NABCO

NABCO Automatic Door

NATRUS

V-60/85/150SL [Sliding Door Series]

Highest level of safety

Future-standard automatic door with a priority on safety

NABCO × TRUST = NATRUS

※ Picture for illustrative purposes only.

Solid technologies and quality open the future

Based on the relationship of trust we have developed with our customers, we have been providing innovative and high quality Pedestrian Flow Solutions that create a more comfortable environment.
To prove worthy of our customers' trust, we have developed "NATRUS," which further enhances safety, by drawing on our past experience and accumulated know-how.

Products conform to EN 16005 and JIS A 4722

NATRUS offers a safer passage environment based on European and Japanese safety standards.

Responsible for safety

As modern society becomes an aging society, products that can offer a higher level of safety are becoming more sought after.

"Safety" is the key element that everyone needs to consider.

Although safety is incorporated into conventional automatic doors, the improvement of safety performance is a never-ending task.

Automatic doors must be safe for all people including pedestrians as well as building managers and owners.

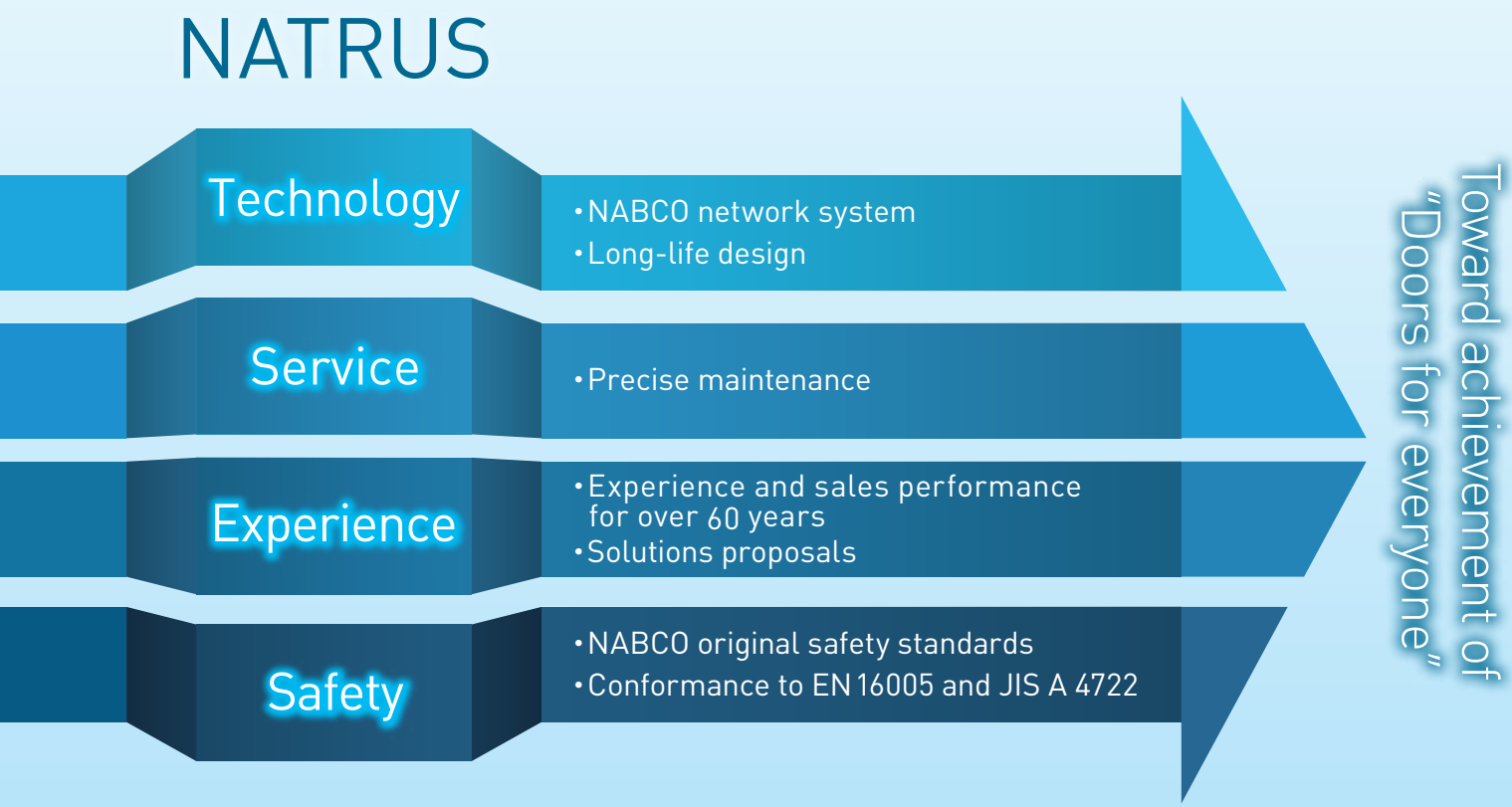
Everyone desires a safe future.

