VN2

series

Product Segments

- **Industrial Motion**

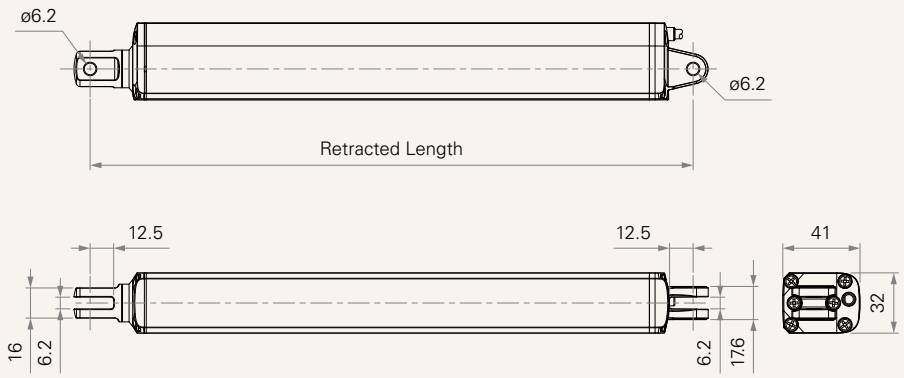
The VN2 series linear actuator is designed specifically for ventilation applications to help remove smoke, heat, and toxic gases from buildings quickly in the event of a fire. It is also designed to generate a minimum smoke layer in the lower parts of a room. The VN2 is made of high-quality aluminum, suitable for applications like fall-through protection systems and greenhouses. The VN2 is currently equipped with either a 12V or 24V DC motor.

General Features

Max. load	500N (push / pull)
Max. speed at max. load	8mm/s
Max. speed at no load	10.8mm/s
Retracted length	≥ Stroke + 189mm
IP rating	IP66 (static)
Stroke	20~500mm
Output signals	NPN Hall sensor (5~36V) * 2
Voltage	12/24V DC; 12/24V DC (thermal switch)
Operational temperature range	-40°C~+85°C
Operational temperature range at full performance	+5°C~+45°C

Drawing

Standard Dimensions
(mm)



Load and Speed (12V DC)

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load	With Load	No Load	With Load
Motor Speed (5200RPM, Duty Cycle 20%: 2min on / 8min off)							
B	500	500	500	1.5	2.0	10.8	7.5

Load and Speed (24V DC)

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load	With Load	No Load	With Load
Motor Speed (5200RPM, Duty Cycle 20%:2min on/8min off)							
B	500	500	500	0.7	1.1	10.8	8.0

Note

1 Please refer to the approved drawing for the final authentic value.

2 The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC; speed will be similar for both voltages.

3 Voltage range: 24V±10%,12V±20%.

4 The current & speed in table are tested when the actuator is extending under push load.

5 Without load, noise level ≤ 56dBA (by TiMOTION test standard, ambient noise level ≤ 56dBA)

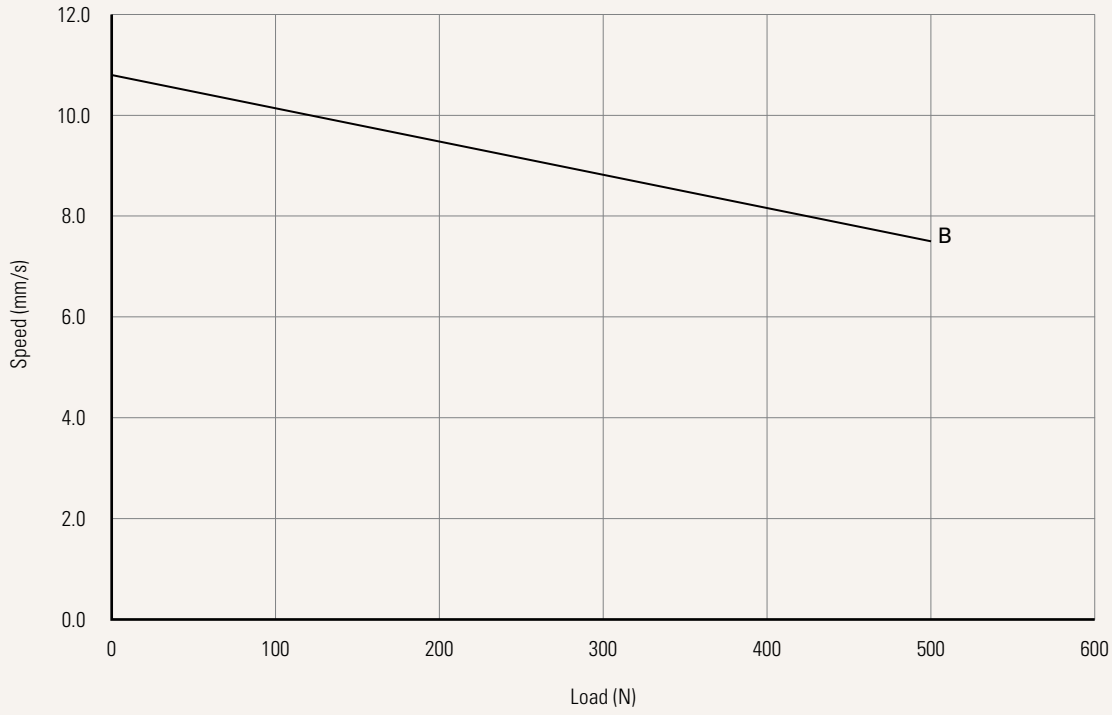
6 Standard stroke: Min. ≥ 20mm, Max. please refer to below table.

