teal
products

Product Brochure

Window Control

Over **20 years experience** in the window control industry to give you the peace of mind you're getting the right products

Contents

We pride ourselves on using only the best window control products on the market. See our range of products and services to discover more.

System Types

Using windows and/or rooflights to naturally ventilate your building can improve the indoor air quality, reduce carbon emissions and improve your learning or working environment.

Opener

Fixed to the outer frame of the opening vent. When cable is driven through the unit the opener will push to open or pull to close the opening vent.
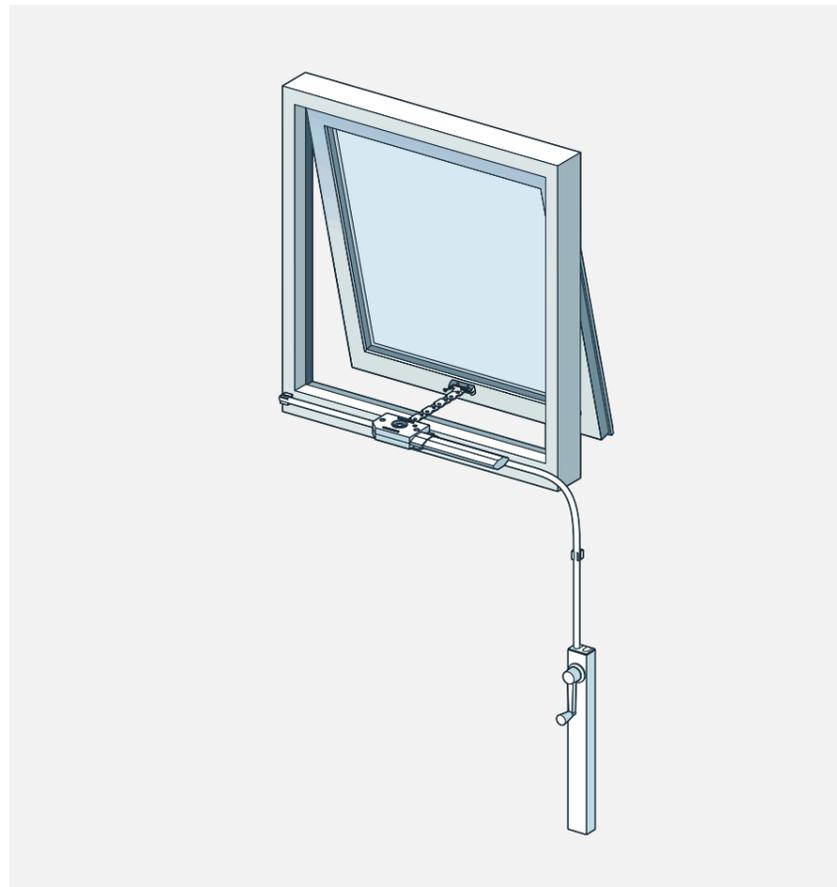

Manual Window Control

The system designed to operate high level windows or rooflights from an easy to reach location. The system is modular allowing it to be used on almost any window size, style or material.

Operator

Used to wind inner cable through conduit. The handle can be turned one way to Open the window or turned the other way to Close.
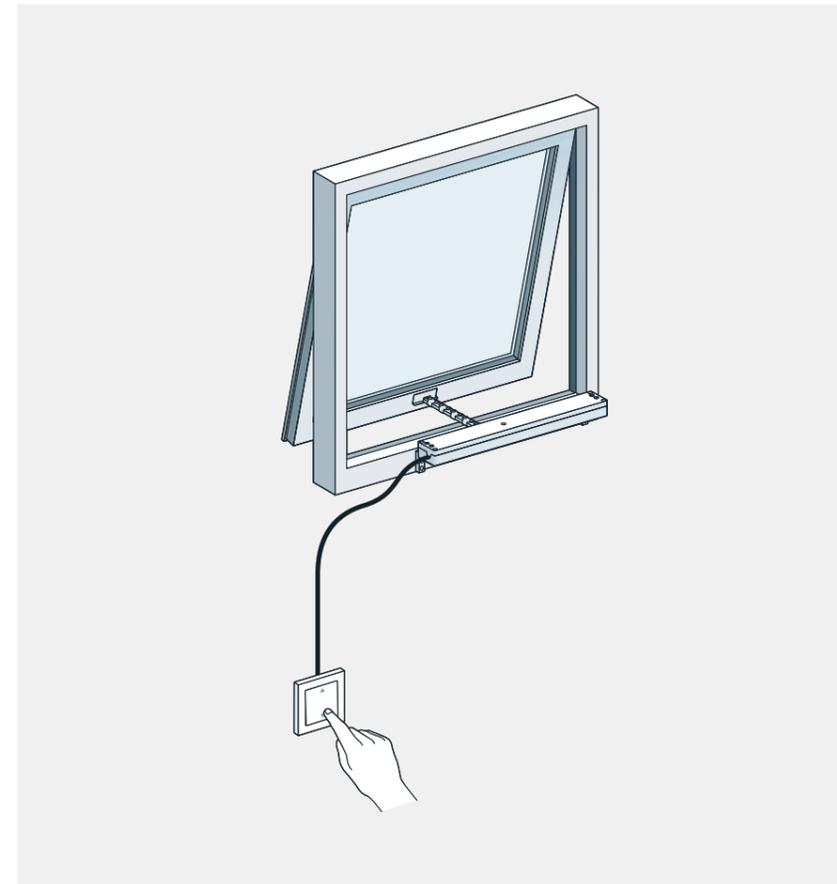
Electric Window Control

Similar to a manual system but with a lot more features including larger opening strokes, higher push forces and automatic control features.

Actuator

Fixed to the outer frame of the opening vent. When powered the opener will push to open or pull to close the opening vent.

Control

Several types of controls are available including handheld remotes, switches, thermostats, rain sensors and BMS.

Principles
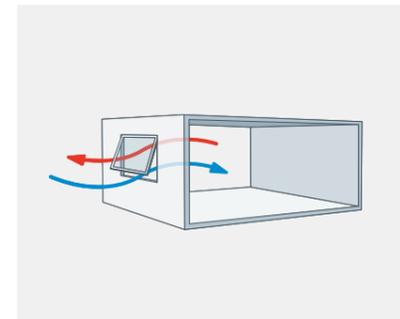
Single Ventilation

Opening vents to one side of the room will provide a basic ventilation system.
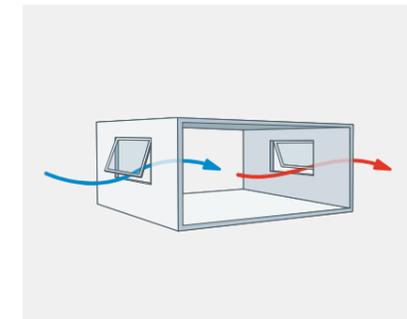
Cross Ventilation

Opening vents on two or more sides to create cross ventilation.
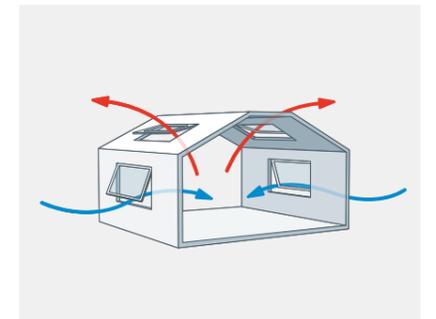
Upflow Ventilation

A mixture of vertical and flat/pitched roof vents to create upflow ventilation.

Actuators

System Overview

There are several factors to consider when selecting the correct actuator for your window including hinge type, profile, weight, size, opening requirement and colour.
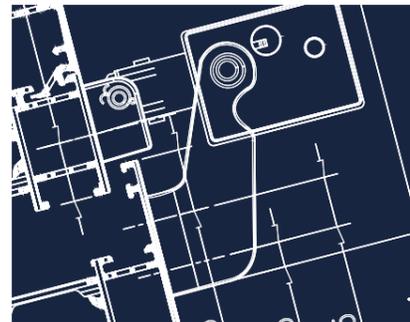
Profile

Ensure the correct fixing brackets are selected to fix the actuator to the window profile. CAD drawings are available upon request.

