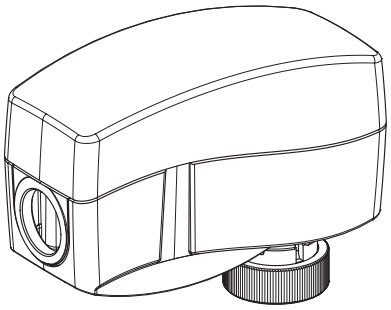
ENGINEERING
TOMORROW

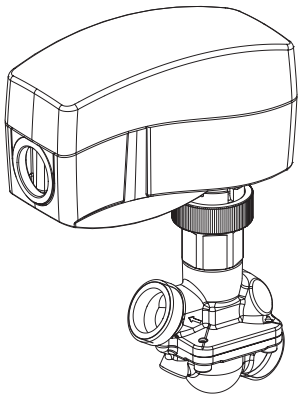
Operating Guide

AME 120 NLX-1 / 73694400

AME 120 NLX-1



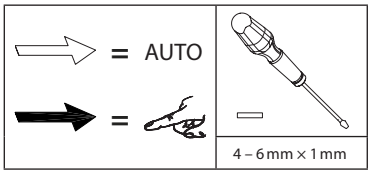
Stem Travel	5 mm
Travel Speed	10 (12) s/mm



