Elevation Window Control System

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LOCKWOOD
ASSA ABLOY

25YEAR MECHANICAL WARRANTY

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Contents

Elevation Electric Window Actuator

Lockwood's Elevation® is an Electric Window Control System designed to control your windows with a touch of a button. Elevation can be configured to reflect the unique layout of any home or commercial building but is primarily used to control windows that are hard-to-reach. Elevation is a flexible solution that will suit multiple window systems[2] and applications.

Window actuators can be installed in pairs that will cater for windows up to 2400mm wide or for heavier double glazed window systems[3].

Elevation conforms to the Building Code of Australia, relating to the "Prevention of Falls from Windows" when used in conjunction with approved window systems. Elevation allows for a generous window opening (300mm) but can also be restricted at 10mm increments and ultimately restrict the window opening to 125mm or less.

Window actuators can be connected to a Lockwood touch screen display and Zones, such as lounge, hall, bedroom, north and east facing can be easily set up.

Alternatively, you can also choose to control your windows with a standard wall switch or via any 3rd party Cbus or Building Management System[4].

Elevation is easy to install with the flexibility of adding additional windows at a later stage. Ultimate control is only a touch away with the option to instantly close all windows at once when leaving the house, or locking up for the night.

Reference notes

[2] See matrix to ensure that Elevation is suitable for your window type or size. Elevation is suitable for awning and casement windows

[3] See website matrix for the exact window size allowance. Large or short windows may be restricted in terms of opening

[4] See specification guide for more details

[5] Power loom can be extended but voltage drop needs to be considered

Product Details

Cabling	Control Loom: 2m extend up to 300m (Twisted pair) Power Loom: 2m (can extend) 5m
Chain Length	300 mm
Chain Limiting	Limit chain between 50-300mm @ every 10mm
Current	**Standby Current** 20mA **Maximum Peak Load** 750mA
Dimensions	32H x 308L x 44D (not including sash bracket)
Endurance	12,000 Cycles
Environment	Operational temperature range 0° to +60°C
Finishes	Black **(BLK),** White **(WH),** Special Powdercoat **(PPC)**
Humidity	90% @ 35°C
Materials	**Furniture body:** cast zinc. **Sash Bracket components:** Cast 303SS **Chain:** Stainless 304
Monitoring	Monitor Open Closed 15mm or 50%
Negative Holding Force	220kg Applied force at chain
Noise Level	65dB @ Maximum window Load
Open/Close Force	9kg
Voltage	24-32 VDC

Standards and Compliance

	Australian Electrical Regulatory Compliance
IP30	Rated (if installed according to installation instructions)
DW2	Australian Window Standard (AS4145.3-2001)
	Australian Window Standard for negative force strength pressure (AS4145.3-2001)

Elevation Electric Window Actuator

Applications

- Awning and casement windows
- High out of reach windows
- Conveniently open single or a group of windows
- Commercial buildings
- Residential buildings

Window Sizes

Maximum Window width Single Actuator - 900mm

Maximum Window width Double Actuators - 2400mm

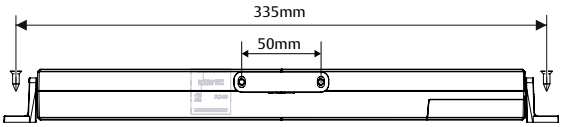
Minimum Window height 300mm

Note: Actuator chains may need to be restricted, based on the sash height, as per the Elevation window matrix.

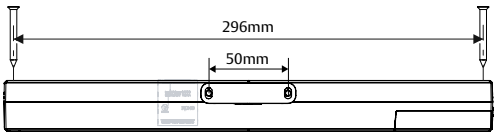
Window Actuator Features

- Actuators can be controlled individually or grouped into zones
- Actuator can withstand 220kg applied negative pressure*
- 9kg closing force ensures a tight window seal when closed
- Smooth chain movement
- 40 seconds Opening/closing time with soft start and stop feature
- Built in anti-collision sensor allows the window to sense an obstacle and stop. 300mm chain opening
- Strong, corrosion resistant stainless steel chain (grade 304)
- Field adjustable chain limiter. Limit chain between 50-300mm at every 10mm
- Quick clutch release Key for easy installation without power connected
- Connect and synchronize a pair of window actuators to one large window
- Ability to install actuator in multiple orientations including top and bottom chain exit
- Will cater for window sashes as short as 300mm high**

