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**VECTOR2**  
Swings Gates  
*Precisely!*

**SABS**

DESIGN  
EXCELLENCE  
AWARDS  
2009

**Swings  
gates  
precisely!**



SWING GATE OPERATORS



SLIDING GATE OPERATORS



GARAGE DOOR OPERATORS



REMOTE CONTROLS



INTERCOMS



SAFETY BEAMS



KEYPADS



Established 1986



**SABS**

DESIGN  
EXCELLENCE  
AWARDS  
2009

The **VECTOR2** automation system is the all-round winner for swing gates.

Its linear operating principle with internal position control makes the system quick and easy to install. The revolutionary mechanical design ensures a swift, powerful and reliable operator for the majority of domestic and light-industrial gates.

The low voltage motor provides safe operation and battery backup. The advanced controller is feature-rich and the setup and commissioning is child's play.

## Main features



### Low profile in-line design

The **VECTOR2** has a low profile design with in-line construction of the motor, gearbox and actuating piston. This enhances the aesthetic appearance of the operator allowing it to blend in as unobtrusively as possible with the design of the gate.



### Easy to install

The fully integrated linear action operator with no complicated linkages makes the installation of the system very quick and easy. Added to this, the internal position control mechanism simplifies the installation even further, as the gates no longer require end-of-travel end-stops\*.

Combined with different optional mounting bracket kits, the **VECTOR2** can be fitted to almost any swing gate pillar.

\*Currently inward swinging gates only



### High push force

The high-torque DC motor operating through an efficient planetary gearbox, delivers a potent 250kg push force. The **VECTOR2** is capable of reliably operating swing gates in the majority of domestic and light-industrial applications.



### Revolutionary brake

The revolutionary centrifugal brake developed for the **VECTOR2** ensures secure locking of the operator when the gate is both open and closed.



### Internal limits

The **VECTOR2** double-redundant opto-electronic internal limit system guarantees very reliable operation and precise control of the movement of the gate.



### Complete speed control

The **VECTOR2** electronics, with "Quadra-Drive" speed control, maintains a smooth and quiet starting and stopping of the gate regardless of its condition and ambient temperatures, even after many years of service. This state of the art control reduces the operating stresses and extends the life of both the operator and the gate.



### Swift operation

The mechanical gearing of the **VECTOR2**, combined with its leading-edge speed system maintains rapid and precisely controlled opening and closing of the gate for greater convenience and security.



### Safe battery backup

With only a low voltage battery supply powering the **VECTOR2** operator, the system is totally safe from risks such as electrocution, and has the added benefit of providing power-failure protection. The added efficiency of the operator results in an exceptional number of uses, even off a low capacity battery in the event of a power failure.



### Sensitive anti-crushing control

The **VECTOR2** controller accurately monitors any obstructions to the movement of the gate and ensures ultra-safe operation against crushing and end-user peace of mind.



### All-weather construction

All external components of the operator are manufactured from a combination of stainless steel, epoxy-coated coastal-grade aluminium and UV-stabilized engineering polymers. This guarantees a robust and durable unit in both inland and coastal environments.



### Easy to use

The **VECTOR2** controller, combined with its Liquid Crystal Display (LCD), provides a very intuitive and easy to use menu system for setting up the end-of-travel limits and all features available on the system.

Offering an extensive range of useful features, the controller is exceptionally versatile and has the ability to adapt the system to suit the requirements of almost every user.



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## Operate wirelessly, thanks to NOVA\*

Besides its ultra-secure rolling code technology offering the highest level remote control security, this NOVA\* onboard receiver is both multichannel and multi-user. This onboard receiver allows a multi-button remote to operate any combination of the system inputs, such as Gate trigger, Pedestrian opening, Holiday Lockout, etc. It stores up to 64 transmitter buttons, and amongst other access control features, it provides the ability to selectively add and delete transmitter buttons saved into its memory.

\*NOVA rolling code (Keeloq™ encryption)



## Break-in Alarm (patent pending)

Make use of the gate operator safety beams to activate a third party alarm, such as armed response, if a would-be intruder loiters at the gate trying to devise a way to get in.

The alarm activates for the period of time that the beam is broken and for thirty seconds thereafter.



## Ambush Alarm (patent pending)

Counter the security risk presented by a would-be intruder using the opportunity of covering the gate operator safety beams, waiting for the gate to be opened and stay open and ambush an unsuspecting homeowner. This feature will set off an alarm if the beams have been blocked for an extended period of time. The alarm remains active while the beams remain broken.

