AUTOFACADE

CATALOGUE

PRODUCT DATASHEET

ACTUATORS

PRODUCT DATASHEET

CM400 Single Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Supply : 24 Vdc +/- 15%

Ampere:
N type: 1.0A
E type, <=600mm: 1.0A
E type, >=700mm: 2.0A

Stroke: 100 -1,400mm (retraction only for stroke>600mm)

Push/Pull forces : 400N/400N

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed:
N type: 10 mm/s
E type, <=600mm: 10 mm/s
E type, >=700mm: 13-18 mm/s

Housing: Extruded Aluminum

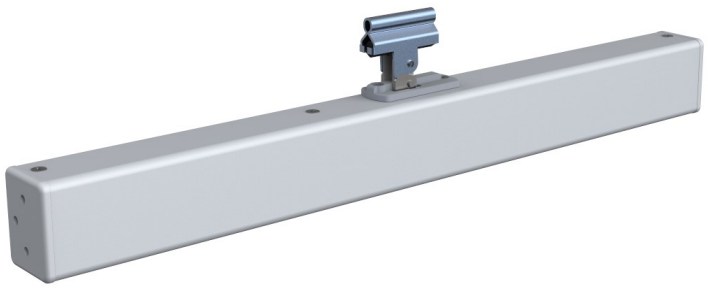
Finishes: Anodized RAL9006

Cable: 1 m silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 2.2 kg (500mm stroke)



Description

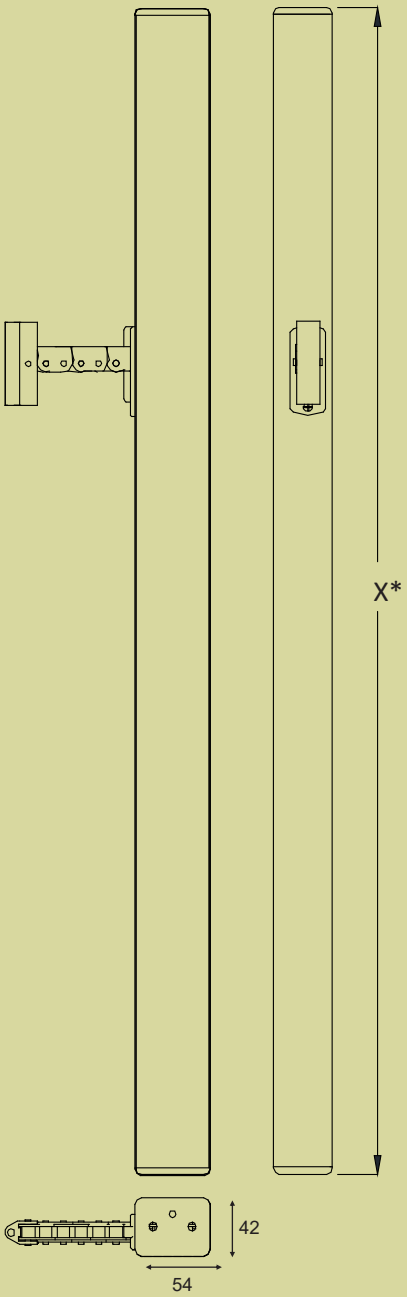
Ideal for natural and smoke ventilation application. Robust double chain design provides good compression force to open light roof light and top hung ventilators in most application.

Features

- Versatile application for different types of ventilators.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- Optional: soft opening, water seal relief and finger protection for safety.
- High speed version available to open 900mm in 60 sec.
- Modbus driven addressable version available for network control installation.

PRODUCT DATASHEET

Dimension



Stroke (mm)	X (mm)
100-250	460
300-400	550
500-600	650
700-800	750
900	800
1000	850

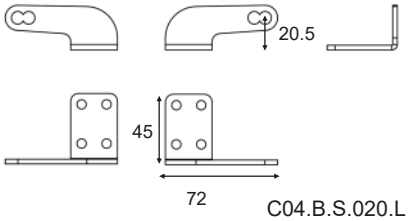
*X = Stroke / 2+506 for fail-safe model.

Order code	Description
C04.N.D.250.A.L0	24Vdc 400N, 250mm chain actuator (bracket order separately)
C04.N.D.300.A.L0	24Vdc 400N, 300mm chain actuator (brackets order separately)
C04.N.D.400.A.L0	24Vdc 400N, 400mm chain actuator (brackets order separately)
C04.N.D.500.A.L0	24Vdc 400N, 500mm chain actuator (brackets order separately)
C04.N.D.600.A.L0	24Vdc 400N, 600mm chain actuator (brackets order separately)
C04.N.D.700.A.L0	24Vdc 400N, 700mm chain actuator (brackets order separately)
C04.N.D.800.A.L0	24Vdc 400N, 800mm chain actuator (brackets order separately)
C04.N.D.1K0.A.L0	24Vdc 400N, 1,000mm chain actuator (brackets order separately)
C04.B.S.020.L	400N face fixed bracket set, stainless steel 3mm, height 20mm
C04.B.G.040.L	400N silt fixed bracket set, zinc plated steel 3mm, height 40mm
C04.B.G.050.L	400N silt fixed bracket set, zinc plated steel 3mm, height 50mm
C04.B.G.060.L	400N Universal silt and face fixed bracket set, zinc plated steel 3mm, height 60mm

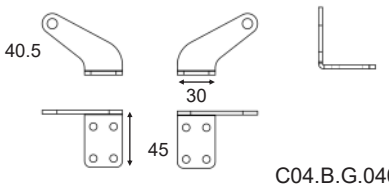
How to order VARIANCES

C04	N	D	XXX	S
0 = normal F = Fail-safe w/ intel PCB G = Fail-safe w/ regular PCB S =Stainless steel	N = carbon steel E = intelligent G = addressable	D = 24Vdc A= 230Vac	Stroke 1K0=1000mm 500=500mm 250=250mm	Colour S = Powder coated A=Anodized (RAL9006) B = black W= White (RAL9003)

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



C04.B.S.020.L



C04.B.G.040.L

PRODUCT DATASHEET

TM800 Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Supply : 24 Vdc +/- 15%

Ampere: 2.5A @ 24Vdc*

Stroke: 100 -1,400 mm

Push/Pull forces : 800N (retraction use only for stroke >1000mm)

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed: 10 -14mm/s *
*high speed version up to 27mm/s available on request

Housing: Extruded aluminum

Finishes: Anodized RAL 9006

Cable: 2 m silicon cable

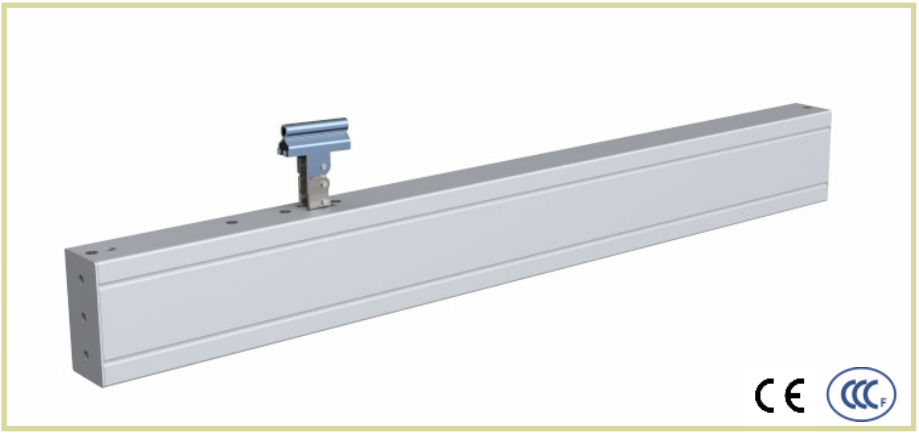
Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Synchronizer: built-in

Weight : 3.5 kg (1,000mm stroke)

Compliant to: GB16806-2006



Description

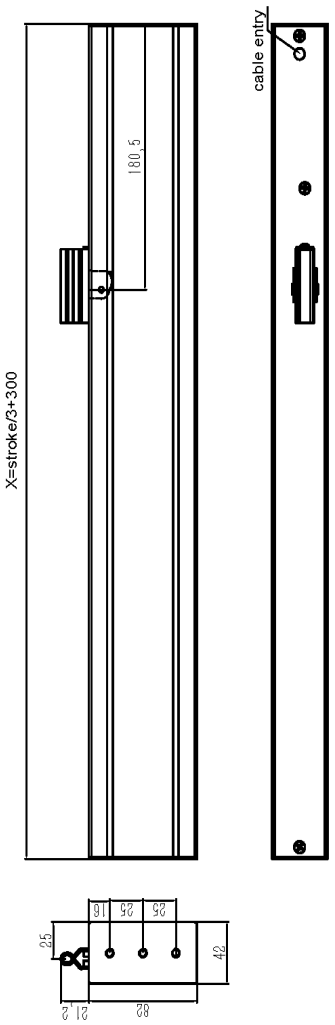
Ideal for natural and smoke ventilation application using bottom-hung, top-hung or skylight windows. Robust double chain and extra-short profile design in TM series provides ideal force to open heavy ventilators in typically long-stroke retraction applications.

Features

- Specially designed for narrow and high windows to reach long stroke with extra-short profile.
- Advanced material applied in gears to ensure durability and low noise level.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles
- Intelligent circuitry renders it adaptable to the changing force during open/close process.
- Configurable soft opening, water seal relief and finger protection features.
- High speed version available to open up to1600mm in 60 seconds.
- Able to work with multi-point locks
- Addressable version available for network control.

PRODUCT DATASHEET

Dimension

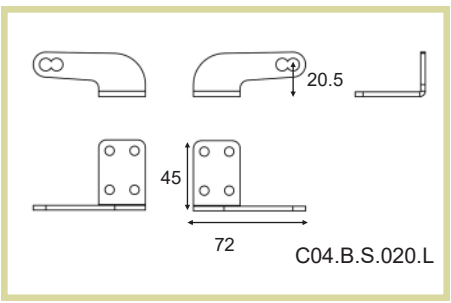


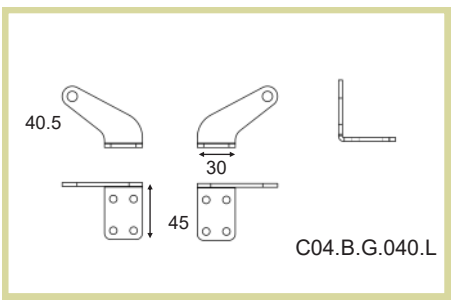
Order code	Description
T08.E.D.250.A.L0	24Vdc 800N, 250mm chain actuator (bracket order separately)
T08.E.D.300.A.L0	24Vdc 800N, 300mm chain actuator (brackets order separately)
T08.E.D.400.A.L0	24Vdc 800N, 400mm chain actuator (brackets order separately)
T08.E.D.500.A.L0	24Vdc 800N, 500mm chain actuator (brackets order separately)
T08.E.D.600.A.L0	24Vdc 800N, 600mm chain actuator, for retraction use only (brackets order separately)
T08.E.D.700.A.L0	24Vdc 800N, 700mm chain actuator, for retraction use only (brackets order separately)
T08.E.D.800.A.L0	24Vdc 800N, 800mm chain actuator, , for retraction use only (brackets order separately)
T08.E.D.1K0.A.L0	24Vdc 800N, 1,000mm chain actuator, for retraction use only (brackets order separately)
T08.E.D.1K4.A.L0	24Vdc 800N, 1,400mm chain actuator, for retraction use only (brackets order separately)
C04.B.S.020.L	400N face fixed bracket set, stainless steel 3mm, height 20mm
C04.B.G.040.L	400N silt fixed bracket set, zinc plated steel 3mm, height 40mm
C04.B.G.050.L	400N silt fixed bracket set, zinc plated steel 3mm, height 50mm
C04.B.G.060.L	400N Universal silt and face fixed bracket set, zinc plated steel 3mm, height 60mm

How to order VARIANCES

T08	E	D	XXX	S
0 = Normal S= Stainless steel (for retraction only)	N = carbon steel E = intelligent K = fast speed	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	Colour S = Powder coated A=Anodized (RAL9006) B = Black W= White (RAL9003)

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.





PRODUCT DATASHEET

CM600 Single Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Supply : 24 Vdc +/- 15%

Ampere: 2.3A @ 24Vdc

Stroke: 100 -1,400 mm (retraction only for stroke >600mm)

Push/Pull forces : 600N/600N

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed: 18 - 25 mm/s

Housing: Extruded Aluminum

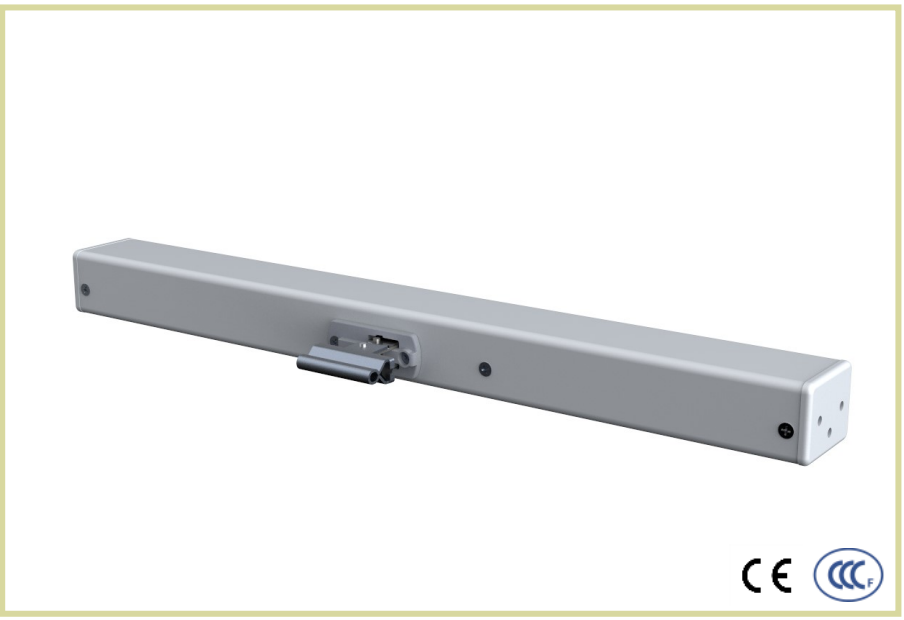
Finishes: Anodized RAL 9006

Cable: 1 m silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 2.2 kg (500mm stroke)



Description

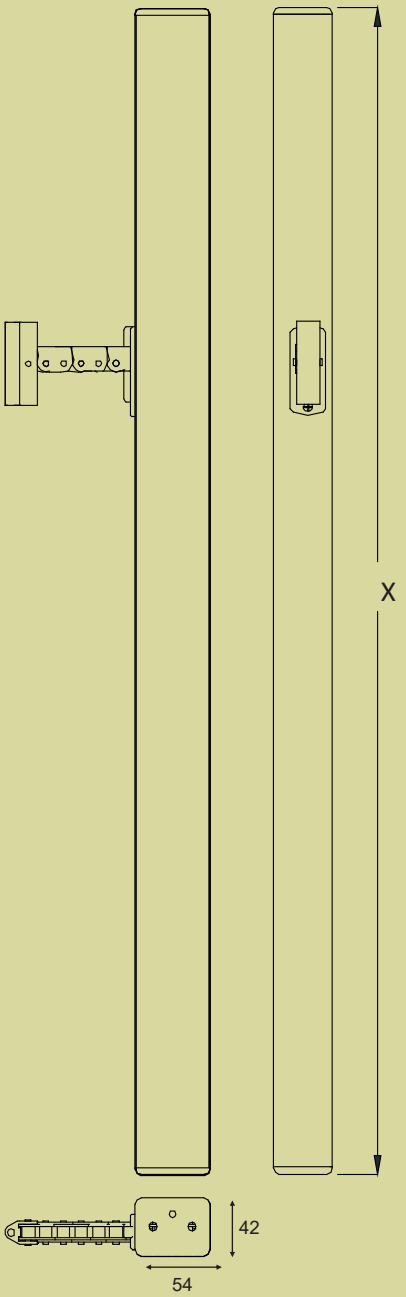
Ideal for natural and smoke ventilation application. Robust double chain design provides good compression force to open light roof light and top hung ventilators in most application.

Features

- Versatile application for different types of ventilators.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- Optional: soft opening, water seal relief and finger protection for safety.
- High speed version available to open 1400mm in 60 sec.
- Smart version available for network control installation.

PRODUCT DATASHEET

Dimension



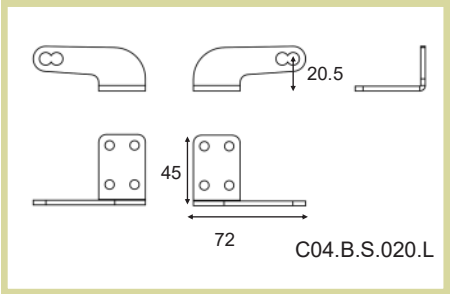
Stroke (mm)	X (mm)
100-250	460
300-400	535
500-600	635
700-800	735
900	785
1000	835

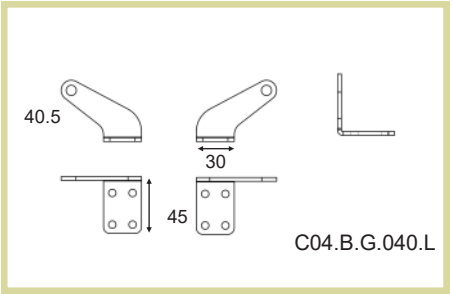
Order code	Description
C06.E.D.250.A.L0	24Vdc 600N, 250mm chain actuator (bracket order separately)
C06.E.D.300.A.L0	24Vdc 600N, 300mm chain actuator (brackets order separately)
C06.E.D.400.A.L0	24Vdc 600N, 400mm chain actuator (brackets order separately)
C06.E.D.500.A.L0	24Vdc 600N, 500mm chain actuator (brackets order separately)
C06.E.D.600.A.L0	24Vdc 600N, 600mm chain actuator (brackets order separately)
C06.E.D.700.A.L0	24Vdc 600N, 700mm chain actuator (brackets order separately)
C06.E.D.800.A.L0	24Vdc 600N, 800mm chain actuator (brackets order separately)
C06.E.D.1K0.A.L0	24Vdc 600N, 1,000mm chain actuator (brackets order separately)
C04.B.S.020.L	400N face fixed bracket set, stainless steel 3mm, height 20mm
C04.B.G.040.L	400N silt fixed bracket set, zinc plated steel 3mm, height 40mm
C04.B.G.050.L	400N silt fixed bracket set, zinc plated steel 3mm, height 50mm
C04.B.G.060.L	400N Universal silt and face fixed bracket set, zinc plated steel 3mm, height 60mm

How to order VARIANCES

C06	E	D	XXX	S
	N = carbon steel E = intelligent G = addressable	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	Colour S = Powder coated A=Anodized (RAL9006) B = Black W= White (RAL9003)

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.





PRODUCT DATASHEET

AF400 Folding Arm Drive - Chain Type

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Opening: max 96 °

Push/Pull forces : max 300N (options of 500N/1000N assisted spring)

Ampere drawn: 0.8-1.5

Speed: 90° in 60s

Housing: Extruded Aluminum

Finishes: Powder coated RAL 9006

Cable: 1 meter PVC cable (options of silicon sleeve cable)

Ingress Protection: IP 32

Endurance: 10,000 cycles 30% duty cycle

Weight (chain body):

Description

This folding arm drive is a variant to our 600N chain drive design, it is equipped with a special chain, which enables automate heavy smoke ventilation application like side hung smoke vent and door application.

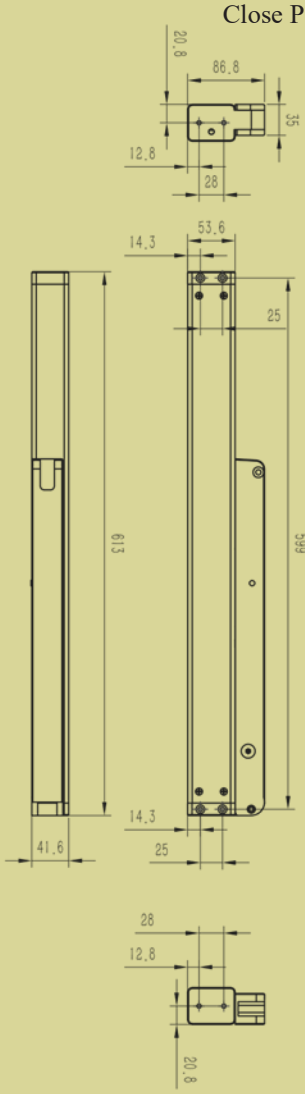
Features

- Unique chain design is able to push heavy load while bending.
- Flexibility to suit day to day door access (with door closer) or dedicated smoke door application.
- Opening in excess of 90 degree.
- Selection of kits to convert the product from fixed type to roller type.
- Scalable gas spring force to suit lower/higher push force, Contact our sales for your specific needs.

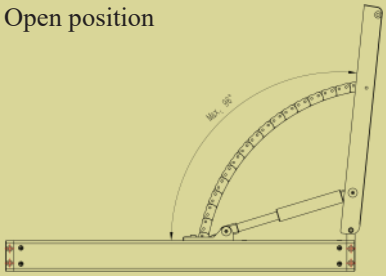
PRODUCT DATASHEET

Dimension

Close Position



Open position



Order code	Description
AF4ED500S.L0.500	Standard folding arm drive 250N/300N for door application.
AF4ED500S.L0.1K0	Heavy duty folding arm drive for vent/door application 350N/400N.
AR4BS030Q	Folding arm brackets for spring-loaded closing doors provides dual mode (manual and automated) opening for inward opening doors.
AR4BS095Z	Folding arm brackets for spring-loaded closing doors provides dual mode (manual and automated) opening for outward-swinging doors.
AG4BS040L	Folding arm brackets for single mode automated outward swinging vents/doors operation.
AG4BS045L	Right-handed opening Folding arm brackets for single mode automatic vents/doors that swing inward.
AG4BS045L.0PP	Left-handed opening Folding arm brackets for single mode automatic vents/doors that swing inward.

