

NSVA SERIES

SMART VAV ACTUATOR FLOATING CONTROL



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NSVA smart VAV actuators provides high-performance DDC (direct digital control) of pressure-independent, VAV(variable-air-volume) function that are designed and produced for extended functionalities in HVAC systems, VAV and laboratory applications.

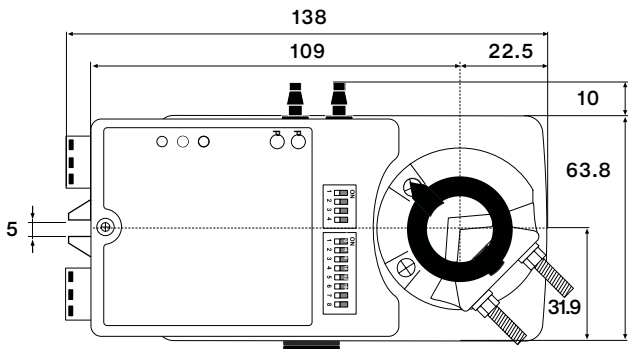
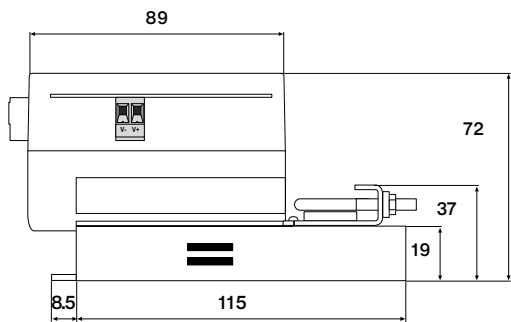
PRODUCT FEATURE

- Torque 5 Nm
- BACNET MS/TP for building automation system
- 128 binary value (BV), 128 analog value (AV)
- Compact with actuator +controller +communication + flow
- Actuator with pluggable terminal & RJ11 connection
- Adjustable angle of rotation (mechanical)
- Selectable direction of rotation of reversing actuator
- Selectable direction of rotation by switch
- Selectable baud rate

MODEL SELECTION TABLE

MODEL /TYPE	TORQUE	POWER SUPPLY	PRES-SURE DIFF.	INPUT / OUTPUT		
				Ai0, 1	Do0, 1	Ao0, 1
NSVA 0000BL	5 Nm	AC 100-277 V $\pm$ 10%	0...500 Pa	0	0	0
NSVA 0000B	5 Nm	AC 24 V $\pm$ 10%	0...500 Pa	0	0	0
NSVA 0200BL	5 Nm	AC 100-277 V $\pm$ 10%	0...500 Pa	Ai0 10 K Ω	Ai1 0-10VDC	0
NSVA 0200B	5 Nm	AC 24 V $\pm$ 10%	0...500 Pa			0
NSVA 0222B	5 Nm	AC 24 V $\pm$ 10%	0...500 Pa			2 (24VAC)
						2 (0-10 VDC)

DIMENSION (mm)



TECHNICAL SPECIFICATION

MODEL NUMBER	NSVA
TORQUE	5 Nm
SHAFT DIMENSION	From Ø 6 to 16 mm round / □ 5 to 12 mm square*
CONTROL SIGNAL	Floating control
RUNNING TIME	75...85 sec
POWER SUPPLY	
• NSVA XXXXB	AC 100-277V ± 10% - 50/60Hz
• NSVA XXXXB	AC 24V ± 10% - 50/60Hz
POWER CONSUMPTION	
• OPERATING	1.5 W
• END POSITION	0.5 W
CONNECTION	
• ACTUATOR	Pluggable terminal 5.0
• HMI	RJ11
• FLOW	Outside diameter 3.175 mm(0.125")
PROTECTION CLASS	
• NSVA XXXXB	Class II □
• NSVA XXXXB	Class III ◇
ANGLE OF ROTATION	90° (95° mechanical)
ROTATION	Selectable direction of rotation by DIP switch
MANUAL OF ROTATION	Manual of rotation by push button in the side
MAX . 95° ANGLE OF LIMITING	Can be limited at both ends with adjustable mechanical end stops
DIP SWITCH	
• SW1	Baud rate & Terminating Resistor & Rotation select
• SW2	MAC address setting
SOUND LEVEL MOTOR AND EFS	42 dB (A)
IP PROTECTION	IP 20
MAINTENANCE	Maintenance Free

*Note that shaft dimension has a tolerance offset of ± 0.2mm.

