

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



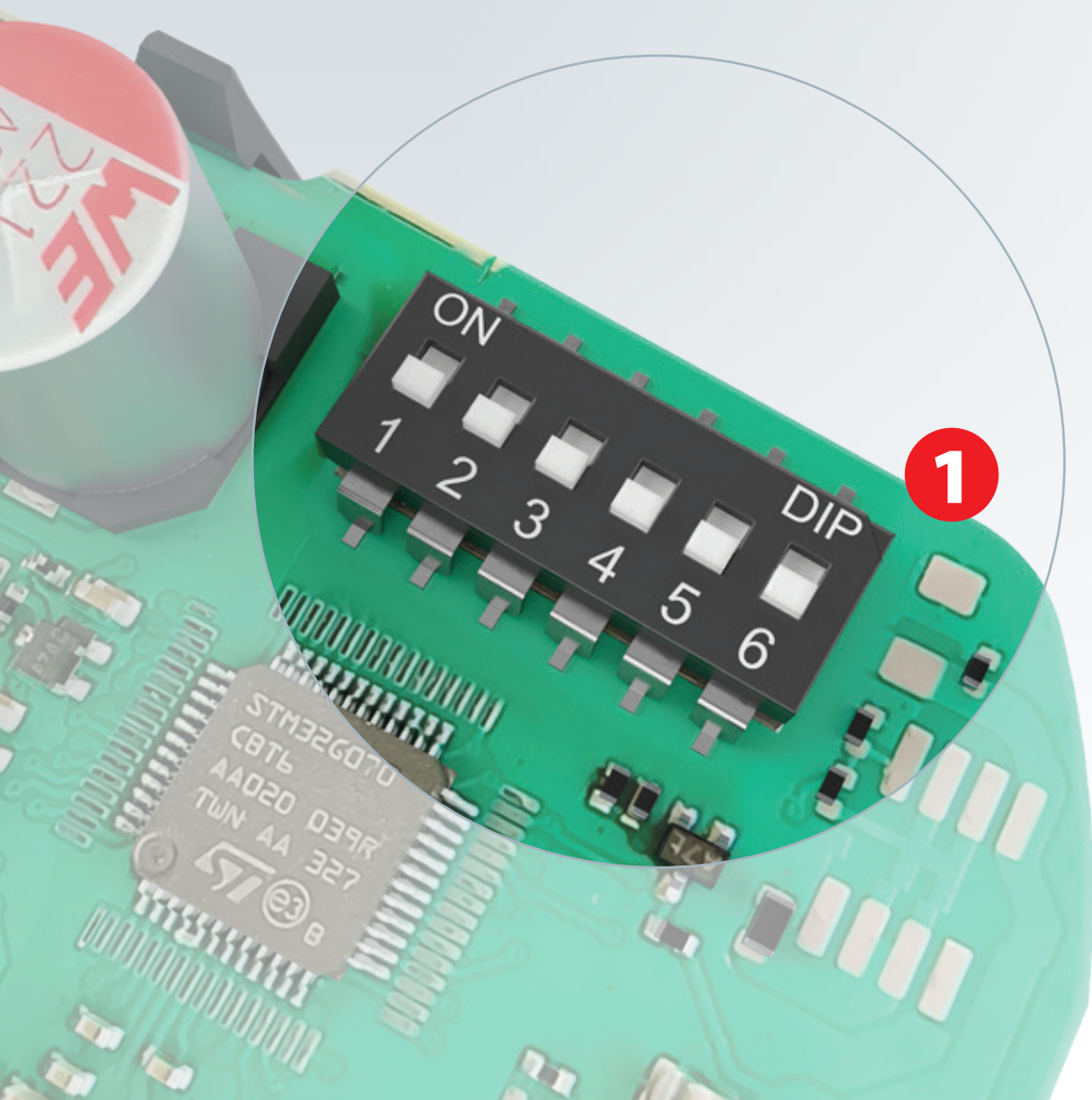


# Electrical

## 1st Gen.

## 2nd Gen.

Motor type	Asynchronous motor	Step motor
Power supply	24V AC +20% to -15%, 50/60Hz	24V AC/ <b>DC ±20%</b> , 50/60Hz
Power consumption	2VA (AC)	<b>0.4-1.4W (DC), 1.1-3.4VA (AC)</b>
Selectable control signal	0-10V, 2-10V, 0-20mA, 4-20mA	0-10V, 2-10V, 0-20mA, 4-20mA
X-signal (feedback on NLX version)	0-10V for 0-10V or 0-20mA control signal 2-10V for 2-10V or 4-20mA control signal	0-10V for 0-10V or 0-20mA control signal 2-10V for 2-10V or 4-20mA control signal
DIP switch	8 function selections	<b>1</b> 6 function selections
Position indicator	Mechanical	<b>2</b> 4x LED (green)
Warnings/alarms	Simple 1x LED (red)	<b>3</b> Advanced 2x LED (multicolor)