AR4BS030Q

AR4BS095Z

AG4BS040L

AG4BS045L.0PP

AG4BS045L

PRODUCT DATASHEET

AM400 90° Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Supply : 24 Vdc +/- 15%

Current draw: 1.0A @ 24Vdc

Open angel: 70°/90°

Push/Pull forces : 100N/400N

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed: > 1.5°/s

Housing: Extruded Aluminum

Finishes: Powder coated RAL9006

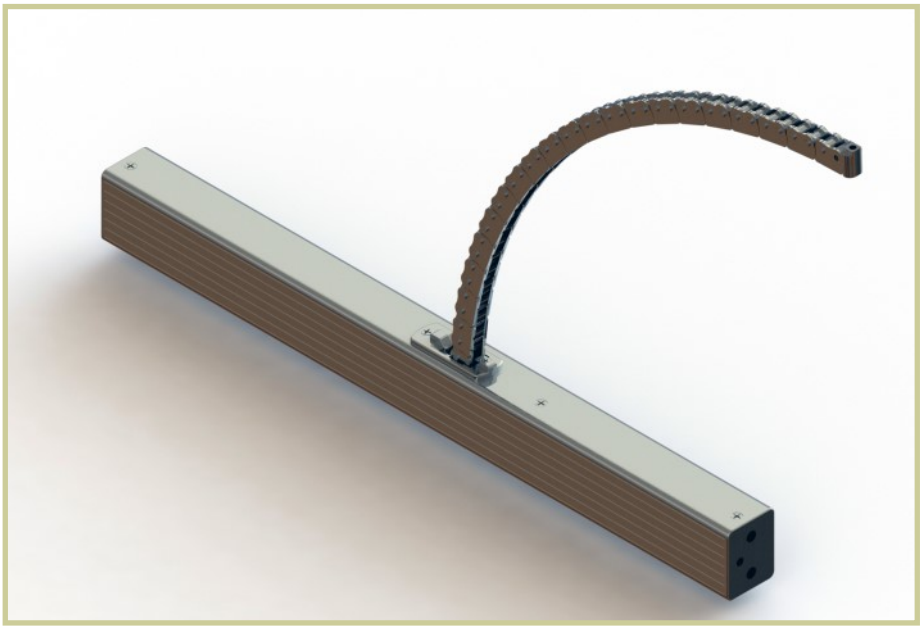
Cable: 1 m silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 2.0 kg

Synchronizer: internal



Description

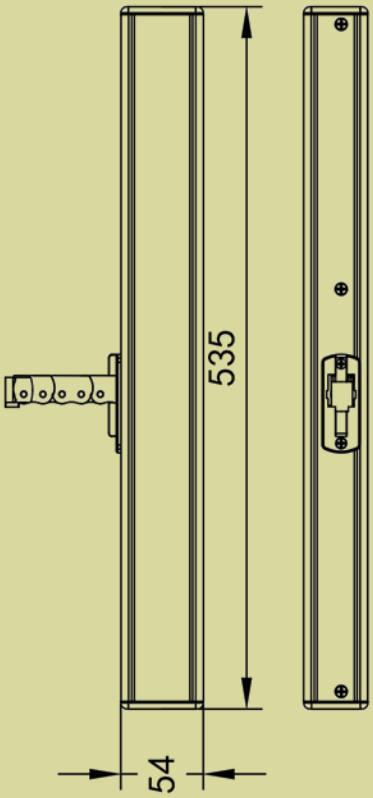
This specially designed chain guarantees a smooth curved movement on the occasions where the actuator body is mounted in a non-pivotal way. It is ideal for natural and smoke ventilation purpose while working with side-opening vents or those with special mounting requirement.

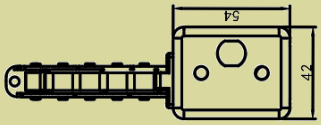
Features

- Versatile application for different types of ventilators.
- Corrosion resistance.
- Tested to meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Tested to meets EN12101-2 annex C cycling test for 10,000 cycles.
- Optional: soft opening, water seal relief and finger protection for safety.
- Able to open 90° within 60 seconds

PRODUCT DATASHEET

Dimension



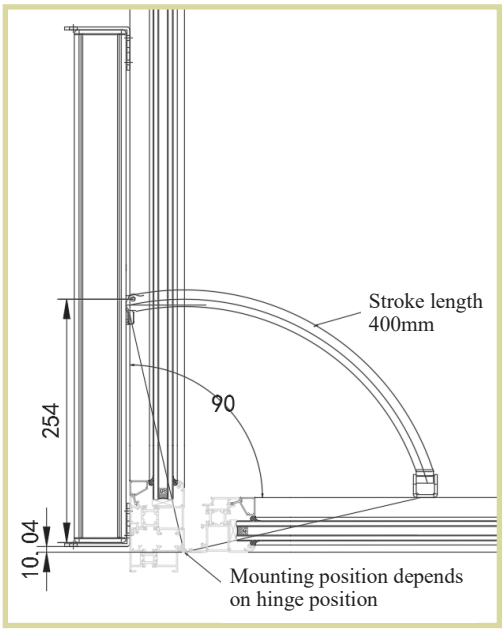


Order code	Description
AS4.N.D.450.A.L0	24Vdc 400N, 90°/**450mm** chain actuator
AS4.N.D.450.A.L0.OPP	24Vdc 400N, 90°/**450mm** chain actuator, opposite hand
AS4.E.D.450.A.L0	24Vdc 400N, 90°/**450mm** chain actuator, intelligent version
AS4.E.D.450.A.L0.OPP	24Vdc 400N, 90°/**450mm** chain actuator, opposite hand, intelligent version
AL4.N.D.600.A.L0	24Vdc 400N, 70°/**600mm** chain actuator
AL4.N.D.600.A.L0.OPP	24Vdc 400N, 70°/**600mm** chain actuator, opposite hand
AL4.E.D.600.A.L0	24Vdc 400N, 70°/**600mm** chain actuator, intelligent version
AL4.E.D.600.A.L0.OPP	24Vdc 400N, 70°/600mm chain actuator, opposite hand, intelligent version

How to order VARIANCES

AS4	N	D	XXX	S
S = 90° L= 70°	N = carbon steel E = intelligent	D = 24Vdc A= 230Vac	stroke 1000mm = 1K0 600mm = 600 450mm = 450	Colour S = Powder coated Silver A = Anodized B = Black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. For this type of actuator, the brackets usually need to be specifically designed to cater for the special installation requirement depending on the window profile.



PRODUCT DATASHEET

CM400 Bow Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Supply : 24 Vdc +/- 15%

Current draw: 0.85A @ 24Vdc

Stroke: 100-1,000mm

Pull forces : 400N

Clamping forces: >3,500N
(based on manufacturers bracket)

Loaded speed (Pull): > 8.0 mm/s

Housing: Extruded aluminum

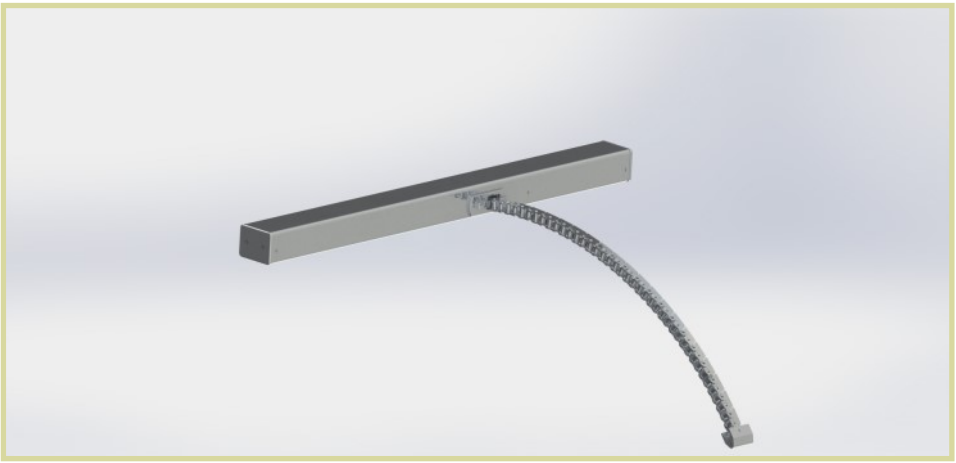
Finishes: Powder coated RAL9006

Cable: 1 m silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 2.0 kg (400mm stroke)



Description

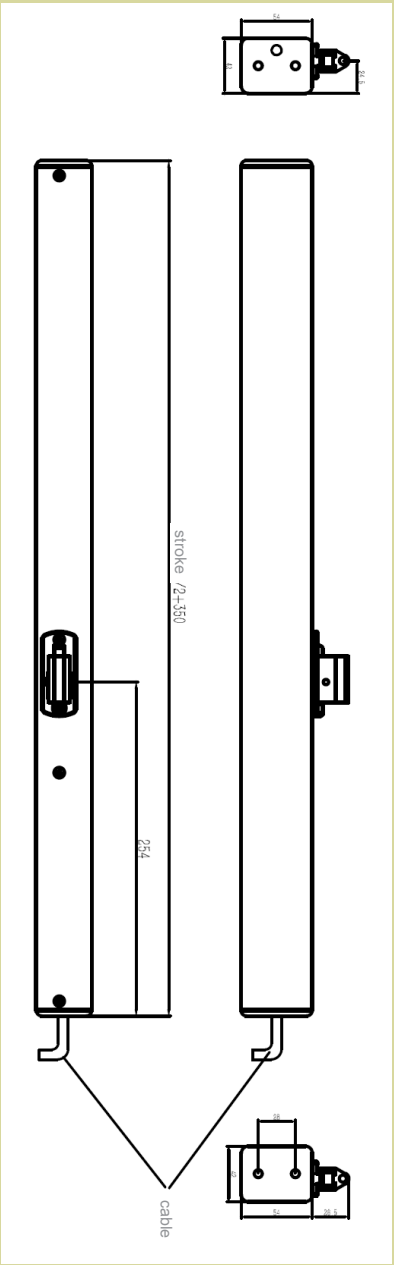
This window actuator is equipped with a special chain which is structurally bendy at a side. This feature makes it ideal for those occasions that the actuator body is somehow fixed in a position. It can be used in bottom-hung or side-hung applications for natural and smoke ventilation purpose.

Features

- Versatile application for bottom-hung or applicable side-hung windows.
- Corrosion resistance.
- Tested to meet EN12101-2 annex C cycling test for 10,000 cycles.
- Optional soft opening, water seal relief and finger protection for safety.

PRODUCT DATASHEET

Dimension

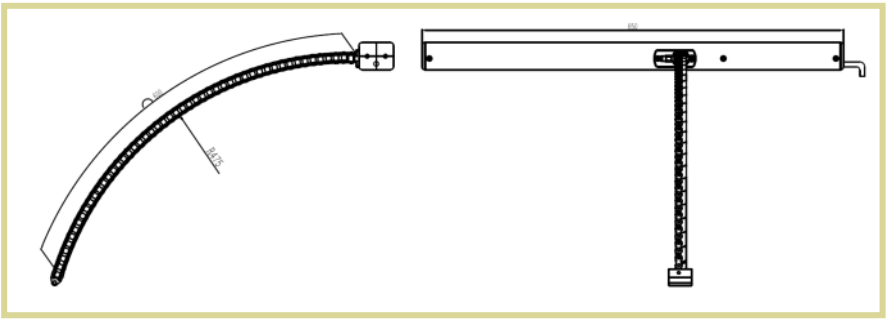


Order code	Description
B04.N.D.400.A.L0	24Vdc 400N, **400mm** chain actuator, for retraction use only
B04.N.D.600.A.L0	24Vdc 400N, **600mm** chain actuator, for retraction use only
B04.N.D.900.A.L0	24Vdc 400N, **900mm** chain actuator, for retraction use only
B04.E.D.400.A.L0	24Vdc 400N, **400mm** chain actuator, intelligent type, for retraction use only
B04.E.D.600.A.L0	24Vdc 400N, **600mm** chain actuator, intelligent type, for retraction use only
B04.E.D.900.A.L0	24Vdc 400N, **900mm** chain actuator, intelligent type, for retraction use only

How to order VARIANTS

B04	N	D	XXX	S
B = Bow chain	N = carbon steel E = intelligent	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	Colour S = Powder coated Silver A = Anodized B = Black

⚠ Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. For this type of actuator, the brackets usually need to be specifically designed to cater for the special installation requirement depending on the window profile.



PRODUCT DATASHEET

CC300 Slim Concealed Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage:

DC version :24 Vdc +/- 15%

Rated current : 1.2 A @ 24Vdc

Push/Pull forces: 300N

Stroke: 300mm
(>300mm retraction only)

Clamping forces: >3000N

Speed: 9.5mm/s

Housing: Aluminum alloy

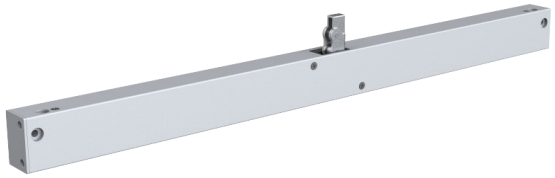
Finishes: Anodized RAL 9006

Cable: 2 meter PVC cable

Ingress Protection: IP 32

Endurance: > 10,000 cycles
(30% duty cycle)

Weight : 1.0 kg



Description

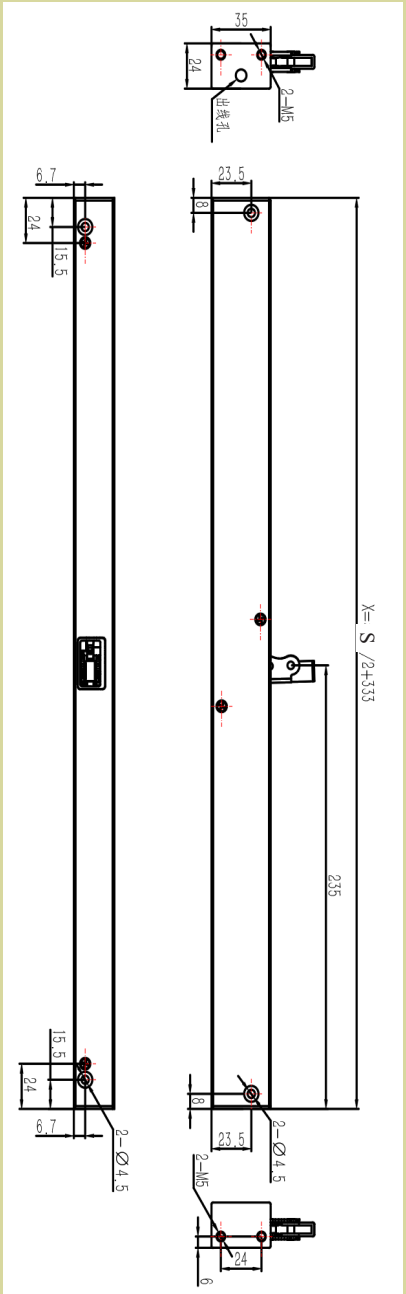
The slim design allows it to be installed inside the window profile to achieve the superior aesthetic requirement while it can be used for general purpose smoke and natural ventilation. This is an upgrade version of CC250 model to reach even higher performance.

Features

- Concealed installation inside the profile.
- Stylish design.
- Quiet and stable. Suitable for home applications.
- Easy to install.

PRODUCT DATASHEET

Dimension

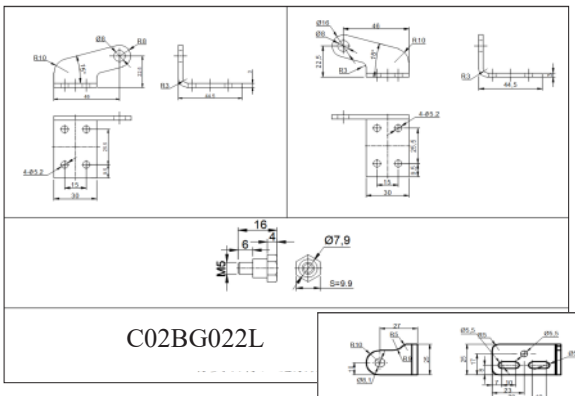


Order code	Description
CC3.E.D.300.A	24Vdc, 300N, 300mm intelligent concealed chain actuator
CC3.E.D.500.A	24Vdc, 300N, 500mm intelligent concealed chain actuator, retraction only
CC3.G.D.300.A	24Vdc, 300N, 300mm addressable concealed chain actuator
CC3.G.D.500.A	24Vdc, 300N, 500mm addressable concealed chain actuator, retraction only
C02.B.G.022.L	250N/500N Chain Actuator Bracket set, face fixing, zinc plated steel 3mm thickness, height 22mm
C02.B.S.027.L	250N/500N Chain Actuator Bracket set, sill fixing, stainless steel 3mm thickness, height 27mm

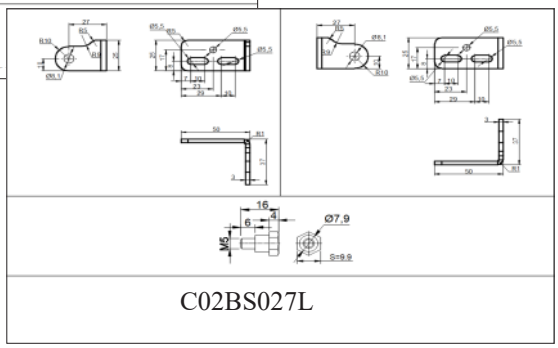
How to order VARIANCES

CC3	E	D	XXX	A
CC3 = 300N	N = carbon steel E = intelligent G = addressable	D = 24Vdc	stroke 100mm = 100 200mm = 200 300mm = 300	Colour A = Anodized (RAL9006) B = black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



C02BG022L



C02BS027L

PRODUCT DATASHEET

CC250 Concealed Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage:

DC version :24 Vdc +/- 15%

Rated current : 1.2 A @ 24Vdc

Current w/o load: < 0.2 A

Stroke: 300mm

Push/Pull forces : 250N

Clamping forces: 2000N

Speed: 6-8mm/s

Housing: Zinc & Alum alloy

Finish: black

Cable: 1 meter PVC cable

Ingress Protection: IP 20

Endurance: > 3,000 cycles (30% duty cycle)

Weight : 1.0 kg

Description

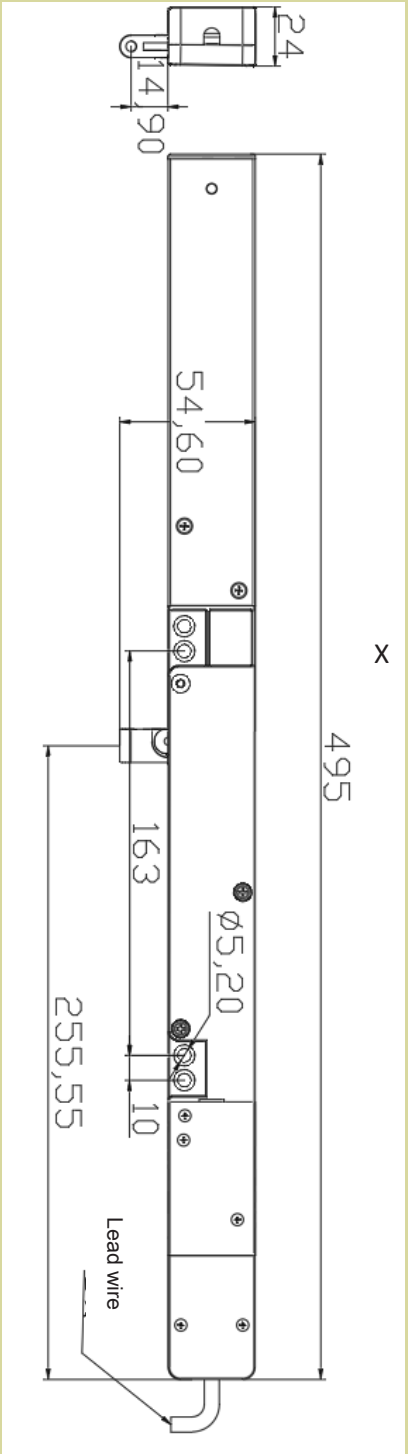
The slim design allows it to be installed inside the window profile to achieve the superior aesthetic requirement while it can be used for general purpose smoke and natural ventilation.

Features

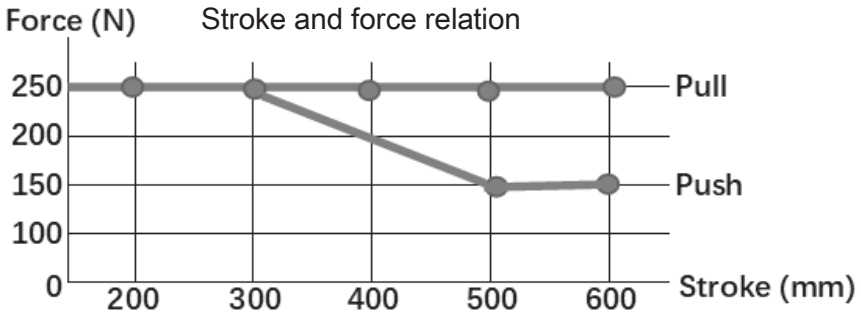
- Concealed installation inside the profile.
- Stylish design.
- Quiet and stable. Suitable for home applications.
- Easy to install.

PRODUCT DATASHEET

Dimension



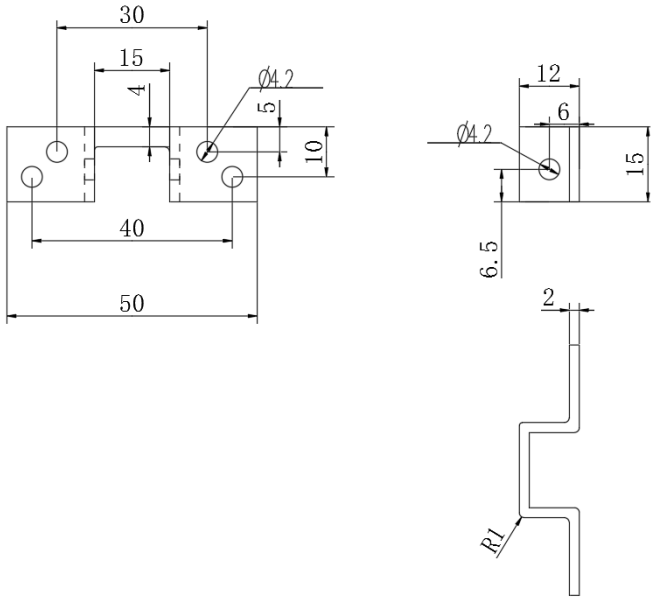
Order code	Description
C02.C.D.300.B	250N, 300mm Concealed chain actuator, 24Vdc, black
C02.C.D.500.B	250N, 500mm Concealed chain actuator, 24Vdc, black



How to order VARIANCES

CO2	C	D	XXX	B
CC2 = 250N	C=CONCEALED	D = 24Vdc	stroke 100mm = 100 200mm = 200 300mm = 300	Colour S = Silver W = white B = black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



PRODUCT DATASHEET

CM1500 Heavy Duty Chain Actuator

Suitable for use in smoke and natural application in roof and slope ventilator

Technical

Voltage: 24 Vdc +/- 15%

Ampere : 4.8A

Stroke: 100 -1,500mm

Compression up to 1100mm

Push/Pull forces : 1500N

Clamping forces: >3500N
(based on manufacturers bracket)

Speed: 12 mm/s

Housing: Extruded Aluminum

Finishes: Powder coated RAL 9006

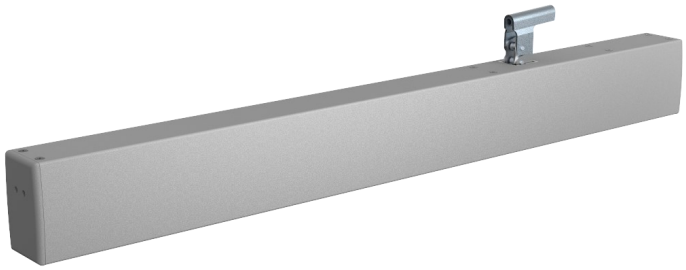
Cable: 1 meter silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 10 kg (500mm stroke)

Synchronization: internal



Description

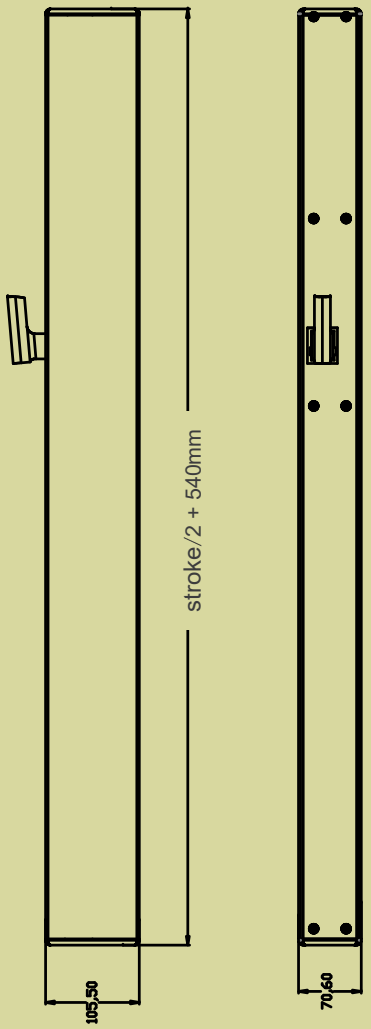
Designed to fulfill the need to drive big roof and slope ventilators with good aesthetics. A better alternative to replace linear actuators to automate heavy vents. Special double layer chain blade provides sufficient force to withstand 1500N compression force up to 1100mm stroke.