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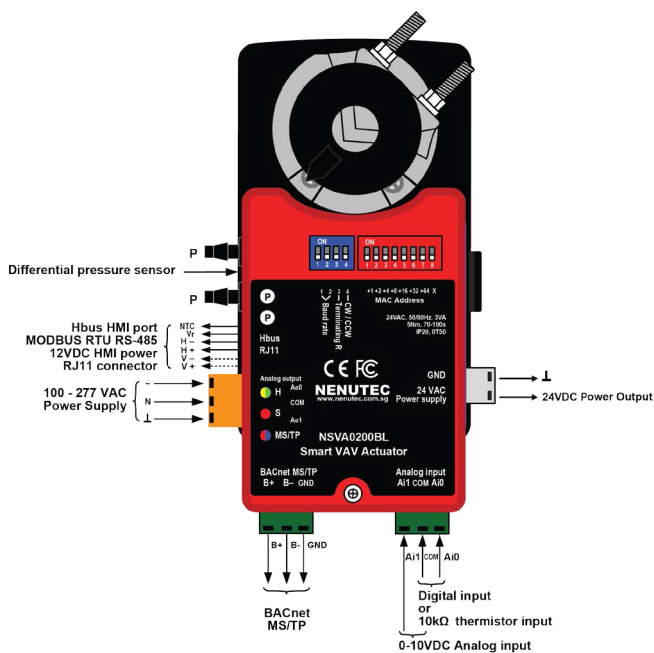
SMART VAV ACTUATOR FLOATING CONTROL

WEIGHT	
• NSVA 0000B, NSVA 0200B	600g
• NSVA 0200BL, NSVA 0200BL	680g
• NSVA 0222B	700g
LIFE CYCLE ACTUATOR	60,000 full cycles
FOR WIRE SIZING	4 VA
MCU	32 bit MCU
MEMORY	384K Flash, 8K FRAM & 1M Flash memory
COMMUNICATION	
• ACTUATOR	BACNET MS/TP RTU RS-485, 9600-76800 BPS, 1200M
• HMI	MODBUS RTU RS-485, 9600 BPS, 30M
FLOW SENSOR	
• TYPE	Differential sensor, I2C, 16BIT
• SPAN	0...500 Pa
• MEASUREMENT RANGE	(0 to 23 m/s)
• ACCURACY	± 5% reading
INPUT	
• ANALOG INPUT(AIO)	Dry contact for any kind input include occupy sensor for energy saving Thermistor 10k (type II)
• ANALOG OUTPUT(AO0,1)	0-10 VDC , 4-20mA ,12 bits resolution
POWER OUTPUT	24VDC 80mA for sensor, NSVA0200BL,NSVA0200BL only RJ11 to 5VDC 240mA ,for HMI thermostat connected.
INDICATION	
• HMI	Red & Green led – Type(upper)
• POWER	Green led(Middle)
• BACNET MS/TP	Red & Blue led – Type(lower)
OPERATING	0...50°C, 20...90%RH, non condensing
SHIPPING AND STORAGE	-4°F to 158°F (-20°C to 70°C), 5% to 95% RH non-condensing
BACNET	BACnet Application Specific Controller (B-ASC)
CERTIFICATION	CE(EMC Directive : 2014/30/EU) FCC(Part 15,Subpart B, Class A)