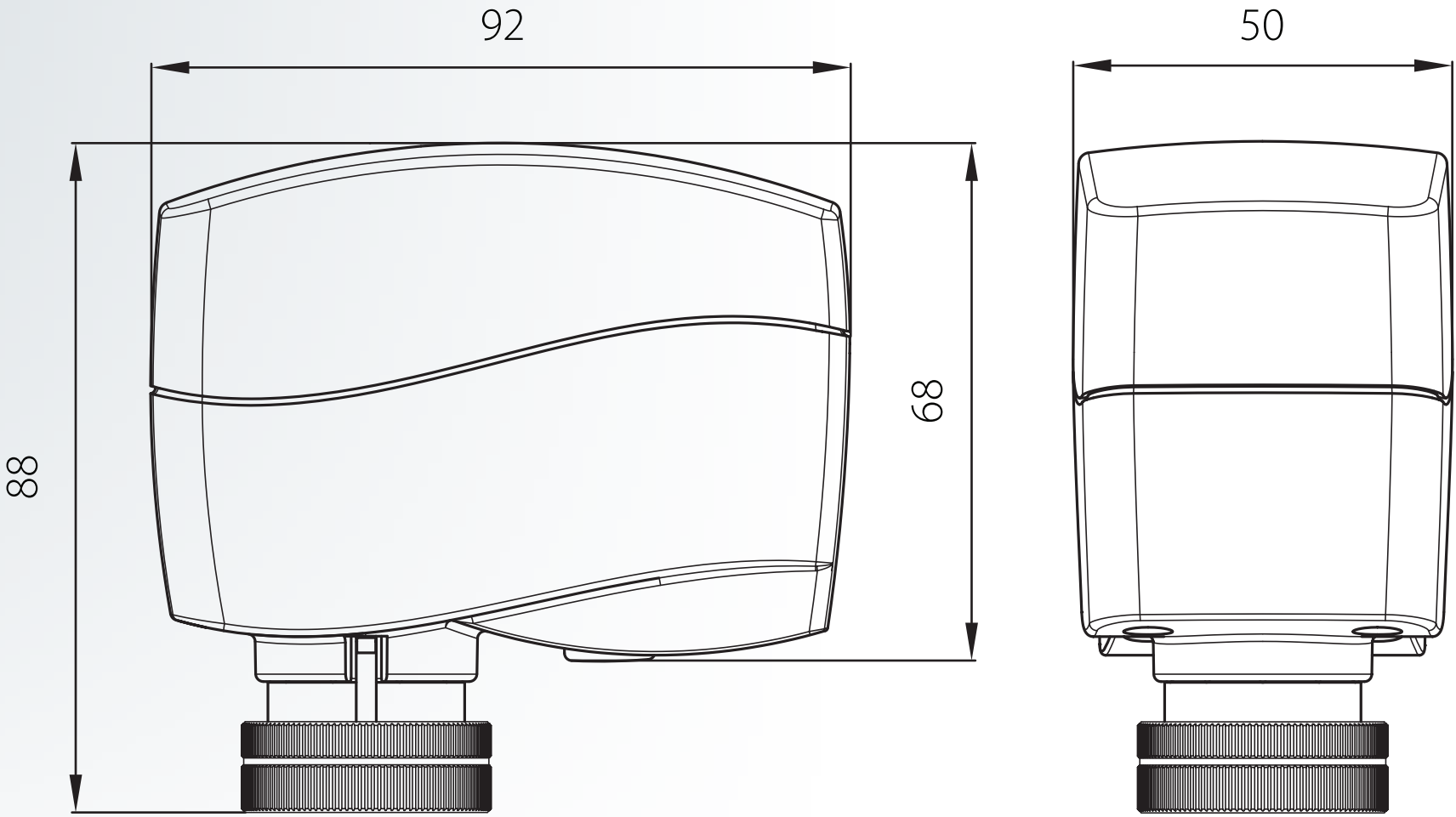




# Mechanical