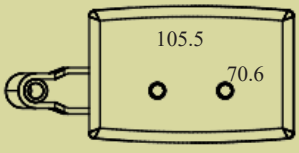
Features

- Strong and robust chain construction to open/ close heavy vents.
- Corrosion resistance housing.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meet EN12101-2 annex C cycling test for 10,000 cycles.
- Micro processor based control delivers constant speed, soft opening, water seal relief and finger protection to enhance users safety and reduce stress to the ventilators.
- High speed opening to 1,100mm in 60 seconds.

PRODUCT DATASHEET

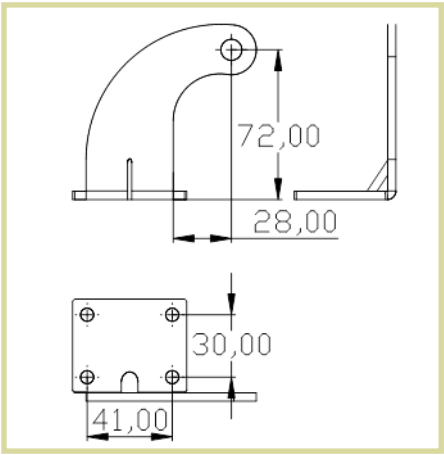
Dimension





Order code	Description of products
C15.E.D.250.S.L0	24Vdc 1500N, 250mm chain actuator (bracket order separately)
C15.E.D.300.S.L0	24Vdc 1500N, 300mm chain actuator (bracket order separately)
C15.E.D.400.S.L0	24Vdc 1500N, 400mm chain actuator (bracket order separately)
C15.E.D.500.S.L0	24Vdc 1500N, 500mm chain actuator (bracket order separately)
C15.E.D.600.S.L0	24Vdc 1500N, 600mm chain actuator (bracket order separately)
C15.E.D.700.S.L0	24Vdc 1500N, 700mm chain actuator (bracket order separately)
C15.E.D.800.S.L0	24Vdc 1500N, 800mm chain actuator (bracket order separately)
C15.E.D.900.S.L0	24Vdc 1500N, 900mm chain actuator (bracket order separately)
C15.E.D.1K0.S.L0	24Vdc 1500N, 1,000mm chain actuator (bracket order separately)

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



PRODUCT DATASHEET

CM800 Twin Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Ampere : 2.0A @ 24Vdc*

Stroke: 100 -1,000mm

Push/Pull forces : 800N/800N

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed: 10 mm/s
*high speed version up to 18 mm/s

Housing: Extruded Aluminum

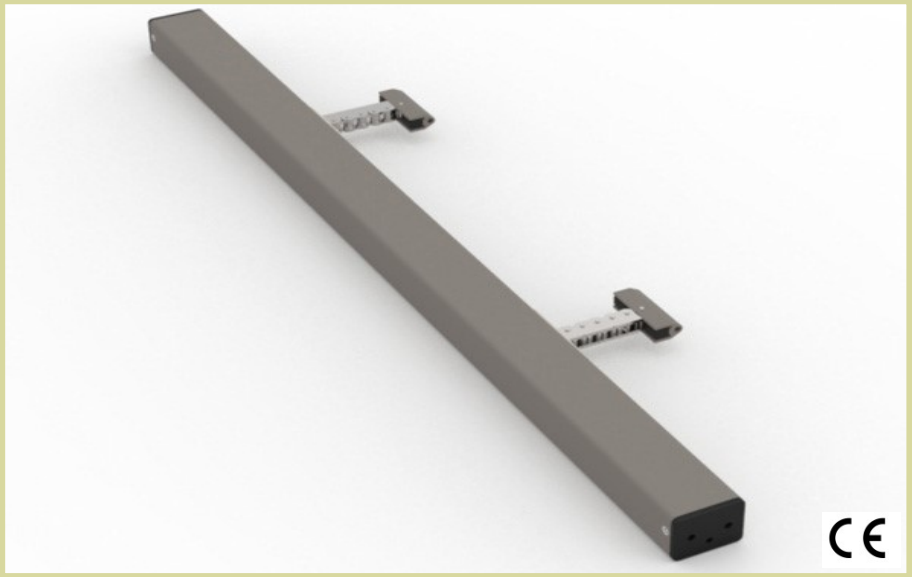
Finishes: Anodized RAL 9006

Cable: 1 meter silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 4.5 kg (500mm stroke)



Description

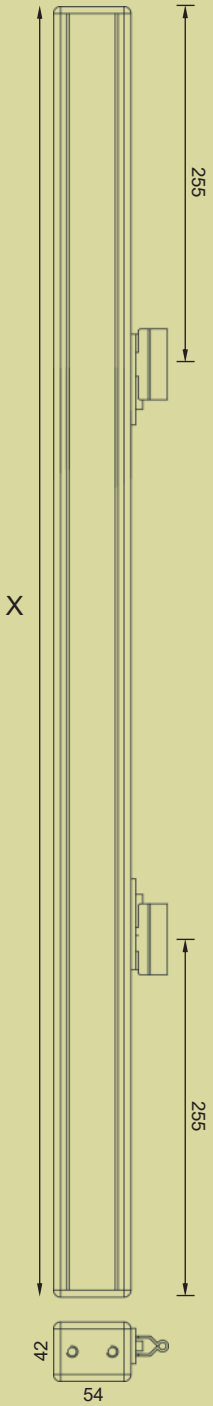
Designed for wide window application when 2 catches are required on the same ventilator. Micro processor based speed control delivers perfect speed synchronization of 2 motors regardless of vent load. This enhances the useful life of the ventilators from immature weather leaks and failure.

Features

- Speed synchronization to deliver stress free installation to window structure.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- Standard feature to include Soft opening, water seal relief and finger protection for safety.
- High speed version available to open 900mm in 60 seconds.
- Smart version available for network control installation.

PRODUCT DATASHEET

Dimension



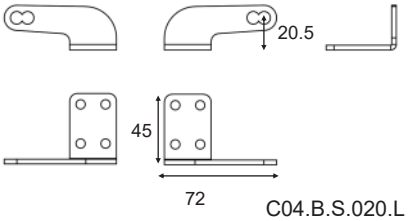
Stroke(mm)	X (mm)
250	910
300	960
400	1060
500	1160
600	1260
700	1360
800	1460
1000	1660

Order code	Description
C08.E.D.250.A.L0	24Vdc 2 x 400N, 250mm chain actuator (bracket order separately)
C08.E.D.300.A.L0	24Vdc 2 x 400N, 300mm chain actuator (brackets order separately)
C08.E.D.400.A.L0	24Vdc 2 x 400N, 400mm chain actuator (brackets order separately)
C08.E.D.500.A.L0	24Vdc 2 x 400N, 500mm chain actuator (brackets order separately)
C08.E.D.800.A.L0	24Vdc 2 x 400N, 800mm chain actuator (brackets order separately)
C04.B.S.020.L	400N face fixed bracket set, stainless steel 3mm, height 20mm
C04.B.G.040.L	400N silt fixed bracket set, zinc plated steel 3mm, height 40mm
C04.B.G.050.L	400N silt fixed bracket set, zinc plated steel 3mm, height 50mm
C04.B.G.060.L	400N Universal silt and face fixed bracket set, zinc plated steel 3mm, height 60mm

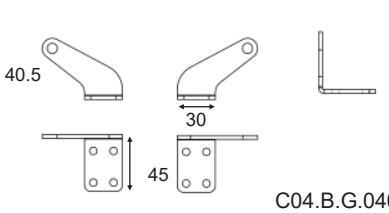
How to order VARIANCES

C08	N	D	XXX	S
0 = Normal S= Stainless steel	N = carbon steel E = intelligent K = fast speed	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	Colour S = Powder coated A=Anodized (RAL9006) B = black W= White (RAL9003

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



C04.B.S.020.L



C04.B.G.040.L

PRODUCT DATASHEET

CM250 Compact Chain Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Ampere : 0.5 A

Stroke: 100 - 1,000mm

Push/Pull forces : 250N

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed: 6 mm/s

Housing: Extruded Aluminum

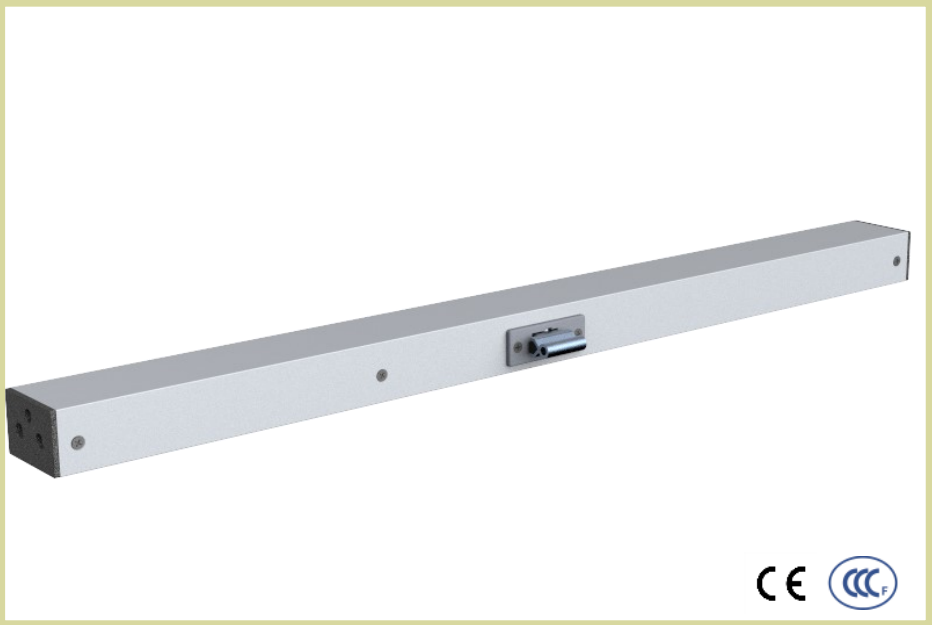
Finishes: Powder coated RAL 9006

Cable: 1 meter silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 1.2 kg (350mm stroke)



Description

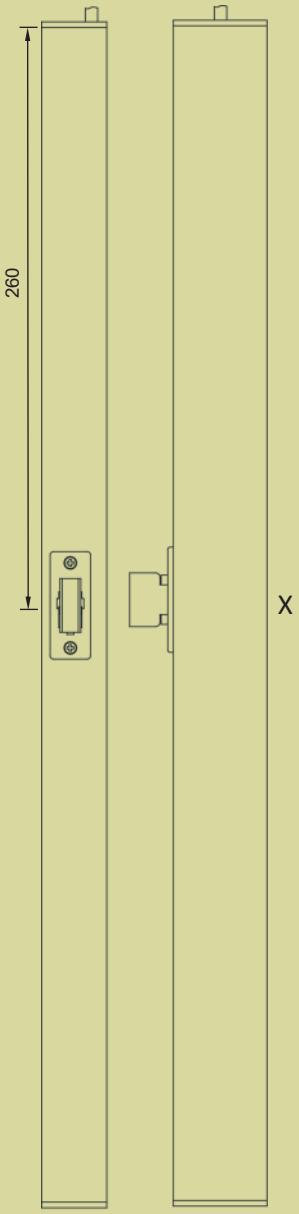
Compact design for use in conceal installation. Very quiet operation ideal for day to day ventilation. Ideal for use in natural ventilation or light weight roof-light.

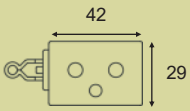
Features

- Compact and small housing for use in small windows.
- Corrosion resistance.
- Design to meet EN 12101-2 annex G.
- Meet EN12101-2 annex C cycling test for 10,000 cycles.
- Option to have soft opening, water seal relief and finger protection.
- Smart version available for network controls.

PRODUCT DATASHEET

Dimension





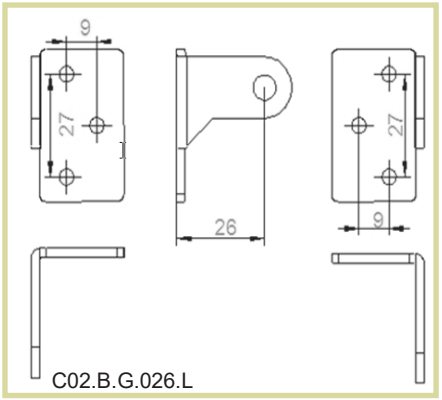
Stroke (mm)	X (mm)
100-350	480
400	530
500	580
600	630
700	680
800	730

Order code	Description
C02.N.D.150.S	24Vdc 250N, 150mm chain actuator (bracket order separately)
C02.N.D.200.S	24Vdc 250N, 200mm chain actuator (brackets order separately)
C02.N.D.400.S	24Vdc 250N, 400mm chain actuator (brackets order separately)
C02.N.D.600.S	24Vdc 250N, 600mm chain actuator, for retraction use only, (brackets order separately)
C02.N.D.800.S	24Vdc 250N, 800mm chain actuator, for retraction use only, (brackets order separately)
C02.N.D.1K0.S	24Vdc 250N, 1000mm chain actuator, for retraction use only, (brackets order separately)
C02.B.G.026.L	250N pivot face fixed bracket set for CM 250, 26mm high

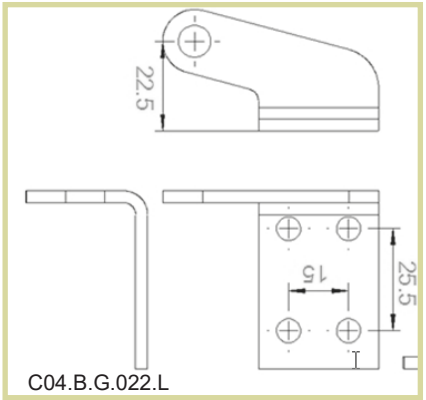
How to order VARIANCES

C02	N	D	XXX	S
	N = Normal E = intelligent	D = 24Vdc A= 230Vac	Stroke 250mm = 250	S = Silver (RAL 9006) B = Black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



C02.B.G.026.L



C04.B.G.022.L

PRODUCT DATASHEET

CM250 Compact Chain Actuator - 230VAC

Suitable for use in smoke and natural ventilators

Technical

Voltage: 230Vac

Ampere : 0.1 A

Stroke: 100 - 1,000 mm

Push/Pull forces : 250N

Clamping forces: >3,500N
(based on manufacturers bracket)

Speed: 6 mm/s

Housing: Extruded Aluminum

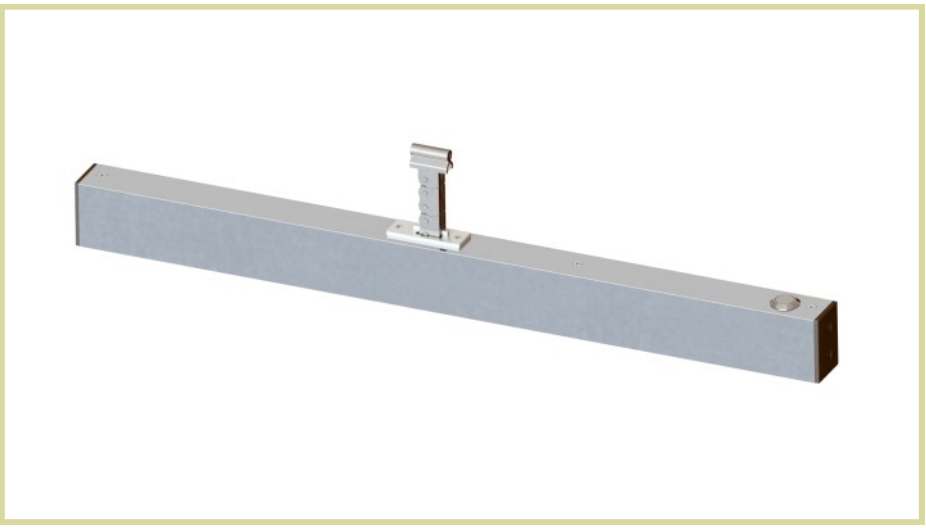
Finishes: Powder coated RAL 9006

Cable: 1 meter silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 1.2 kg (350mm stroke)



CE

Description

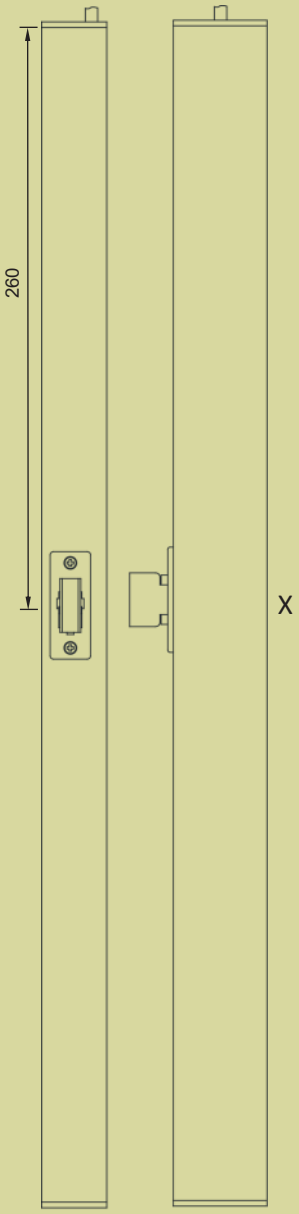
Compact design for use in conceal installation. Very quiet operation ideal for day to day ventilation. Ideal for use in natural ventilation or light weight roof-light.

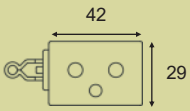
Features

- Compact and small housing for use in small windows.
- Corrosion resistance.
- Design to meet EN 12101-2 annex G.
- Meet EN12101-2 annex C cycling test for 10,000 cycles.
- Option to have soft opening, water seal relief and finger protection.
- Smart version available for network controls.

PRODUCT DATASHEET

Dimension





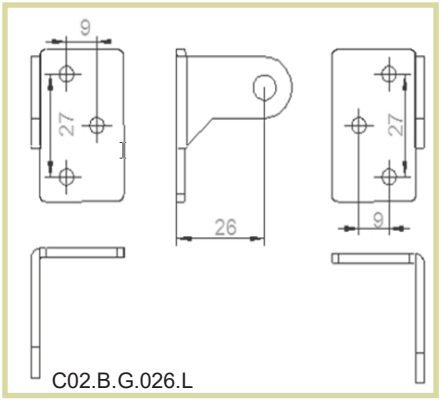
Stroke (mm)	X (mm)
100-300	550
301-400	600
401-600	700
601-800	800

Order code	Description
C02.N.R.300.S	230Vac 250N, 300mm chain actuator with RF868 remote control (bracket order separately)
C02.N.R.600.S	230Vac 250N, 600mm chain actuator with RF868 remote control, for retraction use only, (brackets order separately)
NV.B.22.01.01	RF868 remote control plate 86x86
NV.B.21.01.01	RF868 remote control hand-held
C02.B.G.026.L	250N pivot face fixed bracket set for CM 250, 26mm high

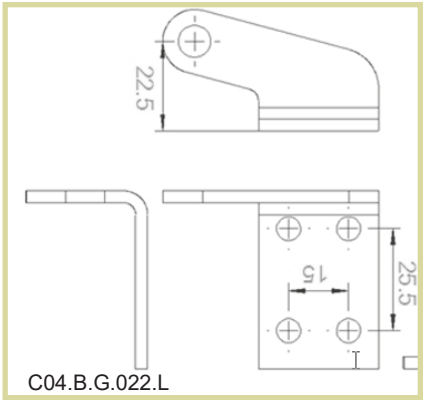
How to order VARIANCES

C02	N	D	XXX	S
	N = Normal E = intelligent	D = 24Vdc A= 230Vac R=230Vac+RF868 V=24Vdc+RF868	Stroke 250mm = 250	S = Silver (RAL 9006) B = Black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.



C02.B.G.026.L



C04.B.G.022.L

PRODUCT DATASHEET

LM650 Weather Proof Spindle Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

No-load Ampere : 0.1A

Operating current:
N type: 0.5A
E type: 0.9A

Stroke: 100-700mm

Push/Pull forces : 650N

Clamping forces: >3000N
(based on manufacturers bracket)

Speed: 5.3 mm/s

Housing: Extruded Aluminum

Finish: Anodized RAL9006

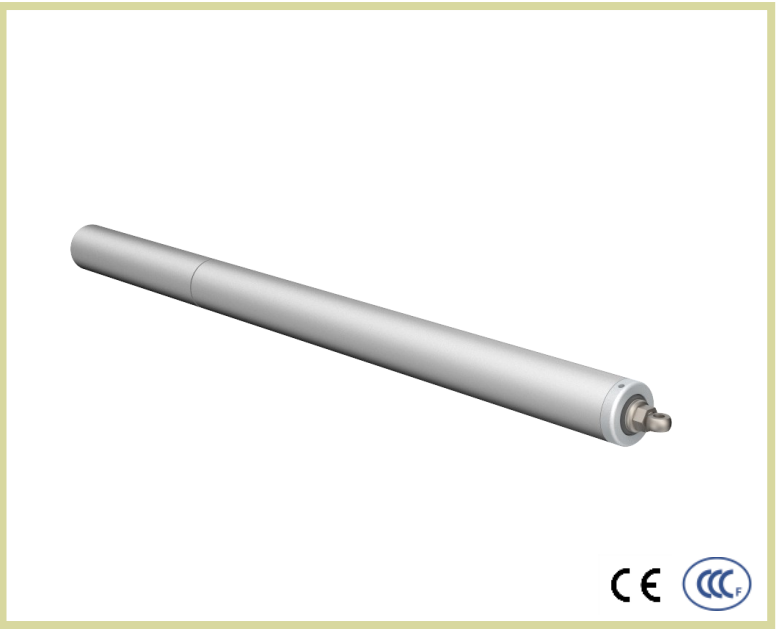
Cable: 1 meter silicon cable

Ingress Protection: IP 67

Endurance: 10,000 cycles on 30% duty cycle

Weight : 1.8 kg (300mm)

Synchronization: internal



Description

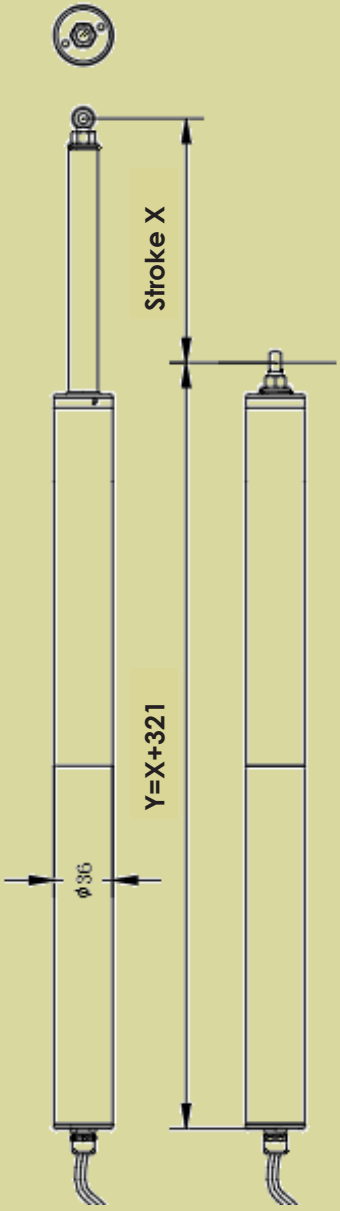
Designed for use in outdoor with good Ingress Protection to IP 67. Ideal for natural and smoke ventilation application where the product are mounted externally and subject to harsh environment. Strong linear actuator for used in heavy roof ventilator or big windows. Intelligent control is regular and conventional current limiting controls available upon request.

