

VN3

series



Product Segments

• Industrial Motion

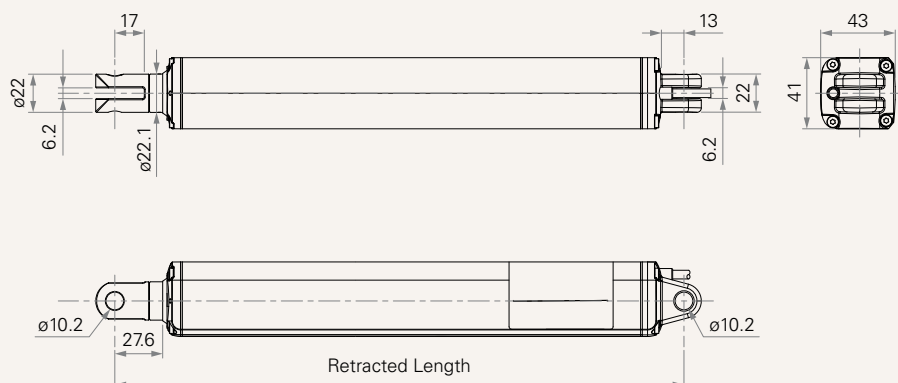
The VN3 series linear actuator is specifically designed for ventilation applications to help quickly remove smoke, heat, and toxic gases from buildings in the event of a fire. It is also engineered to support a reduced smoke layer in the lower parts of a room. The VN3 is constructed with high-quality 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 (static)
Stroke	20~500mm
Output signals	NPN Hall sensor (5~36V) * 2
Voltage	12/24V DC
Operational temperature range	-20°C~+65°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)	Duty Cycle	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull			No Load	With Load	No Load	With Load
Motor Speed (5600RPM)								
D	3000	3000	3000	10%	1.4	5.4	6.0	3.0

Load and Speed (24V DC)

CODE	Load (N)		Self Locking Force (N)	Duty Cycle	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull			No Load	With Load	No Load	With Load
Motor Speed (5600RPM)								
D	3000	3000	3000	10%	0.7	2.8	6.0	3.0

Note

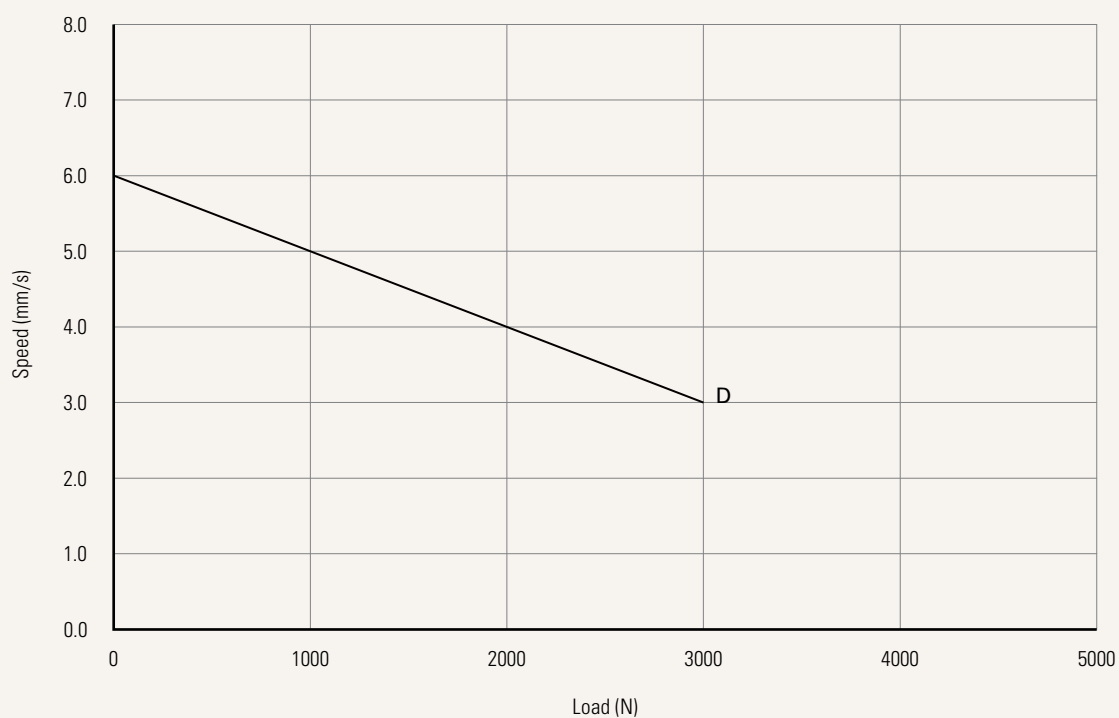
- Please refer to the approved drawing for the final authentic value.
- The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC; speed will be similar for both voltages.
- Voltage range: 24V±10%, 12V±20%.
- The current & speed in table are tested when the actuator is extending under push load.
- The current & speed in table and diagram are tested with a stable 24V DC power supply.
- Without load, noise level ≤ 56dBA (by TiMOTION test standard, background noise level ≥ 65dBA).
- Standard stroke: Min. 25mm, Max. please refer to the table below.