Toward “Doors for everyone” based on technologies, services, and experience

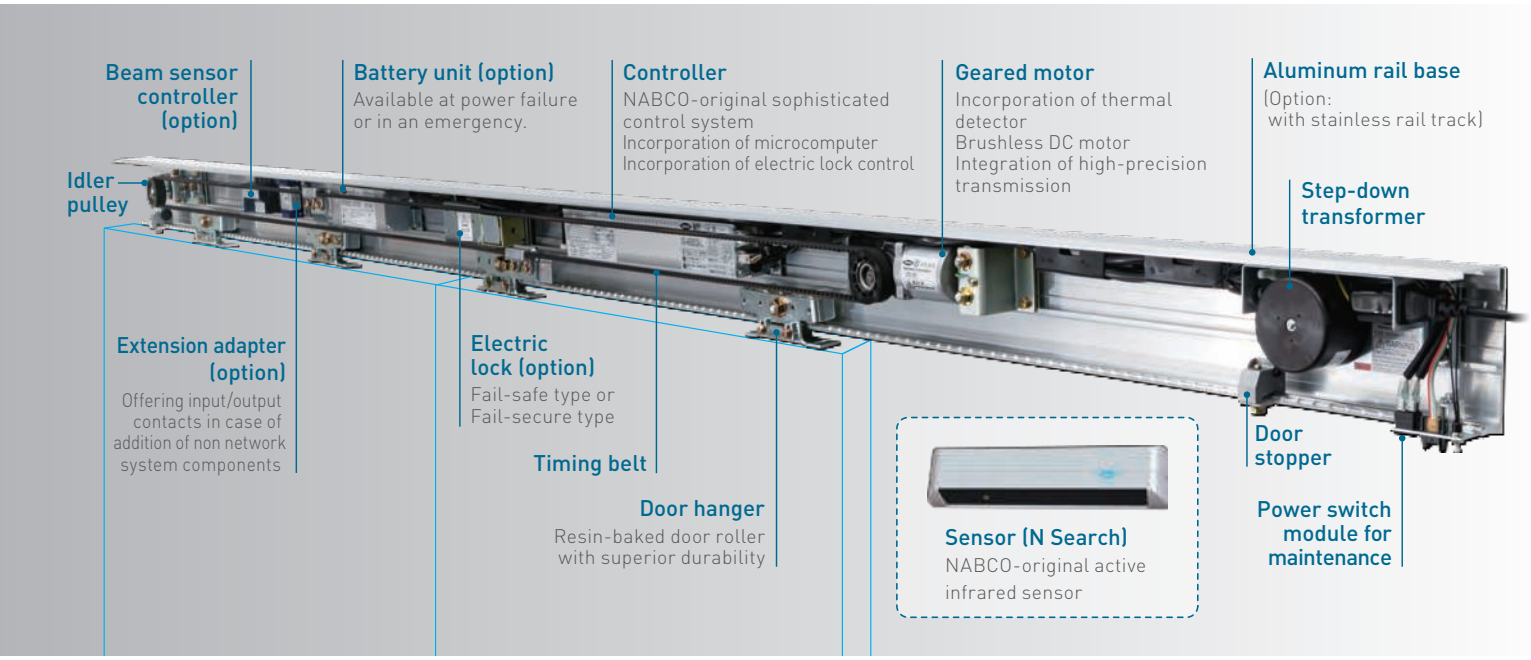
In the future society, entrances providing safety and comfort are required for all people, from children to the elderly, as a matter of course (Doors for everyone).

In order to build such a society, NABCO has launched a new product, NATRUS.

NATRUS is a true “in-a-class-of-its-own” product developed by NABCO, based on over 60 years of experience in technologies, services and safety standards.

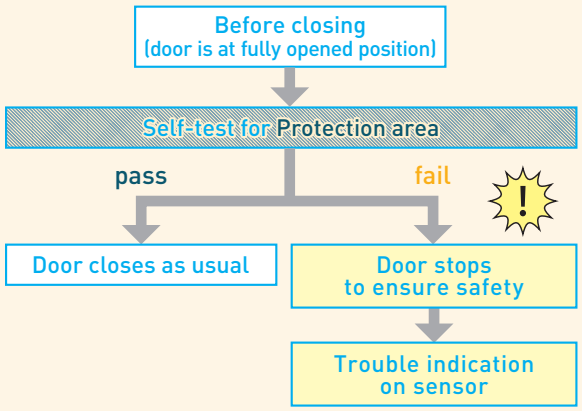


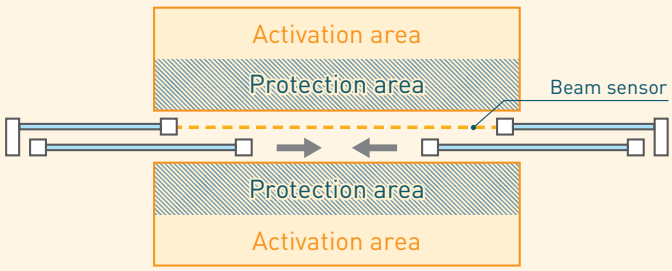
1. Full model change for top level of safety



Self-test feature for sensors

The door system conducts a self-test in every operation to check whether sensors are working in order to correctly detect the protection area.