Elevation Electric Window Actuator



Pivot Mount



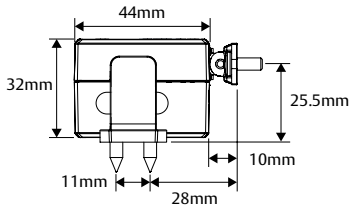
Fixed Mount

- Can connect to touch screen display, standard wall switch or Cbus systems
- Network cabling can span up to 300m without voltage drop
- Connect and control up to 30 window actuators to a touch screen display
- Can connect multiple actuators (30 maximum) to a standard wall switch

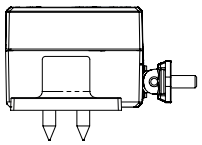
* Through sash fixing is required to reach this force

** Please see matrix for the exact window size allowance, large or short windows may be restricted in terms of opening

Mounting Options



Pivot Mount Top Chain Exit



Pivot Mount Bottom Chain Exit

*Optional Bracket

25YEAR MECHANICAL WARRANTY

Elevation Electric Window Actuator

Devices

Product Type		Devices
Window Actuator		(1)
Window Actuator that's synchronized		(1)
Touch Screen Display		(1)
Rain Sensor		(1)

Ordering Notes

A Network's capacity is 32 devices, each of the above counts as one device. When planning ensure you have 32 devices or less

Network Examples

Example 1	Example 2
Product Type	**Product Type**
30 x Actuators	30 x Actuators
1 x Keypad	2 x Keypads
1 x Rain Sensor	0 x Rain Sensor

Example 3	Example 4
Product Type	**Product Type**
26 x Actuators	29 x Actuators
2 x Keypads	2 x Keypads
4 x Rain Sensors	1 x Rain Sensor

Elevation Electric Window Actuator

Part Numbers	Description
LW-EWAC-300-BLK	ELEVATION SS CHAIN 300 BLK NO POWER SUPPLY
LW-EWAC-300-WH	ELEVATION SS CHAIN 300 WH NO POWER SUPPLY
LW-EWAC-300-PPC	ELEVATION SS CHAIN 300 SPEC NO POWER SUPPLY
Accessories	
EWAC-SSL	ELEVATION SYNC LOOM
EWAC-SNA	ELEVATION NETWORK ADAPTOR
EWAC-SRS	ELEVATION RAINSENSOR + NA
LW-TSD-35-WHT	ELEVATION TOUCH KEYPAD 3.5"
EWAC -SM1500	ELEVATION SWITCH MODE POWER SUPPLY
Spare Parts	
EWAC-CPL	CONTROL & POWER LOOM
EWAC-SCRP	ACC PACK – SCREWS, CAPS, AND LIMITER PLUGS
EWAC-PVT-WH	PIVOT BRACKETS WHITE
EWAC-PVT-BLK	PIVOT BRACKETS BLACK
EWAC-PVT2-BLK	UPSIDE DOWN PIVOT BLACK

Other Notes:

- Power supplies needs to be ordered separately; One power supply has enough power to operate 2 actuators (windows). Work out if it's best to use one power supply to power one window or if the windows are close to each other one power supply can be used to operate both.
- If two actuators are synchronized they will only count as one on the network.
- Rain sensors can operate when connected to touch screen display network or wall switch network.
- If you require a window actuator that's connected to a standalone switch you will need one Network adaptor (EWAC-SNA) per switch.
- If you require a window actuator that's connected to a Cbus system you will need one Network adaptor (EWAC-SNA) per relay output.
- You can connect a maximum of two keypads per network
- You can connect a maximum of four rain sensors per network

Elevation Touch Screen Display

The Lockwood Elevation™ Touch Screen Display is an elegant touch pad that's been designed to control up to 30 Elevation window actuators. The touch pad can be programmed to open individual or groups of windows. You also have the option to name your windows or groups from a pre-defined list suitable for commercial or residential applications.