CODE	Load (N)	Max Stroke (mm)
D	3000	500

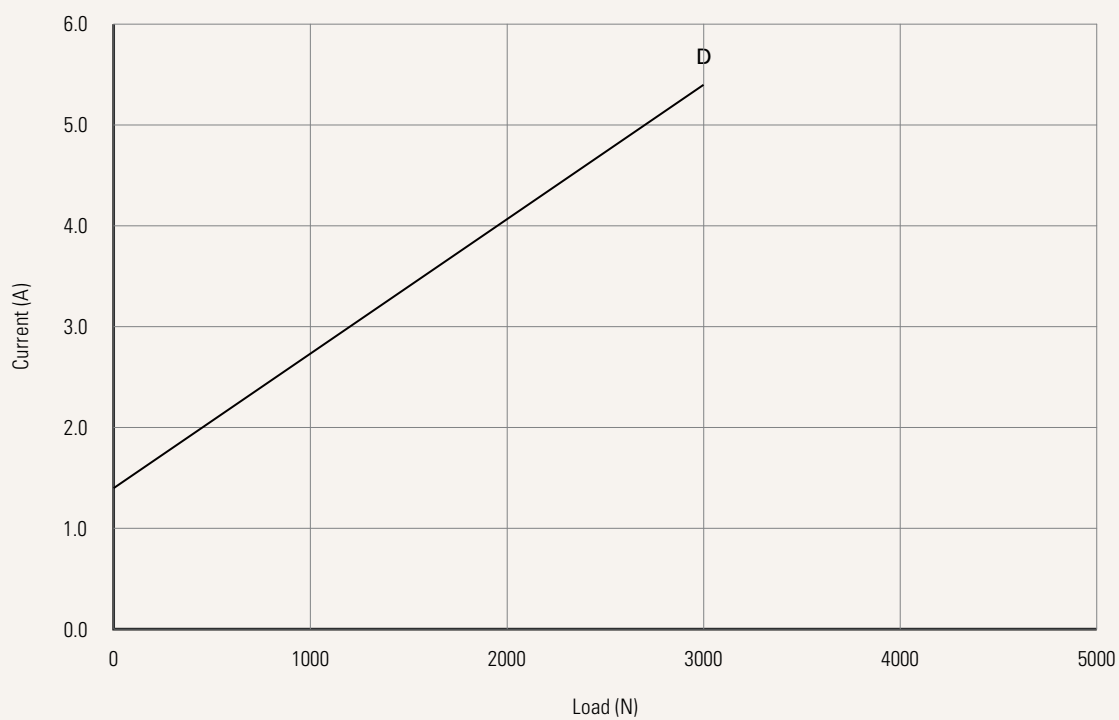
Performance Data (12V DC Motor)

Motor Speed (5600RPM)