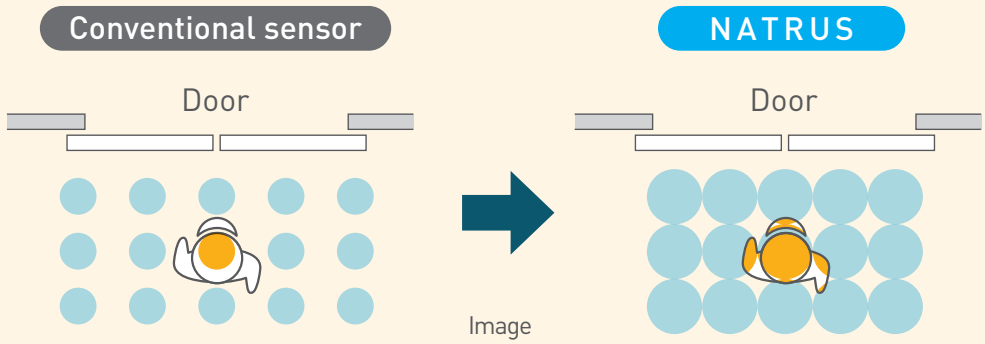
If there are any problems with detection, the system stops the door to ensure safety.

Trouble indication on sensor

Advantage

If there are any problems with the components including the sensors, the fail-safe mechanism works and the LED starts blinking to show "network component error" so that building owners can easily comprehend the current situation. In the case the sensor shows the LED blinking, please contact your local distributor of NABCO.

Higher density of sensor area

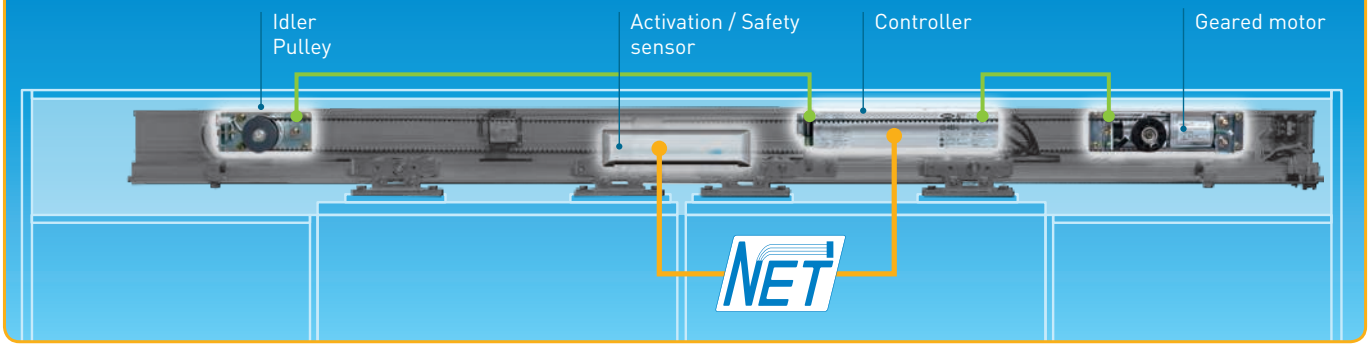


Densifying the sensor area results in greater certainty of detection and better reaction to potential risks near the door, in order to prevent collisions between the door and pedestrians.

NABCO network system based on CAN communication

NABCO network system

Self-diagnosis function allows the automatic door to monitor safety autonomously. If a problem occurs, it can be identified immediately and the fail-safe mechanism will work to prevent an accident.

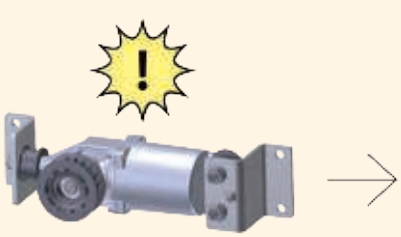


What is CAN (Controller Area Network)?

The CAN technology used in NATRUS is the ISO international standard network technology. Since this technology offers high reliability, noise resistance and superior fault-detecting features in information communications, it has been widely used to transfer important information in various fields including transportation equipment such as automobiles, aircraft, railroad vehicles and ships; medical equipment; and industrial equipment.

Fail-safe design

Troubles with components are detected by the self-diagnosis and automatically trigger the fail-safe mechanism to ensure the safety of pedestrians.



Occurrence of trouble involving a component

Safety feature works (opening or stopping the door) to prevent an accident.

The door system detects the faulty components to provide optimal operation.

For example:

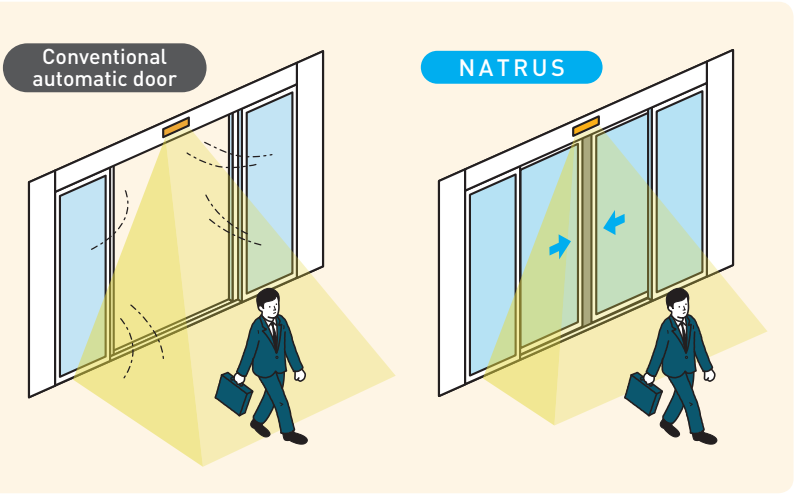
[1] If trouble with the geared motor is detected, the door stops.
[2] If trouble with the sensor is detected, the door is fully opens.
[3] If a wire break is detected, the door stops.