Window positions can be controlled to: open, close, move to a 50% or a venting position. The status of your window positions can be viewed at a glance throughout the building. You also have the option to instantly close all windows at once when leaving the building, or locking up for the night. The Lockwood Touch Screen Display allows you to easily decide which window or group you would like to: open, half open, close or vent.

The Touch Screen Display also gives you the ability to connect up to four rain sensors and can be controlled to automatically close in the event of rain. You also have the ability to set the window to reopen once the rain has stopped. The smart rain sensor also has the ability to differentiate between rain and dew with built in heating elements that dries moisture build up.

Applications

- Commercial Buildings
- Residential Buildings

Touch Screen Display Features

- 3.5" colour Touch Screen Display
- Control up to 30 windows
- 30 predefined window and group names
- 2 button touch, to control a window
- Live status of window position
- Instantly open or close all windows
- Pin code lockout option
- Synchronize an additional touch pad to the network
- Window obstruction status and warnings
- Control up to four rain sensors independently or grouped
- Easy installation with 4 wire control
- Emergency "close all" override from home button

Product Details

Cabling	Control Loom: 2m extend up to 300m (Twisted pair) Power Loom: 2m
Current	Standby Current 20mA Operating Current 100mA
Dimensions	128H x 87W x 21D
Environment	Operational temperature range 0° to +60°C
Finishes	White face with Silver trim **(WH)**
Humidity	90% @ 35°C
Materials	Keypad housing: PVC
Voltage	24-32 VDC

Standards and Compliance

Australian Electrical Regulatory Compliance

Elevation Touch Screen Display

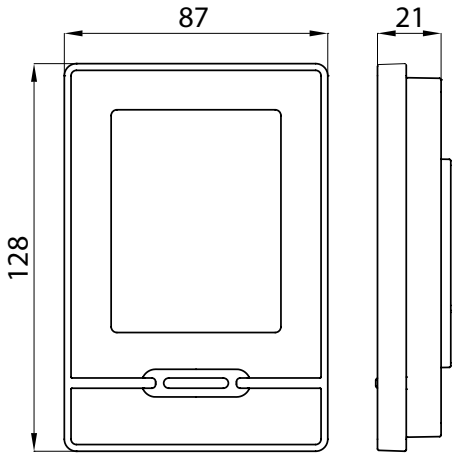
Elevation Touch Screen Display

Part Numbers	Description
LW-TSD-35-WHT	ELEVATION TOUCH KEYPAD 3.5”
Accessories	
EWAC-SRS	ELEVATION RAINSENSOR + NA

