>Step motor</b>	24V AC/ <b>DC ±20%</b> , 50/60Hz
<b>1W (DC), 1.1VA (AC)</b>	
<b>Selectable control signal</b>	0-10V, 2-10V, 0-20mA, 4-20mA
<b>X-signal (feedback on NLX version)</b>	0-10V for 0-10V or 0-20mA control signal 2-10V for 2-10V or 4-20mA control signal
<b>DIP switch</b>	<b>1</b> 6 function selections
<b>Position indicator</b>	<b>2</b> 4x LED (green)
<b>Warnings/alarms</b>	<b>3</b> Advanced 2x LED (multicolor)

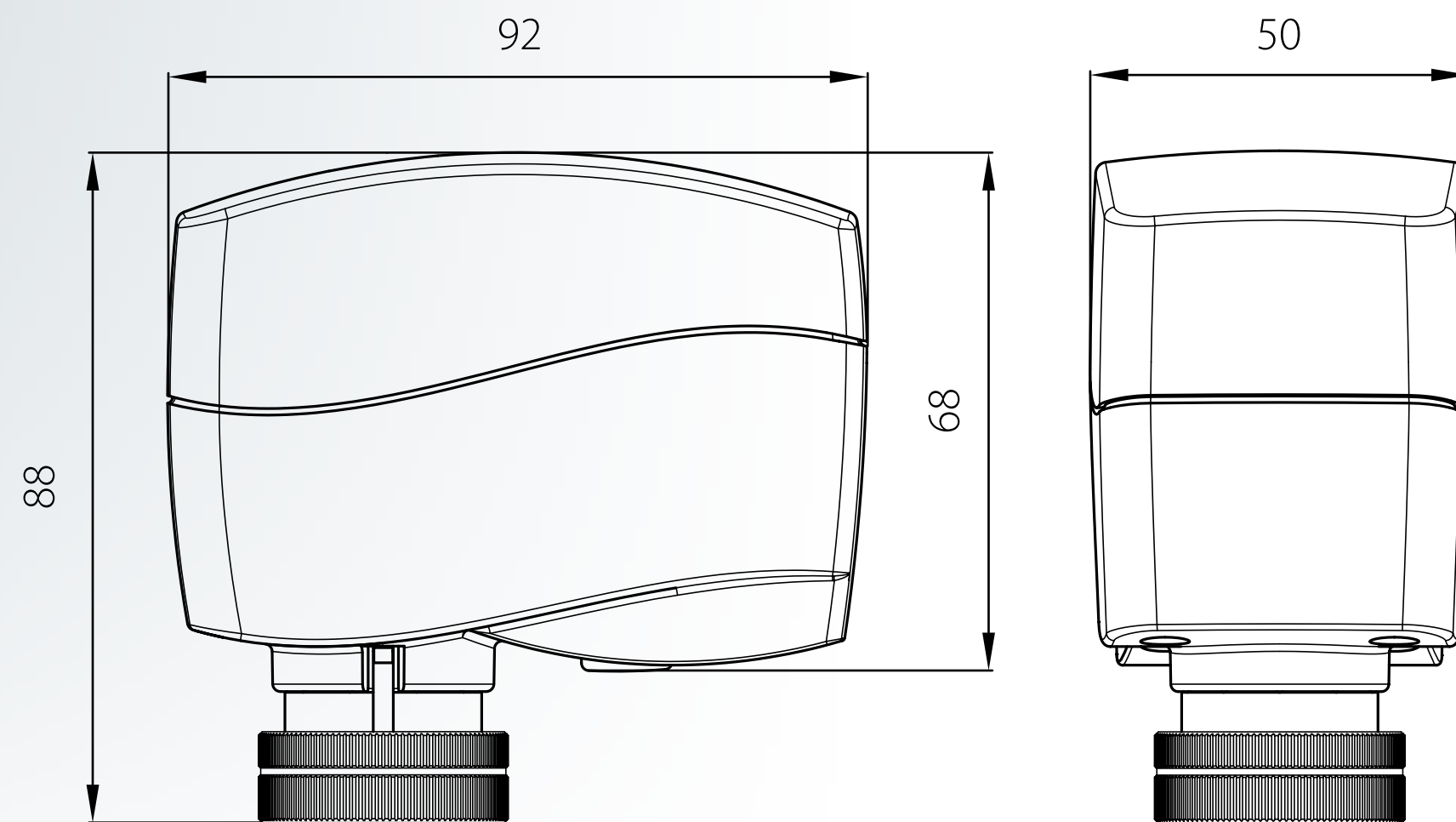




# Mechanical

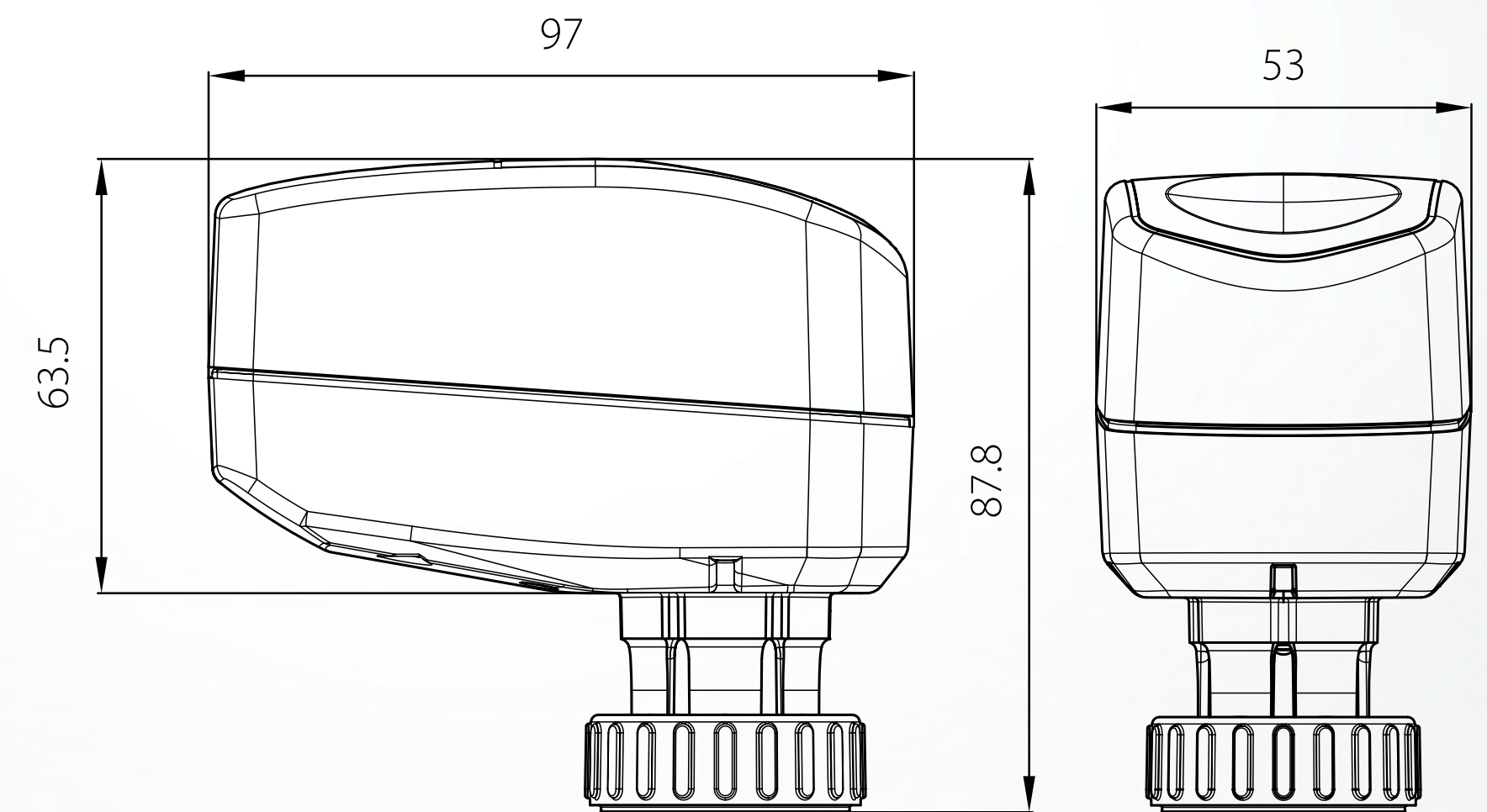
## 1st Gen.

IP classification	IP 42
Mounting positions	Not upside down
Stroke	5.5 mm
Force	130N
Size	92x88x50 mm



## 2nd Gen.

IP classification	<b>IP 54</b>
Mounting positions	<b>In all directions</b>
Stroke	<b>7.5 mm</b>
Force	<b>150N</b>
Size	<b>97x87.8x53 mm</b>





# Performance

## 1st Gen.

<b>Number of steps</b>	256 over total valve stroke
<b>Position Accuracy</b>	N/A
<b>Characteristic</b>	Linear (default) or Logarithmic
<b>Speed</b>	12 s/mm (AME 120NL/X) or 24 s/mm (AME 110NL/X)
<b>Calibration and valve stroke detection</b>	Mechanical
<b>Calibration speed</b>	Slow (using selected speed)
<b>Calibration routine</b>	Manually (with DIP switch or reset button)



## 2nd Gen.

<b>Number of steps</b>	<b>Up to 4,000</b> over total valve stroke
<b>Position Accuracy</b>	<b>± 0.1mm</b>