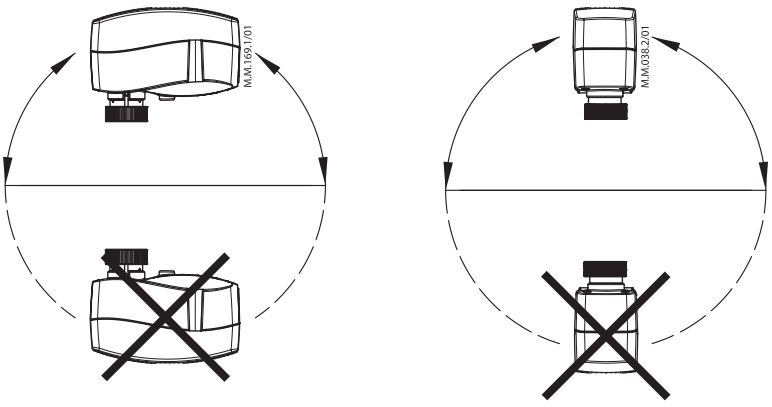
AME 120 NLX-1 +
AB-QM

MAINTENANCE FREE

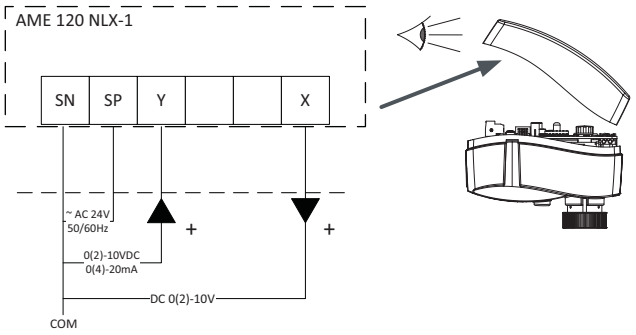
5-95 % RH
no condensing

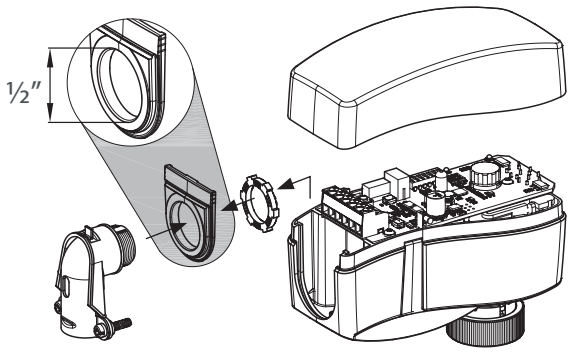


❶



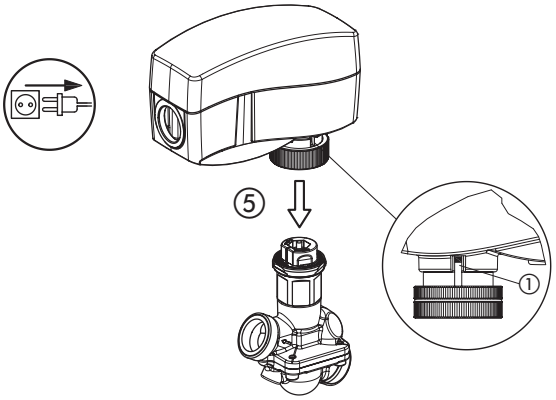
2

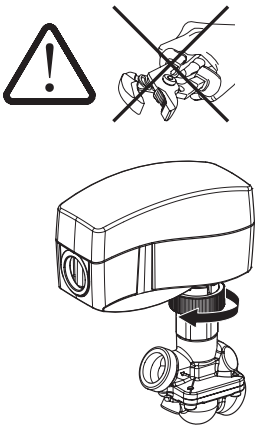




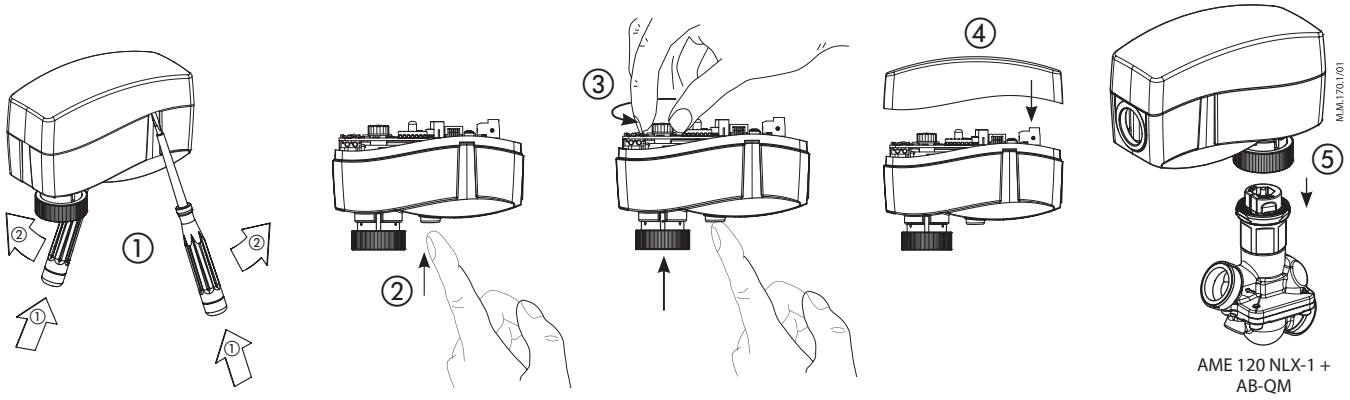
AC 24 V
Connect via safety isolating transformer.