Ordering Notes

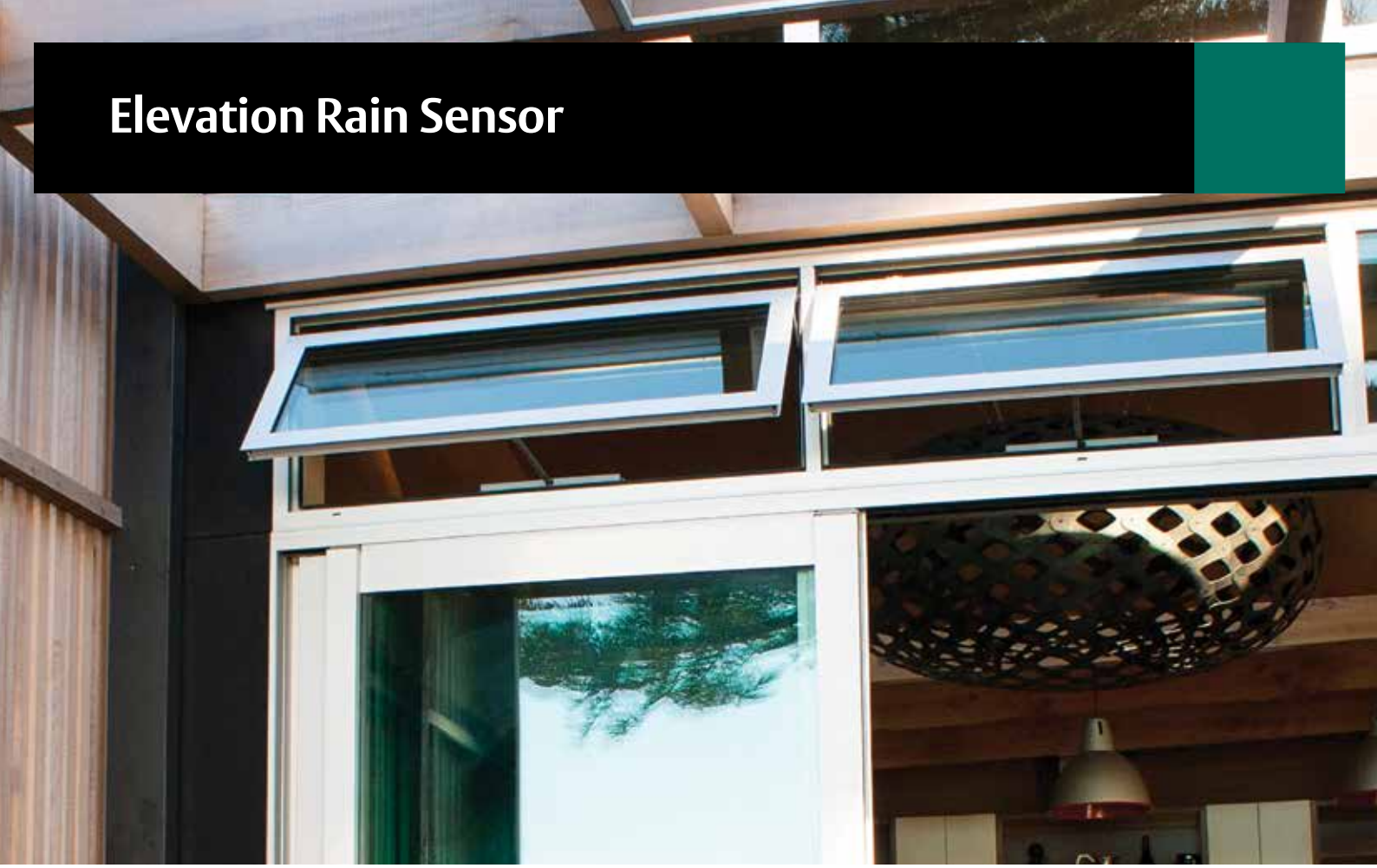
A network’s capacity is 32 devices, each of the above counts as one device. When planning, ensure you have 32 devices or less

Note: EWAC-SM1500 is required to power Keypad



Front View Side View

Elevation Rain Sensor



The Lockwood Elevation™ Rain Sensor has been specifically designed to work with the Elevation actuators and your touch screen display. Basic automatic "close all" function can be achieved or advanced functionality can be programmed.

Functions

Rain Sensors will be triggered by rain and automatically close the windows. Rain Sensors can also be configured to re-open to original position when the rain has stopped. Rain Sensors can be zoned so that if rain comes from one particular direction i.e. east location only, windows in the east will close and the rest will remain open.

Application

- Automatically close windows in the event of rain (keypad and switch network)
- Commercial Buildings
- Residential Buildings

Rain Sensor Features

- Connect up to of four sensors per network
- Visual rainfall indicator on keypad
- Integrated heating elements to dry up dew or moisture
- Smart re-open function
- After rain has stopped "go to vent" function
- Zone Rain Sensors to control particular windows independently

Product Details		
Dimensions	60H x 50W x 16D	
Materials	Furniture body: Durable Acetal UV Stable. Bracket: Stainless Steel 304	
Finish	White **(WH)**	
Voltage	24-32 VDC	
Current	Standby Current Operating Current	50mA 300mA
Environment	Operational temperature range 0° to +60°C	
Humidity	90% @ 35°C	
Cabling	Loom: 2m	

