

# VN3

series



## Product Segments

- **Industrial Motion**

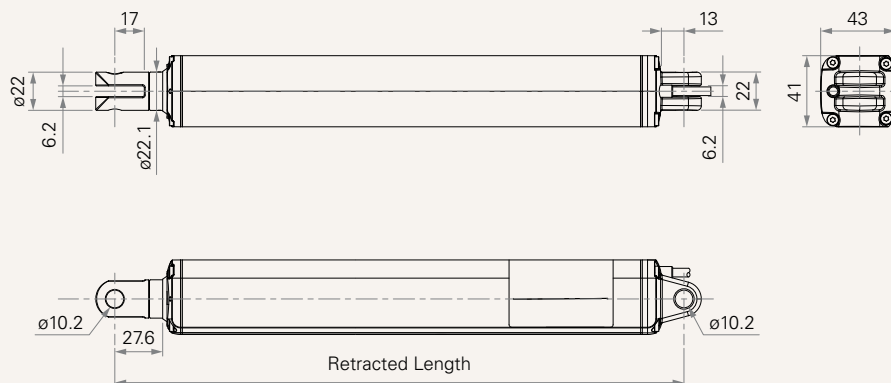
The VN3 series linear actuator is specifically designed for ventilation applications to help quickly remove smoke, heat, and toxic gases from buildings in the event of a fire. It is also engineered to support a reduced smoke layer in the lower parts of a room. The VN3 is constructed with high-quality 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	3.5mm/s
Max. speed at no load	6.8mm/s
Retracted length	≥ Stroke + 248mm
IP rating	IP66
Stroke	20~500mm
Output signals	Hall sensors
Options	Safety nut
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 Locking Force (N)	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
<b>Motor Speed (5600RPM, Duty Cycle 10%)</b>							
<b>B</b>	3000	3000	3000	≤0.4	≤3.2	6.8	3.5

## Note

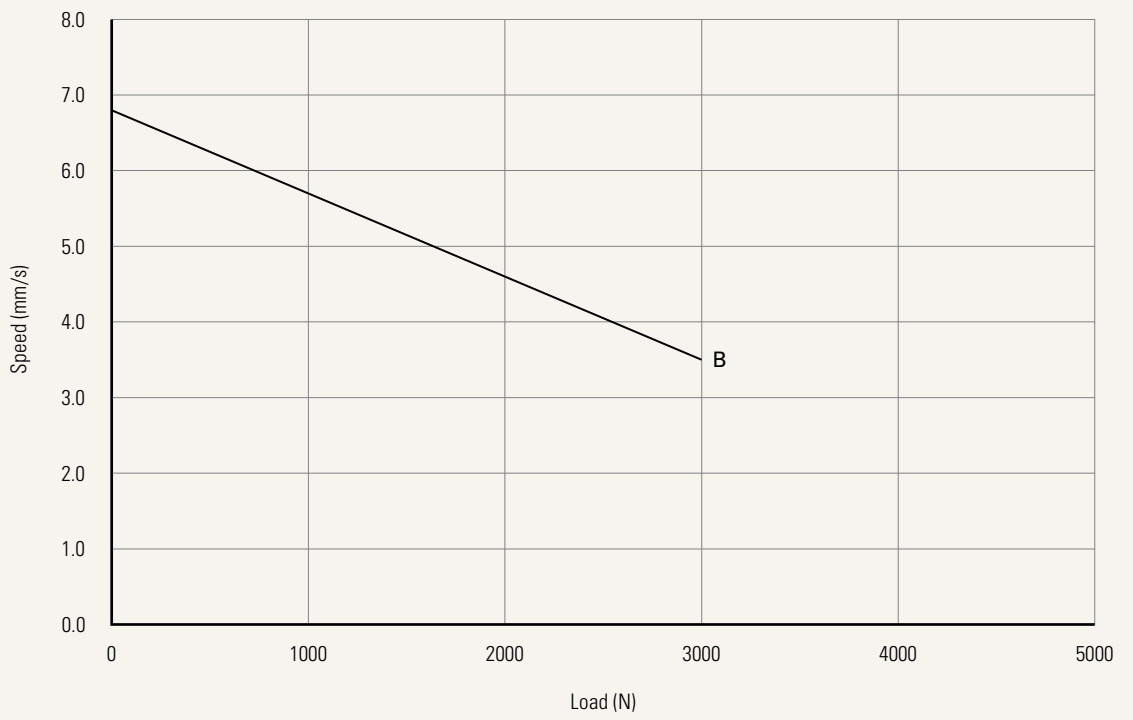
- 1 Please refer to the approved drawing for the final authentic value.
- 2 This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.
- 3 The current & speed in table are tested with 24V DC motor. 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)
<b>B</b>	3000	500