Hinge Type

Electric chain actuators are suitable for almost any window type including top-hung, bottom-hung, side-hung, centre-pivot and parrallel openers.

Colour

Most of actuators are available in standard white, black or silver finish. A specific RAL colour and finish can also be provided to suit your project.
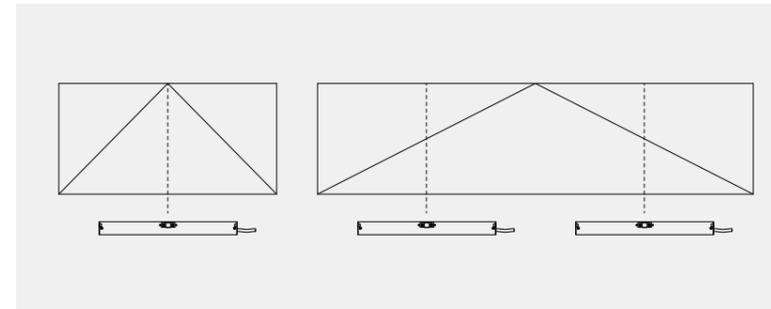
Push Points

For a single push-point/actuator the recommended maximum window width for any actuator is 1300mm. For anything wider it is recommended multiple push points/actuators are used to ensure safer operation and better compression.
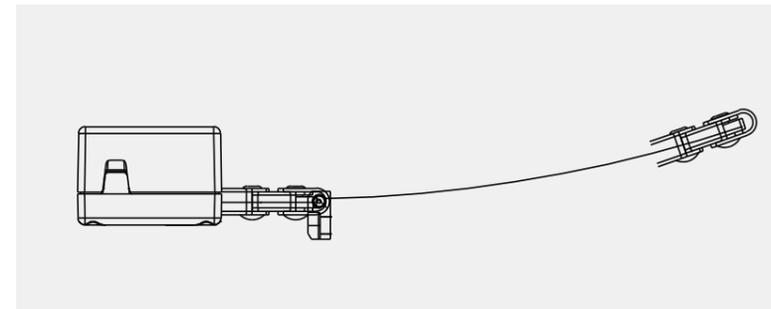
## Opening Stroke

Typically a 200-300mm opening stroke is sufficient to provide the required natural ventilation however in some instances a larger opening stroke may be required.
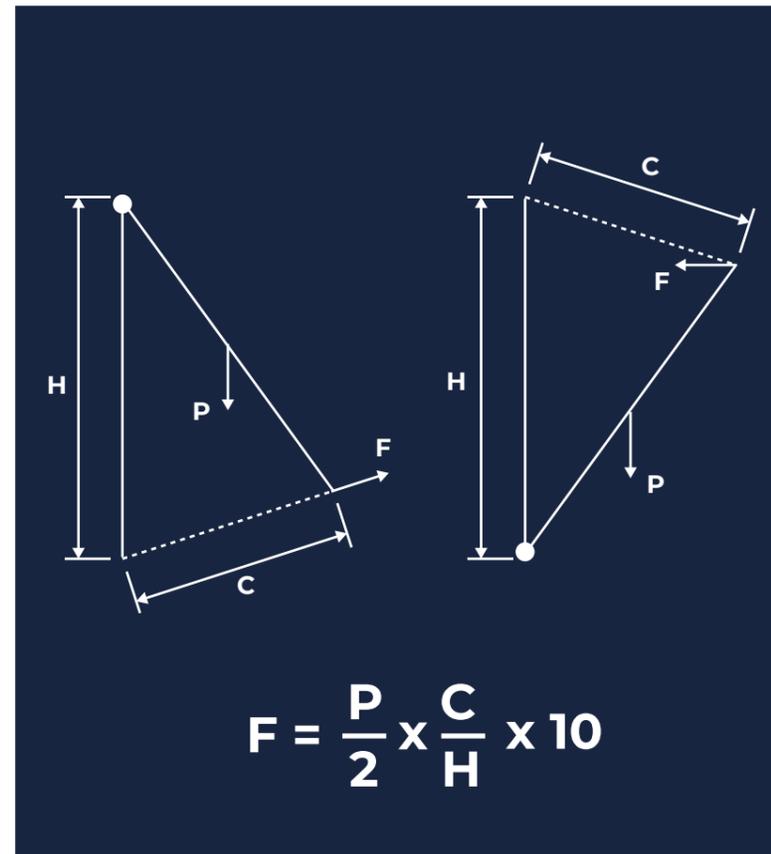
Push Force

Calculate the push force required to open the window using the following formula:

$F = (0.5 \times P) \times (C / H) \times 10$

P = Window sash weight (kg)

C = Window opening stroke (mm)

H = Window height (mm)

$$F = \frac{P}{2} \times \frac{C}{H} \times 10$$

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Stroke	100-200-300-400mm*
Push Force	300N
Voltage	230V AC / 24V DC
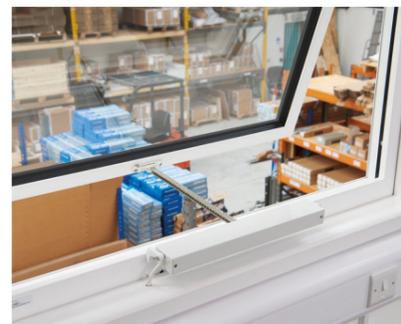
*Adjustable

Products / Actuators / Chain Actuators

MICRO EVO1

Micro Evo1 electric actuator with anti corrosion treated double-link chain. Self adjusting end limit and soft stop closing to preserve the window frame and actuator.

Adjustable Opening Stroke

Turn the dial on the side of the actuator to adjust the maximum opening stroke setting. The stroke can be set at 100, 200, 300 or 400mm. No additional programming devices are needed.

Synchronisation

Built-in synchronisation feature allows 2, 3 or 4 actuators to work in tandem on the same opening vent. No additional controls are required for this feature.

Window Types
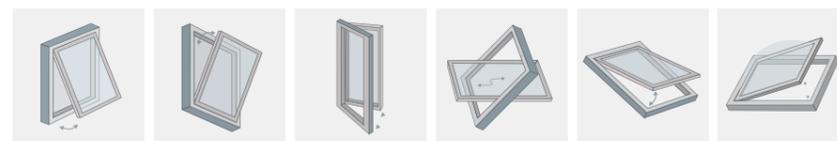
Part Codes

MICROEVO230VB	Micro Evo1 Chain Actuator 230V 400mm 300N Black
MICROEVO230VS	Micro Evo1 Chain Actuator 230V 400mm 300N Silver
MICROEVO230VW	Micro Evo1 Chain Actuator 230V 400mm 300N White
MICROEVO24VB	Micro Evo1 Chain Actuator 24V 400mm 300N Black
MICROEVO24VS	Micro Evo1 Chain Actuator 24V 400mm 300N Silver
MICROEVO24VW	Micro Evo1 Chain Actuator 24V 400mm 300N White

Accessories

MICROEVOBHBB	MICROEVOBHB Inward Opening Bracket Black
MICROEVOBHBW	MICROEVOBHB Inward Opening Bracket White
MICROEVOLPBB	MICROEVOLPB Large Pivot Bracket Black
MICROEVOLPBW	MICROEVOLPB Large Pivot Bracket White
MICROEVOSBB	MICROEVOSB Standard Pivot Bracket Black
MICROEVOSBW	MICROEVOSB Standard Pivot Bracket White
MICROEVOSPBB	MICROEVOSPB Small Pivot Bracket Black
MICROEVOSPBW	MICROEVOSPB Small Pivot Bracket White