Elevation Rain Sensor

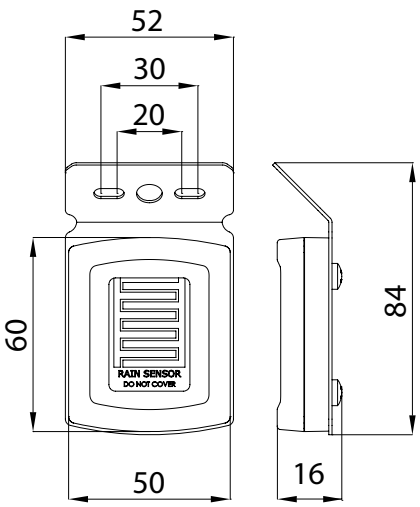
Elevation Rain Sensor

Part Numbers	Description
EWAC-SRS	ELEVATION RAINSENSOR + NETWORK ADAPTOR

Ordering Notes

A Network's capacity is 32 devices, each of the above counts as 1 device. When planning ensure you have 32 devices or less

Note: EWAC-SM1500 is required to power Rain Sensor (one power supply is enough to control unto 4 Rain sensors)



Elevation Network Adaptor

Lockwood Elevation™ Network Adaptor has been designed so you can connect Elevation to any 3rd party wall switch* or home automation system. This flexibility allows connection to virtually any system or switch.

Switch Types

N/O: (Normally open) bell press switches are required; e.g. momentary/ non latching.
We recommend the below parts that can be acquired at any electrical wholesaler:

HPM Part # 770XM
PDL Part# 681M20P
Clipsal Part# 30MBPR

Functions

Wall Switch
For standard wall switch operation; the network adaptor connects to the wall switch, and allows up to 30 windows to be controlled by that wall switch. The network adaptor will typically sit behind the switch. This is normally used for instances where users want to control 1-30 windows per room.

Cbus or Home Automation

The Elevation Network Adaptor can also be connected to a home automation or fire control system. The network adaptor is hardwired to the "panel" and 1 output can control up to 30 windows. This is normally used for instances where users want complete control of all devices in a home from one single keypad or controller.

The system's relays will be programmed to fully open and close the window other pre-sets can also be programmed.

* Momentary bell press type

Product Details	
Dimensions	58H x 43W x 17D
Materials	Durable PVC Black
Voltage	12-24vdc
Current	50ma
Environment	Operational Temperature 0° to +60°
Humidity	90% @ 35°C
Input	2 x Potential Free (1 x Open 1 x Close)
Output	CAN bus Data (white + brown)

Cbus Home Automation

Wall Switch

25YEAR MECHANICAL WARRANTY

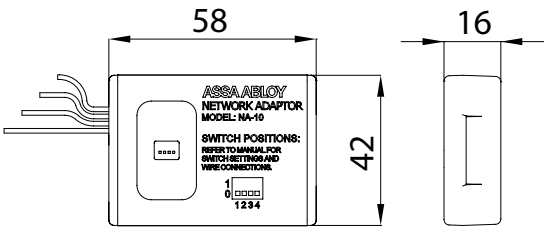
Elevation Network Adaptor

Elevation Network Adaptor

Part Numbers	Description
EWAC-SNA	ELEVATION NETWORK ADAPTOR

Ordering Notes

One Network adaptor is required for a pair of wall switches. No network adaptors are required for Keypad Network.



Specification Guide

Specification Guide

Elevation is a flexible system and allows you to choose how to automate your windows. Some of the standard methods are; Touch screen Keypad or Wall switch. More advanced methods are; Cbus / BMS or Fire control panels.

Standard Elevation Control

Keypad or Wall Switches, are two standard ways to automate your window. It depends on the functionality you need; use the below guide and choose the best option for your requirements.

Choosing Between Keypad or Wall Switch Network

Keypad Network

The touch screen keypad may be required if the user wants to control multiple windows from one location and would like to name the windows or create zones. The keypad also gives you the ability to see the window position remotely and control the windows based of 4 presents like; open, close, half way or vent.

The Touch Screen network can accept 32 devices. Devices are: Keypads, Window Actuators and Rain Sensors. Below is every possible configuration for the keypad network.