CODE	Load (N)	Max Stroke (mm)
B	≤ 500	500

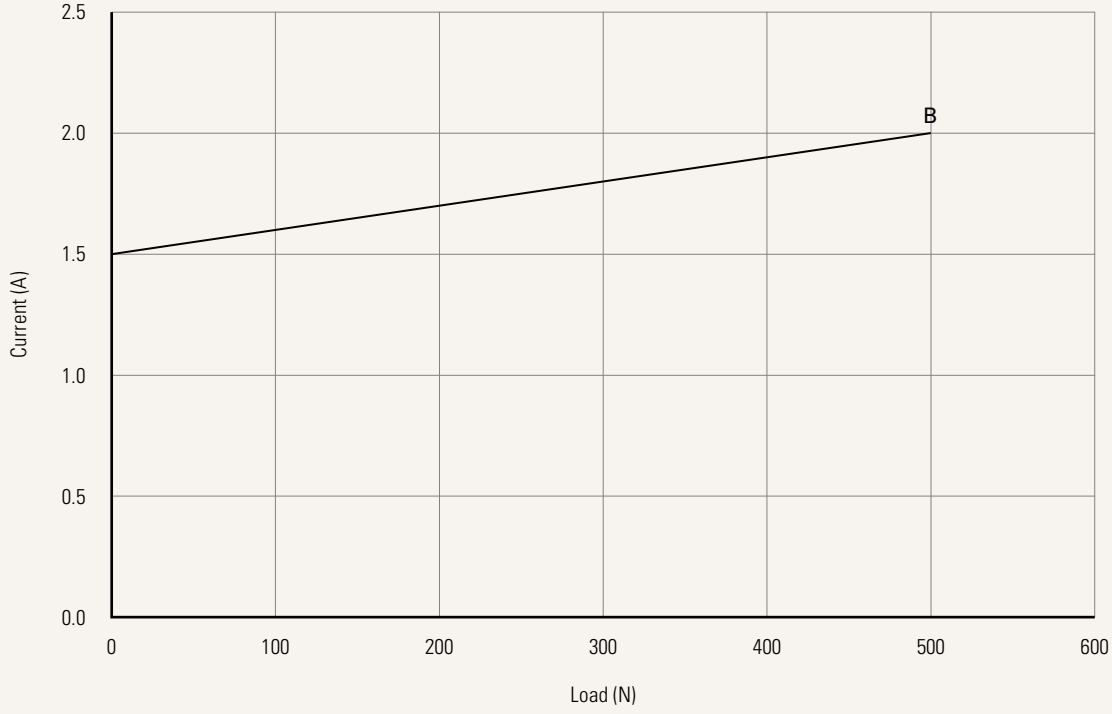
Performance Data (12V DC Motor)

Motor Speed (5200RPM, Duty Cycle 20%:2min on/8min off)