2. Various setups for a comfortable environment

ECO mode

Advantage

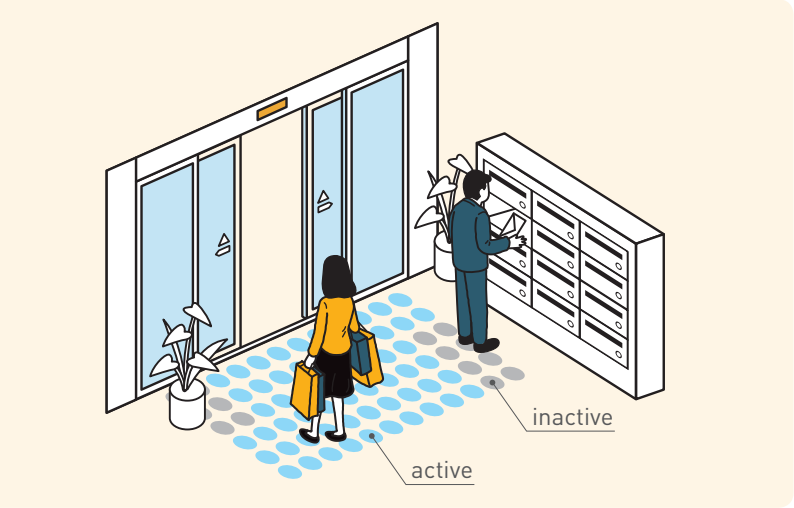
The door system judges pedestrian's movement and, after the pedestrian passes through the door, starts the closing action earlier, contributing to energy saving.



Spot-by-spot setup of sensor

Advantage

Since sensor detection spots can be set one by one according to the actual site environment, it is possible to reduce unnecessary door operation. The interior environment is improved and operational efficiency is maintained.

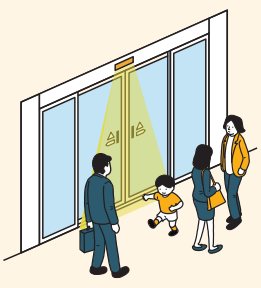


Touchless switch mode

Advantage

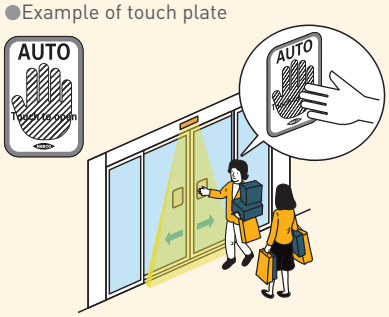
In case the door keeps opening unnecessarily due to continually passing by the door, the setting can be changed to Touchless switch mode (only NS-A01/02/03 sensor).

1 In the case of Touchless switch mode, pedestrians walking or objects moving pass the passageway are not detected.



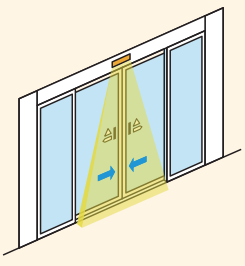
2 When a hand is placed near the touch plate, the door opens.

●Example of touch plate



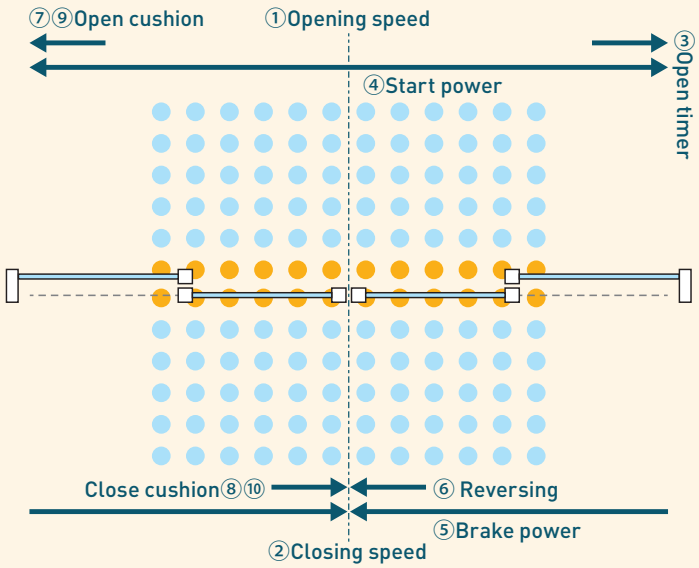
3 After the door opens, the detection area is enlarged around the door to detect pedestrians.

4 When no more pedestrians are detected, the door closes and the detection area returns to be limited again.



⚠ Touchless switch mode works by means of near infrared reflection of active infrared sensor.
Therefore, unlike a mechanical touch switch, this sensor may detect pedestrians or objects outside the detection area of the touch plate.