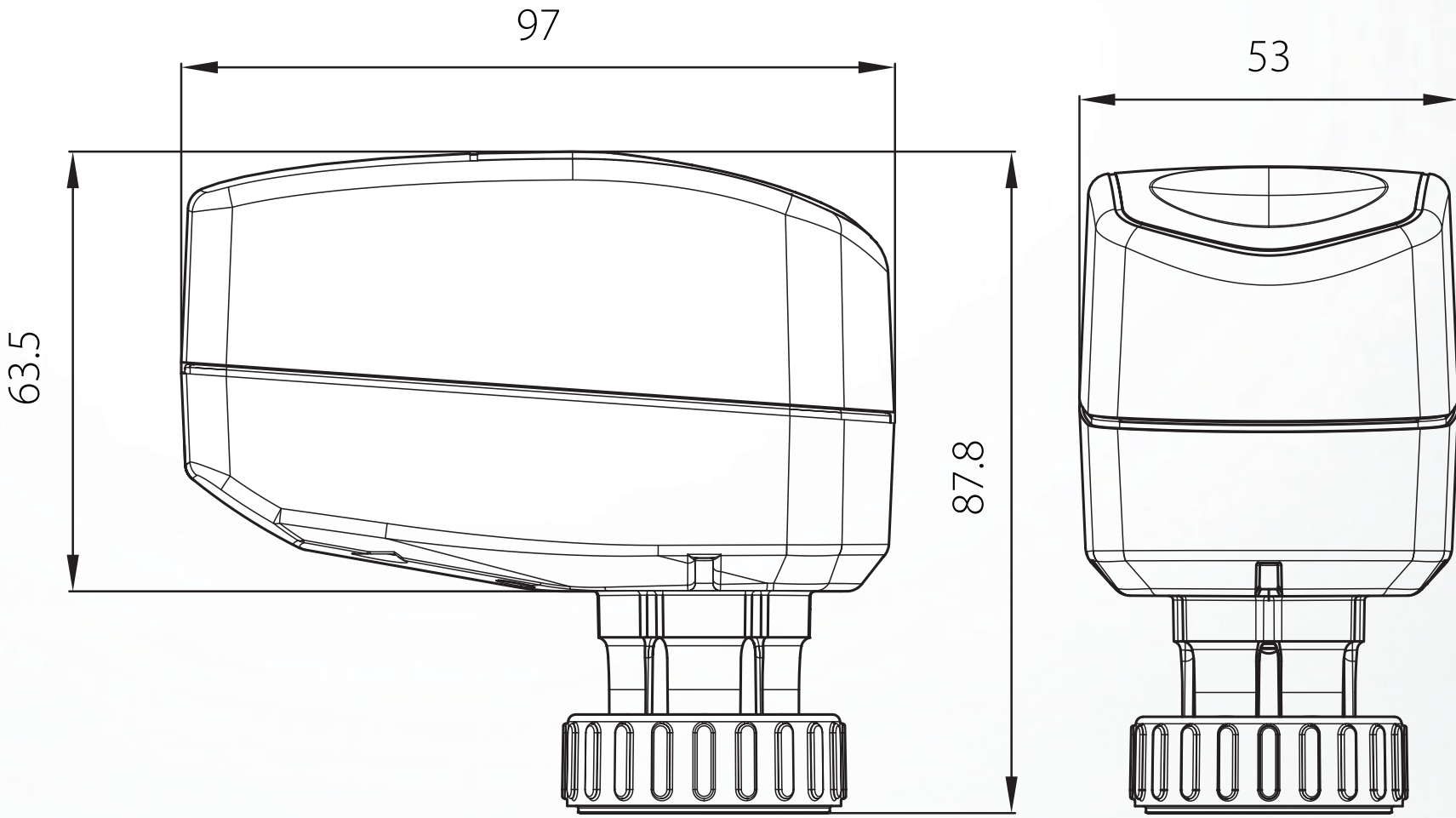
## 1st Gen.