Speed vs. Load



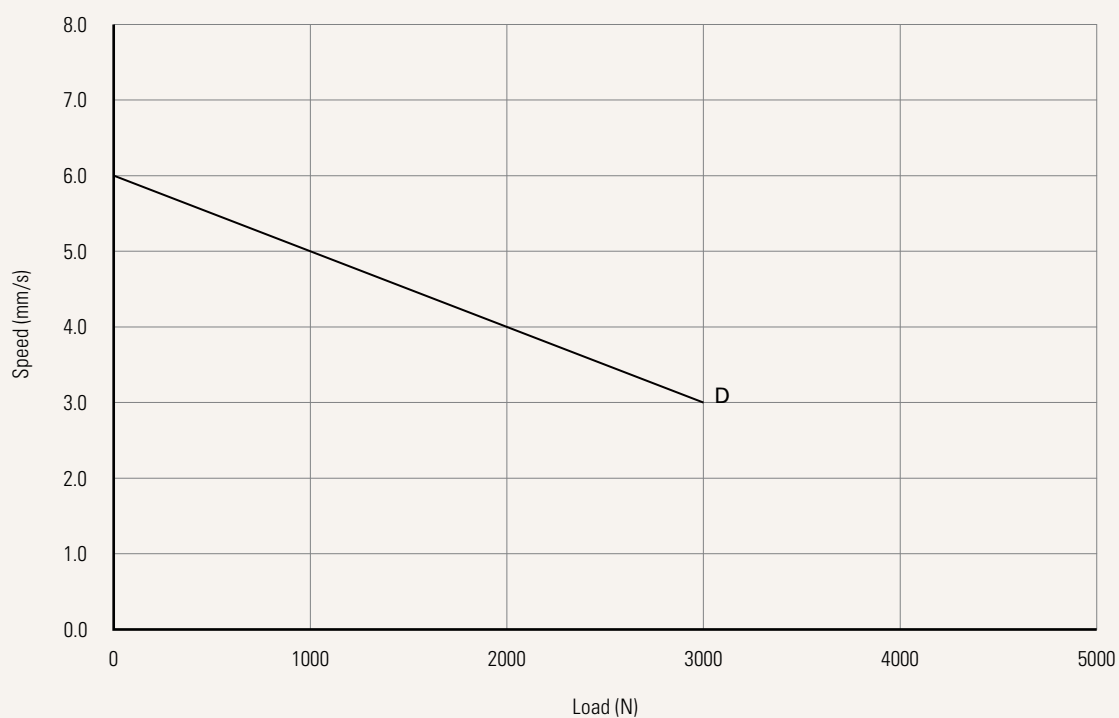
Current vs. Load



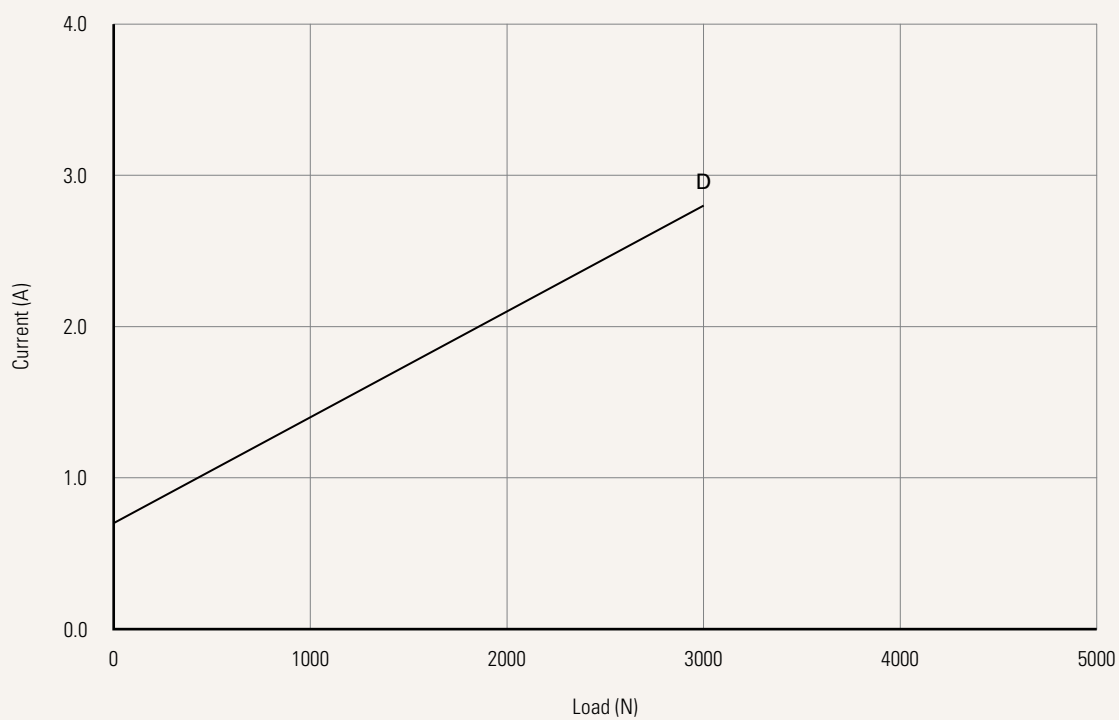
Performance Data (24V DC Motor)