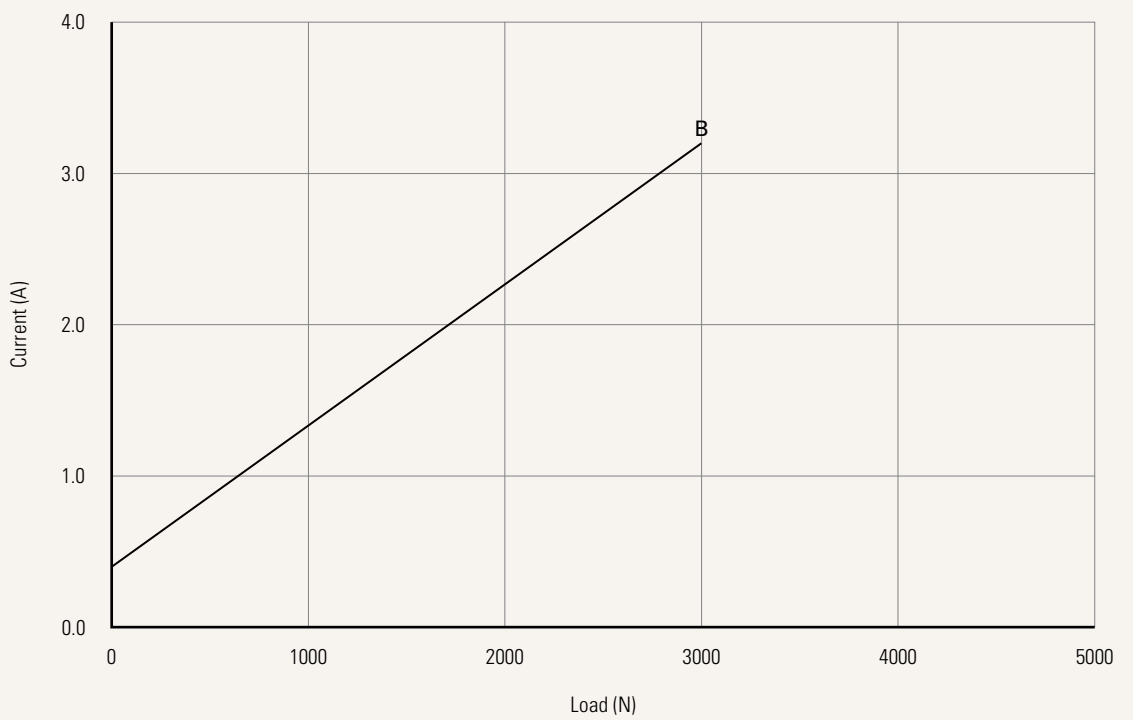
**Performance Data (24V DC Motor)**

Motor Speed (5600RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load



<b>Voltage</b>	1 = 12V DC	2 = 24V DC	3 = 12V DC, thermal switch	4 = 24V DC, thermal switch
<b>Load and Speed</b>	<a href="#">See page 2</a>			
<b>Stroke (mm)</b>	<a href="#">See page 2</a>			
<b>Retracted Length (mm)</b>	<a href="#">See page 5</a>			
<b>Rear Attachment (mm)</b>	1 = Aluminum, U clevis, slot 6.2, depth 13, hole 6.2	3 = Aluminum, U clevis, slot 6.2, depth 13, hole 10.2		
	2 = Aluminum, U clevis, slot 6.2, depth 13, hole 8.2			
	<a href="#">See page 6</a>			
<b>Outer Tube Adjustable Clamping Block</b>	0 = Without (Option when choosing rear attachment #1, #2, #3)			
<b>Mounting Bracket</b>	0 = Without (Option when choosing rear attachment #1, #2, #3)			
<b>Front Attachment (mm)</b>	1 = Aluminum, U clevis, slot 6.2, depth 17, hole 6.2	3 = Aluminum, U clevis, slot 6.2, depth 17, hole 10.2		
	2 = Aluminum, U clevis, slot 6.2, depth 17, hole 8.2			
	<a href="#">See page 6</a>			
<b>Direction of Rear Attachment (Counterclockwise)</b>	2 = 0°			
<b>Color</b>	0 = Standard			
<b>IP Rating</b>	1 = Without	2 = IP54	3 = IP66	
<b>Special Function of Spindle Subassembly</b>	0 = Without (Standard)	1 = Safety nut		
<b>Function of Limit Switches</b>	1 = Two micro switches cut off the actuator at end of stroke			
	3 = Two micro switches send signal at end of stroke			