Technical Data

	230V AC	24V DC
Voltage	230V AC	24V DC
Push Force	300N	300N
Pull Force	300N	300N
Opening Stroke	100-200-300-400mm (Adjustable)	100-200-300-400mm (Adjustable)
Opening Speed	12.5mm/s	12.5mm/s
Current Consumption	0.1 Amp	1 Amp
Operating Conditions	-10°C - +60°C	-10°C - +60°C
Switch-on Duration	S2 4min	S2 4min
Colour	Black RAL 9005 / White RAL 9003 / Silver Anodised / Custom RAL Colour	Black RAL 9005 / White RAL 9003 / Silver Anodised / Custom RAL Colour
IP Rating	IP32	IP32
Life Span	10,000 Opening & Closing Movements	10,000 Opening & Closing Movements
Delivery Includes	1 x Actuator, 1 x Bracket Set (MICROEVOSB, MICROEVOBHB & MICROEVOVENT)	1 x Actuator, 1 x Bracket Set (MICROEVOSB, MICROEVOBHB & MICROEVOVENT)
Flex Length	5m	1m
Cable Dimensions	3-core (plus 2 communication wires)	2-core (plus 2 communication wires)
Min. Window Width	> 430mm	> 430mm
Max. Window Width	< 1300mm (use multiple actuators if wider)	< 1300mm (use multiple actuators if wider)
Dimensions	390 x 60 x 35mm	390 x 60 x 35mm

Stroke	150-300-450-600mm*
Push Force	400N
Voltage	230V AC / 24V DC

*Adjustable

Products / Actuators / Chain Actuators

MICRO EVO2

Micro Evo2 electric actuator with anti corrosion treated double-link chain. Self adjusting end limit and soft stop closing to preserve the window frame and actuator.

Adjustable Opening Stroke

Turn the dial on the side of the actuator to adjust the maximum opening stroke setting. The stroke can be set at 150, 300, 450 or 600mm. No additional programming devices are needed.

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Synchronisation

Built-in synchronisation feature allows 2, 3 or 4 actuators to work in tandem on the same opening vent. No additional controls are required for this feature.

Window Types
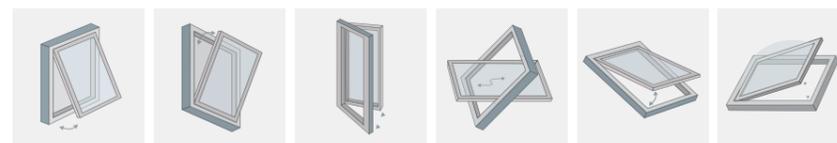
Part Codes

MICROEVO2-230VB	Micro Evo2 Chain Actuator 230V 600mm 400N Black
MICROEVO2-230VS	Micro Evo2 Chain Actuator 230V 600mm 400N Silver
MICROEVO2-230VW	Micro Evo2 Chain Actuator 230V 600mm 400N White
MICROEVO2-24VB	Micro Evo2 Chain Actuator 24V 600mm 400N Black
MICROEVO2-24VS	Micro Evo2 Chain Actuator 24V 600mm 400N Silver
MICROEVO2-24VW	Micro Evo2 Chain Actuator 24V 600mm 400N White

Accessories

MICROEVO2-BHBB	MICROEVO2-BHB Inward Opening Bracket Black
MICROEVO2-BHBW	MICROEVO2-BHB Inward Opening Bracket White
MICROEVOLPBB	MICROEVOLPB Large Pivot Bracket Black
MICROEVOLPBW	MICROEVOLPB Large Pivot Bracket White
MICROEVO2-SBB	MICROEVO2-SB Standard Pivot Bracket Black
MICROEVO2-SBW	MICROEVO2-SB Standard Pivot Bracket White
MICROEVO2-SPBB	MICROEVO2-SPB Small Pivot Bracket Black
MICROEVO2-SPBW	MICROEVO2-SPB Small Pivot Bracket White

Technical Data

Technical Data	230V AC	24V DC
Voltage	230V AC	24V DC
Push Force	400N (150-300mm) / 350N (450mm) / 300N (600mm)	
Pull Force	400N	400N
Opening Stroke	150-300-450-600mm (Adjustable)	150-300-450-600mm (Adjustable)
Opening Speed	12.5mm/s	12.5mm/s
Current Consumption	0.1 Amp	1 Amp
Operating Conditions	-10°C - +60°C	-10°C - +60°C
Switch-on Duration	S2 4min	S2 4min
Colour	Black RAL 9005 / White RAL 9003 / Silver Anodised / Custom RAL Colour	Black RAL 9005 / White RAL 9003 / Silver Anodised / Custom RAL Colour
IP Rating	IP32	IP32
Life Span	10,000 Opening & Closing Movements	10,000 Opening & Closing Movements
Delivery Includes	1 x Actuator & 1 x MICROEVO2-SB *MICROEVOVENT Bracket Not Included	1 x Actuator & 1 x MICROEVO2-SB *MICROEVOVENT Bracket Not Included
Flex Length	1m	1m
Cable Dimensions	3-core (plus 2 communication wires)	2-core (plus 2 communication wires)
Min. Window Width	> 500mm	> 500mm
Max. Window Width	< 1300mm (use multiple actuators if wider)	< 1300mm (use multiple actuators if wider)
Dimensions	450 x 75 x 42mm	450 x 75 x 42mm

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Stroke	250mm*
Push Force	150N
Voltage	24V DC

*Programmable with WAT 200 programmer

Products / Actuators / Chain Actuators

WMX 804

Designed for surface mounting. To be used with all window types. To be used together with ±24V control units or control units with MotorLink®. Genuine position feedback and three speeds when using control unit with MotorLink®.

Programmable

The electronics in this actuator can be programmed to stroke, speed/sound level – with the WAT 200 programming-box, also possible following installation.

Synchronisation

Synchronisation of up to four actuators is possible using the WAT 200 programmer unit - no need for an external synchronisation module.

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Window Types

Part Codes

WMX804-1	WMX 804-1 Chain Actuator 24V 250mm 200N White
WMX804-1G	WMX 804-1 Chain Actuator 24V 250mm 200N Grey
WMX804-2	WMX 804-2 Chain Actuator Synchronised 24V 250mm 200N White
WMX804-2G	WMX 804-2 Chain Actuator Synchronised 24V 250mm 200N Grey

Accessories

WAB-801	WAB 801 Vent Bracket
WAB-804	WAB 804 Standard Bracket White
WAB-804G	WAB 804 Standard Bracket Grey
WAB-805	WAB 805 Inward Opening Bracket White
WAB-805G	WAB 805 Inward Opening Bracket Grey

Technical Data

Voltage	24V DC
Push Force	150N
Pull Force	200N
Opening Stroke	250mm (Programmable with WAT 200 Programmer)
Opening Speed	7mm/s
Current Consumption	1 Amp
Operating Conditions	-5°C - +74°C
Switch-on Duration	ED 40% (max. 4min. per 10min.)
Colour	White RAL 9010 / Grey RAL 9006 / Custom RAL Colour
IP Rating	IP20
Life Span	10,000 Opening & Closing Movements
Delivery Includes	1 x Actuator *Fixing Brackets Sold Seperately
Flex Length	1.9m
Cable Dimensions	2-core (Plus 1 Communication Wire)
Min. Window Width	> 460mm
Max. Window Width	< 1300mm (use multiple actuators if wider)
Dimensions	332 x 42 x 29mm

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Stroke	400 / 600 / 800 / 1000mm*
Push Force	300N
Voltage	24V DC

*Programmable with WAT 200 programmer
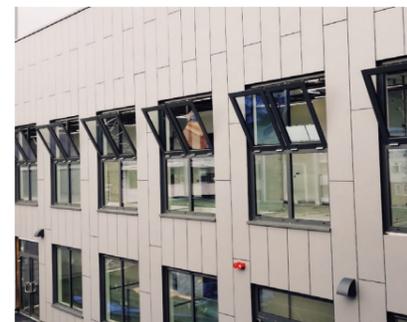
Products / Actuators / Chain Actuators

WMU 836

Designed for surface mounting. To be used with all window types. To be used together with ±24V control units or control units with MotorLink®. Genuine position feedback and three speeds when using control unit with MotorLink®.