Speed vs. Load



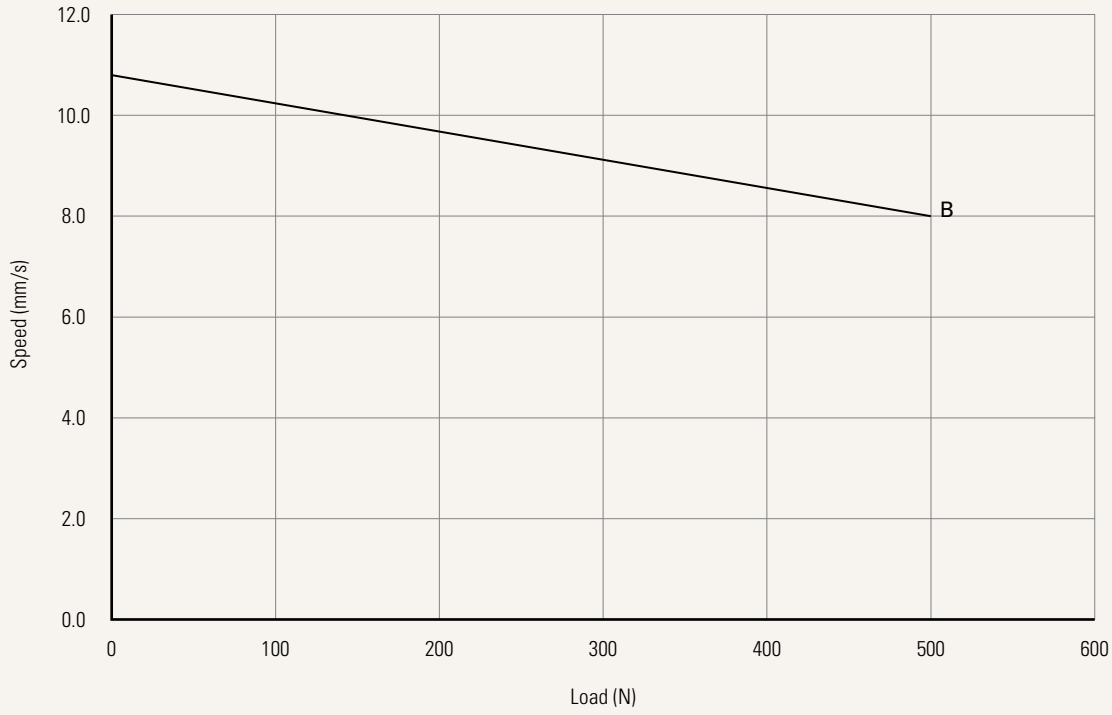
Current vs. Load



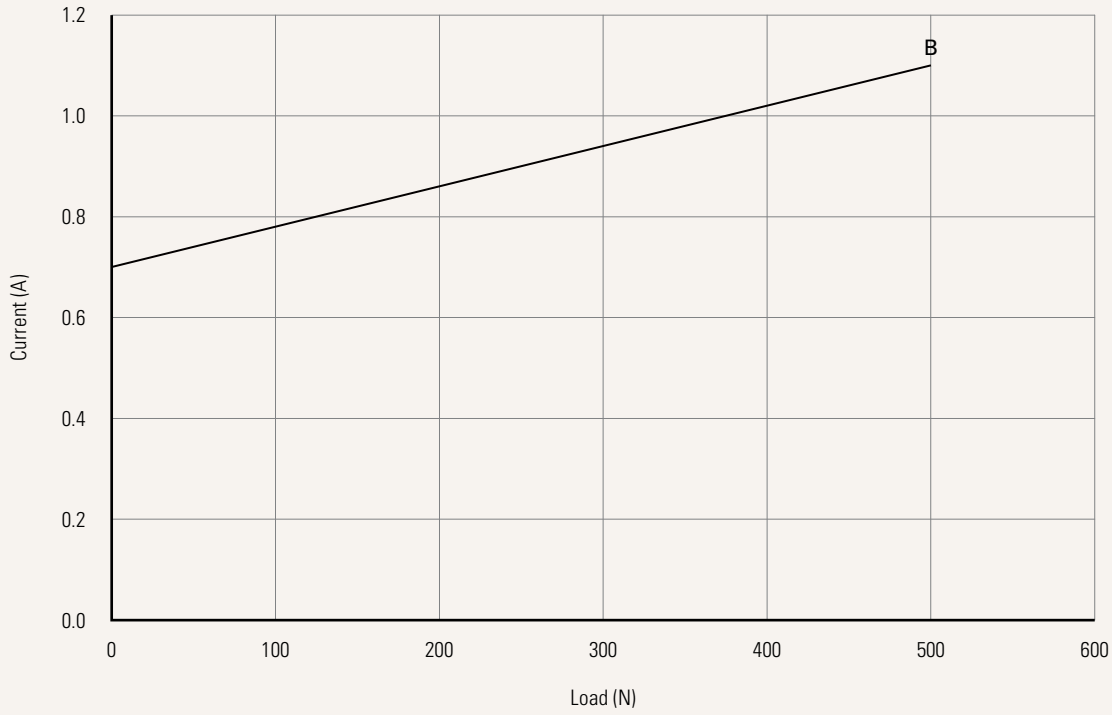
Performance Data (24V DC Motor)