<b>Output Signal</b>	0 = Without	2 = Hall sensor * 2		
	<a href="#">See page 6</a>			
<b>Connector</b>	1 = DIN 6P, 90° plug	2 = Tinned leads		
	<a href="#">See page 6</a>			
<b>Cable Length (mm)</b>	0 = Without	2 = 1000	4 = 2000	
	1 = 500	3 = 1500	5 = 5000	

## Retracted Length (mm)

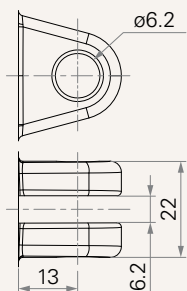
1. Calculate  $A+B = Y$
2. Retracted length needs to  $\geq$  Stroke+Y

A.	
Front Attach.	Rear Attach.
	1, 2, 3
<b>1, 2, 3</b>	+248

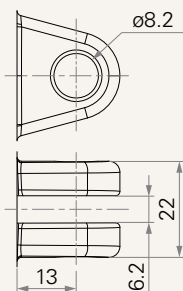
B.	
Stroke (mm)	Load (N)
<b>20~150</b>	-
<b>151~200</b>	-
<b>201~250</b>	+5
<b>251~300</b>	+10
<b>301~350</b>	+15
<b>351~400</b>	+20
<b>401~450</b>	+25
<b>451~500</b>	+30

## Rear Attachment (mm)

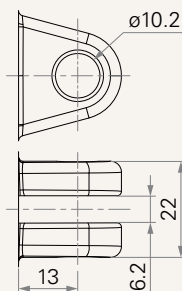
1 = Aluminum, U clevis, slot 6.2, depth 13, hole 6.2



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

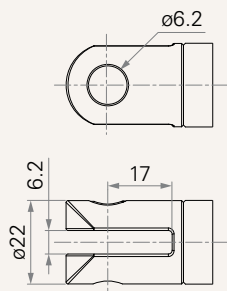


3 = Aluminum, U clevis, slot 6.2, depth 13, hole 10.2

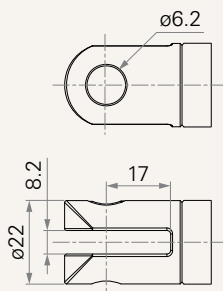


## Front Attachment (mm)

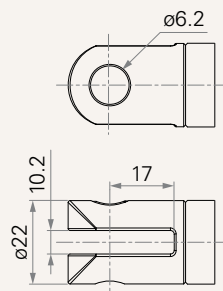
1 = Aluminum, U clevis, slot 6.2, depth 17, hole 6.2



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



3 = Aluminum, U clevis, slot 6.2, depth 17, hole 10.2

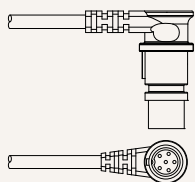


## Wiring Definition

Signal Output		Pin / Color					
		Green	Red	White	Black	Yellow	Blue
0	Without	Extend+	-	-	-	Retract+	-
2	Hall sensor	Extend+	VCC (5V DC)	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.