Programmable

The electronics in this actuator can be programmed to stroke, speed/sound level – with the WAT 200 programming-box, also possible following installation.

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Window Types

Synchronisation

Synchronisation of up to four actuators is possible using the WAT 200 programmer unit - no need for an external synchronisation module.
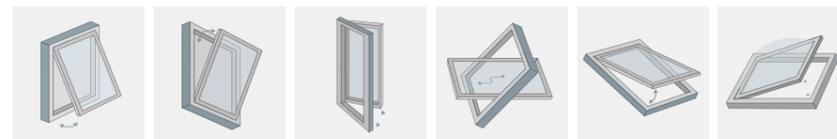
Part Codes

WMU836400	WMU 836-1 0400 Chain Actuator 24V 400mm 300N Silver
WMU836600	WMU 836-1 0600 Chain Actuator 24V 600mm 300N Silver
WMU836800	WMU 836-1 0800 Chain Actuator 24V 800mm 300N Silver
WMU8361000	WMU 836-1 1000 Chain Actuator 24V 1000mm 300N Silver
WMU836400-2	WMU 836-2 0400 Chain Actuator Synchronised 24V 400mm 300N Silver
WMU836600-2	WMU 836-2 0600 Chain Actuator Synchronised 24V 600mm 300N Silver
WMU836800-2	WMU 836-2 0800 Chain Actuator Synchronised 24V 800mm 300N Silver
WMU8361000-2	WMU 836-2 1000 Chain Actuator Synchronised 24V 1000mm 300N Silver

Accessories

WAB824	WAB 824 Pivot Bracket
WAB825	WAB 825 Z-Bracket
WAB836A	WAB 836A Small Pivot Bracket
WAB836B	WAB 836B Large Pivot Bracket
WAB836E	WAB 836E Vent Bracket
WAB836H	WAB 836H XL Pivot Bracket

Technical Data

Voltage	24V DC
Push Force	400N (150-300mm) / 350N (450mm) / 300N (600mm)
Pull Force	300N
Opening Stroke	400mm / 600mm / 800mm / 1000mm
Opening Speed	14mm/s
Current Consumption	1 Amp
Operating Conditions	-5°C - +74°C
Switch-on Duration	ED 40% (max. 4min. per 10min.)
Colour	Silver Anodised / Custom RAL Colour
IP Rating	IP32
Life Span	10,000 Opening & Closing Movements
Delivery Includes	1 x Actuator - Fixing Brackets Sold Seperately
Flex Length	5m
Cable Dimensions	2-core (Plus 1 Communication Wire)
Min. Window Width	> 628mm (400mm) / > 828mm (600mm) / > 1028mm (800mm) / > 1228mm (1000mm)
Max. Window Width	< 1300mm (Use Multiple Actuators If Wider)
Dimensions	400mm = 568 x 47 x 34mm / 600mm = 668 x 47 x 34mm / 800mm = 768 x 47 x 34mm / 1000mm = 868 x 47 x 34mm

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Products / Actuators / Folding Arm Actuators

WMD 820

Designed for doors and surface mounting. For replacement air for windows and doors. Genuine position feedback when using control unit with Motor-Link®. Soft close function.

Stroke	90° / 98° *
Push Force	250N
Voltage	24V DC

*Programmable with WAT 200 programmer

Programmable

The electronics in this actuator can be programmed to stroke, speed/sound level – with the WAT 200 programming-box, also possible following installation.

Synchronisation

Synchronisation of up to two actuators is possible using the WAT 200 programmer unit - no need for an external synchronisation module.

Window Types

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Part Codes

WMD820-1G-IN	WMD 820-1G IN Folding Arm Actuator Inward Opening 24V 98° 250N Silver
WMD820-1G-OUT	WMD 820-1G OUT Folding Arm Actuator Outward Opening 24V 90° 250N Silver
WMD820-2G-IN	WMD 820-2G IN Folding Arm Actuator Inward Opening Sync. 24V 90° 250N Silver
WMD820-2G-OUT	WMD 820-2G OUT Folding Arm Actuator Outward Opening Sync. 24V 90° 250N Silver

Accessories

WAB825	WAB 825 Inward Opening Bracket
WDB820B	WDB 820B Standard Bracket
WDB820L	WDB 820L Inward Opening Bracket, Left
WDB820M	WDB 820M Rail Bracket
WDB820R	WDB 820R Inward Opening Bracket, Right

Technical Data

Voltage	24V DC
Push Force	250N
Pull Force	250N
Opening Stroke	90° / 98° *Programmable with WAT 200 programmer
Opening Speed	< 60 sec.
Current Consumption	1 Amp
Operating Conditions	-5°C - +74°C
Switch-on Duration	ED 40% (max. 4min. per 10min.)
Colour	Silver Anodised / Custom RAL Colour
IP Rating	IP32
Life Span	10,000 Opening & Closing Movements
Delivery Includes	1 x Actuator - Fixing Brackets Sold Seperately
Flex Length	5m
Cable Dimensions	2-core (plus 1 communication wire)
Min. Window Width	> 750mm
Max. Window Width	< 1200mm (use multiple actuators if wider)
Dimensions	668 x 47 x 34mm

Controls

System Overview

There are several factors to consider when selecting the correct control system for your project including motor output, motor load, motor lines, application and inputs.

Motor Load

Ensure the control unit is capable of powering the total number of actuators connected to it. Each actuator will have a current consumption rating (A), make sure this does not exceed the control unit motor load rating (A).

Application

Our controls can be used in a variety of applications. The two main applications are Natural Ventilation and Smoke Ventilation. Smoke Ventilation controls require additional features such as battery backup and EN12101-10 certification.

Inputs

Consider the available number of inputs on the control unit for your application. The project may require the window(s) and roof vent(s) to automate based on temperature, CO2, rain and wind sensor readings - therefore choose the correct control unit to suit.

Motor Output

Our range of actuators are available in 230V or 24V. A control unit with the appropriate motor output will need to be selected to ensure the actuator receives the correct voltage.

Motor Lines

A basic control unit will only have a single motor line to power the connected actuator(s). For more advanced systems with zone controls multiple motor lines will be needed.

Overview

A basic system will have a control unit, an input and an output. The input can be a simple switch or an automatic climate sensor. The output will be a 230V or 24V actuator.

Output

Input

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Motor Output	24V DC
Motor Lines	1 / 2
Motor Load	3 Amp / 6 Amp

Products / Controls / Control Units

WCC 103/106BT

The MotorController controls (opens/closes) the window actuators based on a signal from the included remote control or the connected component(s) e.g. room sensors and weather sensors.

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Application

Natural
Ventilation
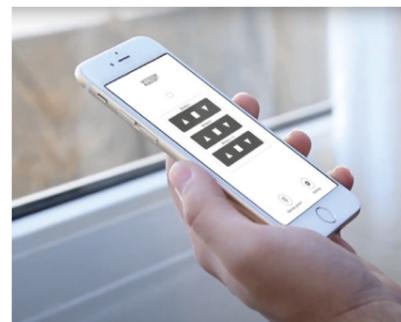
App Control

The WCC 103/106BT is supplied complete with a handheld remote. The control unit can be paired with a smartphone for app control.

24V DC Motor Output

The WCC 103/106BT control unit has a 24V DC motor output. Two versions are available; WCC 103BT has a 3 Amp max. motor load and the WCC 106BT with 6 Amp max. motor load.