3



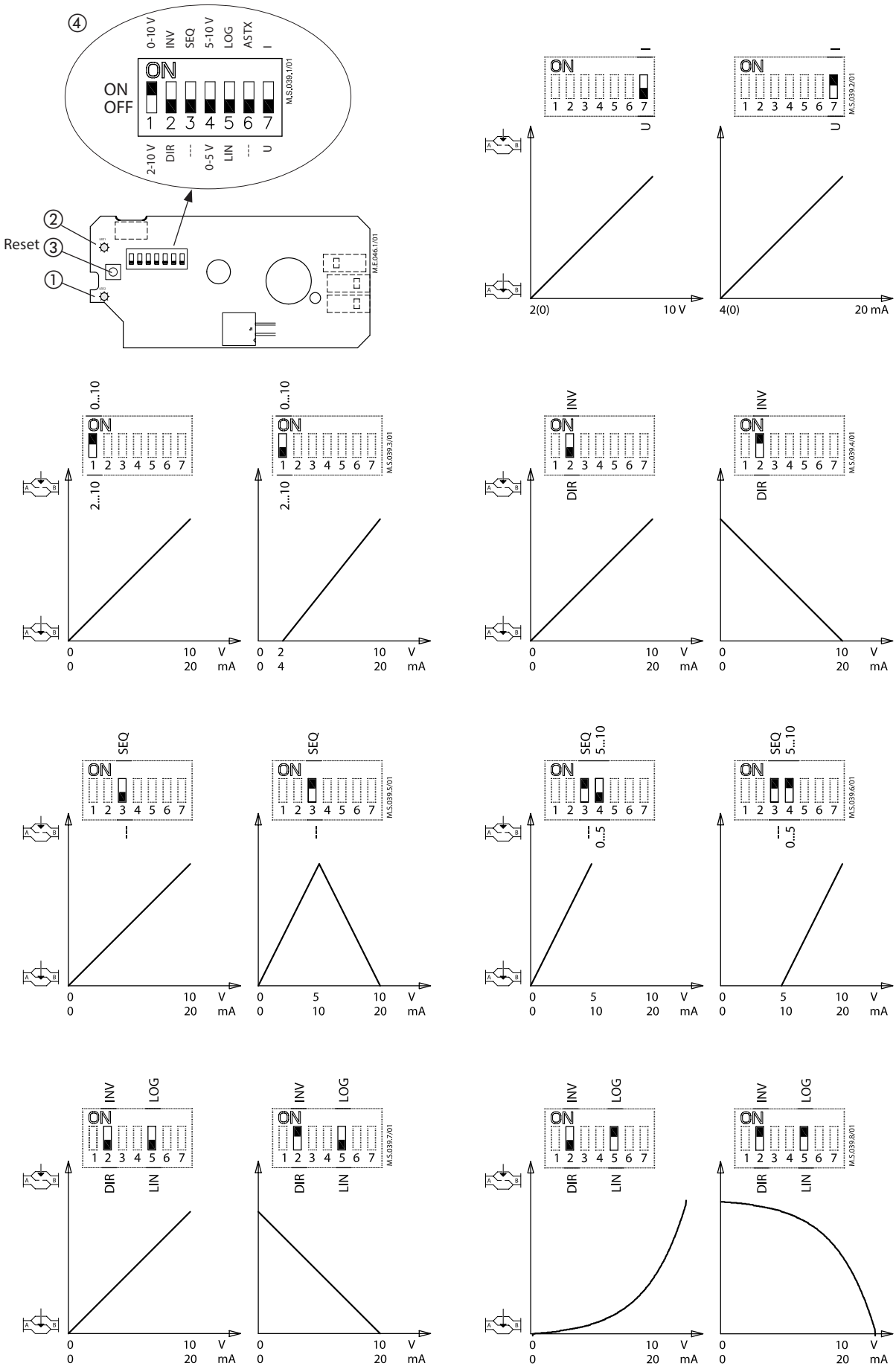


4



AME 120 NLX-1 +
AB-QM

❺



AME 120 NLX-1

ENGLISH

To avoid personal injury and damage to the device or other property, it is necessary to read and follow these instructions carefully.

Assembly, start-up, and maintenance work must be performed by qualified and authorized personnel.

Comply with the instructions of the system manufacturer or system operator.

Do not remove the cover before the power supply is switched off.

Mounting Position ❶

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

Wiring ❷

AC 24 V
Connect via Class 2 (North America) or Safety Extra-Low Voltage (SELV) (Europe). Failure to comply can lead to equipment damage or personal injury.

Switch off power before wiring the actuator!

1. Make all wiring connections in accordance with local, national, or regional regulations.
2. For applications requiring conduit, a field supplied 1/2" trade size electrician's fitting and lock nut can be mounted in the actuator enclosure. Use flexible metallic tubing or its equivalent with the field supplied fitting.
3. Insert wiring material through the removable plug or conduit fitting, and connect to the terminal block using the applicable wiring diagram ❷.