Features

- Strong linear actuator for up to 700N, 700m stroke.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- Option: soft opening, water seal relief and finger protection.
- High speed version available to open 600mm in 60 seconds.
- Smart version available for network control installation.
- Micro processor controlled synchronization up to 8 actuators for the intelligent version.

PRODUCT DATASHEET

Dimension



Stroke X (mm)	Y (mm)
100	421
300	621
500	821
600	921
700	1021
1000	1321

Order code	Description
S06.W.D.100.A.L0	Spindle actuator,650N,100mm, 24Vdc(bracket not included)
S06.W.D.500.A.L0	Spindle actuator,650N, 500mm, 24Vdc(bracket not included)
S06.W.D.700.A.L0	Spindle actuator,650N, 700mm, 24Vdc(bracket not included)
S06.V.D.100.A.L0	Intelligent spindle actuator,650N, 100mm, 24Vdc(bracket not included)
S06.V.D.500.A.L0	Intelligent spindle actuator,650N, 500mm, 24Vdc(bracket not included)
S06.V.D.700.A.L0	Intelligent spindle actuator,650N, 700mm, 24Vdc(bracket not included)
S06.B.S.046.U	650N Linear Actuator Bracket Set, O+U type, U-stainless steel 3mm thickness, height 46mm , O- aluminum alloy

How to order VARIANCES

S06	W	D	XXX	S
S06 = 650N	W= weather proof V = intelligent & waterproof	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 300mm = 300	S = Powder coated silver A = Anodized (RAL 9006) B = Black

⚠ Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.

PRODUCT DATASHEET

LM1000 Spindle Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Operating current:

N type: 1.0A
E type: 1.7A

Load Speed: 8 mm/s

Stroke: 100-1,000mm

Push/Pull forces : 1000N

Clamping forces: 5,000N
(based on manufacturers bracket)

Housing: Extruded Aluminum

Finishes: Anodized RAL9006

Cable: 1 meter silicon cable

Ingress Protection: IP 54

Endurance: 10,000 cycles
30% duty cycle

Weight : 3.6kg (1000mm)

Synchronization: external or internal

Description

Designed for general application of window and façade automation system. Ideal for natural and smoke ventilation application. Strong linear actuator for used in heavy roof ventilator or big windows.

Features

- Strong linear actuator for up to 1000N, and 1000m stroke.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- Option :soft opening, water seal relief and finger protection.
- High speed version available to open 600mm in 60 seconds.
- Smart version available for network control installation.
- Micro processor controlled synchronization up to 8 actuators when order (E) version.

PRODUCT DATASHEET

Dimension

stroke mm	Eye bolt to Eye bolt X (mm)	Recommended mounting method
100	503	U bracket
200	603	U bracket
300	703	U/Clamp ring
400	803	U/Clamp ring
500	903	U/Clamp ring
600	1003	U/Clamp ring
700	1103	U/Clamp ring
800	1203	U/Clamp ring
900	1303	U/Clamp ring
1000	1403	U/Clamp ring

Order code	Description
S10.N.D.100.A.L0	Spindle actuator,1000N, Stroke 100mm, (bracket not included)
S10.N.D.300.A.L0	Spindle actuator,1000N, Stroke 300mm, (bracket not included)
S10.N.D.500.A.L0	Spindle actuator,1000N, Stroke 500mm, (bracket not included)
S10.N.D.700.A.L0	Spindle actuator,1000N, Stroke 700mm, (bracket not included)
S10.N.D.1K0.A.L0	Spindle actuator,1000N, Stroke 1000mm, (bracket not included)
S10.E.D.300.A.L1	Spindle actuator,1000N, Stroke 300mm, intelligent (bracket not included)
S10.E.D.500.A.L1	Spindle actuator,1000N, Stroke 500mm, intelligent (bracket not included)
S10.E.D.700.A.L1	Spindle actuator,1000N, Stroke 700mm, intelligent (bracket not included)
S10.E.D.1K0.A.L1	Spindle actuator,1000N, Stroke 1000mm, intelligent (bracket not included)
S10.B.S.030.U	1000N Linear Actuator Bracket Set, U type, stainless steel 3mm thickness, height 30mm
S10.B.S.090.U.S2	1000/1500N Linear Actuator Bracket Set, O+U type, height 90mm

How to order VARIANCES

S10	N	D	XXX	A
S10 =1000N S06 = 600N	N = normal E = intelligent	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	A=Anodized S = Silver (RAL 9006) B = Black

⚠ Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.

PRODUCT DATASHEET

LM1500 Water Proof Spindle Actuator

Suitable for use in

Technical

Voltage: 24 Vdc +/- 15%

Operating Ampere :
N type: 1.0A
E type: 1.8A

Stroke: 100-1,000mm

Push/Pull forces : 1500N

Clamping forces:
5,000N (based on manufacturers bracket)

Load Speed: 6 mm/s

Housing: Extruded Aluminum

Finishes: Anodized RAL9006

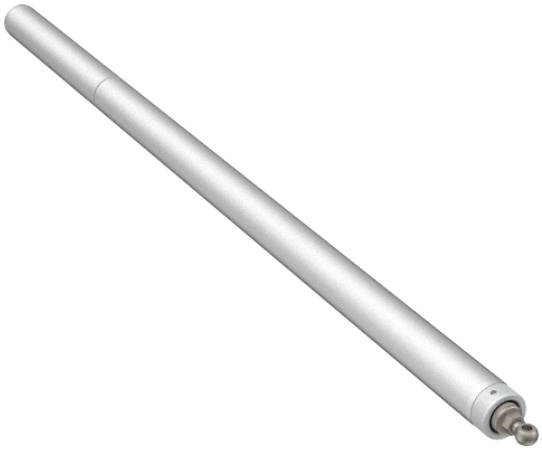
Cable: 1 meter silicon cable

Ingress Protection: IP 68

Endurance: 10,000 cycles
30% duty cycle

Weight : 3.6kg (1000mm)

Synchronization: external or internal



Description

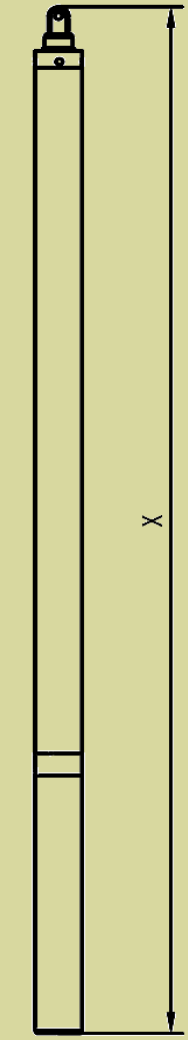
Designed for general application of window and façade automation system. Ideal for natural and smoke ventilation application. Strong linear actuator for used in heavy roof ventilator or big windows.

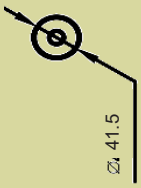
Features

- Strong linear actuator for up to 1500N, and 1000m stroke.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- Option :soft opening, water seal relief and finger protection.
- High speed version available to open 600mm in 60 seconds.
- Smart version available for network control installation.
- Micro processor controlled synchronization up to 8 actuators when order (E) version.
- IP68 class water proof

PRODUCT DATASHEET

Dimension





Stroke (mm)	X (mm)
100	502
300	702
500	902
600	1002
700	1102
1000	1402

Order code	Description
S15.W.D.100.A.L0	Spindle actuator,1500N, Stroke 100mm, (bracket not included)
S15.W.D.300.A.L0	Spindle actuator,1500N, Stroke 300mm, (bracket not included)
S15.W.D.500.A.L0	Spindle actuator,1500N, Stroke 500mm, (bracket not included)
S15.W.D.600.A.L0	Spindle actuator,1500N, Stroke 600mm, (bracket not included)
S15.W.D.700.A.L0	Spindle actuator,1500N, Stroke 700mm, (bracket not included)
S15.W.D.1K0.A.L0	Spindle actuator,1500N, Stroke 1000mm, (bracket not included)
S15.E.D.300.A.L1	Spindle actuator,1500N, Stroke 300mm, intelligent (bracket not included)
S15.E.D.500.A.L1	Spindle actuator,1500N, Stroke 500mm, intelligent (bracket not included)
S15.E.D.700.A.L1	Spindle actuator,1500N, Stroke 700mm, intelligent (bracket not included)
S15.E.D.1K0.A.L1	Spindle actuator,1500N, Stroke 1000mm, intelligent (bracket not included)
S10.B.S.030.U	1000N Linear Actuator Bracket Set, U type, stainless steel 3mm thickness, height 30mm

How to order VARIANCES

S15	W	D	XXX	A
S15 =1500N	W = Waterproof V = intelligent & waterproof	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	A = Anodized S = Silver (RAL 9006) B = Black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.

PRODUCT DATASHEET

LM2000 Spindle Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/-15%

Ampere : 3.0 A

Stroke: 100 -1,000mm (P type for stroke≤500mm, G type for stroke>500mm)

Push/Pull forces : 2000N

Clamping forces: 5,000N (based on manufacturers bracket)

Load Speed: 8 mm/s

Housing: Extruded Aluminum

Finishes: Anodized RAL9006

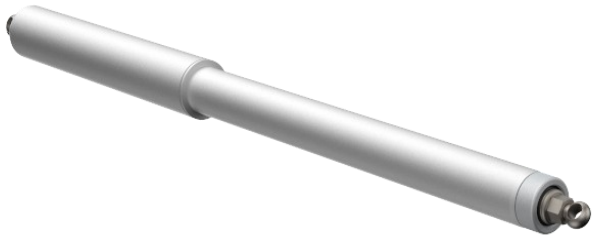
Cable: 1 meter silicon cable

Ingress Protection: IP 54

Endurance: 10,000 cycles 30% duty cycle

Weight : 6kg (700mm)

Synchronization: internal



Description

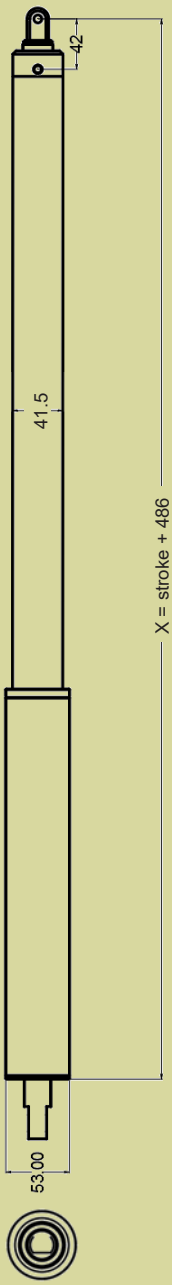
Designed for application of heavy window and façade automation system. Ideal for natural and smoke ventilation application. Strong linear actuator for used in heavy roof ventilator or big windows.

Features

- Strong linear actuator for up to 2000N, and 1000m stroke.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- soft opening, water seal relief and finger protection.
- Able to open 1000mm in 60 seconds for bottom-hung application* optional
- Built-in micro processor to realize intelligent synchronization and constant speed control. Speed and force are configurable on site.
- IP65 class ingress protection

PRODUCT DATASHEET

Dimension



Stroke (mm)	X (mm)
100	586
300	786
500	986
600	1086
700	1186
1000	1486

Order code	Description
S20.E.D.100.A.L0	Spindle actuator,2000N, Stroke 100mm, (bracket not included)
S20.E.D.300.A.L0	Spindle actuator,2000N, Stroke 300mm, (bracket not included)
S20.E.D.500.A.L0	Spindle actuator,2000N, Stroke 500mm, (bracket not included)
S20.E.D.600.A.L0	Spindle actuator,2000N, Stroke 600mm, (bracket not included)
S20.E.D.700.A.L0	Spindle actuator,2000N, Stroke 700mm, (bracket not included)
S20.E.D.1K0.A.L0	Spindle actuator,2000N, Stroke 1000mm, (bracket not included)

How to order VARIANCES

S20	E	D	XXX	A
S20 =2000N	E = intElligent	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	S = Silver (RAL 9006) B = Black A = Anodized

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.

PRODUCT DATASHEET

LM3500 Spindle Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Ampere : 4A

Stroke: 100-1,000mm (P type for stroke≤500mm, G type for stroke>500mm)

Push/Pull forces : 3500N

Clamping forces: 5,000N (based on manufacturers bracket)

Load Speed: 6 mm/s*

Housing: Extruded Aluminum

Finishes: Anodized RAL9006

Cable: 1 meter silicon cable

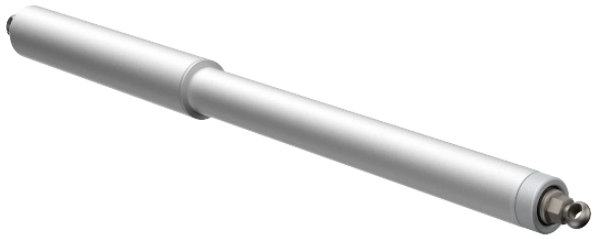
Ingress Protection: IP 54

Endurance: 10,000 cycles 30% duty cycle

Weight : 6kg (700mm)

Synchronization: internal

*in bottom-hung applications it could reach much higher speed with compatible controllers



Description

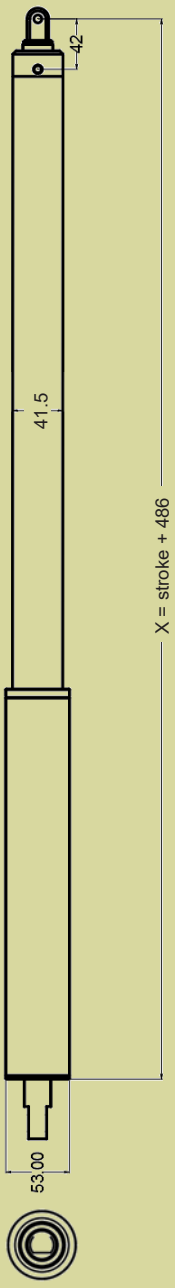
Designed for application of heavy window and façade automation system. Ideal for natural and smoke ventilation application. Strong linear actuator for used in heavy roof ventilator or big windows.

Features

- Strong linear actuator for up to 3500N, and 1000m stroke.
- Corrosion resistance.
- Meets B300 (300°C 30 Mins) EN 12101-2 annex G.
- Meets EN12101-2 annex C cycling test for 10,000 cycles.
- soft opening, water seal relief and finger protection.
- Able to open 1000mm in 60 seconds for bottom-hung application
- Built-in micro processor to realize intelligent synchronization and constant speed control. Speed and force are configurable on site.
- IP65 class ingress protection

PRODUCT DATASHEET

Dimension



Stroke (mm)	X (mm)
100	586
300	786
500	986
600	1086
700	1186
1000	1486

Order code	Description
S35.E.D.100.A.L0	Spindle actuator,3500N, Stroke 100mm, (bracket not included)
S35.E.D.300.A.L0	Spindle actuator,3500N, Stroke 300mm, (bracket not included)
S35.E.D.500.A.L0	Spindle actuator,3500N, Stroke 500mm, (bracket not included)
S35.E.D.600.A.L0	Spindle actuator,3500N, Stroke 600mm, (bracket not included)
S35.E.D.700.A.L0	Spindle actuator,3500N, Stroke 700mm, (bracket not included)
S35.E.D.1K0.A.L0	Spindle actuator,3500N, Stroke 1000mm, (bracket not included)

How to order VARIANCES

S35	E	D	XXX	A
S35 =3500N	E = intelligent	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	A = Anodized S = Silver (RAL 9006) B = Black

Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply. The brackets drawings are updated from time to time, visit our website for more information.

PRODUCT DATASHEET

RM600/RM800 Rack and Pinion Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Ampere :

Single/Master slave 0.8-1A

Master/Master 1.6-2A

Stroke: 100-1,000mm

Push/Pull forces :

RM 600 = 600N (single/master-slave)

RM 800 = 800N (single/master-slave)

RM 1200 = 1200N (master/master)

RM 1600 = 1600N (master/master

Clamping forces: 1500N

(based on manufacturers bracket)

Speed: 8mm/s

Housing: Plastic/Aluminum

Finishes: Powder coated RAL9006

Cable: 1 meter silicon cable

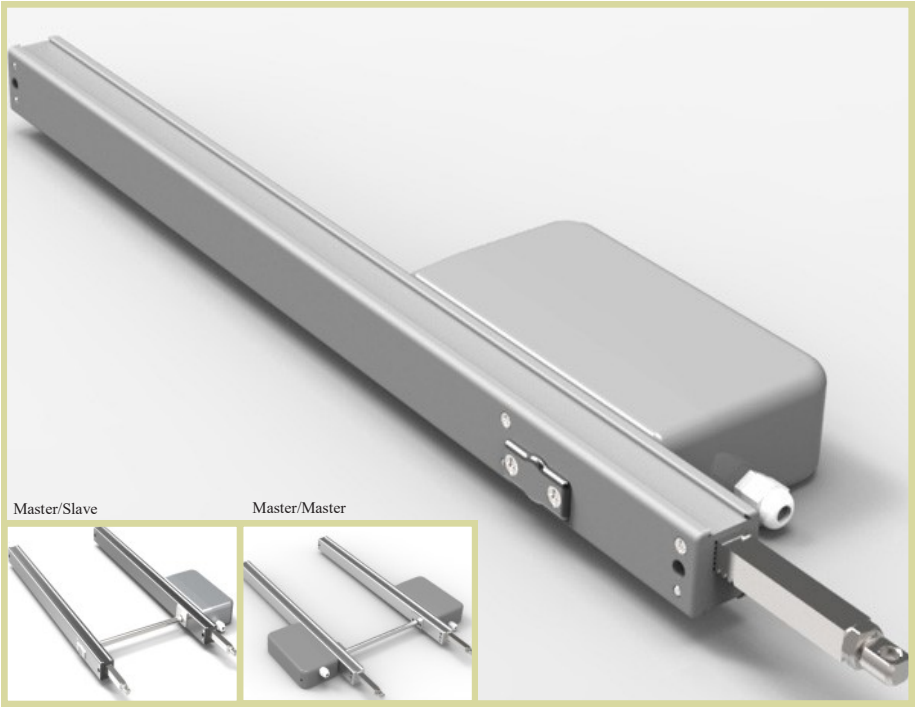
Ingress Protection: IP 55

Endurance: 10,000 cycles test

30% duty cycle

Weight : 2 kg (1000mm)

Synchronization: mechanically by connecting rod



Description

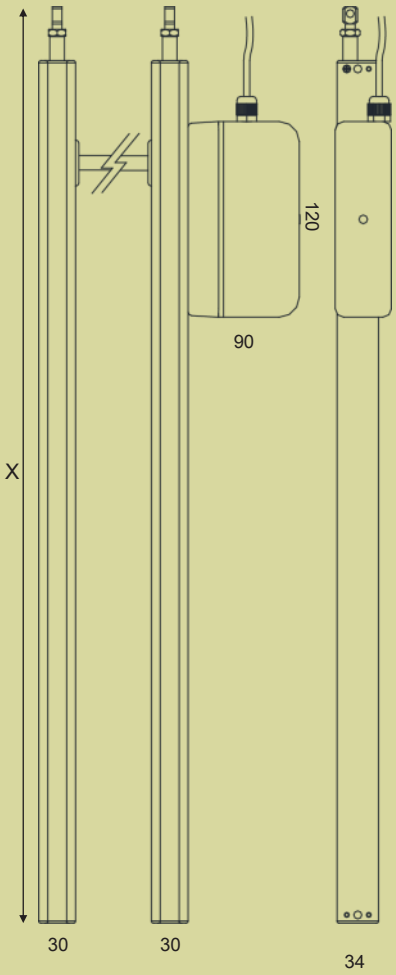
Low cost solution for roof lights, louver, and heavy window application. There are master/slave and master/master configuration using Rack and Pinion motor to provide 2 catches on one ventilator economically, as the synchronization is done by mechanically linked rod to bring 2 motors the same speed.

Features

- Affordable window automation solution for roof light and slope vents.
- Wide range of force available for different application.
- Corrosion resistance.
- Design to meet EN 12101-2 annex G.
- Choice of master/master and master/slave configuration for 2 catches application.
- Mechanically connected for simple, low cost tandem protection.
- Choice of plastic and metal housing.

PRODUCT DATASHEET

Dimension



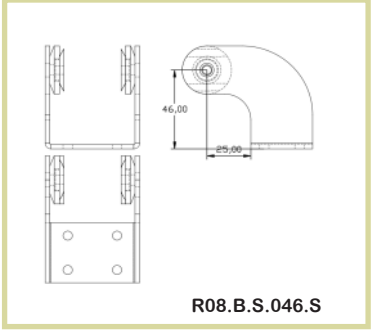
Stroke mm	Eyebolt to Eyebolt X (mm)
200	392
350	542
450	642
550	742
700	892
800	992
1000	1192

Order code	Description
R06.N.D.200.A	Rack and Pinion actuator,600N, Stroke 200mm, (bracket not included)
R06.N.D.250.A	Rack and Pinion actuator,600N, Stroke 250mm, (bracket not included)
R06.N.D.350.A	Rack and Pinion actuator,600N, Stroke 350mm, (bracket not included)
R06.N.D.550.A	Rack and Pinion actuator,600N, Stroke 550mm, (bracket not included)
R06.N.D.700.A	Rack and Pinion actuator,600N, Stroke 700mm, (bracket not included)
R06.N.D.800.A	Rack and Pinion actuator,600N, Stroke 800mm, (bracket not included)
R06.N.D.1K0.A	Rack and Pinion actuator,600N, Stroke 1000mm, (bracket not included)
R08.B.S.046.S	Sliding bracket set for Rack and Pinion Actuator
R08.B.G.0.38.U	U bracket set for Rack and Pinion Actuator, 38mm high

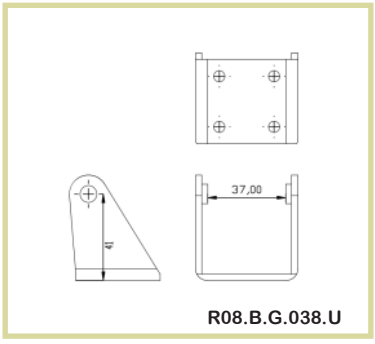
How to order VARIANCES

R08	N	D	XXX	A
single/master slave R06 = 600N R08=800N Master/Master R12= 2 x 600N R16= 2 x 800N	N = Normal w/ plastic housing M = Normal wi/ metal housing E = Intelligent w/ metal housing	D = 24Vdc A= 230Vac	Stroke 1000mm = 1K0 500mm = 500 250mm = 250	S = Silver (RAL 9006) B = Black A = Anodized

⚠ Use of improper brackets will damage windows and actuators or reduce their useful life, please contact our sales for special brackets supply.