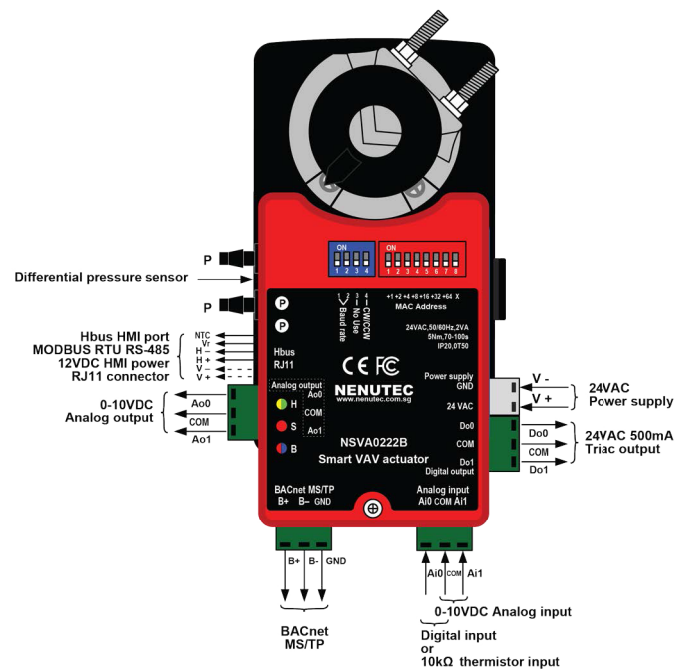
TECHNICAL SPECIFICATION

POWER INPUT

- NSVA 0000B/ NSVA 0200B/ NSVA 0222B is powered by VAC/DC 24 V. Power supply wiring connects to the two screw terminals on the controller L (live) and N (common)
- NSVA 0000BL/ NSVA 0200BL is powered by 100-277 VAC only. Power supply wiring connects to the two screw terminals on the controller L (live), N (common), and G (ground). Please take note that ground connection is required.



NSVA 0000B/ NSVA 0200B/ NSVA 0222B



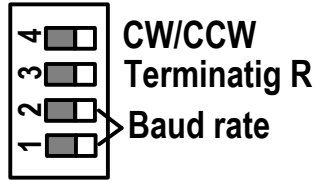
NSVA 0000BL/ NSVA 0200BL

POWER INPUT (AI,AO,DO,MS/TP)	Pluggable terminal block
HBUS (HMI COMMUNICATION PORT)	RJ11 connector
PRESSURE SENSOR	PE tube No polarity Outside diameter 3.175mm (0.125")
STATUS INDICATION	HMI Room Unit Upper (Yellow & Blue Led) Middle (Red Led) BACNET MS/TP Lower (Yellow & Blue Led)

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ADJUSTING CONTROL SIGNALS NSVA (S1)

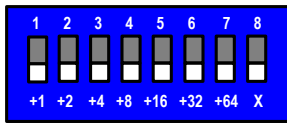


SW4(S1,2) SET BAUD RATE OF COMMUNICATION

- Factory-set 38.4k. The baud rate of communication can be changed by the baud rate switch (switch on S1-S2) on the actuator's housing.

SW4(S4) CHANGING DIRECTION OF ROTATION

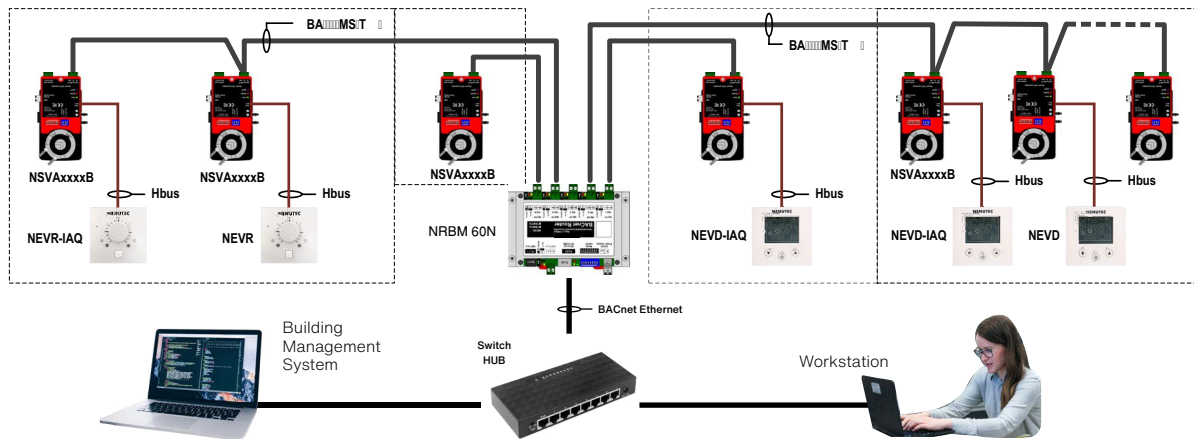
- Factory-set CW. The direction of rotation can be changed by the CW/CCW switch (switch on S4) on the actuator's housing.