Keypads	Rain Sensors	Windows
1	0	30
1	1	29
1	2	28
1	3	27
1	4	26
2	0	30
2	1	29
2	2	28
2	3	27
2	4	26

If you want to control all your windows from one location the keypad is the best option.

Rain Sensors can also be connected and can control all windows or be zoned to control certain windows, refer to full functions of Rain Sensors for more information.

Wall Switch Network

A wall switch network is used typically to control a small amount of windows in a room with one quick press of a button (up to 30 windows). Most of the time the windows will be visible from the switch.
Function - The switch is a simple bell press type; one quick press; opens the window and the other button closes the window. Windows can be stopped at any point by pressing the any button again.

The standalone network can accept 30 devices. Devices are: Network Adaptors / Switches, Window Actuators and Rain Sensors. Below is every possible configuration for the standalone network.

Switches	Rain Sensors	Windows
1	0	29
1	1	28
1	2	27
1	3	26
2	0	28
2	1	27
2	2	26
3	0	27
3	1	26
4	0	26

Other options for wall switch network.

- Rain Sensors can also be connected to a wall switch network and will close upon receiving a rain signal.
- In some cases it's preferred to install multiple wall switches in one room to activate the same windows. This could be a large room i.e class room; and the windows can be activated from multiple locations.

Advanced Control

You can program any fire panel or 3rd party building management system (cbus) to control your windows. This is needed if you don't want a secondary controller in your building and would like all your building automation connected into one system.

Elevation Connections

Elevation Connection Information

Elevation should be connected by means of a "daisy chain" method. Ensure you provide this document to your electrician to ensure smooth implementation and connection.

A daisy chain connection may save you up to 240% on cabling instead of a typical star connection; Daisy chain connection is the same for Keypad or wall switch networks.

What is a daisy chain network?

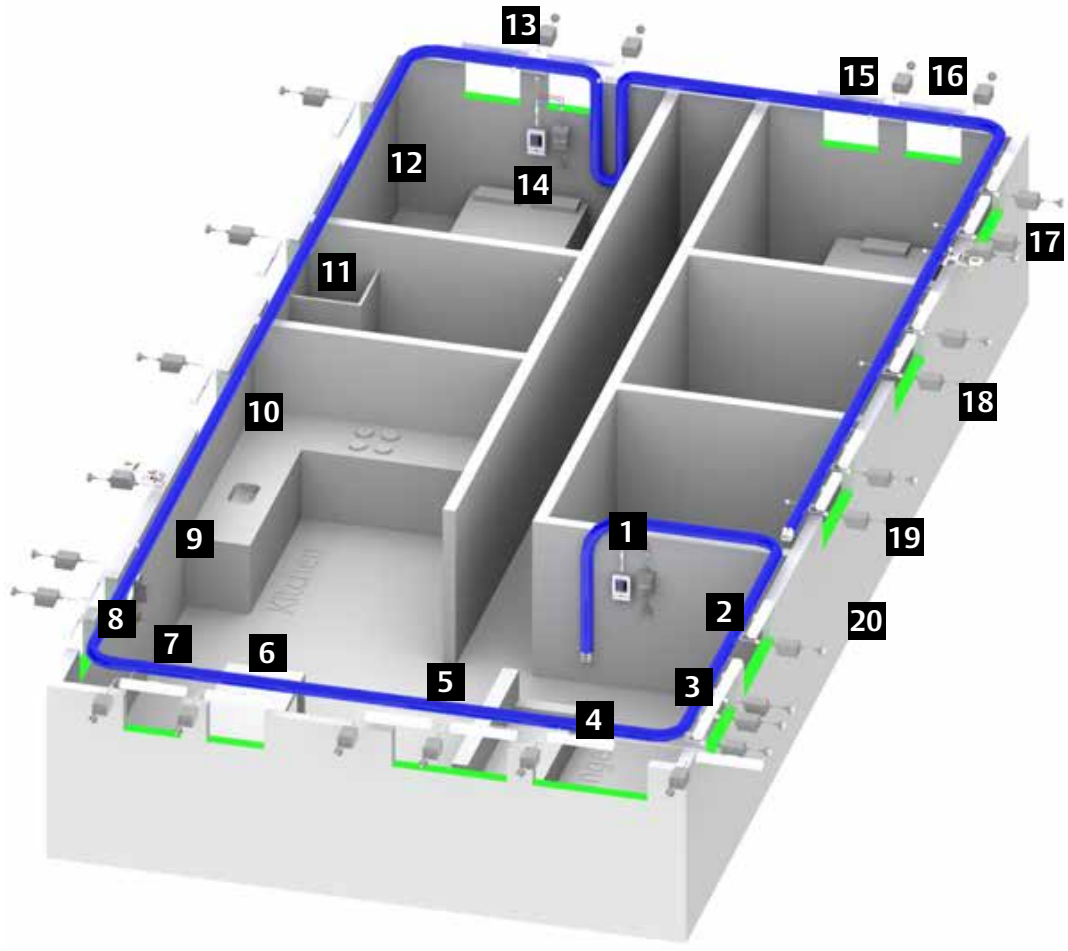
The Network will have a typical starting point as shown in the below diagram (point 1). The cable will continuously run to the next "point" 2,3,4,5 ... 13. These "points" can be window actuators, rain sensors or keypads. This can be seen below where the blue network cable is one continuous cable run and each "point" branches off this network. You may notice a loop to the second keypad (13), this is an example of how to extend the dropper cable.