R08.B.S.046.S



R08.B.G.038.U

PRODUCT DATASHEET

MPL 600 Multiple Lock/Lourver Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 15%

Stroke: 22/55mm

Push/Pull forces : 600N

Ampere: 0.8A @ 24Vdc

Speed: 3.2 mm/s

Housing: Extruded Aluminum

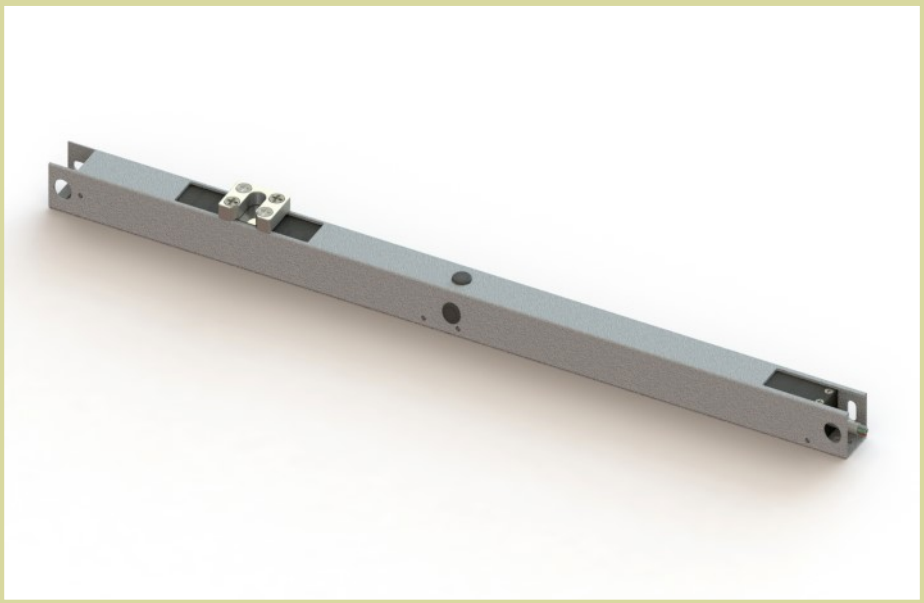
Finishes: Powder coated RAL 9006

Cable: 1 meter silicon cable

Ingress Protection: IP 32

Endurance: 10,000 cycles
30% duty cycle

Weight : 1.2 kg (22mm)



CE

Description

Compact design, and equipped with manual unlocking mechanism, ideal for in-profile installation for good aesthetic appearance.

Control sequence:

Open MPL > Open Vent > Close Vent > lock MPL

Features

- Compact design easy for conceal installation.
- 20mm and 55mm stroke selection for driving MPL or louver.
- Built in micro processor control and compatible with intelligent actuator for control sequence. No external board required.
- Equipped with manual override for quick release during power outrage, and malfunction to facilitate maintenance work.

PRODUCT DATASHEET

Dimension

Order code	Description
M06.C.D.055.S	600N louver actuator, 55mm stroke
M06.C.D.022.S	600N MPL actuator, 22mm stroke

PRODUCT DATASHEET

MPL 800 Multiple Lock/Lourver Actuator

Suitable for use in smoke and natural ventilators

Technical

Voltage: 24 Vdc +/- 6%

Stroke: 20/50mm

Push/Pull forces : 800N

Ampere: 1.2A @ 24Vdc

Speed: 4.0 mm/s

Housing: Extruded Aluminum

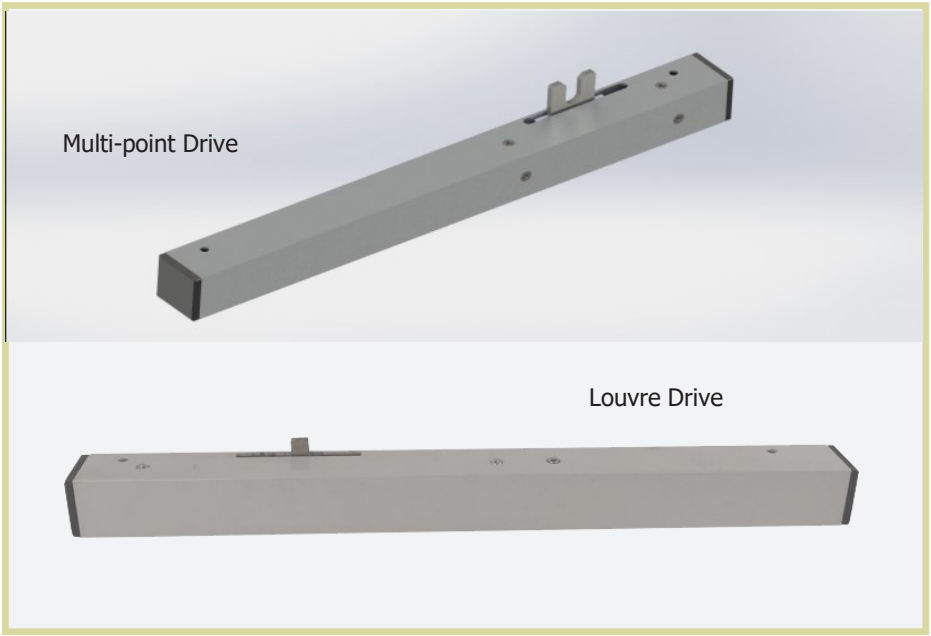
Finishes: Powder coated RAL 9006

Cable: 1 meter silicon cable

Ingress Protection: IP 20

Endurance: 10,000 cycles
30% duty cycle

Weight : 1.5 kg (20mm)



Description

Compact design, and equipped with manual unlocking mechanism, ideal for in-profile installation for good aesthetic appearance.

Control sequence:

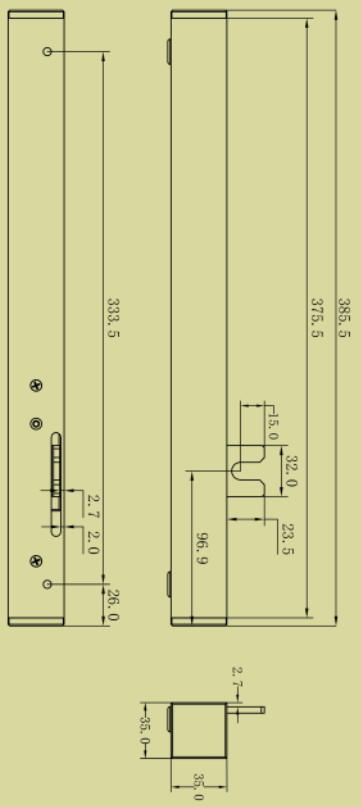
Open MPL > Open Vent > Close Vent > lock MPL

Features

- Compact design easy for conceal installation.
- 20mm and 55mm stroke selection for driving MPL or louver.
- Built in micro processor control and compatible with intelligent actuator for control sequence. No external board required.
- Equipped with manual override for quick release during power outrage, and malfunction to facilitate maintenance work.

PRODUCT DATASHEET

Dimension



For stroke 20mm

Order code	Description
M08.E.D.050.S.L0	800N louver actuator, 50mm stroke, with intelligent control
M08.E.D.020.S.L0	800N MPL actuator, 20mm stroke, with intelligent control.
M08.N.D.020.S.L0	800N MPL actuator, 20mm stroke, (external sequential control required)

PRODUCT DATASHEET

ACCESSORIES

PRODUCT DATASHEET

Wind and Rain Sensor

Suitable for use in all AF Controls NSHEV panel

Technical

Wind Speed Sensor

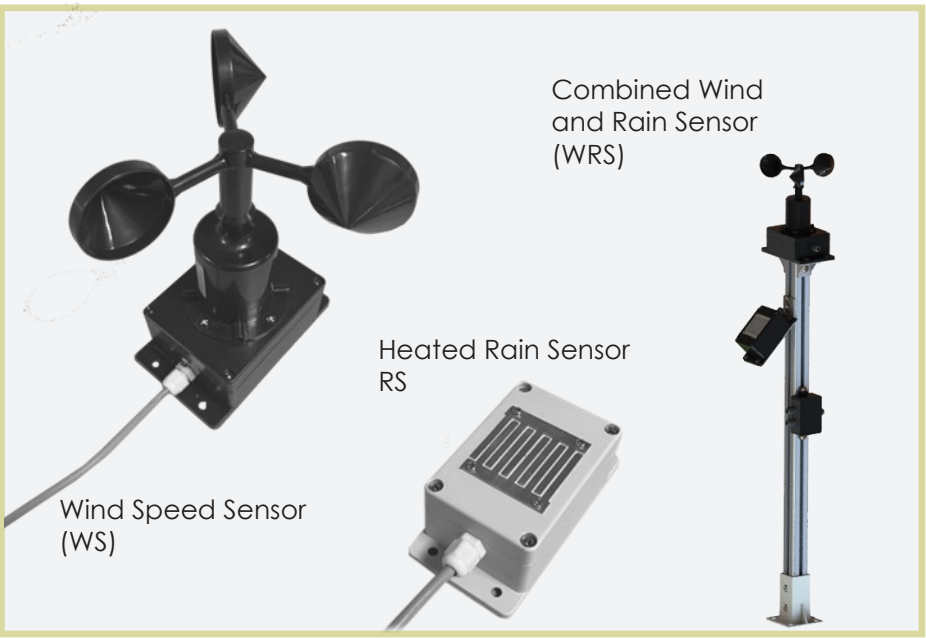
Voltage: 24 Vdc +/- 10%
Rating:<2W
Output: Dry Contact
Material:
Wind Cup: ABS or aluminum
Housing: ABS
Finishes: Black
Cable: 1 meter cable
Ingress Protection: IP 55

Heated Rain Sensor

Voltage: 24 Vdc +/- 10%
Rating: <10W
Output: Dry Contact
Material:
Wind Cup: ABS or aluminum
Housing: ABS
Finishes: Black or off white
Cable: 1 meter cable
Ingress Protection: IP 55

Combined WRS with mounting stand

Voltage: 24 Vdc +/- 10%
Current Rating: <12W
Output: Dry Contact
Material:
RS/WS: See above
Standard: Aluminum
Ingress Protection: IP 55



Description

Both RS and WS are designed to work with AF range of control panel to protect damages to windows and indoor fixtures from ingress of rain or strong wind. Both sensors are calibrated in the factory, users can adjust sensitivity on site by simple setting. Both sensor can work separately or as a combo wind and rain sensor.

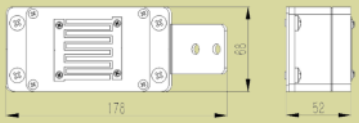
Features

- Rain sensor is heated to avoid unwanted activation of window closing due to water condensation such as morning dew.
- Choice of aluminium or ABS material for wind speed cup to cater for different environment.
- All electronics are encapsulated in water proof epoxy to enhance working life due to adverse external environment.
- Onsite adjustable setting for different sensitivity of different application requirement.

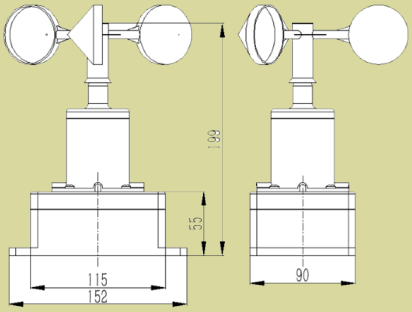
PRODUCT DATASHEET

Dimension

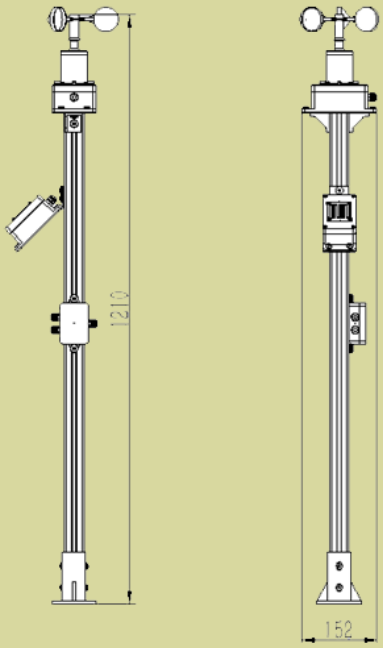
RS



WS



WRS



Order code	Description
NV.W.01.00.01.S1	WS Wind Speed Sensor, 0-60m/s, dry contact output, with 1 meter cable
NV.W.03.00.01.S1	WRS Combined Wind speed and Rain Sensor (heated) with mounting stand, dry contact output
NV.W.02.00.01.S1	RS Rain sensor with built-in heating element, dry contact output with 1 meter cable,

PRODUCT DATASHEET

Low Cost Rain Sensor for NV.RF controller

Part no: NV.W.03.00.01.S2

Rain Sensor

A low cost rain sensor compatible to NV.R range of controller by AF Controls with reliability and durability in mind.

Part No.NV.W.03.00.01.S2

Compatible Controller:

NV.R.D5.XX.00.ZH

NV.R.A3.XX.00.ZH

Input: 24Vdc

Output: momentary contact

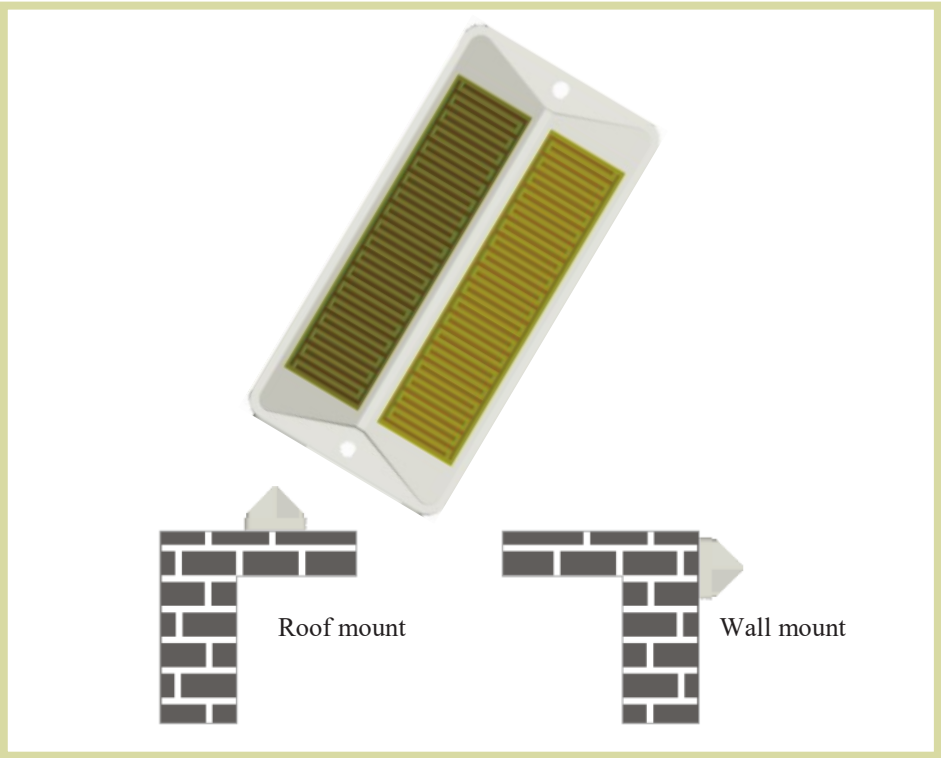
Temperature: -20 to 70 deg C

Mounting: Suitable for both roof and wall mount application

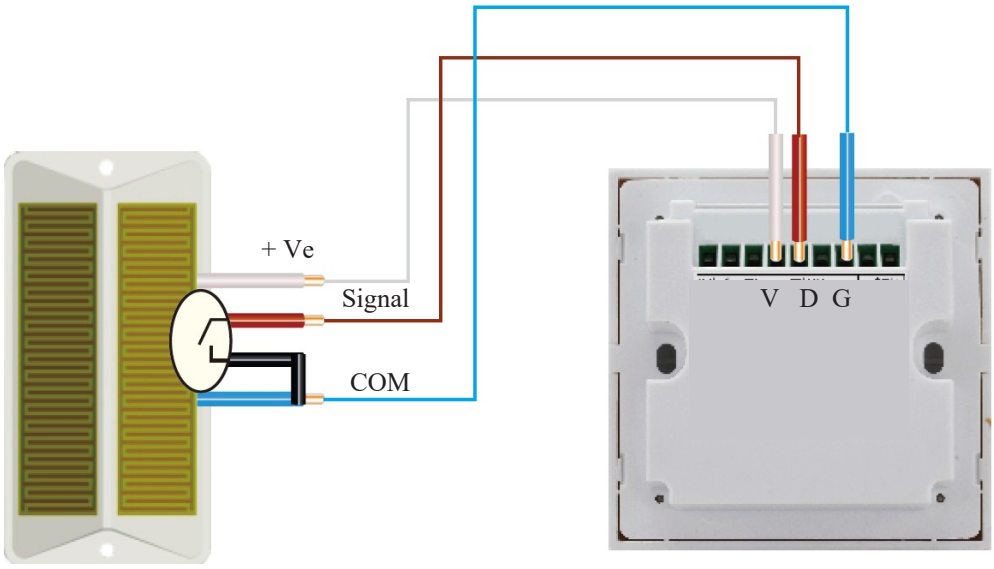
Dimension: 100 x 30 x 55 mm

Ingress protection: IP 65

Check compatibility if you want to use non NV.RF controller.



Wiring Instruction



PRODUCT DATASHEET

Sensors, Switches and Accessories

For smoke and natural ventilation

NV day to day switch

Order code: NV.B.03.86.86

Fixing centre: 60.3mm, Plate size 86 mm x 86mm

Spring return rocker , Plastic front-plate

Current: < 5A

SHEV/MCP manual activation switch

Order code: SV.B.01.86.86

Emergency button for smoke ventilator (yellow)

Break glass to activate system c/w Reset test key available for maintenance purpose

Size: 86 x 86 mm

Current: < 5A

NV/RF control module

Order Code:
NV.R.D3.86.86: 3A@24Vdc (24Vdc input)
NV.R.A1.86.86: 1A@24Vdc (230Vac input), max 1.5 A for 60 seconds
NV.R.A3.86.86: 2A@24Vdc (230Vac input), max 3A for 60 seconds

Frequency: RF433.92Mhz
Dimension: 86mm x 86mm, house in normal BS single gang box

NV/RF portable control

Order code: NV.B.21.00.01.S1 (single channel)
NV.B.21.00.05 (5 channels)

Frequency: RF433.92Mhz

Each can pair one or more RF control modules. 5 channels unit can control 5 individual control modules separately by selecting the corresponding paired channel.

Dimension:125mm x 45mm

Effective transmit distance: 100M (open space)

PRODUCT DATASHEET

IN/WEATHER Wind Rain Detector

Order code: NV.W.02.00.01

Compact design, integrated wind and rain sensing

Sensitivity: Adjustable

Voltage: 24VD

Output: Combined relay output

IN/WEATHER Outdoor Thermostat

Order Code: NV.W.01.00.01

Sensing external high/low temperature with adjustable set-points for automated opening/closing window

Output: 2 x Dry contacts

IN/TEMP Room Thermostat

Order Code: NV.T.01.86.01

For use indoor for sensing space temperature for opening/closing window

Output: Dry contact

IN/WEATHER Outdoor Humidity Detector

Order Code: NV.W.03.00.01

Detection of external humidity for inputs to close/opening natural ventilators

Output: Dry contact

IN/WEATHER Visibility Sensor

Order Code: NV.W.07.00.01

Detection of outdoor visibility and air quality to assist opening/closing of natural ventilators

Power supply: 24Vdc

Output: Relay output

PRODUCT DATASHEET

RADIO CONTROLS

PRODUCT DATASHEET

Remote Control Transmitter and Receiver

Suitable for 230Vac and 24Vdc

Family of RF controls units

24Vdc-24Vdc RF receiver

6A controller
Input/Output: 24Vdc +/- 6%
Rating (resistive load): 144W
3-position button in BS Front Plate
RF 868MHz

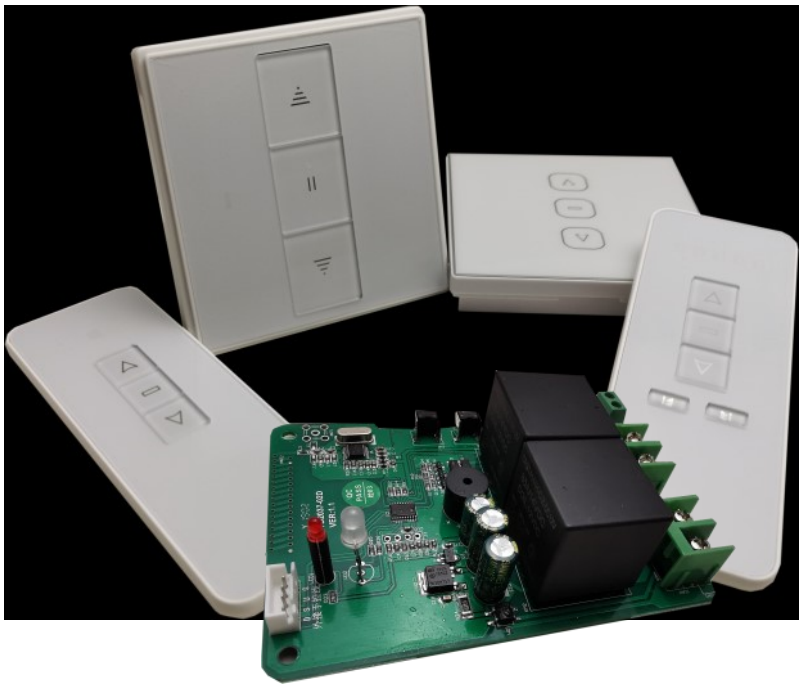
20A Control Module (opt. with PS)
Input/Output: 24Vdc +/- 6%
Rating (resistive load): 480W
RF 433MHz

230Vac-24Vdc RF receiver

External RF Controller
Input: 230Vac
Output: 24Vdc
Rating: 3A (resistive load)
On board 3-position button
Size: 86 x 86 mm, BS front plate
Surface Mount
RF 433MHz

"Built-in" Type RF Control Module
Input: 230Vac
Output: 24Vdc
Rating: 1.5A (resistive load)
"Built in" module for CM02/CM04 chain actuator.
RF 868MHz
RF Transmitter

	RF433	RF868
Handheld, 1 channel	✓	✓
Handheld, 5 channels	✓	
BS front plate 86x86mm		✓



Description

Versatile control for window automation project where remote control is required. Additional input is provided in all external remote controls units for smoke ventilation or natural ventilation system for use as a priority control over day to day/RF controls. The "built-in" 230Vac version is ideal for domestic window automation project, just plug into any wall power outlet and you can swiftly control the opening and closing of window remotely.

Features

- Simple wiring and flexible to use.
- Secure rolling code with million coding combination with no interference.
- Flexible Switch look alike hand held controller replace normal day to day switch.
- Low cost and easy to use.
- Additional input available for automatic inputs such fire signal or weather sensor.
- Available for both 24Vdc/230Vac

PRODUCT DATASHEET

External Mounted Power Remote Control Unit
E X T

Order Code: NV.B.05.01.08
24Vdc 6A RF Control Unit
Power Input/Output: 24Vdc +/- 6%
"Follow me"* input available
Rating: 144W (resistive load)
On board 3-position button
Size: 86 x 86mm BS front plate
Compatible RF 868mHz RF Transmitter
(NV.B.21.01.01, NV.B.22.01.01)

Order Code: NV.B.05.02.03
230Vac 3A RF Control Unit
Power Input: 230Vac +/-15%, Output: 24Vdc
"Follow me"* input available
Rating: 36W (resistive load)
On board 3-position button
Size: 86 x 86 mm, BS front plate
Compatible RF 868mHz RF Transmitter
(NV.B.21.01.01, NV.B.22.01.01)

20A Single Zone RF Slave Power Unit
Voltage Input: 230Vac +/- 10%
Voltage Output: 24Vdc
Rating: 480W (resistive load)
"Follow me*" input from master controller
Additional day to day remote switch inputs
Plastic Enclosure: IP 55 .
Operating Temperature: -5°C— +55°C
Dimension: 245*145*105 mm
compatible RF 433 transmitter.
(NV.B.21.00.01.S1, NV.B.21.00.05)

Order Code: NV.S.20.00.01.S2

Order Code: NV.R.DB.15.09

20A RF Control Module
Voltage Input: 24Vdc +/- 6%
Voltage Output: 24Vdc
Rating: 480W (resistive load)
Other Inputs
-"follow me" inputs from master controller
-Remote Day to day switch connection (require external 3 positions switch, preferably spring return)
compatible RF 433 transmitter.
(NV.B.21.00.01.S1, NV.B.21.00.05)

* "Follow Me" inputs refer to the connection to compatible output from master controller. The slave unit will synchronize open/close operation of that in the master panel which could be triggered by presence of smoke, or other automatic inputs. The "follow me" input will have a priority over RF and Day to Day input in local slave controller.