Example of setting operation



● : Protection area
● : Activation area

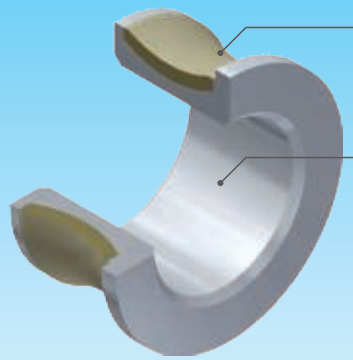
Setting operation

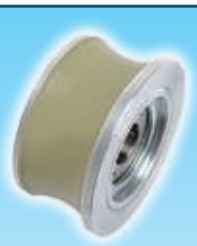
① Opening speed (61 steps)
② Closing speed (61 steps)
③ Open timer (0 to 50 seconds)
④ Start power (8 steps)
⑤ Brake power (8 steps)
⑥ Reaction power (8 steps)
⑦ Open cushion speed (20 to 160 mm/s)
⑧ Close cushion speed (20 to 160 mm/s)
⑨ Open cushion distance (25 to 350 mm)
⑩ Close cushion distance (25 to 350 mm)
⑪ Detection sensitivity (available to set per spot)

※ Note: Depending on the site environment, some features and settings may not be available.

3. Long-life design and low running costs

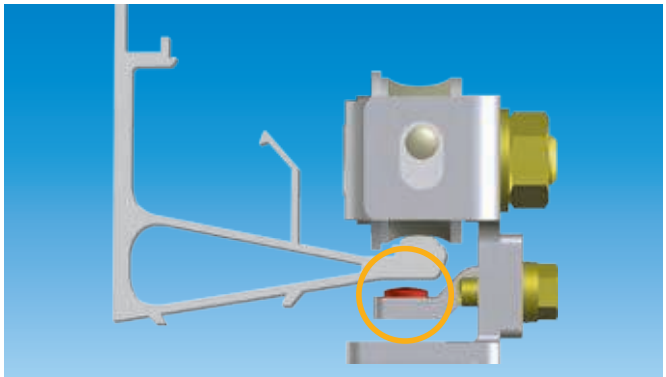
Special design based on our abundant experience provides high durability.



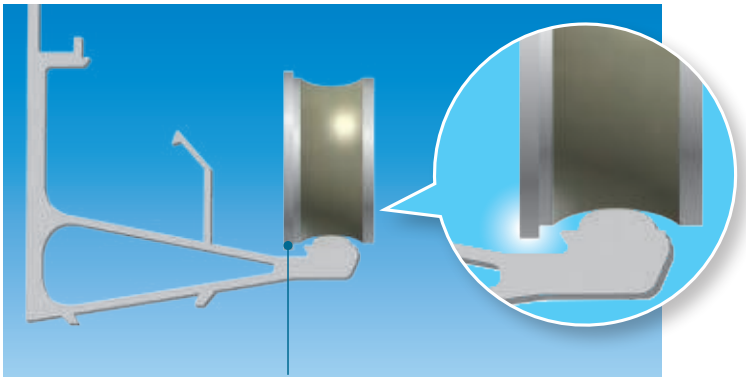


Employment of resin-baked doors roller and complete improvement of the door rollers and rail provide high durability and make it noiseless. The optimal design of the door roller and rail increases the anti-derailing performance and ensures safety in case of a possible collision of a pedestrian/object with the door.