<b>Characteristic</b>	<b>Logarithmic (default)</b> or Linear
<b>Speed</b>	<b>3 s/mm</b> or 12 s/mm (default)
<b>Calibration and valve stroke detection</b>	<b>Electronic</b>
<b>Calibration speed</b>	<b>Fast (always 6 s/mm)</b>
<b>Calibration routine</b>	<b>Automatically (on every power up)</b> or manually with reset button





# Other

## 1st Gen.

<b>Cable</b>	Halogen free cables
<b>Cable lengths</b>	1.5m ; 5m ; 10m
<b>Cable colors</b>	24V: red GND/Common: black 0-10V: grey X-signal: white
<b>QR code</b>	None
<b>Packaging</b>	Single / multipack
<b>RoHS compliance</b>	With exemptions
<b>Environmental Product Declaration (EPD) available</b>	Yes <a href="#">Download here</a>
<b>Valves</b>	AB-QM 4.0 DN 15-32

## 2nd Gen.

**Harmonized** halogen free cables, according **EN 50525-3-11**

1.5m ; **2.5m** ; 5m

24V: **brown**  
GND/Common: black  
0-10V: grey  
X-signal: **blue**  
**according VDE 293-308 standards**

**Link to technical documentation**

Single / **Industry pack**

**Without** exemptions

Yes

[Download here](#)

AB-QM 4.0 DN 15-32



For a full overview of technical specifications click the button:



[Go to Product store](#) >

For Tender text description click the button:

[Go to Tender text](#) >

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