PRODUCT DATASHEET

Window Actuator with Embedded Remote Control

Order Code: CA4.R.A.300.S/CA4.R.A.400.S
300mm/400mm Stroke, Force: 350N

350N RF Control 230Vac Chain Actuator
Power Input: 230Vac
Additional input: rain detector
Compatible RF 868mHz RF Transmitter(NV.B.21.01.01, NV.B.22.01.01)
Other technical details, please refer to 250N chain actuator datasheet

250N RF Control 230Vac Chain Actuator
Power Input: 230Vac
Additional input: rain detector.
Compatible RF 868mHz RF Transmitter(NV.B.21.01.01, NV.B.22.01.01)
Other technical details, please refer to 250N chain actuator datasheet

Order Code: C02.R.A.300.S/C02.R.A.400.S
300mm/400mm Stroke, Force: 250N

Order Code: NV.B.21.00.01.S1
Single Channel hand held transmitter
RF 433 MHZ
Battery: CR 2430 x 1

Order Code: NV.B.21.01.01
Single Channel hand held transmitter
RF 868MHZ
Battery :CR 2430 x 1

Order Code: NV.B.21.00.05
5-Channel hand held transmitter
RF 433MHz
Battery: CR 2430 x 1

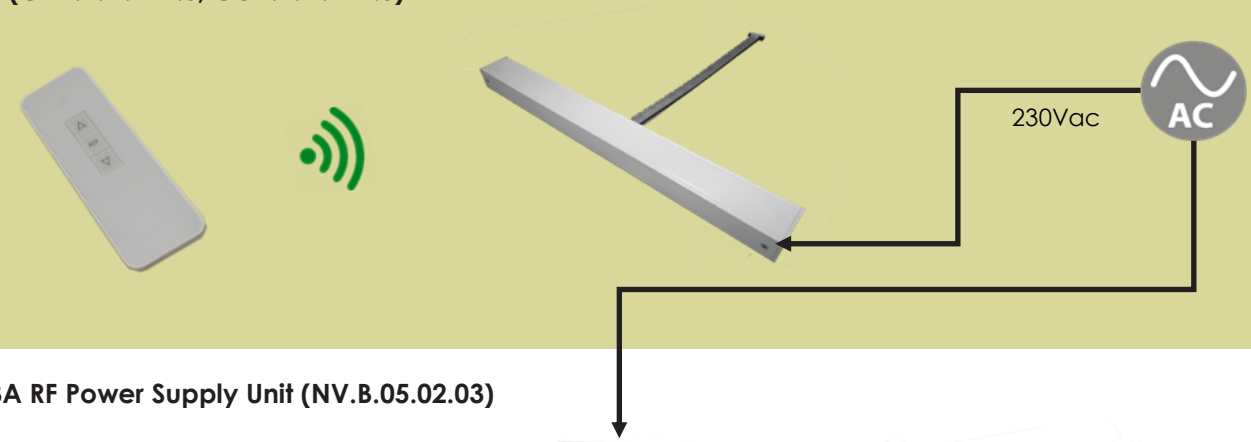
Order Code: NV.B.22.01.01
Single Channel BS plate transmitter
RF 868 MHz
Dimension: 86mm * 86mm)
Battery: CR 2430 x 1

PRODUCT DATASHEET

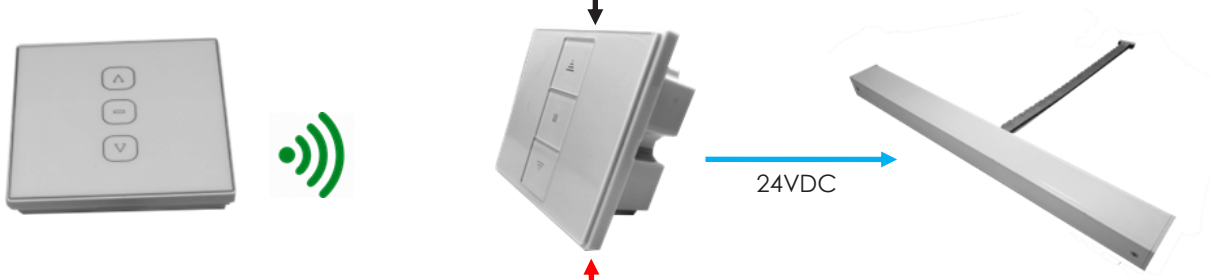
Configuration

230Vac Series

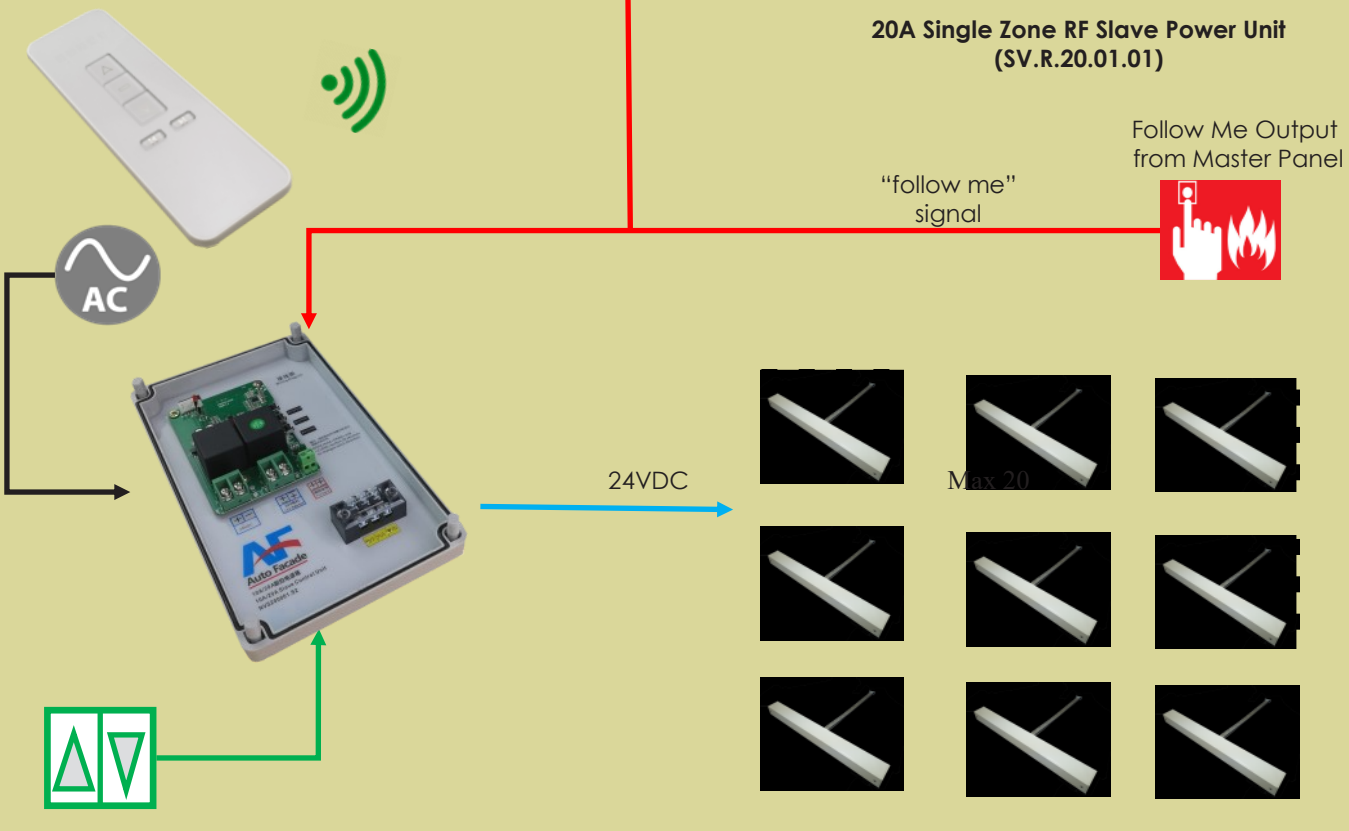
230Vac Chain Actuator with Built in RF controls (CA4.R.A.xxx.S, CO2.R.A.xxx.S)



3A RF Power Supply Unit (NV.B.05.02.03)



20A Single Zone RF Slave Power Unit (SV.R.20.01.01)



PRODUCT DATASHEET

CONTROL PANELS

PRODUCT DATASHEET

SHEV Compact Control Panel 5A

For controlling and powering of smoke ventilator

Technical

Input: 220Vac

Output : 24Vdc @5A

Consumption: 120W Max.

Working Temp: -10 ~ +50 °C

RH: 10-90%, Non-condensing

Ingress Protection: IP 20

Dimension:

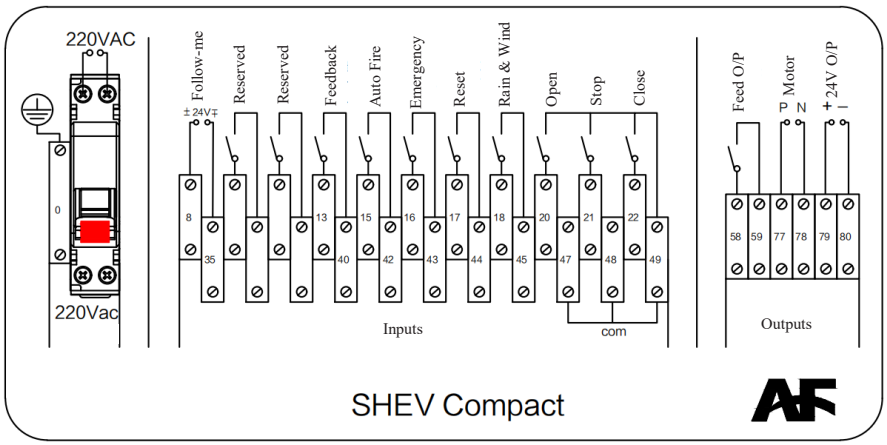
400 * 300 *160 mm (W*D*H)

Conform To: GB16808-2006

Part Number: SV.C.05.01.00

Description

SHEV controller receives input from the fire alarm system as well as the manual control buttons to enable emergency opening of a single smoke zone. It also provides day-to-day inputs for natural ventilation.



Use Instructions

Automatic Mode

1, Switch the Manual/Auto key to Auto to enter the Standby mode. The Auto Mode indicator will turn on.
2, When a closed dry contact signal is applied to terminals 15 & 42 (fire alarm active), the controller outputs +24V on terminals 77 & 78, triggering window opening. The output voltage will be continuously maintained. At the same time, the Fire Signal indicator lights up and the buzzer sounds.
Note: If the Manual/Auto key is switched to Manual Mode when a fire alarm signal is received on terminals 15 & 42, there will be no output from terminals 77 & 78, but the Fire Signal Indicator and buzzer will still activate.

Manual Opening

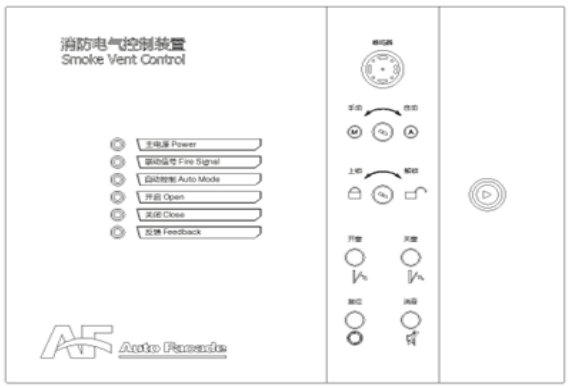
1, Switch the Lock/Unlock key to Unlock and press the Open button. The controller outputs +24V on terminals 77 & 78 to open the windows, and the Open Indicator light turns on.

Manual Closing

1, Switch the Lock/Unlock key to Unlock and press the Close button. The controller outputs -24V on terminals 77 & 78 to drive the actuators to close the windows. At the same time, the Close Indicator light turns on.

Fire Feedback Output

The control panel can receive feedback signals from external controlled devices via terminals 13 and 40 (active on normally closed state). When a feedback signal is detected, the Feedback indicator lights up. The controller then sends a 24V active signal through terminals 58 & 59.



PRODUCT DATASHEET

SHEV Control Panel 20A

For controlling and powering of smoke ventilator

Technical

Input: 220Vac, 8A

Output : 24Vdc @Max 25A (for two P/N outputs combined)

Consumption: 600W Max.

Working Temp: -10 ~ +50 °C

RH: 10-90%, Non-condensing

Ingress Protection: IP 20

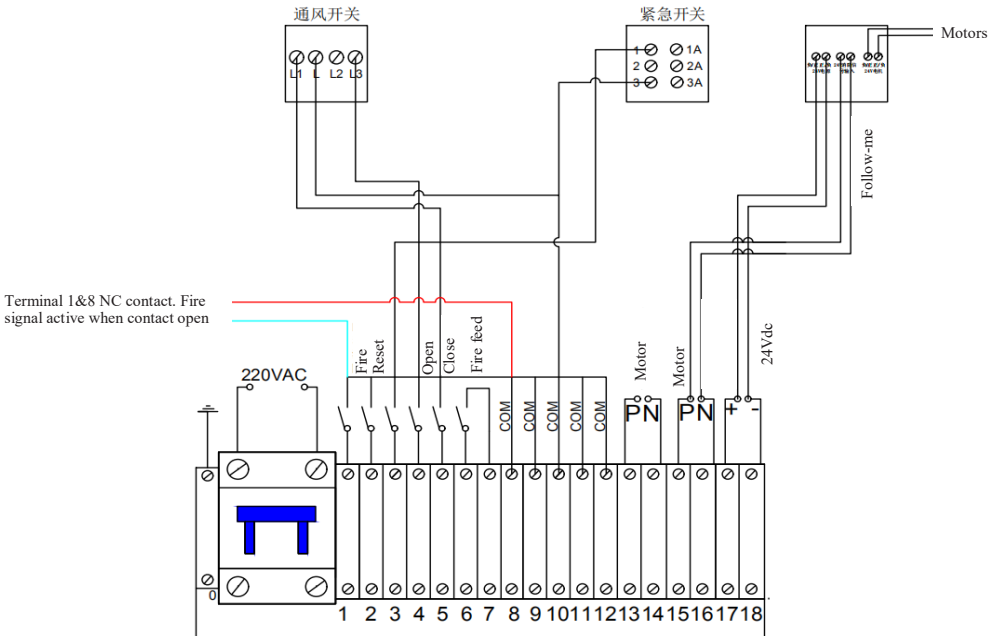
Dimension:
500 * 400 *200 mm (W*D*H)

Conform To: GB16808-2006

Part Number: SV.C.20.01.01.CCC

Description

SHEV controller receives input from the fire alarm system as well as the manual control buttons to enable emergency opening of a single smoke zone. It also provides day-to-day inputs for natural ventilation.



Use Instructions

Automatic Mode
1, Set the controller to Auto Standby mode:
Switch the 3-position key to Stop and 2-position key to Auto; then connect terminals 1 & 8 with a normally closed contacts (fire signal active on open contact). The Auto, Main Supply and 24Vdc Supply will be illuminated.
2, In standby mode, when a open dry contact signal is applied to terminals 1 & 8 (fire alarm active), the controller outputs +24V on terminals 13 & 14 and 15 & 16, triggering window opening. At the same time, the Fire alarm indicator and buzzer will activate. The 24V output will stop after 180 seconds.
Note: If the Manual/Auto key is switched to Manual Mode when a fire alarm signal is received on terminals 1 & 8, there will be no output from terminals 13 & 14 and 15 & 16, but the Fire Alarm Indicator and buzzer will still activate.

Manual Opening
1, Switch the 3-position key to Open, the controller outputs +24V on terminals 13 & 14 and 15 & 16, opening the windows, and the Run Indicator light turns on.

Manual Closing
1, Switch the 3-position key to Close. If the input signal is maintained for 2 seconds, a close command is triggered, the controller outputs -24V on terminals 13 & 14 and 15 & 16, which drives the actuators to close the windows. At the same time, the Close Indicator light turns on.

Fire Feedback Output
Upon fire alarm, the feedback signal is activated, switching terminals 6 & 7 from NO to NC. The Controller Device indicator turns on.

Auxiliary Control
A 24Vdc output (terminal 17 &18) is available to supply power to the auxiliary control panel, which has a Follow-me input to receive the switching voltage from terminals 13 & 14 or 15 & 16. When a fire signal is present, the actuators connected to the auxiliary control panel will operate following exactly with the voltage polarity at these terminals in the controller.

PRODUCT DATASHEET

NV Auxiliary Control Panel 20A/30A

For controlling and powering of day-to-day ventilator

Technical

Input: 230Vac

Output Voltage: 24 Vdc

Output Current: 20A /32A

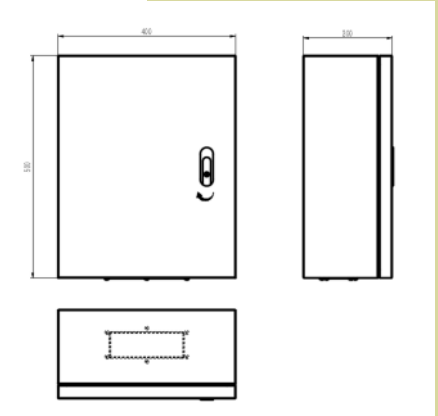
Working Temp: -10 ~ +50 °C

Humidity:
10-90%, Non-condensing

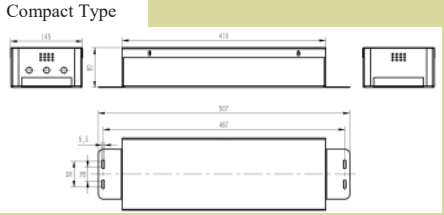
Ingress Protection: IP20

Dimensions:

Panel Type



Compact Type

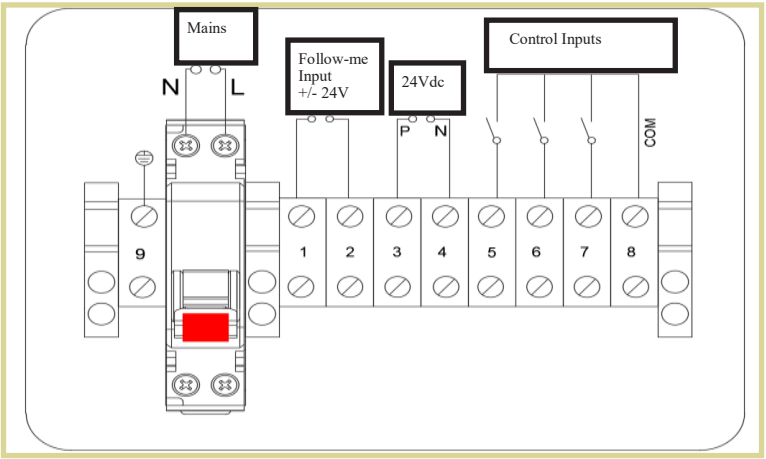


Description

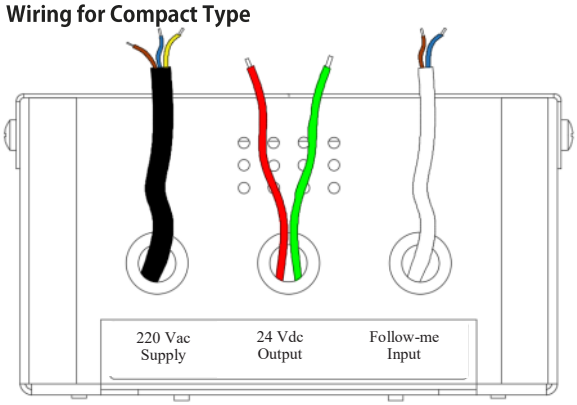
This control panel/box acts as an additional power supply and follows the control signal from a compatible AF main controller to drive the actuators. The panel also possess inputs for manual operations.

Order Code	Description
NV.S.20.00.01.V1	20A Auxilliary Ventilation Control Box (Compact Type), Single Zone
NV.S.30.00.01.V1	32A Auxilliary Ventilation Control Box (Compact Type), Single Zone
NV.S.20.00.01.V3	20A Auxilliary Ventilation Control Panel, Single Zone
NV.S.30.00.01.V3	32A Auxilliary Ventilation Control Panel, Single Zone

Wiring for Panel Type



Wiring for Compact Type



220 Vac Power Supply:
Brown = L, Blue = N,
Yellow = Ground

24 Vdc Output:
Red = 24V+, Green = 24V+

Follow-me Signal Input:
+/- 24V signal from controller P/N output

PRODUCT DATASHEET

ADDRESSABLE SYSTEMS

PRODUCT DATASHEET

Addressable System: M-Type Node Controller

Suitable for addressable window applications

Technical Specs

M-type Node Controller

Power supply: 220 Vac
CPU: Cortex-A7, 800 MHz
Consumption: 5 W
RAM: 128 MB DDR2
Storage: 128M Flash
Serial comm: RS485 *2, RS232 *1
Ethernet port: RJ45 *1, 10/100M
Display: 7" TFT LCD
Resolution: 800 x 480
Inputs: 4 (24Vdc or dry contact)
Outputs: 1x 24Vdc, 2x relay
Max number of vents: 50
RS485_1: 30 vents (or interfaces)
RS485_2: 20 vents
Max number of I/O modules: 5
Max number of switches: 10
Max number of sensors: 5
Max number of zones: 9
Recommended cable size: 0.75mm^2 shielded twisted pair
Max RS485 cable run: 1000 m
Operating temp: 0 - 50 °C
Operating RH: 5-90% (non-condensing)
Ingress Protection: IP20

Description

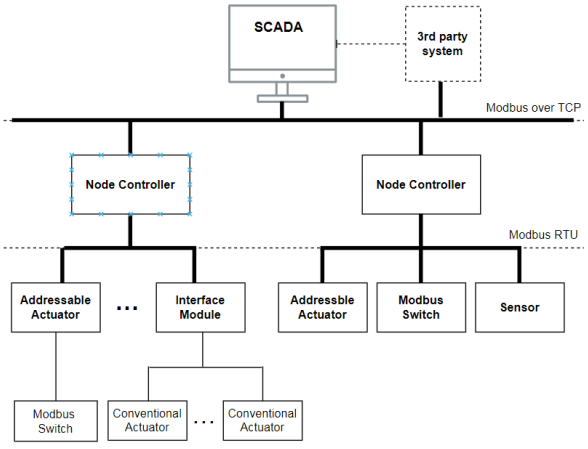
This addressable system is ideal for smoke and natural ventilation applications where the precise control of each individual window is required. It can seamlessly interface with conventional devices and third party system such as building automation and fire alarm systems. Utilizing the standard Modbus protocol it enables easy deployment of both local and global strategies.

Features

- Robust and stable performance.
- Low consumption.
- Flexible configuration options.
- Supporting Modbus RTU and Modbus over TCP.
- Two parallel RS485 bus in a single node controller, supporting 50 vents in total.
- Interface module available for connecting conventional motors.
- Supporting up to 9 local zones.
- Easy assignment of switch to zone.
- Switch configurable as window-subordinate to save bus resource.