Part Codes

WCC103BT	WCC 103BT Control Unit 24V 3 Amp
WCC106BT	WCC 106BT Control Unit 24V 6 Amp

Technical Data

Primary Voltage (Input)	230V AC
Secondary Voltage (Output)	24V DC
Motor Load	3 Amp (WCC 103BT) / 6 Amp (WCC 106BT)
Motor Lines	1 (WCC 103BT) / 2 (WCC 106BT)
Inputs For	Switch, Key-Switch, Rain Sensor, Wind & Rain Sensor, Thermostat, Timer
Operating Condition	-5°C - +45°C, max
Dimensions	215mm (w) x 206 (h) x 37mm (d)
Protection Type	IP20
Delivery	1 x Control Unit, 1 x Remote, 1 x UK Plug Adapter

Connection Possibilities

WLA 330
Wind & Rain Sensor

WLA 331
Rain Sensor

Smart Phone

WCC-RC3
Remote Transmitter

S50
Rocker Switch

WLA 110
Room Thermostat

24V DC Actuator(s)

WCC 103/106BT
Control Unit

230V AC

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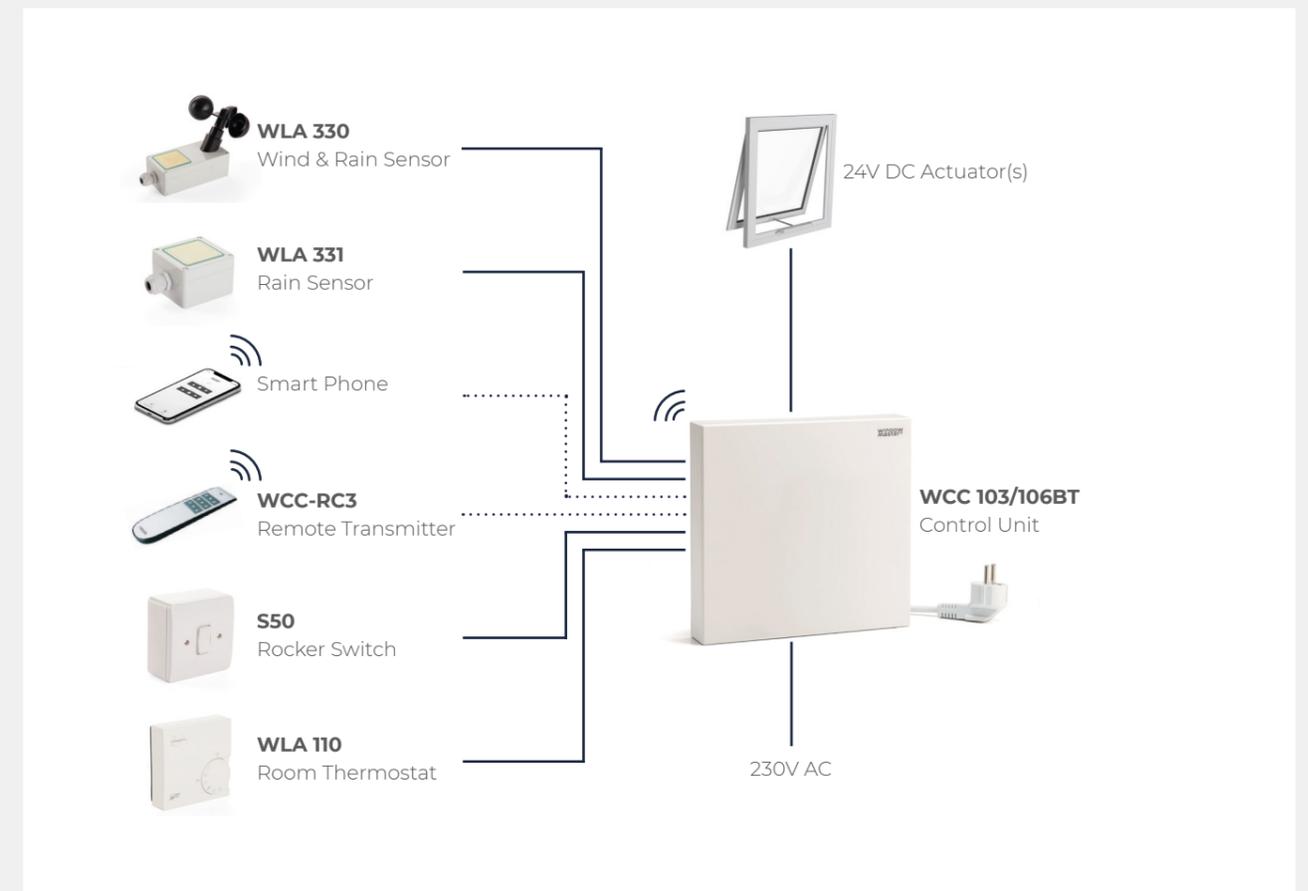
Motor Output	24V DC
Motor Lines	2 / 6 / 10
Motor Load	10 Amp / 20 Amp

WCC 310/320PLUS

The MotorController controls (opens/closes) the window actuators based on the signals from the connected components e.g. keypads, room sensor, weather sensor and BUS commands.

Touch Screen

Easy-to-use LCD touch screen makes the panel easy to configure, commission and maintain – without the need of a PC. System errors are described on screen to facilitate troubleshooting and initialisation.

BMS Communication

The WCC 310/320PLUS can be expanded with a communication card (fieldbus card) thus daily comfort ventilation will be possible via bus communication KNX, BACnet IP MS/TP or Modbus TCP/RTU/RS485.

Application

Natural Ventilation

Part Codes

WCC310-PLUS0202	WCC 310-PLUS 0202 Control Unit 24V 10 Amp 2 Motorlines / 2 Inputs
WCC310-PLUS0612	WCC 310-PLUS 0612 Control Unit 24V 10 Amp 6 Motorlines / 12 Inputs
WCC310-PLUS1012	WCC 310-PLUS 1012 Control Unit 24V 10 Amp 10 Motorlines / 12 Inputs
WCC320-PLUS	WCC 320-PLUS 0202 Control Unit 24V 20 Amp 2 Motorlines / 2 Inputs
WCC320-PLUS-6	WCC 320-PLUS 0202 Control Unit 24V 20 Amp 6 Motorlines / 12 Inputs
WCC320-PLUS-10	WCC 320-PLUS 0612 Control Unit 24V 20 Amp 10 Motorlines / 12 Inputs

Technical Data

Primary Voltage (Input)	230V AC
Secondary Voltage (Output)	24V DC
Motor Load	10 Amp (WCC 310*) / 20 Amp (WCC 320*)
Motor Lines	2 / 6 / 10
Inputs For	Switch, Key-Switch, Rain Sensor, Wind Sensor, Thermostat, Timer, CO2, BMS
Operating Condition	-5°C - +45°C, max
Dimensions	355mm (w) x 320 (h) x 76mm (d)
Protection Type	IP20
Delivery	1 x Control Unit

Connection Possibilities

WLA 330
Wind & Rain Sensor

WLA 331
Rain Sensor

CTS2
CO2 Sensor

RRTKEY
Key Switch

S50
Rocker Switch

WLA 110
Room Thermostat

Motorline 1
24V DC Actuator(s)

Motorline 2
Motorline 3
Motorline 4
Motorline 5
Motorline 6
Max. Motorlines = 10

WCC 310/320PLUS
Control Unit

BMS
KNX
BACnet
Modbus

230V AC

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Motor Output	230V AC
Motor Lines	1
Motor Load	3.15 Amp

Products / Controls / Control Units

RCU1-KIT

Control unit for one actuator or one group of actuators. Complete with radio receiver for remote operation. Inputs for Remote Transmitter, Wireless Switch or Wireless Timer. Maximum output of 3.15 amp to operate 230V AC actuators. Supplied complete with surface mount enclosure.