Signal Cable requirements

It's required to run CAT5 or CAT6 cable for your network. Using this cable allows your network to be up to 300m long.

Power supplies

Are normally located in close proximity to the window actuator to minimise voltage drop. One EWAC-SM1500 has enough power to run 2 Window actuators simultaneously. Extending the power supply cables are possible however please ensure the cable gauge is large enough to withstand any voltage drop.



Touch Screen
Keypad Network

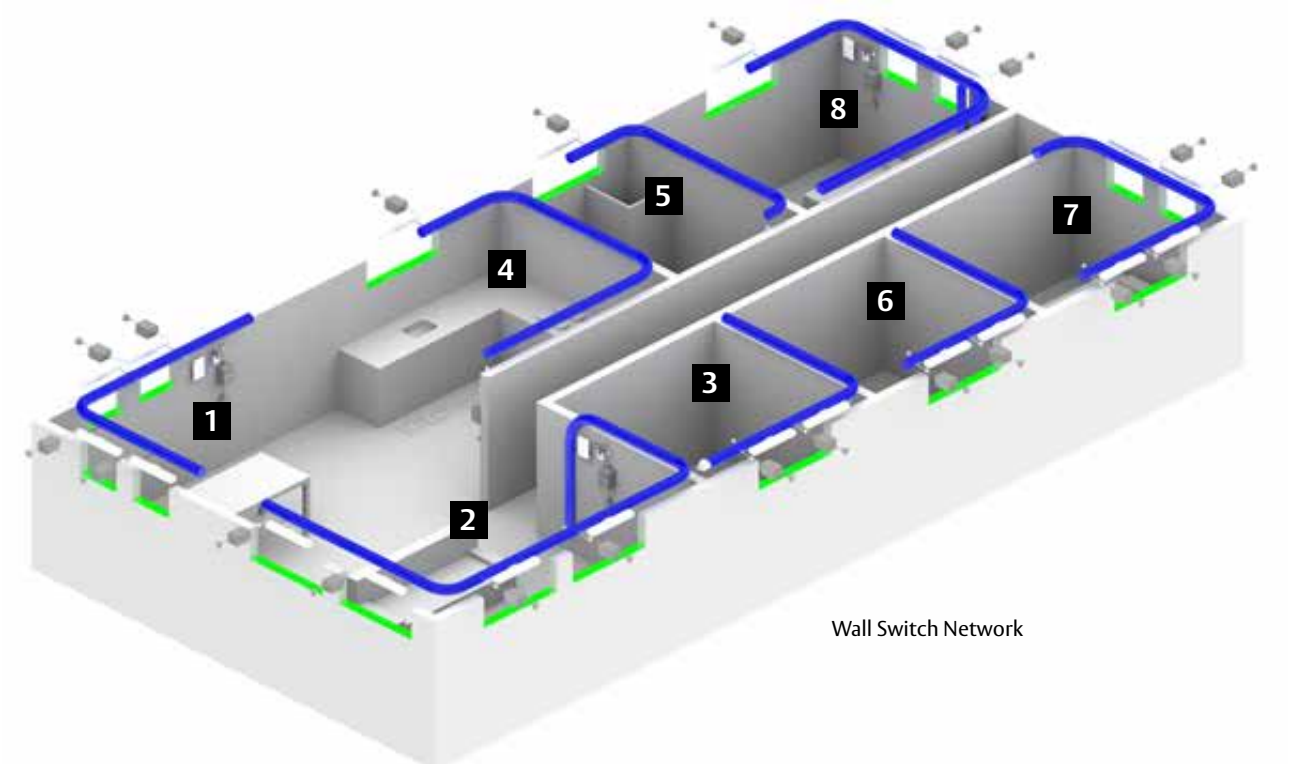
Elevation Connections

Wall Switch Network Cabling

The standalone network is no different to the keypad network. These are normally smaller networks and these should also be connected by means of a “daisy chain” method.

Each Network will have a typical starting point as shown in the below diagram. Some networks may only have 1 window and others may have 3-4 windows (max 30).

The below example is a home that has 8 small networks.



Wall Switch Network

Elevation Window Matrix

Lockwood's Elevation™ is an Electric Window Control System that can be configured to reflect the unique layout of any home or commercial building.

In order for Elevation to operate, it's important that you follow the matrix and restricted your chain according to the window size. This will also allow you to get tight window seal when closed.

Note: Always install pivot brackets provided to allow the actuator to sufficiently pivot.

Wide Windows

We can't guarantee the rigidness of the section Elevation will be installed on. For this reason windows wider than 900mm will need two locking points to create a tight seal (Meaning you need 2 actuators).

If you have prior knowledge that the section used is ridged enough to support one locking point and still provide a tight seal then proceed with 1 actuator. However ASSA ABLOY provides no undertakings of product suitability for applications with a sash width greater than 900mm.

Elevation Window Matrix

Chain Restrictions

Awning Window on Top Hinge / Pivot

For windows that are hung without stays ensure the chain is restricted as per the below table:

Sections highlighted in green only need 1 actuator and sections highlighted in red need two.

Matrix - Awning Top Hinge / Top Pivot

Assume Glass is between 3-12mm
Sash Width (mm)

Sash Height mm	500	650	900	901	1200	1500	1700	1900	2100	2400