Motor Speed (5200RPM, Duty Cycle 20%:2min on/8min off)

Speed vs. Load



Current vs. Load



VN2 Ordering Key

TiMOTION

VN2

Version: 20251110-K

Voltage	1 = 12V DC	2 = 24V DC	3 = 12V DC, thermal switch	4 = 24V DC, thermal switch
Load and Speed	See page 2			
Stroke (mm)	See page 2			
Retracted Length (mm)	See page 6			
Rear Attachment (mm) See page 7	1 = Plastic, slotless, hole 6.2 2 = Plastic, slotless, hole 8.2		3 = Plastic, U clevis, slot 6.2, depth 12.5, hole 6.2 4 = Plastic, U clevis, slot 6.2, depth 12.5, hole 8.2	
Outer Tube Adjustble Clamp Block	0 = Without (Option when choosing rear attachment #1, #2, #3, #4)			
Mounting Bracket	0 = Without (Option when choosing rear attachment #1, #2, #3, #4)			
Front Attachment (mm) See page 7	1 = Aluminum, slotless, hole 6.2 2 = Aluminum, slotless, hole 8.2 3 = Plastic, U clevis, slot 6.2, depth 12.5, hole 6.2		4 = Plastic, U clevis, slot 6.2, depth 12.5, hole 8.2 5 = Plastic, U clevis, slot 6.2, depth 22.5, hole 8.2	
Direction of Rear Attachment (Counterclockwise)	2 = 0°			
Color	0 = Standard			
IP Rating	1 = Without	2 = IP54	3 = IP66	
Special Function of Spindle Set	0 = Without			
Function of Limit Switches See page 9	1 = Two limit switches cut off the actuator at EOS 3 = Two limit switches send signal at EOS			
Output Signal See page 9	0 = Without		N = NPN Hall sensor (5-36V input) * 2	
Connector See page 8	1 = DIN 6P, 90°plug 2 = Tinned leads		C = Y cable (direct cut, water proof, anti-pull)	
Cable Length (mm)	0 = Without 1 = 500	2 = 1000 3 = 1500	4 = 2000 5 = 5000	B~H = Cable length for direct cut system, See page 8

VN2 Ordering Key Appendix

Retracted Length (mm)

1. Calculate A+B = Y
2. Retracted length needs to ≥ Stroke+Y

* Tolerance: fully extended length & retracted length ±3mm

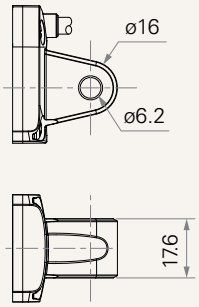
A.	
Front Attach.	Rear Attach.
	1, 2, 3, 4
1, 2	+189
3, 4	+200
5	+210

B.	
Stroke (mm)	
20~150	-
151~200	+2
201~250	+2
251~300	+2
301~350	+12
351~400	+22
401~450	+32
451~500	+42

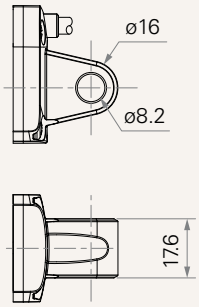
VN2 Ordering Key Appendix

Rear Attachment (mm)