Anti-derailing performance

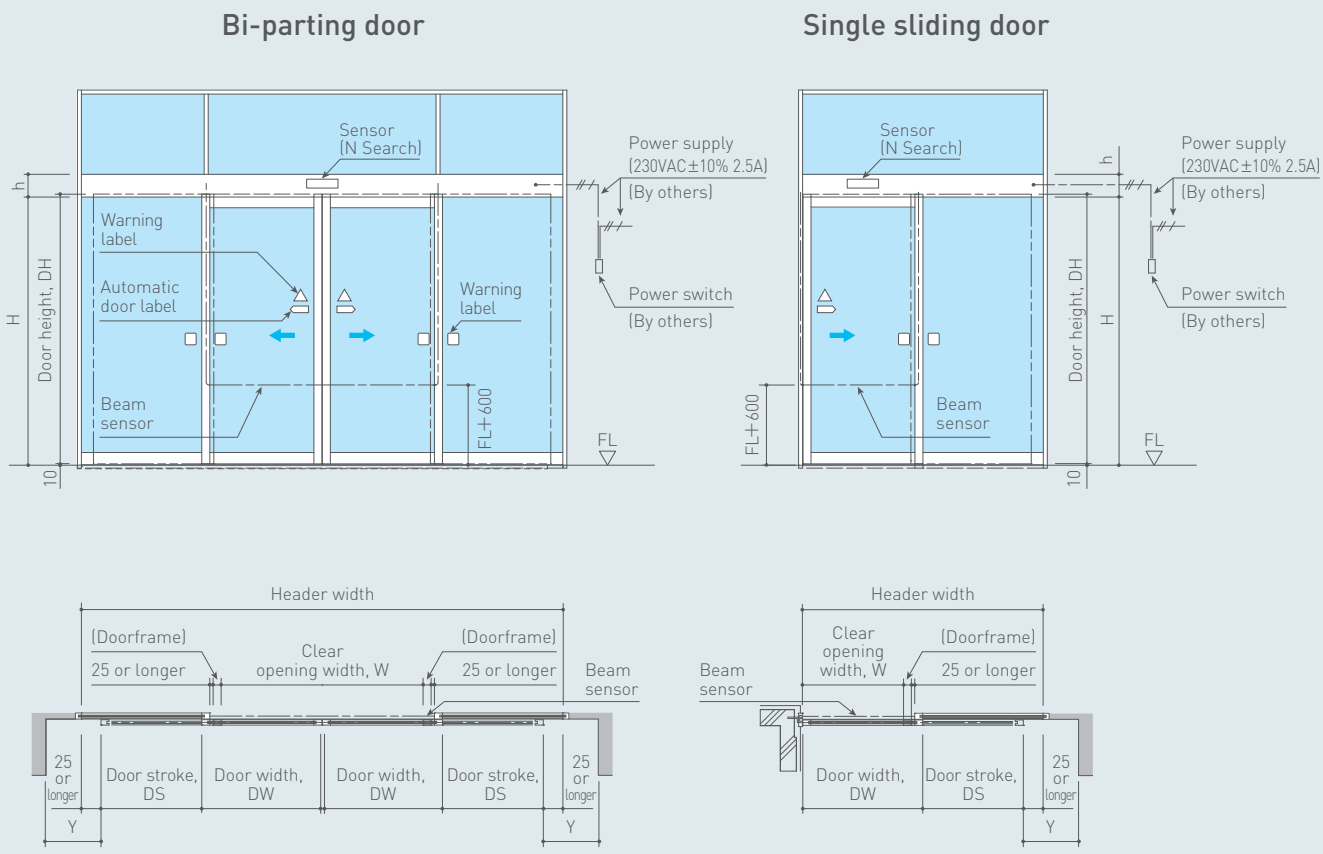


To prevent derailing, the door roller is equipped with an anti-derailing mechanism as standard.



The flange design on one side is improved to increase the anti-derailing performance of the door.

Front View



Note: For safety,The following dimension must be ensured :
Y ≧ 200

Unit: mm

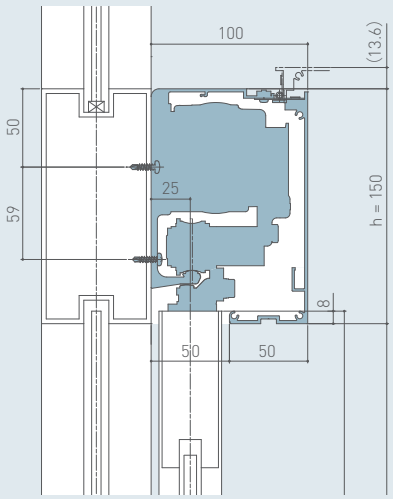
Specifications of Bi-parting and Single sliding doors

Type		Bi-parting door				Single sliding door			
		V-60SL	V-85SL	V-150SL		V-60SL	V-85SL	V-150SL	
		S/HM/F		S/HM/F	F	S/HM/F		S/HM/F	F
Door	Maximum door weight (kg) ※2	60 × 2	85 × 2	120 × 2	150 × 2 ※1	75 × 1	100 × 1	120 × 1	150 × 1 ※1
	Door width, DW (mm)	650~2500							
	Ratio of door height / width, DH/DW ※3	Max. 4							
Door operation speed (m/s)		0.1 - 0.7 ※4							
Required power capacity		230VAC ± 10% 2.5A ※5							

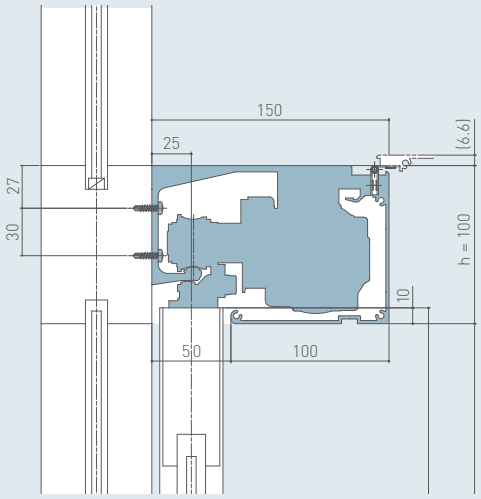
※1 Only V-150SL-F (F rail base design) is applicable to a door unit weight of up to 150 kg. V-150SL-F (N rail base design) is applicable to a door unit weight of up to 120 kg.
※2 The door should be used under conditions where the door unit weight will not exceed the value defined in the specification. If the weight exceeds the specification, malfunction or accident will occur.
※3 The unit door aspect ratio should not exceed the value defined in the specification. If the aspect ratio exceeds the specification, the specified performance will be impaired.
※4 The speed varies according to the door weight or site environment.
※5 With a transformer specified by NABCO

