VN3

series

## Product Segments

• **Industrial Motion**

The VN3 series linear actuator is specifically designed for ventilation applications to help quickly remove smoke, heat, and toxic gases from buildings in the event of a fire. It is also engineered to support a reduced smoke layer in the lower parts of a room. The VN3 is constructed with high-quality aluminum, making it ideal for applications like fall-through protection systems and greenhouses. The VN3 has a higher load capacity than the VN2, and is currently equipped with either a 12V or 24V DC motor.

General Features

Max. load	3,000N (push/pull)
Max. speed at max. load	3mm/s
Max. speed at no load	6mm/s
Retracted length	≥ Stroke + 248mm
IP rating	IP66
Stroke	20~500mm
Output signals	NPN Hall sensor*2
Voltage	12/24V DC; 12/24V DC (thermal switch)
Operational temperature range	-20°C~+65°C
Operational temperature range at full performance	+5°C~+45°C

Drawing

Standard Dimensions
(mm)
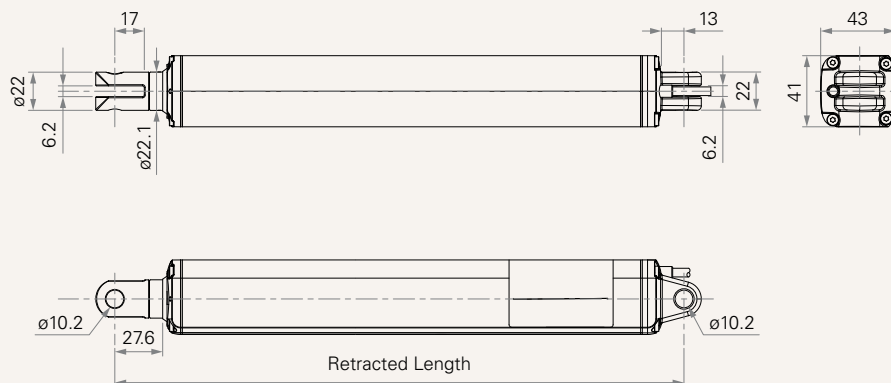
Load and Speed

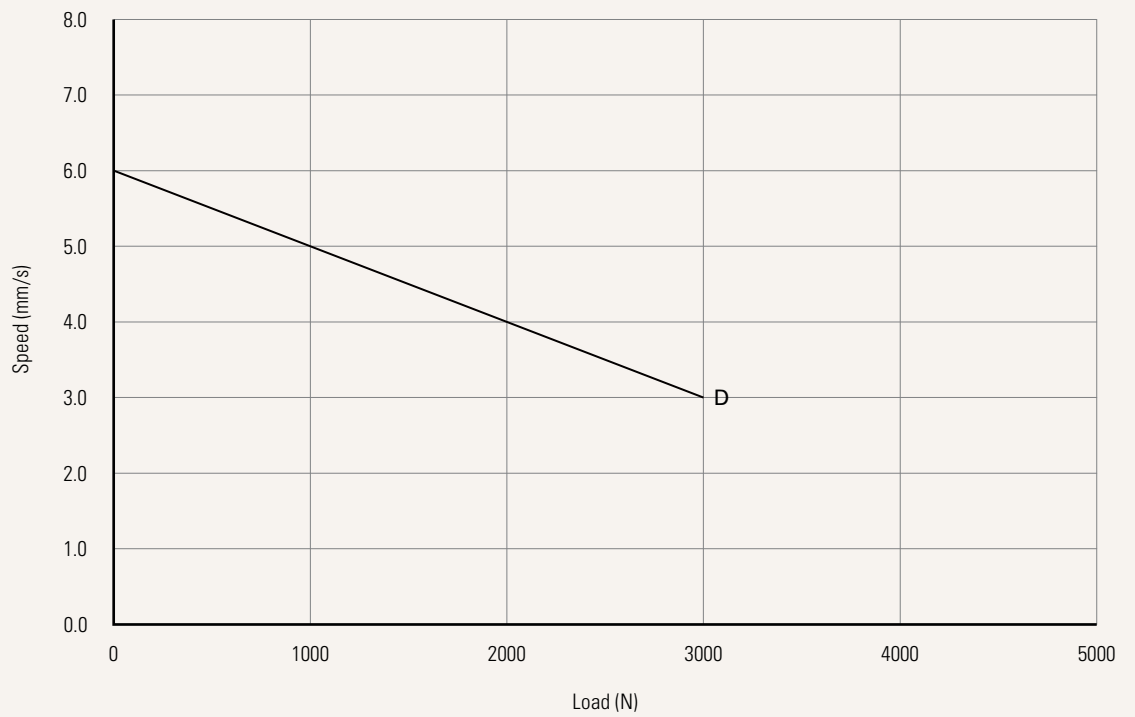| CODE	Load (N)		Self lock (N)	Duty cycle	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull			No Load 24V DC	With Load 24V DC	No Load 24V DC	With Load 24V DC
Motor Speed (5600RPM)								
D	3000	3000	3000	10%	0.4	2.8	6.0	3.0