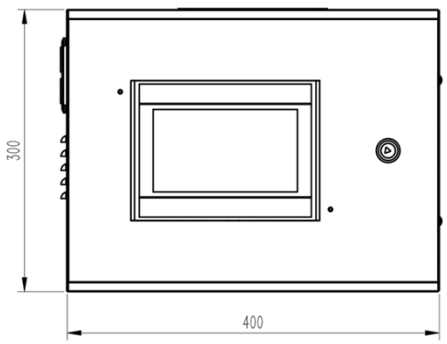
System Topology

The system is organized into three fundamental levels. At the field bus level, addressable actuators, interface modules and Modbus-compatible devices are connected. The middle level consists of node controllers that execute the local strategy and serve as gateways, relaying field data to the service level. At the service level, SCADA uses Modbus over TCP protocol to ensure intercommunication among node controllers, implement the global strategies and interface with third party systems.

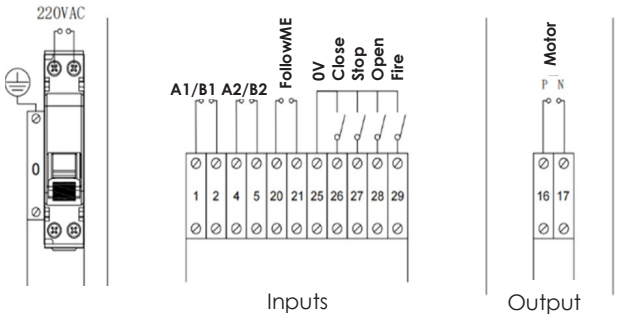


PRODUCT DATASHEET

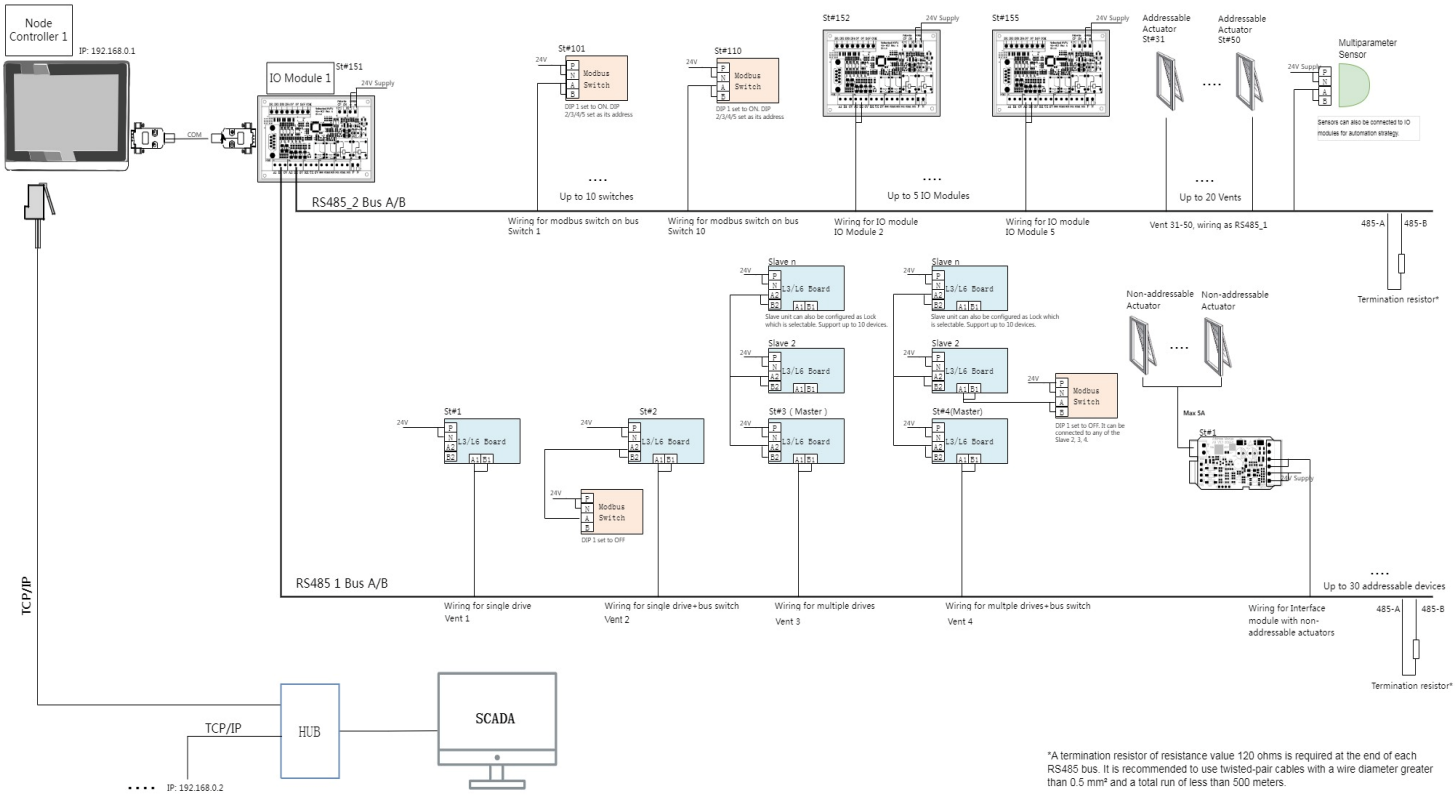
Dimensional Drawings



External Wiring (Default)



General System Structure and Wiring Diagram



*A termination resistor of resistance value 120 ohms is required at the end of each RS485 bus. It is recommended to use twisted-pair cables with a wire diameter greater than 0.5 mm² and a total run of less than 500 meters.

A node controller is equipped with two RS485 buses, extended by an IO module (Station #151) which is built into the controller enclosure.

RS485_1 bus: Primarily intended for connecting addressable actuators (with L3/L6 PCB) or Modbus interface modules (for connecting non-addressable actuators). The maximum number of addressable devices on RS485_1 should not exceed 30.

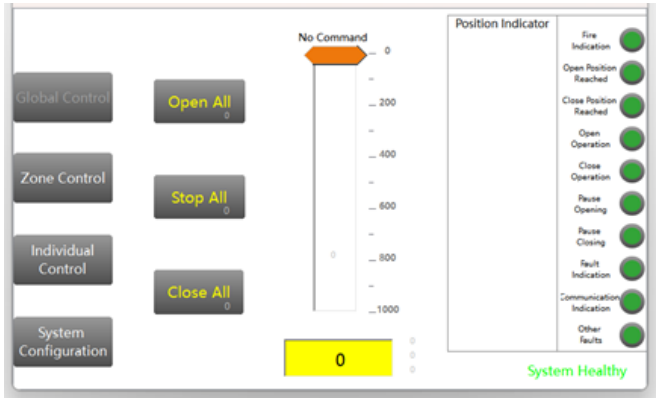
RS485_2 bus: Recommended for connecting IO modules, Bus switches, or sensors. Note: IO modules, Bus switches and 3rd party devices (e.g. sensors) can only be connected to RS485_2, they're not allowed to be on RS485_1!

PRODUCT DATASHEET

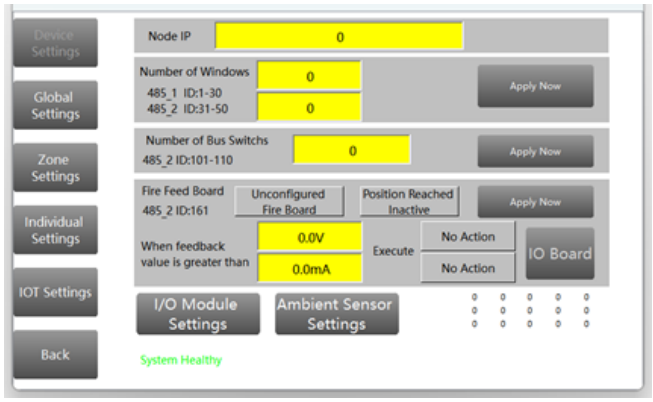
Node Controller Display Panel User Manual

System Configuration

Click "System Configuration" to access Settings page.



Device Settings



1, Set the Node IP address as required (e.g. 192.168.0.1).

2, Configure the number of windows installed in RS485_1 and RS485_2:

RS485_1 supports up to 30 windows, with IDs ranging from 1to 30.

RS485_2 supports up to 20 windows, with IDs ranging from 31 to 50.

Click "Apply Now" to apply the settings immediately.

3, Input the actual number of bus switches installed. The max number of bus switches, which must be connected to RS485_2, is 10. The ID range is 101 to110.

4, The fire feed board is disabled by default. To activate it, click "Configure Fire Board".

Choose "Position Reached Inactive/Active" mode.

Specify threshold value for voltage (V) or current (mA).

Define the desired actions to be triggered.

Click "Apply Now" to apply the settings.

5, Click "I/O Module Settings" to access the I/O Module configuration page.

Input the actual number of I/O modules connected to the node controller (supporting up to 5 modules on RS485_2 only, with IDs ranging from 151 to 155). Once completed, click "Apply Now" to apply the configuration.

The default window opening time is 120s and window closing time is 180. Change them as desired.

I/O module supports two modes: "Connect Window" or "Not Connect Window". Click the button to toggle between these modes.

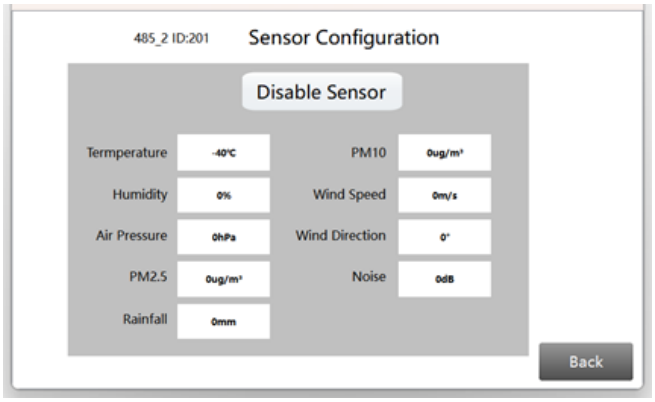
Each I/O module can be assigned to a specific zone. Click to toggle between "No Zone Assigned" or "Assigned Zone x".

There are 6 selectable input signal types: None, Open Reached, Close Reached, Open Command, Close Command, and Stop Command. Click the button to cycle through options.

There are 4 selectable output signal types: None, Fire Signal, Open Reached, and Close Reached. Click the button to cycle through options.

After completing all settings, click "Save & Exit" to finalize the configuration.

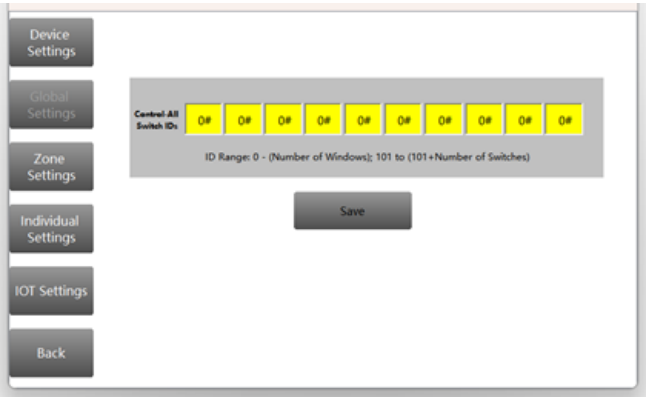
6, Click "Ambient Sensor Settings" button to open the configuration page. Enable/disable the sensor by



PRODUCT DATASHEET

toggling the "Enable/Disable Sensor" button. All 3rd party Modbus devices like sensors must be connected to RS485_2 bus which supports up to 5 sensors with IDs ranging from 201 to 205.

Global Settings



1, This section allows you to designate specific Modbus switches for global control. e.g. if the Modbus switch with address 101 is used to control all windows, input 101 in the Control-All Switch IDs field; if you want the Modbus switch subordinate to the window with address 10 to control all windows, input 10. Click "Save" to complete the setting.

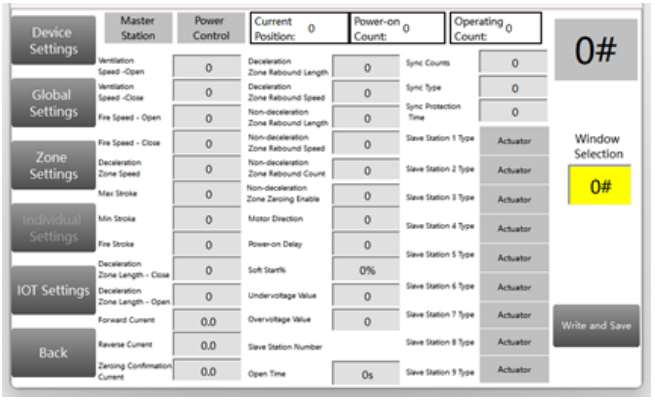
Zone Settings

1, All zones (1-9) are disabled by default. Select the zone

you want to configure, then click "Enable" to activate it.
2, Assign windows to the zone. Input the window IDs one by one. e.g. The above picture shows windows with address ID 1, 3, 4 and 7 are assigned to Zone 1.
3, Specify the Modbus switches that will control this zone. The above example shows the switch subordinate to the window ID3 is now the control switch for the Zone 1.
4, Click "Save" to complete the setting.

Individual Settings

This section is to configure parameters for individual window actuators. Each actuator must be configured separately.



*Changing actuator parameter can lead to abnormal driving operation. Only qualified technicians are authorized to perform these settings.
1, Input the window address ID in the "Window Selection" field.
2, Change the specific parameters as required.
3, Click "Write and Save" to apply the settings.

IOT Settings

This feature is only available with WiFi-enabled node controllers, allowing remote access and assistance over the internet. Contact us for more information.

PRODUCT DATASHEET

System Operations

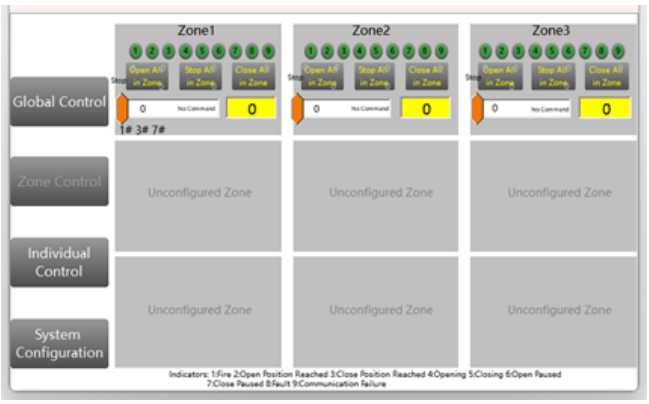
Global Control

Click "Global Control" to access the control options for open, stop and close all windows connected to the node controller.

You can adjust the windows open/close position by sliding or entering a value directly.
The "Position Indicator" displays the position of every window in the node. Click on it to show all.
The side bar displays the control status.

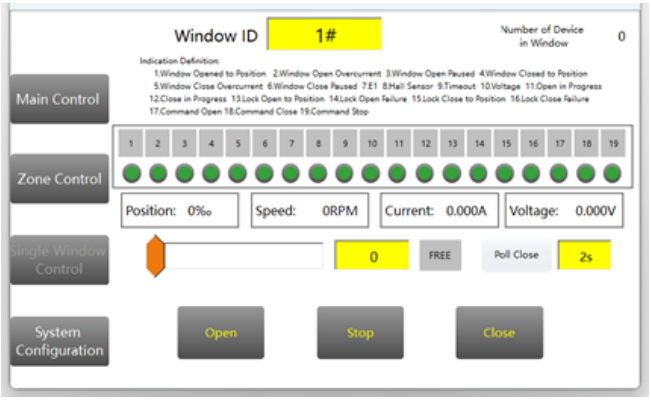
Zone Control

Zone Control section allows you to control the specific zone by opening, stopping or closing all windows within it. The operation status is displayed with numbered indicators for easy reference.



Individual Control

This section allows for the individual control of a specific window actuator. It supports status polling, enabling sequential checks of each window based on a predefined time interval. This helps monitor the operational state of each window efficiently.



PRODUCT DATASHEET

Addressable System: Addressable Actuators

Suitable for addressable window applications

Technical Specs

Addressable Actutators

Power supply: 24Vdc +/-25%
Control variant: 3A/6A
Serial comm: RS485
Protocol: Modbus RTU
Max number on Bus: 50
Address range: 1-50

Refer to the specific models for more technical details.

The default communication parameters are “8 data bits,1 stop bit, even parity and 38.4K baud rate”. These parameters can be modified by writing a new value to Address 209 as per below table. The station number can also be updated by writing to Address 204, followed by writing 1111 to Address 201 to save the change. Restart the device for the changes to take effect.

Setting Comm Parameters

Add.	Bit	Description
209	Bit0: Baud rate	1: 4800 2:9600 3:14400 4: 19200 5: 28800 6: 38400 7: 57600 8: 115200
	Bit1: Stop bit	0: 1 1: 2
	Bit2: Checksum	0: None 1: Even parity 2: Odd parity
204	Word	New station#
201	Word	Write 1111 to 201 to save station# change

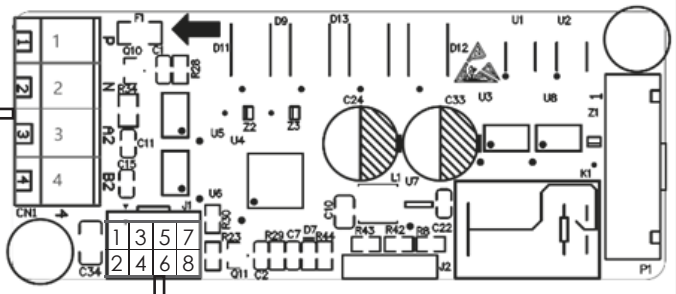
Description

All AuotFacade electrical window actuators can be upgraded into addressable Modbus devices by using our advanced control and communication board, ensuring seamless integration in the window control system.

Configuration and Wiring

1: P	24V output
2: N	
3: A2	485 sync port
4: B2	

CN1



CN2

1: B1	3: ARR	5: IN1	7: 5V
2: A1	4: GND	6: OUT1	8: GND

A1/B1 on CN2 connector is the networking port. Follow the wiring instruction as per General System Structure and Wiring Diagram in controller datasheet.

Communication Protocol Definition

Function Code	Address	Bit	Description	Type	Remarks
06 or 16	401	Bit0	Open	Read/Write	Write 1 to open
		Bit1	Close	Read/Write	Write 1 to close
		Bit2	Stop	Read/Write	Write 1 to stop
		Bit3	Fire	Read/Write	Write 1 to set Fire active
		Bit4	Force Zero	Read/Write	Write 1 to force zero on full close
		Bit5	Save target pos	Read/Write	Write 1 to save change by 402
	402	word	Change target 0.1%	Read/Write	Change target position, 1000=full
03	502	Bit0	Fw pos reached	Read	-
		Bit1	Fw overcurrent	Read	-
		Bit2	Fw pause	Read	-
		Bit3	Rv pos reached	Read	-
		Bit4	Rv overcurrent	Read	-
		Bit5	Rv pause	Read	-
		Bit6	Fault overcurrent	Read	-
		Bit9	Voltage abnormal	Read	-
		Bit12	Lock Fw pos reached	Read	-
		Bit13	Lock Fw fault	Read	-
		Bit14	Lock Rv pos reached	Read	-
		Bit15	Lock Rv exception	Read	-
	503	word	Pos feedback 0.1%	Read	Based on opening time
	504	word	Speed feed rpm	Read	-
	505	word	Current feed mA	Read	-

PRODUCT DATASHEET

Addressable System: I/O Module

Suitable for addressable window applications

Technical Specs

I/O Module

Power supply: 24Vdc +/-25%
Input: 4x Universal (configurable)
FollowME input: 24V+/-
Output: 2 relay outputs
P/N O/P: Max. 4A@24V
Serial comm: RS485
Protocol: Modbus RTU
Max number on Bus: 5
Address range: 151-155
Operating temp: 0 - 50 °C
Operating RH: 5-90% (non-condensing)

Attention: The unit does not have built-in lightning protection or isolation mechanism. If the RS485 network cable runs over long distances or passes through outdoor areas prone to lightning strikes, additional lightning protection devices must be installed. If the devices on the RS485 network do not share a common ground, isolation devices must be added.

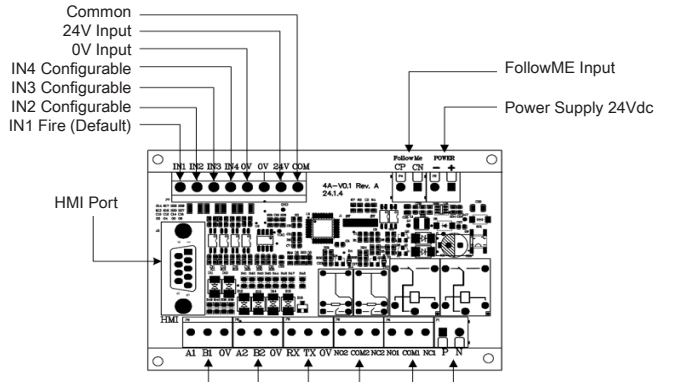
Comm Protocol Definition

Fn Code	Add.	Bit	Description	Type
03	2	Bit0	Input 1	Read
		Bit1	Input 2	Read
		Bit2	Input 3	Read
		Bit3	Input 4	Read
		Bit4	Direction CW	Read
		Bit5	Direction CCW	Read
	4	Bit0	O/P +24V	Read
		Bit1	O/P –24V	Read
		Bit2	O/P 1	Read
		Bit3	O/P 2	Read
06,16	204	Word	Station#	R/W
	209	Word	Comm paras	R/W
	406	Bit0	DO 1	R/W
		Bit1	DO 2	R/W
	407	word	0:No,1:+24v,2:-24v	R/W

Description

This module is a key component of the node controller, serving as a bridge between the control panel and field devices. Additionally it can function as an independent device within the bus. The module features 4 universal inputs and 2 relay outputs. The inputs can be configured in the panel as either 24dc signal (polarity insensitive) or dry contacts. Each input and output has an unique address displacement in the system. Furthermore, this module can interface with conventional actuators using P/N port, adding to its versatility.

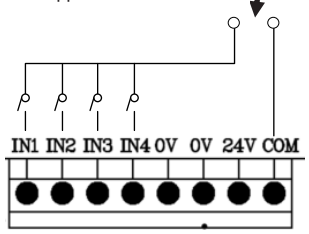
Configuration and Wiring



Dimension: L107 * W73mm

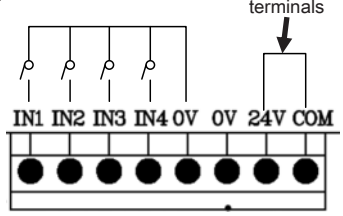
Configuring Inputs as 24Vdc signal

The inputs are polarities insensitive. Connecting 24V+ or – to COM and 24V-or + to IN1 will activate input 1. The same applies to IN2/3/4.



Configuring Inputs as dry contact signal

By default, the input is active when closed. e.g. If 0V and IN1 are shorted, input 1 becomes active. The same applies to IN2, IN3, and IN4.