Motor Speed (5600RPM)

Speed vs. Load



Current vs. Load



VN3 Ordering Key

VN3

Version: 20260106-J



Voltage	1 = 12V DC	2 = 24V DC
Load and Speed	See page 2	
Stroke (mm)	See page 2	
Retracted Length (mm)	See page 6	
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
See page 7		
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)	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
See page 7		
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 EOS	
Output Signal	0 = Without	N = NPN Hall sensor (5~36V input) * 2
See page 8		
Connector	1 = DIN 6P, 90° plug 2 = Tinned leads	C = Y cable (direct cut, water proof, anti-pull)
See page 7		
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 $\geq \text{Stroke}+Y$
- * Tolerance: fully extended length & retracted length $\pm 3\text{mm}$

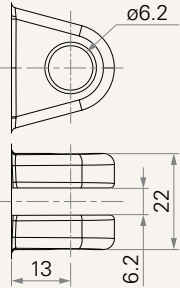
A.

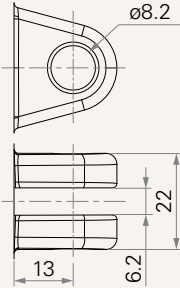
Front Attach.	Rear Attach.
	1, 2, 3
1, 2, 3	+248

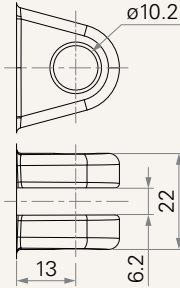
B.

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

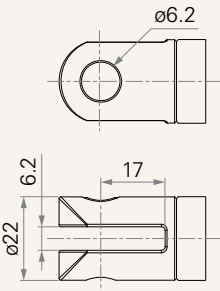
Rear Attachment (mm)

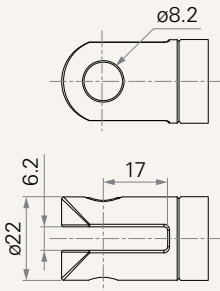
1 = Aluminum, U clevis, slot 6.2, depth 13, hole 6.2
 

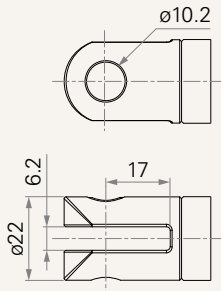
2 = Aluminum, U clevis, slot 6.2, depth 13, hole 8.2
 

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

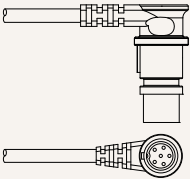
Front Attachment (mm)

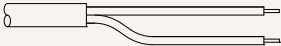
1 = Aluminum, U clevis, slot 6.2, depth 17, hole 6.2
 

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

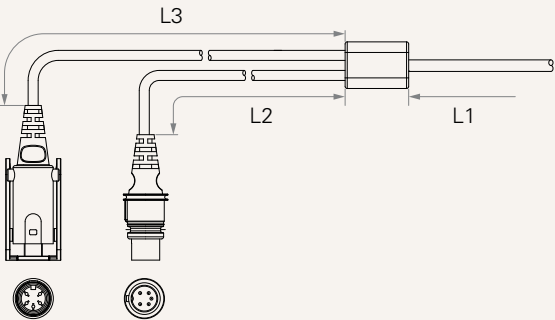
3 = Aluminum, U clevis, slot 6.2, depth 17, hole 10.2
 

Connector

1 = DIN 6P, 90° plug
 

2 = Tinned leads
 

C = Y cable (For direct cut system, 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

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

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.