Note

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

2 This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.

3 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.

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

5 The current & speed in table and diagram are tested with a stable 24V DC power supply.

6 Without load, noise level ≤ 65dBA (by TiMOTION test standard, background noise level ≤ 36dBA)

7 Standard stroke: Min. ≥ 20mm, Max. please refer to below table.
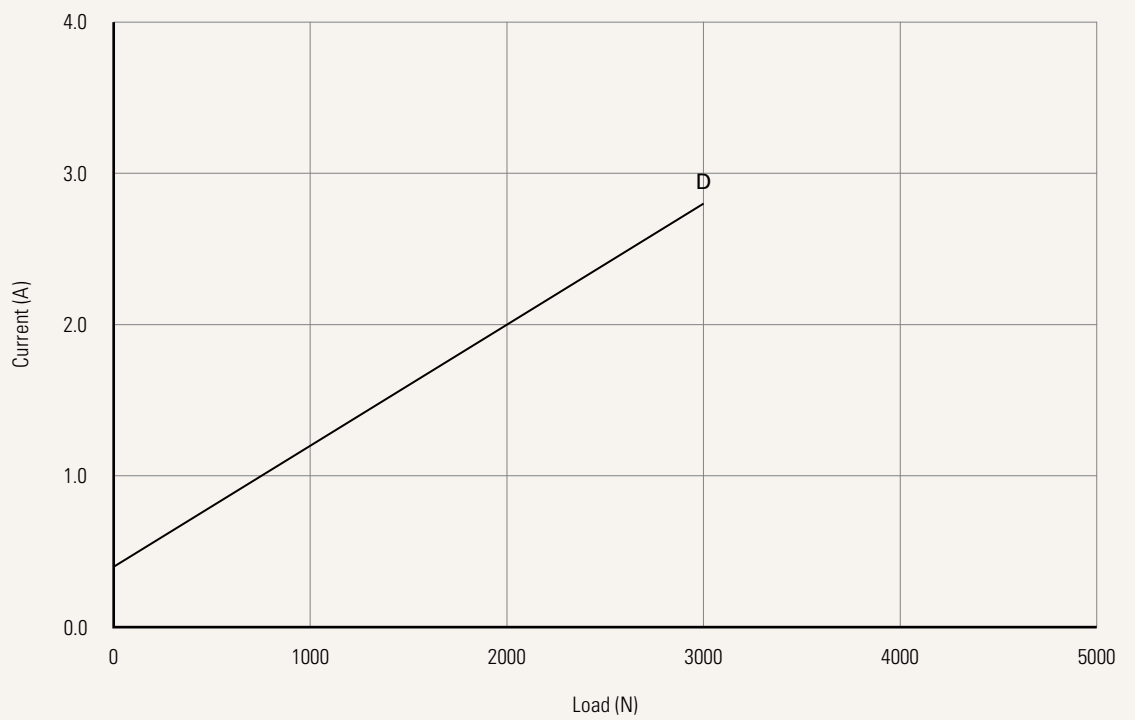
CODE	Load (N)	Max Stroke (mm)
D	3000	500

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Performance Data (24V DC Motor)

Motor Speed (5600RPM)