## VECTOR2 controller features

### Hardware features

- Separate weatherproof housing for dual-channel controller, battery and charger
- Fully sealed plastic housing for controller to prevent ingress of dirt and insects
- Easy setup of controller using LCD user interface
- Removable connectors on controller for easy maintenance
- Watchdog IC ensures full and safe operation of controller

### Electronic features

- Onboard multichannel NOVA rolling code receiver (Keeloq™ encryption) with the ability to learn transmitter buttons to specific functions (e.g. Gate trigger, Pedestrian opening, Free-exit, Pillar light control\*, Holiday Lockout), selectively delete specific transmitters that have been lost or stolen, automatically learn transmitters (autolearn) and automatically delete transmitters that are not in use (delete-not-present)
- Multiple modes of operation including Standard Mode and Condominium Mode (multi-user)
- Full configuration of gate opening parameters, including independent gate opening and closing speeds, ramp-up and ramp-down distances and end-of-travel crawl distance
- Automatic closing with adjustable time, pushbutton override and selectable according to gate status
- Selectable leaf-delay on either gate leaf
- Advanced Positive Close Mode ensuring the gate remains closed in a secure, rigid position
- Multiple Operating Profiles to suit region of installation - select between ZA, CE, etc.
- Pedestrian opening (adjustable opening and autoclose time)\*
- Remote gate-status indicator (gate position, power failure, low battery, multiple collision detection and pillar light status indication)⊕
- Courtesy / Pillar-light timer with adjustable time\*
- Fully configurable pre-delays with multi-modal pre-flash\*
- Opening and closing safety beam inputs with beam circuit functional test⊕
- High security cleared-beam autoclose in conjunction with safety beam (PIRAC)⊕
- Break-in and Ambush Alarms with configurable outputs via onboard buzzer, pillar light relay, etc.⊕
- Holiday Lockout – configurable as emergency stop\*
- Free-exit facility⊕
- Advanced solenoid or magnetic gate-lock release pulse

⊕ infrared safety beams or equivalent detection device must be fitted

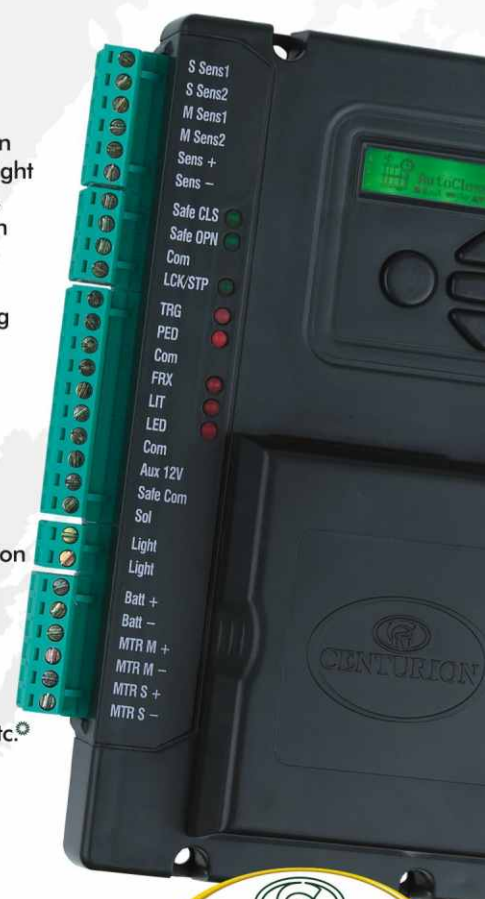
⊕ remote LED must be fitted

\* onboard receiver must be used or external access control device such as keypad, keyswitch must be fitted

⊕ inductive loop detector or infrared safety beams must be fitted

⊕ emergency stop pushbutton must be fitted

⊕ security / pillar lights must be fitted



## Technical specifications

### Installation information

#### Allowable gate mass:

#### Maximum allowable gate mass for VECTOR2 400 operator

Gate swing angle	Up to 1.5m	Up to 2m	Up to 2.5m	Up to 3m <sup>★</sup>	Up to 3.5m <sup>★</sup>	Up to 4m <sup>★</sup>
90°	500kg	500kg	500kg	360kg	260kg	200kg
100°	500kg	500kg	388kg	160kg	190kg	150kg
110°	500kg	306kg	198kg	130kg		
120°	180kg	100kg	65kg			