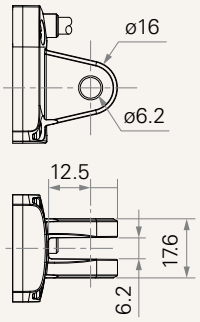
1 = Plastic, slotless, hole 6.2



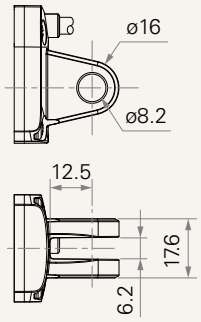
2 = Plastic, slotless, hole 8.2



3 = Plastic, U clevis, slot 6.2, depth 12.5, hole 6.2

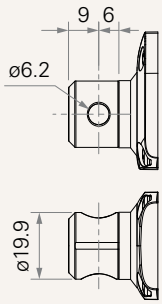


4 = Plastic, U clevis, slot 6.2, depth 12.5, hole 8.2

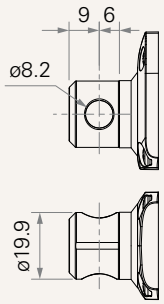


Front Attachment (mm)

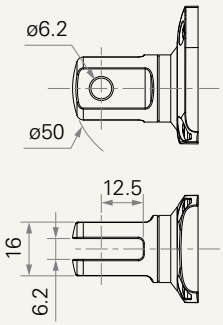
1 = Aluminum, slotless, hole 6.2



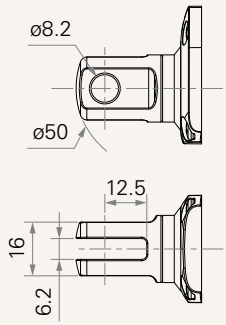
2 = Aluminum, slotless, hole 8.2



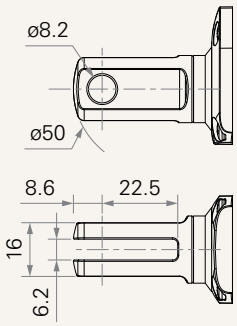
3 = Plastic, U clevis, slot 6.2, depth 12.5, hole 6.2



4 = Plastic, U clevis, slot 6.2, depth 12.5, hole 8.2



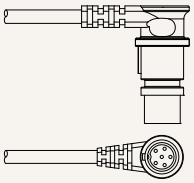
5 = Plastic, U clevis, slot 6.2, depth 22.5, hole 8.2



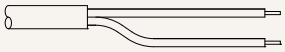
VN2 Ordering Key Appendix

Connector

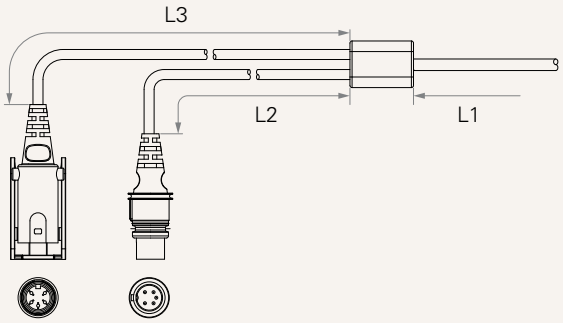
1 = DIN 6P, 90° plug



2 = Tinned leads



C = Y cable (direct cut, water proof, anti-pull)



Cable Length for Direct Cut System (mm)

CODE	L1	L2	L3
B	100	100	100
C	100	1000	400
D	100	2700	500
E	1000	100	100
F	100	600	1000
G	1500	1000	1000
H	100	100	1200

VN2 Ordering Key Appendix

Wire Definition

Port	Functions of Limit Switches	Wire Color	AWG	Output Signal	
				0. Without	2, N. Hall sensor*2
P1	1. Two limit switches cut off the actuator at end of stroke	RD	20	EXT+	EXT+
		BK	20	RET+	RET+
		RD	26	-	Vcc
		WH	26	-	S1
		BK	26	-	GND
		BU	26	-	S2
		BN	26	-	-
		GY	26	-	-
		OG	26	-	-
		VT	26	-	-
P1	3. Two limit switches send signal at end of stroke	RD	20	EXT+	EXT+
		BK	20	RET+	RET+
		RD	26	EOS-COM	Vcc
		WH	26	EOS-extended	S1
		BK	26	-	GND
		BU	26	EOS-retracted	S2
		BN	26	-	EOS-extended
		GY	26	-	-
		OG	26	-	EOS-retracted
		VT	26	-	EOS-COM

Terms of Use

The user is responsible for determining the suitability of TiMOTION products for a specific application.
TiMOTION products are subject to change without prior notice.