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



## 2nd Gen.

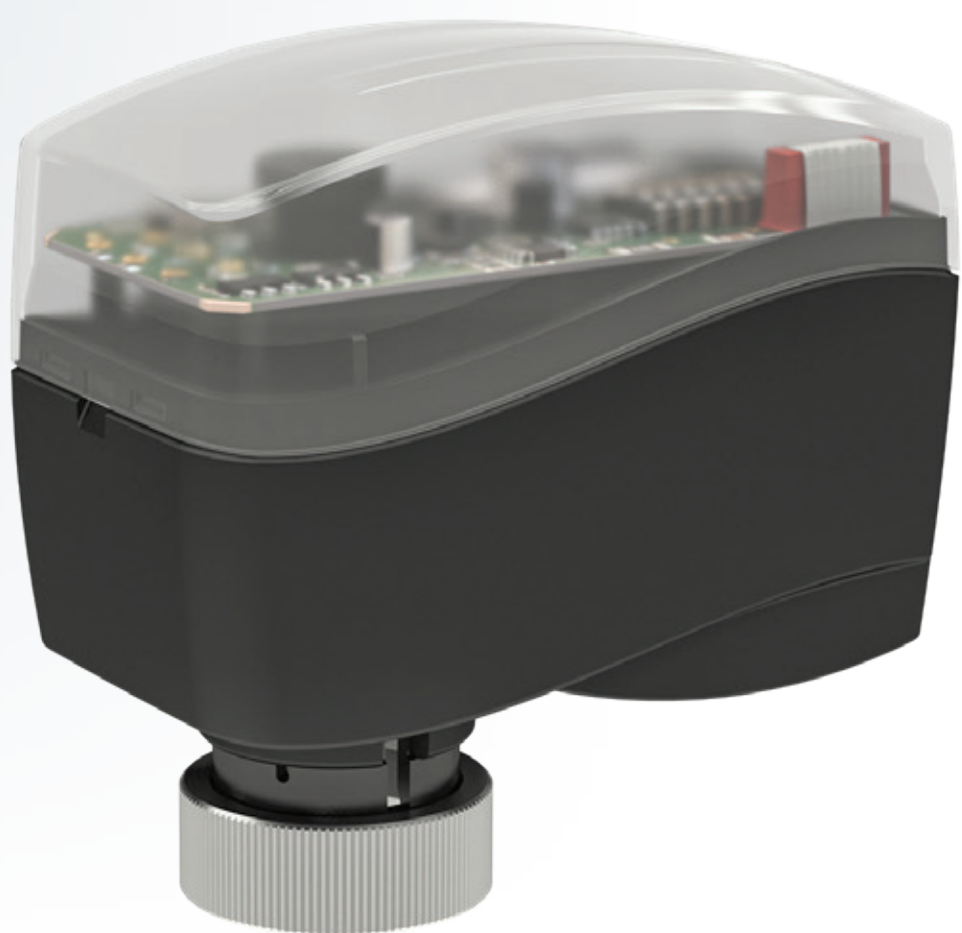
IP classification	IP 54
Mounting positions	In all directions
Stroke	7.5 mm
Force	150N
Size	97x87.8x53 mm



# Performance

## 1st Gen.

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




## 2nd Gen.

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





Other

1st Gen.		2nd Gen.	
Cable	Halogen free cables		<b>Harmonized</b> halogen free cables, according <b>EN 50525-3-11</b>
Cable lengths	1.5m ; 5m ; 10m		1.5m ; <b>2.5m</b> ; 5m
Cable colors	24V: red GND/Common: black 0-10V: grey X-signal: white		24V: <b>brown</b> GND/Common: black 0-10V: grey X-signal: <b>blue</b> <b>according VDE 293-308 standards</b>
QR code	None		<b>Link to technical documentation</b>
Packaging	Single / multipack		Single / <b>Industry pack</b>
RoHS compliance	With exemptions		<b>Without</b> exemptions
Environmental Product Declaration (EPD) available	Yes <a href="#">Download here</a>		Yes <a href="#">Download here</a>
Valves	AB-QM 4.0 DN 15-32	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:

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