SW8 SET MAC ADDRESS OF ACTUATOR

- Factory-default NO.1. The MAC address of actuator can be changed via dip switch (switch on S1-S7) on the actuator's housing. Switch 8 should not be in use.

VAV SYSTEM

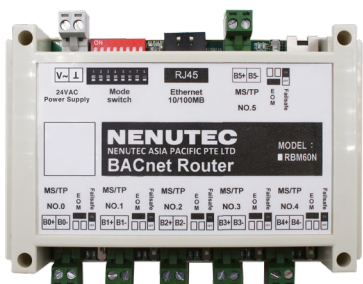


ACCESSORIES



USB TOOL FOR VAV ACTUATOR

- VAV actuator firmware update by USB tool.



GATEWAY FOR VAV ACTUATOR (MODEL RBM60N)

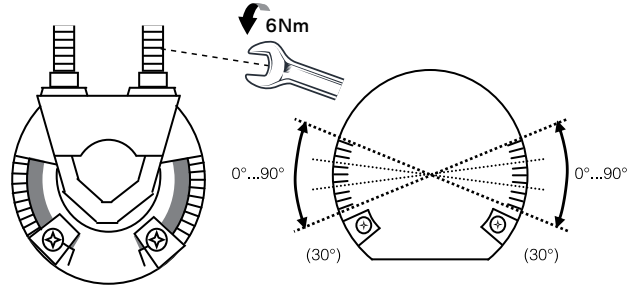
- GATEWAY for VAV actuator connect with Building Management System.

MECHANICAL LIMITING ANGLE OF ROTATION

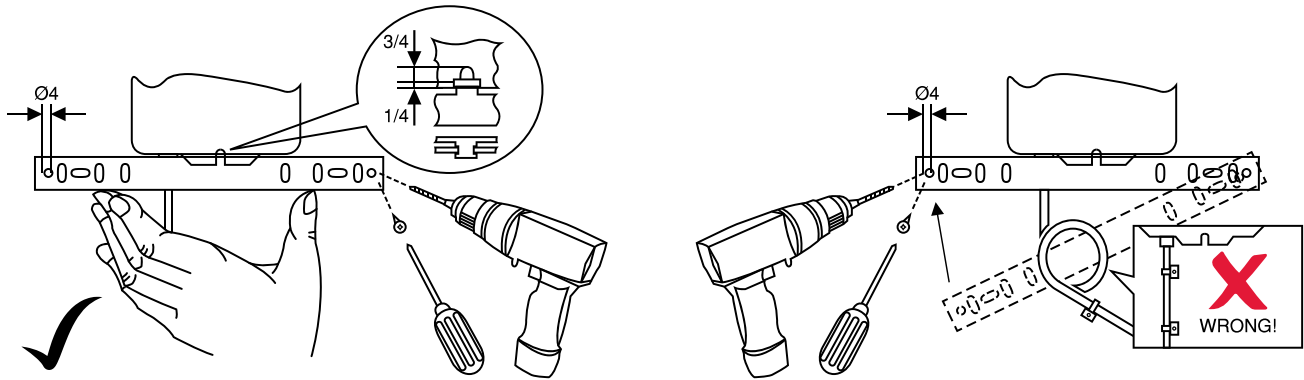
Adjustment of Mechanical Limiter

1. Loosen screw of mechanical limiter
2. Move limiter to appropriate position*
3. Tighten screw

*Working range of 90° can be reduced up to 30° from end position.



INSTALLATION / MOUNTING INSTRUCTION



IMPORTANT REMARK

For special requirement, consult your local Nenutec's representative.



This actuator includes electrical and electronic components and may not be disposed as household garbage. Please consider the local valid legislation.



AC / DC 24 V: Connect via safety isolating transformer.
AC 230 V: To isolate from the main power supply, the system must incorporate a device which disconnects the phase conductor (with at least a 3mm contact gap.)

The performance specifications are nominal and conform to acceptable industry standards. NENUTEC shall not be liable for damages resulting from misapplication or misuse of its products.