#### Maximum allowable gate mass for VECTOR2 500 operator

Gate swing angle	Up to 1.5m	Up to 2m	Up to 2.5m	Up to 3m <sup>★</sup>	Up to 3.5m <sup>★</sup>	Up to 4m <sup>★</sup>
90°	750kg	750kg	750kg	550kg	410kg	310kg
100°	750kg	750kg	600kg	420kg	310kg	230kg
110°	750kg	500kg	320kg	220kg		
120°	310kg	170kg	110kg			

★ An electric lock must be fitted to secure gate in closed position

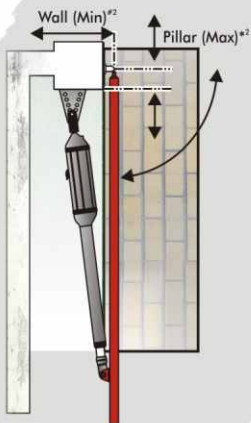
### Wind loading

Operator	Gate 2.5m wide x 1.8,m high with 25% coverage		Gate 2.5m wide x 1.8,m high with 100% coverage	
	Basic geometry <sup>◇</sup>	Best geometry <sup>◇</sup>	Basic geometry <sup>◇</sup>	Best geometry <sup>◇</sup>
VECTOR2 400	48km/h	76km/h	24km/h	38km/h
VECTOR2 500	58km/h	79km/h	30km/h	49km/h

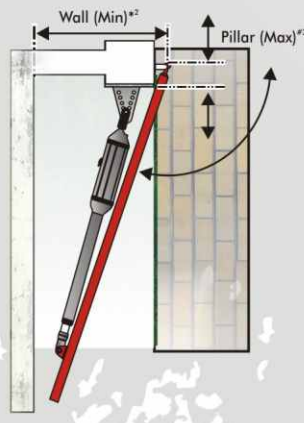
◇ The installed position of the operator determines the mechanical advantage that the operator has on the gate. See installation manual for more details

### Minimum installation requirements

#### Gate opening 90° or less



#### Gate opening 110°



Operator	Wall (Min) <sup>*2</sup>	Pillar (Max) <sup>*2</sup>	Operator	Wall (Min) <sup>*2</sup>	Pillar (Max) <sup>*2</sup>
VECTOR2 400	150mm	250mm	VECTOR2 400	150mm	145mm
VECTOR2 500	150mm	335mm	VECTOR2 500	150mm	210mm

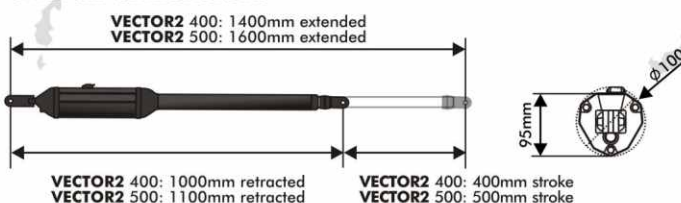
Tables are based on gates shorter than 2.5m









- For gates 2.5m to 3m long, reduce the maximum pillar thickness by 20mm
- For gates 3m to 3.5m long, reduce the maximum pillar thickness by 40mm
- For gates 3.5m to 4m long, reduce the maximum pillar thickness by 60mm

#2 The typical minimum wall clearance required to fit the operator

\*2 The maximum allowable pillar thickness on which to fit the operator

### Overall dimensions



	VECTOR2 400	VECTOR2 500
Input voltage	220V ± 10%, 50Hz <sup>★</sup>	
Motor voltage	12V DC	
Motor power supply	Battery driven (standard capacity - 7Ah) <sup>†</sup>	
Battery charger <sup>★</sup>	Domestic  CP84E - 800mA @ 13.8V Light-industrial  CP84SM - 2A @ 13.8V	
Current consumption (mains)	60mA  / 170mA 	
Current consumption (motor at rated load)	15A - max	
Operator push force - maximum	250kgf	
Operator stroke	400mm	500mm
Piston extension / retraction speed	27mm/sec	
Typical gate opening time <sup>‡</sup>	<14 sec	<17 sec
Manual override	Key release	
Maximum number of operations per day <sup>★</sup>	100  / 250 	
Duty cycle - mains present <sup>★</sup> <sup>★</sup>	25%  / 50% 	
Operations in standby with 7Ah battery <sup>‡</sup>	Half day 70 Full day 58	
Collision sensing	Electronic	
Controller solenoid output rating	2A DC	
Operating temperature range	-15°C to +50°C	
Onboard receiver type	NOVA rolling code (Keeloq™ encryption) multichannel	
Receiver code storage capacity	64 transmitter buttons	
Receiver frequency	433MHz	
Mass of unit packed (excluding battery)	Single kit 8.5kg 9kg Double kit 14kg 15kg	