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Application

Natural Ventilation

Remote Control

It is possible to pair a handheld remote to the RCU1 control unit. Allowing the user to manually operate the connected actuator(s).
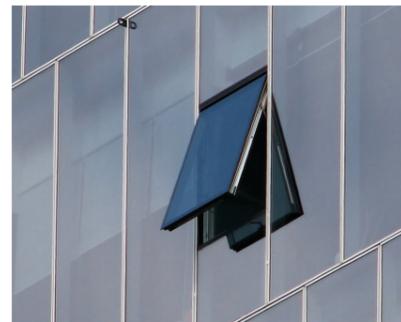
230V AC Motor Output

The RCU1-KIT control unit has a 230V AC motor output with a maximum motor load of 3.15 Amp.

Part Codes

RCU1-KIT	RCU1-KIT Control Unit & Remote Transmitter

Technical Data

Primary Voltage (Input)	230V AC
Secondary Voltage (Output)	230V AC
Motor Load	3.15 Amp
Motor Lines	1
Inputs For	Remote Transmitter, Wireless Switch and Wireless Timer
Operating Condition	-20°C - +60°C
Dimensions	110mm (w) x 110 (h) x 40mm (d)
Protection Type	IP55
Delivery	1 x Control Unit, 1 x Remote

Connection Possibilities

230V AC Actuator(s)

RCU1-RC1
Remote Transmitter

RCU1-SWITCH
Wireless Switch

RCU1-TIMER
Wireless Timer

RCU1
Control Unit

230V AC

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Products / Controls / Control Units
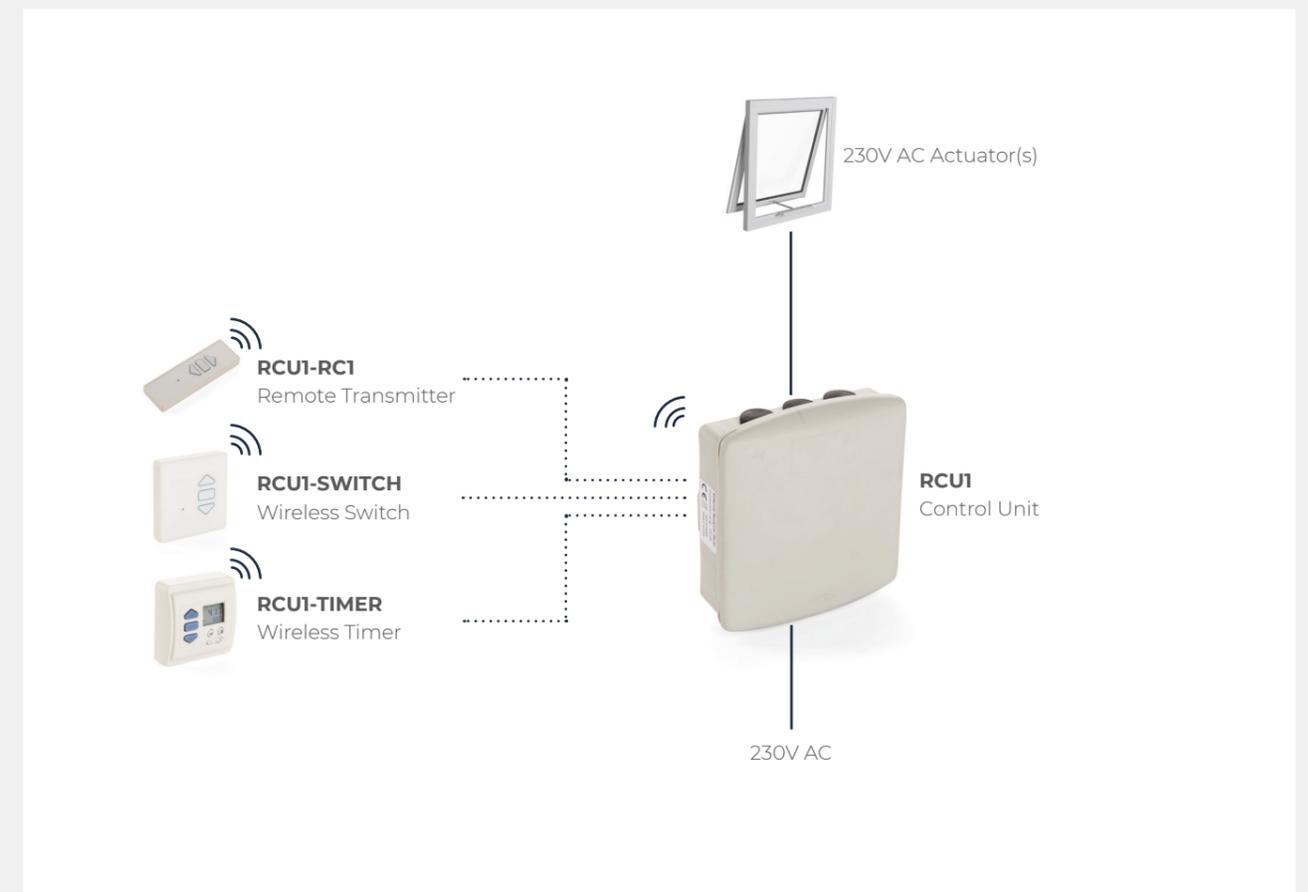
EVC

The EVC Control Unit is used to automatically ventilate the indoor environment. The connected window actuator(s) open or close according to the internal and external temperatures. The rain and wind sensors ensure the connected actuator(s) close during rain and/or high wind speeds.

Motor Output	230V AC
Motor Lines	1
Motor Load	4 Amp

Part Codes

EVC	EVC Control Unit 24V 4 Amp

Technical Data

Primary Voltage (Input)	230V AC
Secondary Voltage (Output)	230V AC
Motor Load	4 Amp
Motor Lines	1
Inputs For	Rain Sensor (built in), Wind Sensor (built in), Temperature Sensor (built in) & Remote
Operating Condition	-10°C - +50°C, max
Dimensions	96 x 77 x 118mm (Weather Station) / 103 x 98 x 28mm (Control Unit)
Protection Type	IP44 (Weather Station) / IP40 (Control Unit)
Delivery	1 x Control Unit, 1 x Weather Station

Remote Control

It is possible to pair a handheld remote (EVC-RC8) to the EVC weather station. Allowing the user to manually operate the connected actuator(s).

230V AC Motor Output

The EVC control unit has a 230V AC motor output with a maximum motor load of 4 Amp.

Application

Natural Ventilation

Connection Possibilities

230V AC Actuator(s)

EVC (i) Control Unit

EVC-RC8 Remote Transmitter

**EVC (ii)** Weather Station

230V AC

Products / Controls / Accessories

Accessories

We have a large range of control accessories including rain sensors, wind sensors, thermostats, CO2 sensors, remotes and switches.

WLA 331 Rain Sensor

WLA 330 Wind & Rain Sensor

S50 Rocker Switch

EVC-RC8 Remote Transmitter

RRTKEY Key Switch

WLA 110 Thermostat

RCU1-TIMER Wireless Timer

RCU1-RC1 Remote Transmitter

RCU1-SWITCH Wireless Switch

WCC-RC3 Remote Transmitter

WSK 100 Keypad

CTS2 CO2 Sensor

Manual

System Overview

There are several factors to consider when selecting the correct manual system for your window including hinge type, profile, weight, size, opening requirement and colour.

Profile

Ensure the correct fixing brackets are selected to fix the opener the window profile. CAD drawings are available upon request.

Colour

All parts are available in black, grey, white or anthracite finish as standard.