PRODUCT DATASHEET

Addressable System: Modbus Interface Module

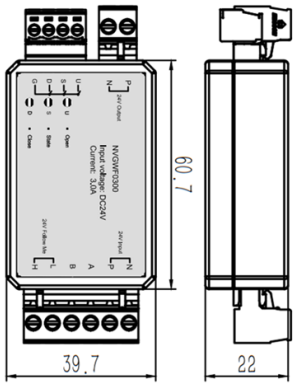
Suitable for addressable window applications

Technical Specs

Modbus Interface Module

Power supply: 24Vdc +/-25% (Polarity insensitive)
Input: 3x dry contact (NO)
FollowME Input*: 24V +/- 6V
P/N O/P: 3A or 5A@24V optional
Serial comm: RS485
Protocol: Modbus RTU
Max number on Bus: 30+20
Address range: 1-50 (same as window)
Operating temp: 0 - 50 °C
Operating RH: 5-90% (non-condensing)
Ingress Protection: IP20

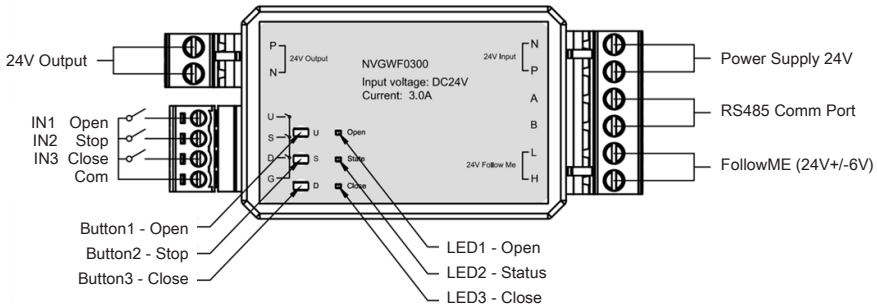
*By default (v5102), FollowME signal takes highest priority over bus commands while button operations holds the lowest priority. Optional versions are available for special applications such as using 24V power supply as FollowME input (v6102) or using inputs as "Position reached" feedback (v7102). Please consult supplier for details.



Description

This module is a standard Modbus device designed for addressable systems to integrate with conventional actuators (non-addressable) to enhance system compatibility. Its slim design allows for easy installation within window profiles. Built-in buttons and LED indicators facilitate field control and monitoring.

Configuration and Wiring



LED Definition: LED1 On - Open; LED2 On - Close; LED3 - Status indicated as below

Flash once	Forward position reached	Flash 6 times	Reverse pause
Flash twice	Forward overcurrent	Flash 7 times	Drive overcurrent
Flash 3 times	Forward pause	Flash 8 times	Hall error
Flash 4 times	Reverse position reached	Flash 9 times	Synchronization timeout
Flash 5 times	Reverse overcurrent	Flash 10 times	Voltage abnormal

Communication Protocol Definition

Function Code	Address	Bit	Description	Type	Remarks
06 or 16	401	Bit0	Open	Read/Write	Write 1 to open
		Bit1	Close	Read/Write	Write 1 to close
		Bit2	Stop	Read/Write	Write 1 to stop
03	502	Bit0	Fw pos reached	Read	-
		Bit1	Fw overcurrent	Read	-
		Bit2	Fw pause	Read	-
		Bit3	Rv pos reached	Read	-
		Bit4	Rv overcurrent	Read	-
		Bit5	Rv pause	Read	-
		Bit6	Fault overcurrent	Read	-
		Bit9	Voltage abnormal	Read	-
		Bit10	Opening	Read	-
		Bit11	Closing	Read	-
	503	word	Pos feedback 0.1%	Read	Based on opening time
	505	word	Current feed mA	Read	-
	508	word	Voltage feed mV	Read	-
	6	16 bits	Voltage in mV	Read	Unsigned data
	7	16 bits	Current in mA	Read	Unsigned data
	307	16 bits	Open time in 0.1S	Read	Stop counting on max parameter
	308	16 bits	Close time in 0.1S	Read	Stop counting on max parameter
06 or 16	217	16 bits	Max open time S	Read/Write	Parameter setting
	218	16 bits	Max close time S	Read/Write	Parameter setting

The default comm parameters are 8 data bits,1 stop bit, even parity and 38.4K baud rate. These parameters can be modified by writing to Address 209. The station number can also be updated by writing the new value to Address 204, followed by writing 1111 to Address 201 to save the change. Restart the device for the changes to take effect.

PRODUCT DATASHEET

Addressable System: Modbus Switch

Suitable for addressable window applications

Technical Specs

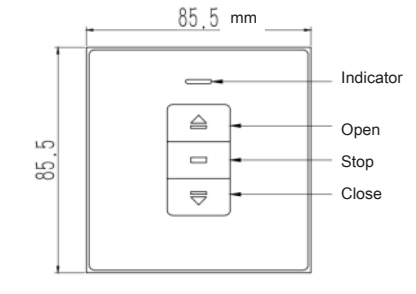
Modbus Switch

Power supply: 24Vdc +/-25%
(Polarity insensitive)
Serial comm: RS485
Protocol: Modbus RTU
Max number on Bus: 10
Unique address range: 101-110
Operating temp: 0 - 50 °C
Operating RH: 5-90% (non-condensing)
Ingress Protection: IP20

Comm Protocol Definition

Fn Code	Add.	Bit	Description	Type
03	2	Bit0	Open state	Read
		Bit1	Close state	Read
		Bit2	Stop state	Read
		Bit3	DIP 1 state	Read
		Bit4	DIP 2 state	Read
		Bit5	DIP 3 state	Read
		Bit6	DIP 4 state	Read
		Bit7	DIP 5 state	Read
	4	Bit0	LED red	Read
		Bit1	LED green	Read
06 or 16	204	Word	Station#	R/W
	209	Word	Comm paras	R/W

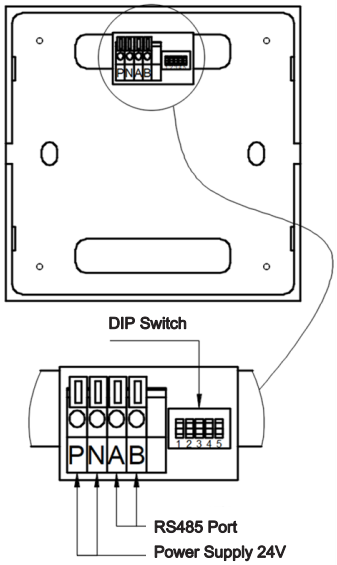
Dimensions

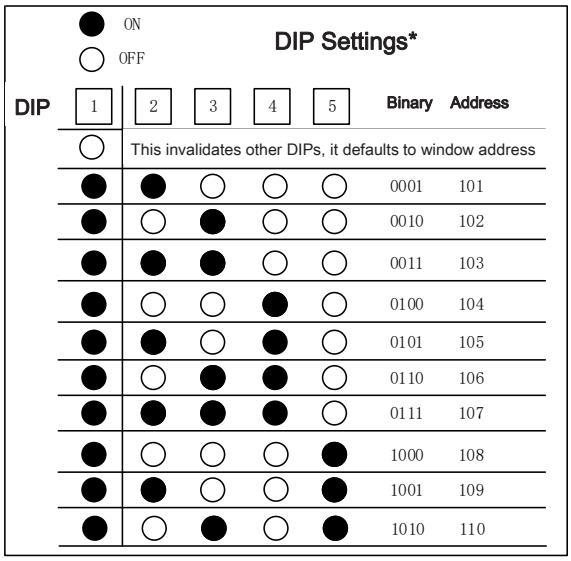


Description

This Modbus switch is designed for dual purpose functionality. It can operate as a standalone conventional switch to control the local window it is subordinate to. More importantly it functions as a Modbus device which can be assigned to any window zones in addressable system, enabling easy control.

Configuration and Wiring





*When DIP 1 is set to Off, DIP 2/3/4/5 are invalid. The switch then uses window actuator's address as its address (master mode). When no zone is assigned to the switch, it directly control the connected window; when a zone is assigned, it controls the assigned zone plus the connected window regardless of whether it is in this zone. When DIP is set to On, DIP 2/3/4/5 become valid, and the switch is assigned its own address as per above table (slave mode). In this scenario, if no zone is assigned to it, it does not control anything.

If the state of DIP 1 is changed, the switch must be powered off and restarted for the change to take effect. Changes to DIP 2/3/4/5 take effect immediately without requiring a power reset.

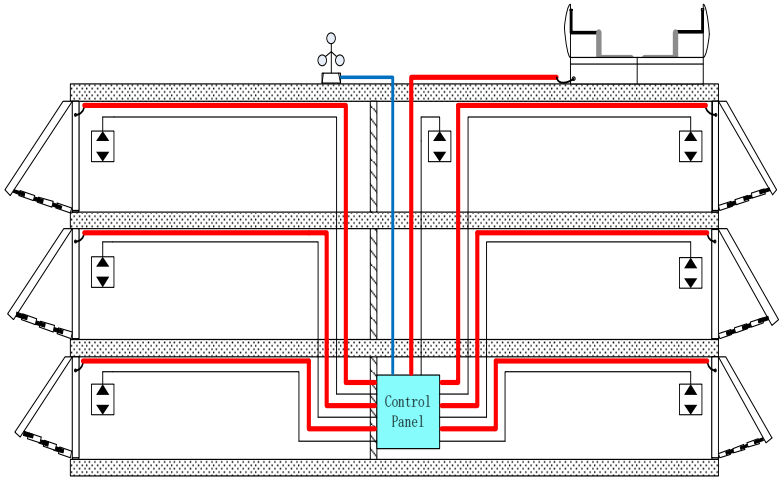
LED Indicator Status

Off	No command received
Red on for 3S, then off	Opening command in progress
Green on for 3S, then off	Closing command in progress
Yellow on for 3S, then off	Stop command in progress
Yellow flashing every 1s for 8 times	Communication error

PRODUCT DATASHEET

CANBus-Driven Addressable Windows Controls (AWC)

For motorized automatic vents for smoke and natural ventilation system



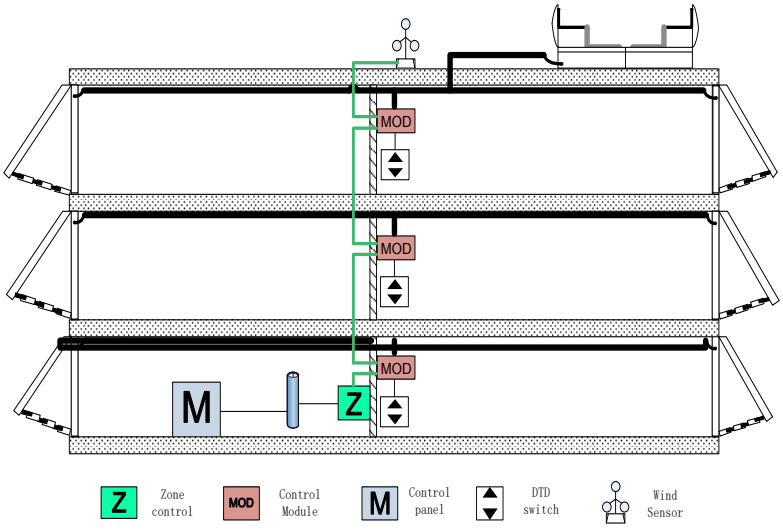
Conventional System - Cabling

Conventional Window Controls

- ◊ Simple to use and no frills
- ◊ Suitable for small system without complex controls
- ◊ Costly rewiring is required for changes in controls once installation has been completed
- ◊ Limited functionality and no upgrade is available in future
- ◊ Installation costs are higher for cabling and cable containment.

Addressable Window Controls (AWC)

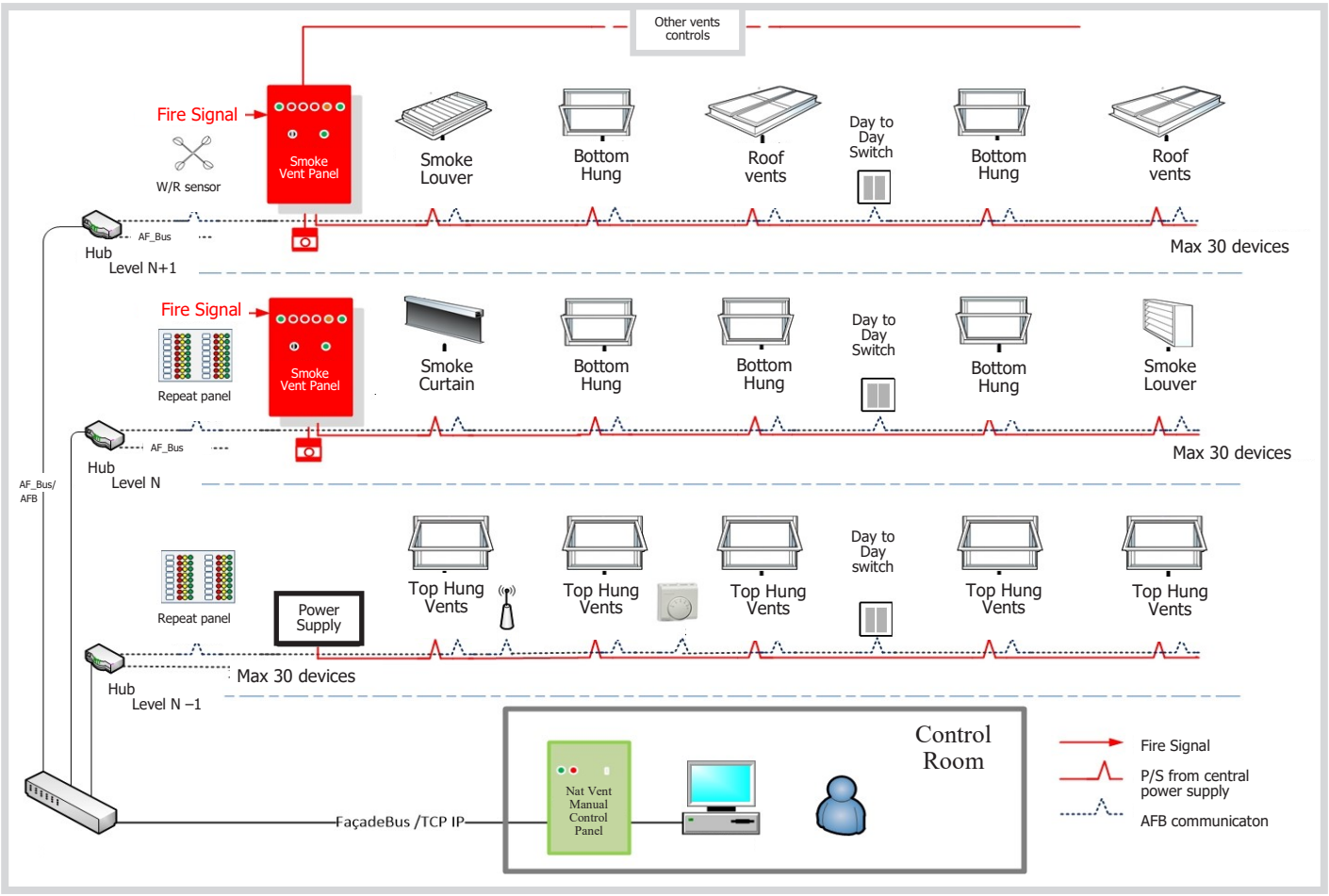
- ◊ Suitable for use in buildings required complex controls. Software based controls up to 9999 devices for flexibility;
- ◊ Reliable AF_bus scalable for high speed communication with immunity to interference;
- ◊ Ease of design and installation for specifiers and installers, last minute changes in control is possible to meet client's desire without expensive rewiring;
- ◊ Lowest lifetime cost for building owners. Surveys shown that average office layout changes every 18 months, there is no expensive hard wiring cost in future system upgrade.
- ◊ Precise control and true status monitoring are possible by either built-in MMI or by 3nd parties BMS.



Addressable Window Controls System (AWC)

PRODUCT DATASHEET

CANBus-Driven Addressable Window System



Technical Details
Max capacity: 9999 Physical Devices

Natural Smoke Zone
Max. capacity: < 128
There is no limit of AOV in one smoke zone. All lines are being monitoring for fault reporting for short and open circus

Natural Vent Zone
Max. capacity: < 9,999
Each zone can be controlled by either addressable switch or automatically by BMS or environmental sensors.

All devices are being connected a 4-core cables. 2 for 24Vdc supply and another pair for data communication for AFB.

Additional devices can be added or removed from the AFB, and changes in the system configuration is required in the master controller panel.

Example, if you want to spilt 1 zone to 2 controls zone and controls by 2 switches, the things that you need to do is to add one switch to any nearest devices with a 4 core cables, and reconfigure the system software locally to implement the changes.

Environmental Sensors
Environmental sensor, such as thermostat, hydrostat, CO2 sensor or presence detectors can be connected to network to implement automatic controls.

Manual Controls
Beside wired options of manual controls, Hand held remote control can be appended to an interface unit for ease of manual control.

Integration to 3rd parties equipment
3rd parties equipment can be integrated into AWC by using interface units. Legacy system can easily be incorporated into the system to scale the system improvement by stage.

Controls System
Systems can be used as a stand alone system or integrated with 3rd party SCADA system via open protocol, such as ModBus/TCPIP.

Remote Access
Master controller has a built-in engine for web browsing capability which can connect to any mobile phone or tablet either via intranet.

A cloud services is available to connect your remote devices to AWC system. You can easily monitor the system and push you filtered system message if you want to receive them accordingly.

PRODUCT DATASHEET

CANBus-Driven Addressable Windows Controls (AWC)

System 3800 Controller/PSU/Interface Unit/Sensor

Master Controller (S3300 and S3800)

NV.A.MA.99.99

Master Controller Module for S 3300 and S 3800

Order Code:

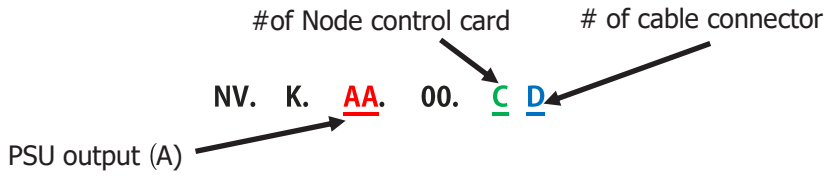
NV.A.MA.01.00	AWS S3300/S3800 Master Controller	< 100 addresses
NV.A.MA.05.00	AWS S3300/S3800 Master Controller	< 500 addresses
NV.A.MA.20.00	AWS S3300/S3800 Master Controller	< 5,000 addresses
NV.A.MA.50.00	AWS S3300/S3800 Master Controller	< 2,000 addresses
NV.A.MA.99.99	AWS S3300/S3800 Master Controller	< 9,999 addresses

Housing and graphic terminal to be ordered separately c/w power supply and connectors. (Please enquire our sales representative for details)

S3800-PSU

Node Controller with Power Supply and cable connectors

Order Method



Example

NV.K.10.00.10	10A MWS CAN PSU Panel, c/w 1 NV node
NV.K.20.00.20	20A MWS CAN PSU Panel, c/w 2 NV nodes
NV.K.20.00.21	20A MWS CAN PSU Panel, c/w 2 NV nodes, 1 cable connectors
NV.K.60.00.44	60A MWS CAN PSU Panel, c/w 4 NV nodes, 4 cable connectors
NV.K.80.00.54	80A MWS CAN PSU Panel, c/w 5 NV nodes, 4 cable connectors
NV.K.80.00.60	80A MWS CAN PSU Panel, c/w 6 NV nodes
NV.K.80.00.83	80A MWS CAN PSU Panel, c/w 8 NV nodes, 3 cable connectors

S3800-MOD

AWC Modules (24Vdc, CANbus)

NV.K. I T.22.00	CAN bus Interface Unit (2 IN 2 OUT) module only
NV.K. I T.22.01	CAN bus Interface Unit (2 IN 2 OUT) with enclosure
NV.K. I T.84.00	CAN bus Interface Unit (8 IN 4 OUT) module only
NV.K. I T.84.01	CAN bus Interface Unit (8 IN 4 OUT) with enclosure
NV.K.WF.04.00	CAN bus Window Actuator Interface Unit 4A module only
NV.K.WF.04.01	CAN bus Window Actuator Interface Unit 4A with enclosure

S3800-SW

Addressable Day to Day Switch

NV.K.SW.A0.86	CAN bus Addressable Switch module
NV.K.SW.A3.86	CAN bus Addressable Rocker Switch, 3-position Spring return
NV.K.SW.A4.86	Same as NVKSWA386, c/o status display
NV.K.SW.A4.86	CAN bus Addressable Rotary Switch, 3-position Spring return

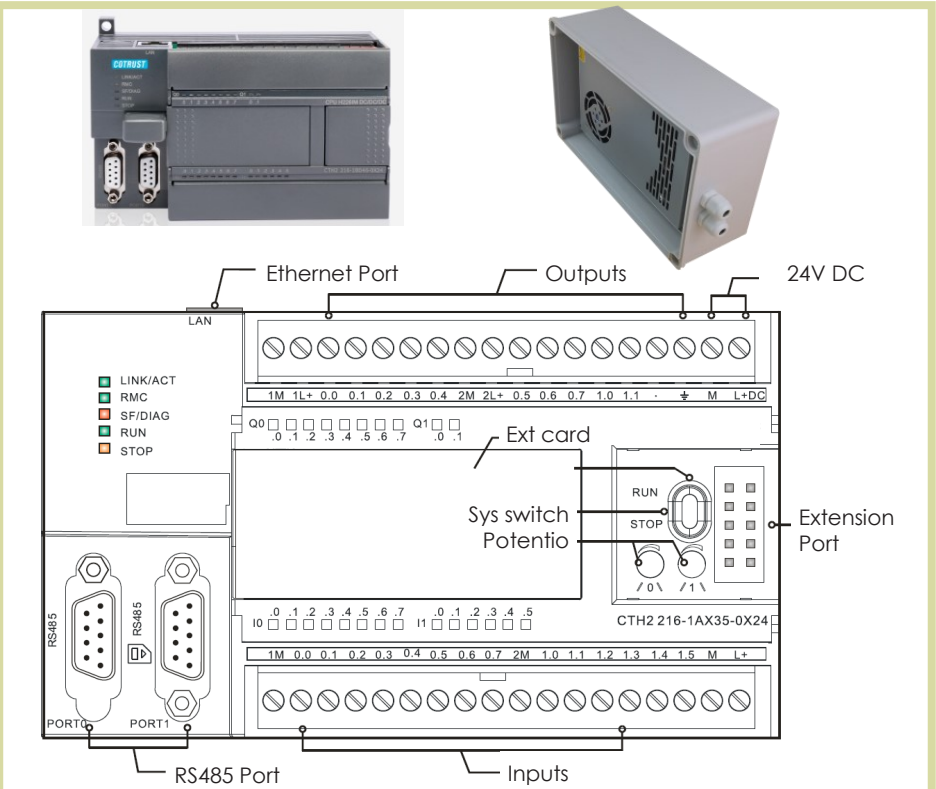
PRODUCT DATASHEET

Programmable Master Controller

Suitable for interfacing BMS systems

Technical Specs

Power supply: 24 Vdc
Consumption: 7 W
RAM: 128 KB
Flash ROM: 64 KB
Digital Inputs: 14
Digital Outputs: 10
Extension modules: 7
Max DIs: 128
Max Dos: 128
Max Ais: 32
Retaining time: >10ms
Timers: 512
Counters: 256
Bool Computing: ≤0.15us
Float Computing: ≤6.2us
PPI Ports: 2, RS485
PPI Baud Rate: 9.6/19.2/187.5 kbps
Max substations: 32
Ethernet Port: RJ45
Ethernet Protocol: UDP/TCP
Max Ether Connection: 8
Max packet size:
UDP_PPI 200 bytes
Modbus_TCP 240 bytes
Socket 512 bytes
S7 200bytes
Max ether cable run: 100M Cat5e



Description

This programmable controller is typically used to interface with other systems such as building automation system and fire alarm system etc. It receives input signals from sensors and commands controls based on given logics. This controller is flexible in configuration by supporting multiple communication protocols and various input/output types.

Features

- Robust stability.
- Low consumption.
- Flexible configuration.
- Support Modbus over TCP, Socket, S7, CANopen, CANfree.
- 14 DI /10 DO expandable up to 128 DI /128 DO and 32 AI.
- Support both transistor and relay outputs.
- Expandable up to 7 modules.
- Substations up to 32 using CAN-open bus.

阿法门窗控制系统 (杭州) 有限公司
AutoFacade Controls (Hangzhou) Ltd.

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