Sectional view

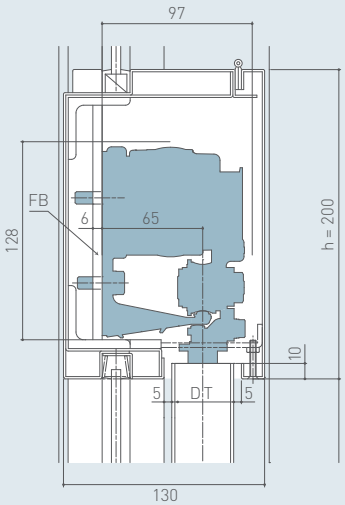
Surface mount
V-60/85/150SL-S



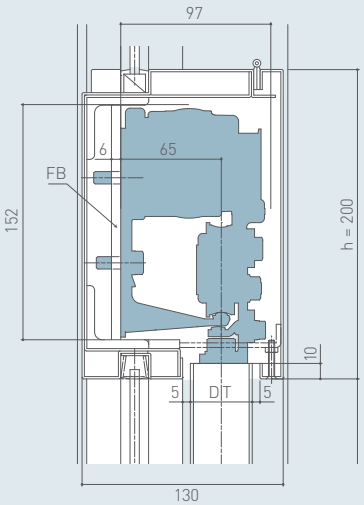
Surface mount (100mm header type)
V-60/85/150SL-HM



Concealed flat bar mount for Stainless steel sash
V-60/85/150SL-F
(N rail base)



Concealed flat bar mount for Stainless steel sash
V-60/85/150SL-F
(F rail base)



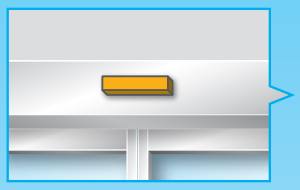
Unit: mm

Measures for further improvement of safety

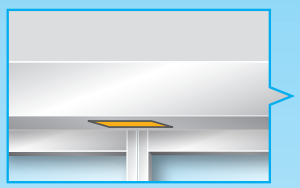
- Use safety glass such as tempered glass or laminated glass
- Install a guard (protection door) or safety fence near the fixed panel
- Mount a beam sensor

※ An maintenance hatch should be prepared when installing the drive unit in the ceiling.

Header mount sensor, Header recessed sensor, Header bottom-mount sensor, and ceiling mount sensor

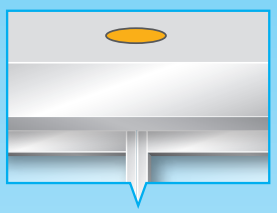


Header mount sensor NS-A01



Header recessed sensor NS-A02

Header bottom-mount sensor NS-A03



Ceiling mount sensor NS-A04

Type	N Search	
	NS-A01 / A02 / A03	NS-A04
Detection characteristics	Motion & Presence Detection (active infrared sensor)	
Mount height	When used as activation sensor : 2.0 to 4.0 m When used as safety sensor : 2.0 to 3.5 m	When used as activation sensor : 2.0 to 4.0 m When used as safety sensor : 2.0 to 4.0 m
Detection area	When mount height is 2.5 m : 3.05 m (width) × 2.09 m (depth) (reference)	When mount height is 3.0 mm : 3.04 m (width) × 2.37 m (depth) (reference)
Sensor cover color (type 01 and 03)	Silver / Bronze / White / Black / Mirror / Stainless steel color	—
Sensor color (type 02 and 04)	Black	Black
Remarks	Function: Spot-by-spot setup, Safety test before closing, Trouble indication, Full-color LED display, Eco mode, Snow/Insects mode, Touchless switch mode, Available for Circular/Folding door as well	Function: Spot-by-spot setup, Safety test before closing, Trouble indication, Full-color LED display, Eco mode, Snow/Insects mode, Available for Circular/Folding door as well

Beam sensor

Type	Photoelectric sensor
	NP-01
Detection characteristics	Motion / Presence Detection
Mount height	Standard height: Floor level + 600 mm
Maximum detection distance	Between photocells: 5 m (8 m: when using with NP-A001 controller)
Remarks	2 units of NP-01 are available with NP-A001 controller

NP-01

PL-type electric lock (option)

The PL-type electric lock is a device that keeps the door closed by restraining the driving belt firmly coupled to the door with the electromagnetic lock built into the idler pulley.

PL-type
electric lock

Locking/unlocking condition	Fail safe (unlock at power off)
Structure of locking mechanism	Electromagnetic brake with tooth
Locking/unlocking monitor output	When the power is on : Make or Break can be selected.
Forced unlocking input	Non-voltage a/b contact

SKD-type electric lock (option)

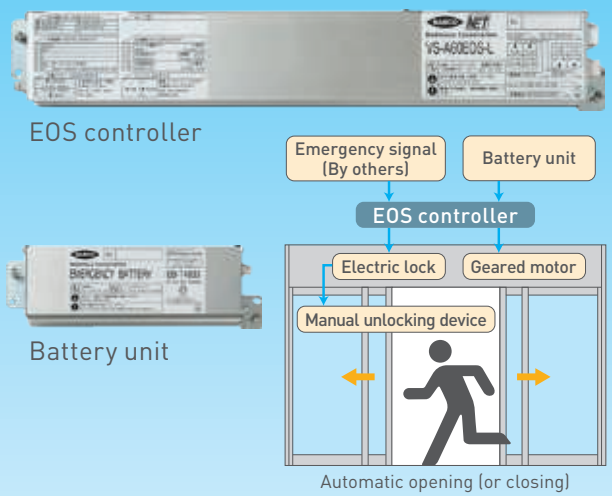
The SKD-type electric lock operates the dead bolt by supplying power to the solenoid to lock and unlock the door. It is possible to provide the locking/unlocking monitor output even during a power interruption (option).