Speed vs. Load

Current vs. Load

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VN3 Ordering Key

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 5			
Rear Attachment (mm) See page 6	1 = Aluminum, U clevis, slot 6.2, depth 13, hole 6.2 2 = Aluminum, U clevis, slot 6.2, depth 13, hole 8.2		3 = Aluminum, U clevis, slot 6.2, depth 13, hole10.2	
Outer Tube Adjustable Clamping Block	0 = Without (Option when choosing rear attachment #1, #2, #3)			
Mounting Bracket	0 = Without (Option when choosing rear attachment #1, #2, #3)			
Front Attachment (mm) See page 6	1 = Aluminum, U clevis, slot 6.2, depth 17, hole 6.2 2 = Aluminum, U clevis, slot 6.2, depth 17, hole 8.2		3 = Aluminum, U clevis, slot 6.2, depth 17, hole10.2	
Direction of Rear Attachment (Counterclockwise)	2 = 0°			
Color	0 = Standard			
IP Rating	1 = Without	2 = IP54	3 = IP66	
Special Function of Spindle Subassembly	0 = Without (Standard)	1 = Safety nut		
Function of Limit Switches	1 = Two limit switches cut off the actuator at end of stroke 3 = Two limit switches send signal at end of stroke (when choosing #3, output signal is restricted to #0_without)			
Output Signal See page 6	0 = Without	N = NPN Hall sensor*2		
Connector See page 6	1 = DIN 6P, 90° plug	2 = Tinned leads		
Cable Length (mm)	0 = Without 1 = 500	2 = 1000 3 = 1500	4 = 2000 5 = 5000	

Retracted Length (mm)

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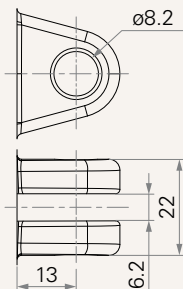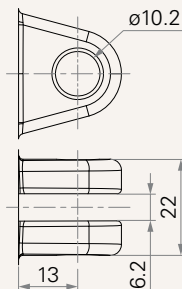
A.

Front Attach.	Rear Attach.
	1, 2, 3
1, 2, 3	+248

B.

Stroke (mm)	Load (N)
20~150	-
151~200	-
201~250	+5
251~300	+10
301~350	+15
351~400	+20
401~450	+25
451~500	+30

VN3 Ordering Key Appendix

Rear Attachment (mm)

1 = Aluminum, U clevis, slot 6.2, depth 13, hole 6.2
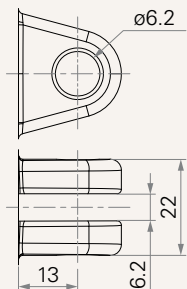
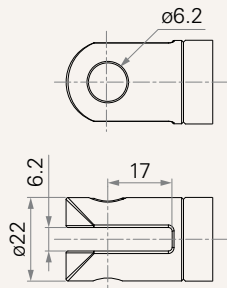2 = Aluminum, U clevis, slot 6.2, depth 13, hole 8.2
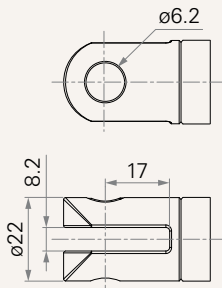

3 = Aluminum, U clevis, slot 6.2, depth 13, hole10.2

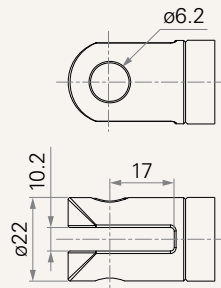---

Front Attachment (mm)

1 = Aluminum, U clevis, slot 6.2, depth 17, hole 6.2

2 = Aluminum, U clevis, slot 6.2, depth 17, hole 8.2
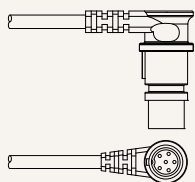

3 = Aluminum, U clevis, slot 6.2, depth 17, hole10.2

Wiring Definition

Signal Output		Pin / Color					
		🔴 Red	🔴 Red	⚪ White	⚫ Black	⚫ Black	🔵 Blue
0	Without	Extend+	-	-	-	Retract+	-
N	Hall sensor	Extend+	Vcc	Hall 1	Com	Retract+	Hall 2

Connector

1 = DIN 6P, 90° plug

2 = Tinned leads

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.