Hinge Type

Manual Chain Openers are suitable for almost any window type including top-hung, bottom-hung and side-hung. Locking Openers are used for bottom-hung windows only.
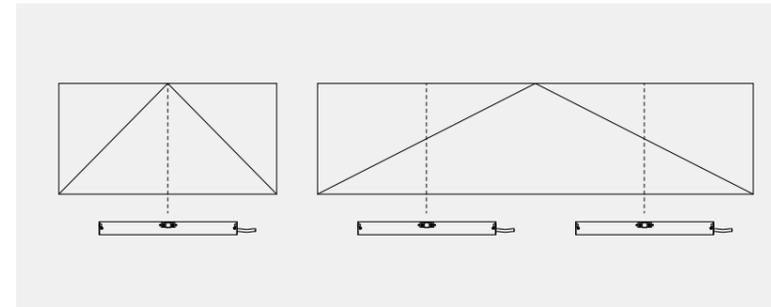
Push Points

For a single push-point/opener the recommended maximum window width for any 1000mm. For anything wider it is recommended multiple push points/openers are used to ensure safer operation and better compression.
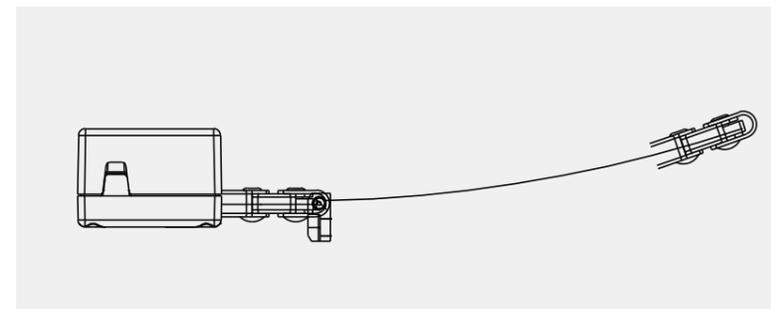
Opening Stroke

Openers are available with a 250mm or 380mm opening stroke You will need to consider the maximum opening of the window when selecting the correct opening stroke.z

Push Force

Calculate the push force required to open the window using the following formula:

$$F = (0.5 \times P) \times (C / H) \times 10$$

P = Window sash weight (kg)

C = Window opening stroke (mm)

H = Window height (mm)

$$F = \frac{P}{2} \times \frac{C}{H} \times 10$$

Need Help?

Speak to one of our friendly experts:
01242 620318

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Products / Manual / Openers

T100/T150

Manual Chain Opener used to drive open or close a high level or hard to reach window. Can be fitted to most window types - aluminium, timber or uPVC. Individual or multiple chain openers can be controlled from a single operator.

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Window Types

Flexibility

The T100/T150 chain opener is compatible with almost any window style when used with the correct fixing brackets. Speak to our friendly experts to help find the right bracket for your project.

Operators

Several types of operators are available. The T100 is compatible with the T210, T250 and T300 operator. The T150 is compatible with the T260 operator.

Part Codes

|	
T100NTB	T100 Chain Opener 250mm Black
T100NTG	T100 Chain Opener 250mm Grey
T100NTW	T100 Chain Opener 250mm White
T150NTCB	T150 Chain Opener 380mm Black
T150NTCG	T150 Chain Opener 380mm Grey
T150NTCW	T150 Chain Opener 380mm White

Accessories

T740B	T740 Narrow Fixing Plate Black
T740G	T740 Narrow Fixing Plate Grey
T740W	T740 Narrow Fixing Plate White
T750B	T750 Wide Fixing Plate Black
T750G	T750 Wide Fixing Plate Grey
T750W	T750 Wide Fixing Plate White
T760B	T760 Angled Fixing Plate Black
T760W	T760 Angled Fixing Plate White
T850NTB	T850 Bottom Hung Fixing Bracket Black
T850NTG	T850 Bottom Hung Fixing Bracket Grey
T850NTW	T850 Bottom Hung Fixing Bracket White

Technical Data

Opening Stroke	250mm (T100) / 380mm (T150)
Colour	Black RAL 9005 / Grey RAL 9006 / White RAL 9010
Delivery Includes	1 x Chain Opener, 1 x Vent Bracket
Min. Window Width	> 450mm
Max. Window Width	< 1000mm (use multiple openers if wider)

Examples

A.   B.   C.   D.   E.   F.

![teal products logo]

Stroke	250mm
Colour	Black / Grey / White

Products / Manual / Openers
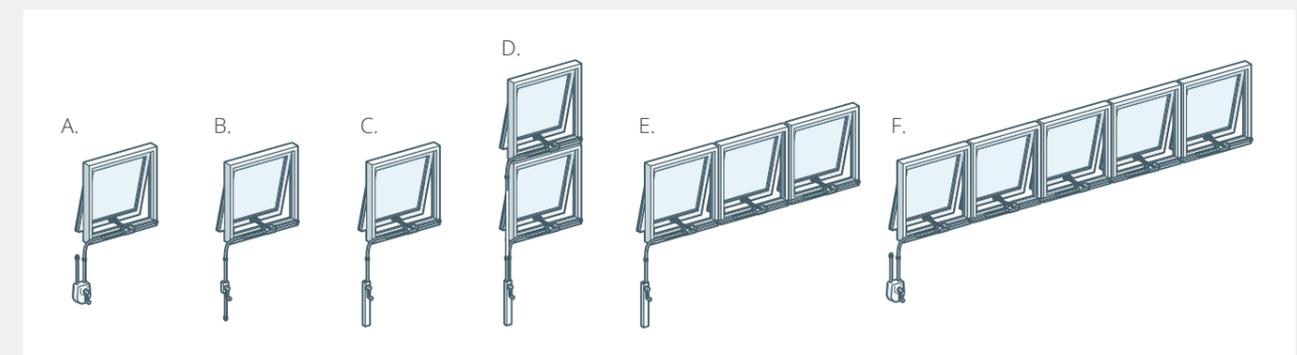
T175

Manual Locking Opener for bottom hung inward opening windows. Maximum opening of 250 mm (adjustable). Individual or multiple T175 Locking Openers can be controlled from a single T200, T210, T250 or T300 Operator.

Inward Opening Windows

The T175 locking opener is a great alternative the T100 chain opener when there is limited fixing space available. Speak to our friendly experts to help find the opener for your project.

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Window Types

Operators

Several types of operators are available. The T175 is compatible with the T210, T250 and T300 operator.

Part Codes

T175B	T175 Locking Opener 250mm Black
T175G	T175 Locking Opener 250mm Grey
T175W	T175 Locking Opener 250mm White

Technical Data

Opening Stroke	250mm
Colour	Black RAL 9005 / Grey RAL 9006 / White RAL 9010
Delivery Includes	1 x Locking Opener
Min. Window Width	> 50mm
Max. Window Width	< 1000mm (use multiple openers if wider)

Examples

A.   B.   C.   D.

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Products / Manual / Operators
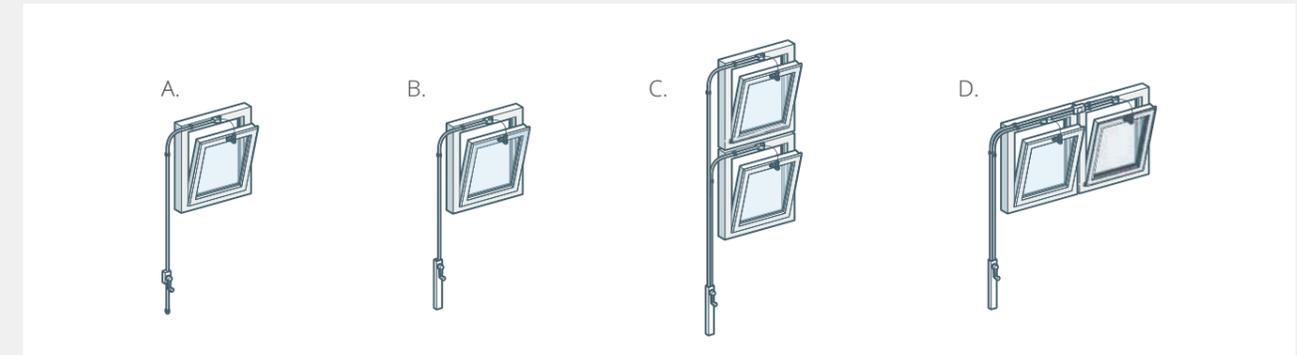
T210/T250/T260/T300

A manual operator is used to manually wind open or close high level or hard to reach window(s) or louvre(s). A single operator can be used to control individual or multiple openers.