★ Can operate off a solar supply, consult Centurion Systems for assistance

† Can increase battery capacity for longer standby times

★ Based on 25°C ambient temperature and unit not in direct sunlight

★ Based on an operator push force of less than 50% of rated

◇ Based on double kit excluding infrared safety beams

★ Assumes a 90° opening gate and optimum mounting position

‡ Assumes full stroke of operator is used

### Optional mounting kits available

#### A: High security kit VECBSK00V1



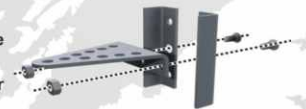
The **high security kit** provides one with the means to ensure optimal security of your home by adding strength to the installation. The **high security wall bracket** enables the installer to spread the load of the cyclic repetition of the gate opening over a wider wall area, along with providing

more static strength against attempted forced entries. The **long security plate** enables the installer to position the operator according to the installation tables easily, with a minimum of cutting, grinding and welding. A **padlock** should be fitted through both the **gate bracket pin** and the **wall bracket pin** for additional security.

#### B: Wall adaptor kit VECWAK00V1

The **wall adaptor plate** spreads the load of the wall bracket over four holes vertically.

This kit can be used with either the standard or high security wall brackets.



#### C: Mechano kit VECMAK00V1



This kit has been designed to make the **VECTOR2** easier to install, and also to give the installer more flexibility during the installation. The securing plates in this kit have been designed to secure to either the standard or high security wall brackets.

The positions of the holes in the securing plate ensure maximum flexibility in selecting the most appropriate mounting point for the operator.

#### D: Gate adaptor kit VECGAK00V1

This kit is used when a need arises to spread the load absorbed by the gate bracket over a wider area of the gate surface. The **spreader plate** can be welded between bars or onto an existing beam. This should be used when the gate is made up of thin-section material, and is highly recommended for all light-industrial installations.





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## The VECTOR2 Wallbox

The VECTOR2 Wallbox, supplied standard with all VECTOR2 kits, is constructed out of tough, UV-resistant, fade-resistant ABS plastic, providing strength and long-term durability. The high IP65 rating (ingress protection) will assure you that just about nothing will get in.

Its contemporary design complements the unobtrusive design of the VECTOR2 operator and enhances the aesthetics of any installation.



### Accessories



**15 Infrared beams**  
Always recommended on any gate automation installation



**SmartGUARD keypad**  
Cost-effective and versatile keypad for allowing access for pedestrians, armed response companies, etc.



**Pedestrian keyswitch**  
Basic key operated switch for allowing access for pedestrians



**SOLO/Lattice proximity access control**  
Proximity reader for allowing access for both pedestrians and vehicles offering a higher level of security than the keypad



**POLOphone intercom**  
Allow visitors to communicate with people inside in order to gain access to the property



**POLOview surveillance**  
Enhances the POLOphone by providing CCTV at the gate



**Inductive Loop Detector**  
Allows free-exit of vehicle from the property. Requires ground loop to be fitted



**NOVA transmitters**  
Available in one, two and four button variants. Incorporates KEELQ™ ultra-secure rolling code encryption



**Gooseneck**  
Steel pole for mounting intercom gate station or access control reader



**Solar supply**  
Alternative means of powering the system - consult Centurion Systems for details



- Legend:**
- 1a Light pipes displaying LED outputs, which will indicate gate status from the interface board
  - 1b Interface board with an anti-tamper switch which can be linked to a security company
  - 2 Spare fuse holders for both ATO and glass fuses
  - 3 Clip-in component brackets
  - 4a Weatherproof design to prevent ingress of water, dust and insects includes the built-in rubber seal on underside of lid
  - 4b Exterior lip to ensure water stays out, even during the removal of the cover
  - 4c Screw-down points for cover and mounting slots located outside of the general housing to ensure complete sealing of the unit
  - 5 Slotted, diagonal mounting slots add mounting flexibility
  - 6 Low level housing wall provides easy access to terminal points
  - 7 Five knock-outs for easy, and multiple, cable entry
  - 8 Gas breathing point allows any potential build-up of gas to escape, whilst still preventing the ingress of dust, water and ants
  - 9 Built-in isolator to conform with legal requirements
  - 10 Built-in, easily accessible earth point
  - 11 Strip-proof, ultra-strong polycarbonate screws enclosed in screw-retaining slots