Auto sleep mode

1. If the AME 120 NLX-1 is powered by 24 V supply voltage and if it is not installed on an AB-QM valve, it will extend to the lowest position, stop, and switch off all LED indicators after 5 minutes
2. **It is mandatory to drive the spindle of the actuator to the upper position before it is installed on an AB-QM valve (please refer to manual override section ❷!**
3. Auto sleep mode switches back to learning mode by pressing RESET button or by cycling power supply.

Installation ❸

1. Check the valve neck. The actuator should be in the full up position ① (factory setting). If it is not, refer to the manual override instructions and reposition the actuator to its full up position ❸①.
2. The actuator is fixed to the valve body by means of a ribbed nut which requires no tools for mounting. The ribbed nut should be hand tightened only.

DIP switch settings and reset button ❺

I) DIP switches ❺④

Factory settings:
All switches are in OFF position (except SW 1 which is in ON position)!

NOTE:
All combinations of DIP switches are allowed. All functions that are selected are added consecutively.

SW 1: 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). In case of missing control signal, during normal operation in 2-10V/4-20mA mode (OFF position), the actuator will stay in the last known position, until a valid control signal is present again. 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).

SW 2 : D/I - Direct or inverse acting selector

If set to OFF position, the actuator is direct acting (stem retracts as voltage increases). If the actuator is set to ON position, the actuator is inverse acting (stem extends as voltage increases).

SW 3: ---/Seq - Normal or sequential mode selector

If set to OFF position, the actuator is working normally in 0(2)-10V or 0(4)-20mA range. If set to ON position, the actuator is working in a sequential mode with its range dependent on the position of SW 4.

SW 4: 0-5 V/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.

SW 5: LIN/LOG - Linear or equal percentage flow through valve selector

If set to ON position, the flow through the valve is equal percentage to the control signal.
If set to OFF position, the flow through the valve is linear to the control signal.

SW 6: ---/ASTK - Anti-blocking function

Periodically repositions the valve, minimizing potential for sticking when the heating/cooling control system is inactive and 24V power remains.
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 (---), function is disabled.

SW 7: 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 ❺③

The reset button will cause the actuator to go through an auto-calibration cycle (press it for 2 s).

Manual override ❹

(for service purposes only)

Do not use the manual override if power is connected!

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

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

Function test

The light emitting diodes (LEDs)
❺① (green - direction indicator),
❺② (red - reset and normal mode indicator)
indicate whether the actuator is in operation or not, the operating status, and failures, if any.

Red LED:
- Constant On
  - Normal operation
- Flashing (1Hz)
  - Auto-calibration mode
- Flashing (~3Hz)
  - Power supply too low
  - Auto-calibration error, valve stroke too short
  - Failure during auto-calibration
- Off
  - No Power or no operation

Green LED:
- Constant On
  - Spindle retracting (valve opening)
- Flashing (1Hz)
  - Spindle extending (valve closing)
- Off
  - At set-point

The following information is provided on the device or on the instruction manual or datasheet:

A) Purpose of control: Electrical Actuator
B) Construction of control: Independently Mounted Control
C) Method of mounting control
D) Type 1 Action
E) Pollution Degree 3
F) Impulse Voltage: 500V
G) Software Class A
H) Mechanical and thermal ratings (ref to Ratings section for more details)
I) "Use ½ inch flexible metal conduit for connection"
J) "Use Listed Flexible Metal Conduit Fitting DWTT/7"
K) "Use 60°C/75°C copper (CU) conductor and wire size range (#) AWG, stranded or solid".
"The terminal tightening torque of (#) Lb per In."
L) Torque value for Cover screw: 0,6 +/-0,1 Nm.

Note (#): Values depend by field wiring ratings of terminal block employed on the device construction.

ІМПОРТЕР:
UA: ТОВ з іі «Данфосс ТОВ» 04080, Київ 80, п/с 168, Україна

Danfoss A/S
Climate Solutions • danfoss.com • +45 7488 2222