T210

T300

T250

T260

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Load

The correct operator will depend on the system load. Which will take into account the number of bends in the conduit and number of openers. Speak to our friendly experts to help find the correct operator for your project.

Application

Natural Ventilation

Openers

Several types of openers are available. The most suitable will depend on the application. Speak to our friendly experts to help find the best opener for you.

Part Codes

T210NTB	T210 Maxi Operator Black
T210NTG	T210 Maxi Operator Grey
T210NTW	T210 Maxi Operator White
T250NTB	T250 Midi Operator Black
T250NTG	T250 Midi Operator Grey
T250NTW	T250 Midi Operator White
T260NTB	T260 Midi Operator Black
T260NTG	T260 Midi Operator Grey
T260NTW	T260 Midi Operator White
T300NTB	T300 Mini Operator Black
T300NTG	T300 Mini Operator Grey
T300NTW	T300 Mini Operator White

Accessories

T275B	T275 Operator Handle Black
T275G	T275 Operator Handle Grey
T275W	T275 Operator Handle White
T410	T410 Square Conduit 250mm
T411	T411 Square Conduit 380mm
T720	T720 Brass Stop

Technical Data

Opening Stroke	T210 = 380mm / T250 = 250mm / T260 = 380mm / T300 = 380mm
Colour	Black RAL 9005 / Grey RAL 9006 / White RAL 9010
Delivery Includes	1 x Operator, 1 x Handle, 1 x Fixing Pack

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Accessories

Several types of fixing plates, handles, tools and accessories are available for our manual window control range.

T275 Operator Handle	T350 Rotary Junction Box	T410/T411 Square Conduit
T420 Conduit End Plug	T400 Conduit	
T450 Inner Cable	T600 Conduit Saddle Bracket	T620 Conduit Saddle Bracket

T700 Spring Stop	T720 Brass Stop	T740 Narrow Fixing Plate
T900 Conduit Groove Tool		T750 Wide Fixing Plate
		T760 Angled Fixing Plate
T950 Conduit Bending Tool		T850 Bottom Hung Bracket

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Resources

Case Studies

Over the years we have had the privilege of working on numerous window control projects from museums, art galleries, hospitals and universities. Here are examples of just a few of them.

Natural History Museum, London

Micro 02	Chain Actuator
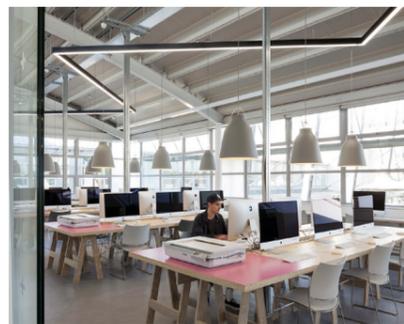
Harrow Library, Westminster

WMX 804	Chain Actuator
WCC 320	Control Unit
WSK 100	Ventilation Keypad

Hartpury College, Glos.

WCC 320	Control Unit
WCA 3FM	BACnet Interface
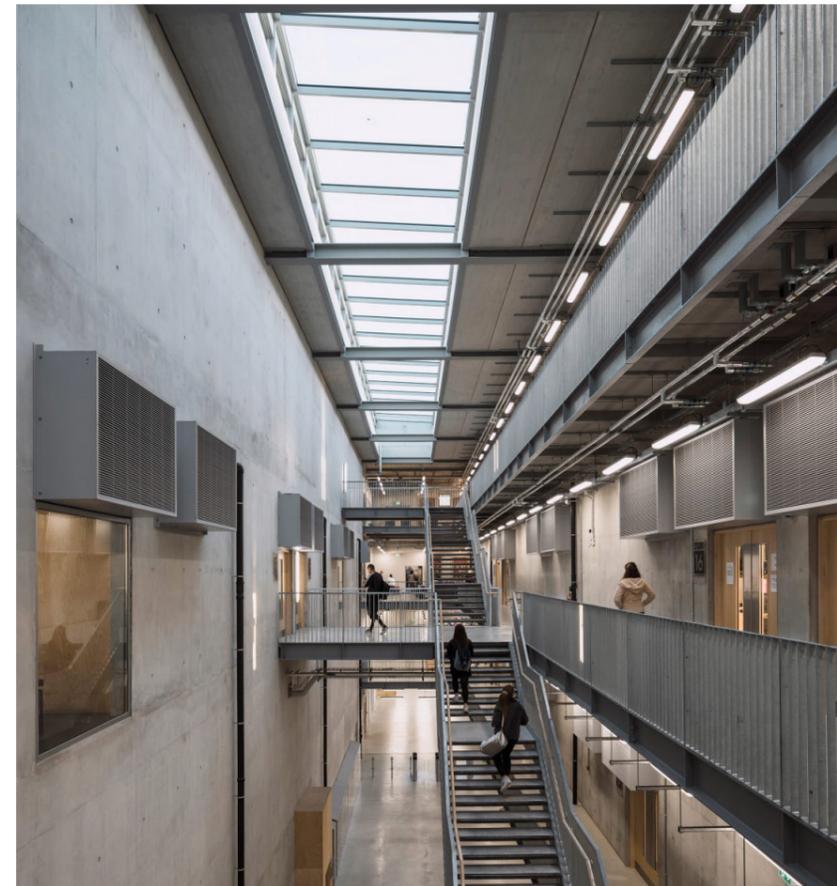
Mountview Academy, London

WSC 320	Control Unit
WLA 330	Wind & Rain Sensor
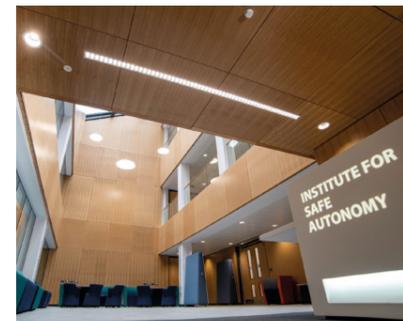
University of York, York

WMX 804	Chain Actuator
WCC 310	Control Unit
WCA 3FM	BACnet Interface

UWE University, Bristol

WCC 310	Control Unit
WCA 3FM	BACnet Interface
S50	Rocker Switch

Barons Quay, Northwich

WCC 320	Control Unit
WLA 110	Room Thermostat
WLA 331	Rain Sensor

Cirencester College, Glos.

Micro Evo1	Chain Actuator
WCC 310	Control Unit
WCA 3FB	BACnet Interface

La Retraite College, London

WMX 804	Chain Actuator
WCC 320	Control Unit
CTS2	CO2 Sensor

48 WINDOW CONTROL   **49** WINDOW CONTROL

Get in touch

If you have any queries regarding our products or would like some support on your next project please do not hesitate to contact our helpful and friendly team:

01242 620318
sales@tealproducts.co.uk

Well stocked

We keep a large stock of both Manual & Electric Window Controls including popular brands - Highline, Mingardi, Windowmaster, Comunello,& Aumuller.

Next day delivery

Place your order for before 2.00pm on weekdays for next day delivery. Need something early? We also offer timed deliveries - Pre-12.00pm or Pre-10.30am.

Training

Our Technical Department can also offer in-house product training on our Manual and Electric Window Opener Control range. Please call us for further information.

Expert advice

Contact our Technical Department if you need help selecting the correct product. With 20+ years experience in the industry we can help you with all your Window Control needs.

Helpful team

The team at Teal Products prides itself on first class customer service. Ensuring you are guaranteed the very best response from initial enquiry to installation.

Accredited

IFC certified, CHAS accredited and a certified WindowMaster partner it's safe to say you're in good hands!

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