SKD-type
electric lock

Locking/unlocking condition	Fail secure/safe (lock/unlock at power off)
Structure of locking mechanism	Dead bolt
Locking/unlocking monitor output	When the power is on: Make or Break can be selected When the power is off: Non-voltage 1c contact (option)
Forced unlocking input	Non-voltage a/b contact
Manual unlocking device	Option for unlocking at power off

EOS Emergency Operation System (option)

The EOS Emergency Operation System is a control unit that detects the emergency signal or the interruption of power to open (or close) the door in an emergency. When the door is manually opened while in emergency closing mode, it is automatically closed again. (This function is excluded from the requirements of escape routes and emergency exits in EN 16005.)



Emergency input signal	Non-voltage or 24VDC voltage
Battery capacity	30-cycle or 30-minute emergency operations
EOS operation monitor output	When the power is on: Make or Break can be selected.
Buzzer output	When EOS is working, buzzer activation mode can be selected.

APS-type Program Switch (option)

Color LCD offers excellent visibility for switching the automatic door mode.

APS-A10

Application operators	NATRUS / NET-DS
Program mode	Auto, Hold open, One-way, Manual, Night (Lock)
Languages	English, Chinese, Korean, Thai, Vietnamese, Indonesian, Russian
Security Code	Passcode

Specifications

Applicable doors

Model \ Item		Max. door weight	Max. area of a single door	Max. Header width	Max. ratio of door height / width	Door width
V-60SL-S/HM/F	Single Sliding	75 kg × 1	2.2 m²	2500 mm	4	650 - 2500 mm
	Bi-parting	60 kg × 2	1.8 m²	5000 mm		
V-85SL-S/HM/F	Single Sliding	100 kg × 1	2.8 m²	2500 mm		
	Bi-parting	85 kg × 2	2.6 m²	5000 mm		
V-150SL-S/HM/F	Single Sliding	120 kg × 1	3.3 m²	2500 mm		
	Bi-parting	120 kg × 2	3.0 m²	5000 mm		
V-150SL-F	Single Sliding	150 kg × 1 ※1	3.3 m²	2500 mm		
	Bi-parting	150 kg × 2 ※1	3.0 m²	5000 mm		

※1 Only V-150SL-F (F rail base design) is applicable to a door unit weight of up to 150kg.

Technical data

Header height	V-XXSL-S : 150 mm V-XXSL-HM : 100 mm
Header depth	V-XXSL-S : 100 mm V-XXSL-HM : 150 mm
Opening/closing speed	0.1 - 0.7 m/s
Hold-open time	0 - 50 sec.
Required power capacity	230 VAC ± 10% 2.5A
Power consumption	39Wh (V-60SL) , 42Wh (V-85SL), 52Wh (V-150SL) * reference
Ambient temperture	−20℃ to 50℃
Ambient humidity	20 to 90% RH (no icing or condensation)
Wind load	15 m/s or less
Complying with	EN 16005, JIS A4722

Basic module

Microcomputer control	✔
CAN transmission network	✔
Connections with controller	✔* Input: 2, Output: 1, Beam sensor: 1
Self-diagnosis function	✔* trouble indication on sensors
Self-test for safety sensors	✔* trouble indication on sensors
Wireless setting	✔* with Android device
Saving history data of operation	✔
Brushless DC motor	✔* no need to replace brush
Thermal protector	✔
Anti-derailing performance	✔
ECO mode (for activation device)	✔
Spot-by spot setup of sensor	✔
Touchless switch mode	✔
Interlocking mode	✔
Hand-move mode (semi-automatic)	✔
Simultaneous mode	✔

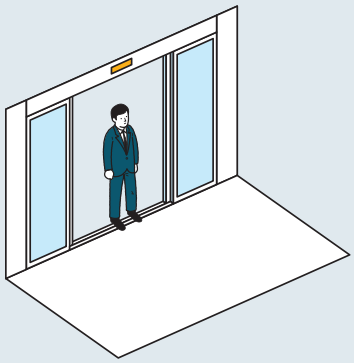
Optional module

Electric lock (lock with dead bolt)	✔
Electric lock (lock with idler pulley)	✔
2 units of Beam sensor	✔
Emergency operation	✔* with battery unit
Program switch	✔
Additional connections	✔* Input: 3, Output: 2

Cautions

For safe operation when using automatic doors

1. Don't halt !



Do not stop on the door way.

2. Don't run in !

Do not rush through the door.
Do not cross the door diagonally.

3. Don't play near automatic door !

Do not stand talking near the door.
Do not let children play near the door.

4. Don't lean on the automatic door !

Do not lean on the door, the screen or the wall nearby nor step on them.

5. Accompany your children !

For small children, grownups should take their hands when passing through the door. Extra care should be taken for people with visual or physical disabilities.

6. Pay attention to the door !

Be careful so that fingers will not be caught in the leading or rear edge of the door.

Nabtesco Corporation

Accessibility Innovations Company

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ISO9001・ISO14001 Certified

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VEGETABLE OIL INK

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