<299	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
300	110mm	110mm	110mm	110mm	110mm	110mm	110mm	110mm	110mm	110mm
350	130mm	130mm	130mm	130mm	130mm	130mm	130mm	130mm	130mm	130mm
400	155mm	155mm	155mm	155mm	155mm	155mm	155mm	155mm	155mm	155mm
450	180mm	180mm	180mm	180mm	180mm	180mm	180mm	180mm	180mm	180mm
500	210mm	210mm	210mm	210mm	210mm	210mm	210mm	210mm	210mm	210mm
550	280mm	280mm	280mm	280mm	280mm	280mm	280mm	280mm	280mm	280mm
600	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
700	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
800	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1000	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1200	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1400	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1600	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1800	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm

Elevation Window Matrix

Awning Window on Interlock 4 Bar Stays

For windows that are hung with Interlock 4 Bar stays ensure the chain is restricted as per the below table:

Sections highlighted in green only need 1 actuator and sections highlighted in red need two.

For windows with 4 bar stays, follow the table below:

Matrix - Awning with 4 Bar Stay

Assume Glass is between 3-12mm
Sash Width (mm)

Sash Height mm	500	650	900	901	1200	1500	1700	1900	2100	2400
<299	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
300	220mm	220mm	220mm	220mm	220mm	220mm	220mm	220mm	220mm	220mm
350	280mm	280mm	280mm	280mm	280mm	280mm	280mm	280mm	280mm	280mm
400	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
450	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
500	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
550	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
600	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
700	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
800	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1000	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1200	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1400	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1600	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm
1800	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm	300mm

Note: Windows less than 300mm high cannot be catered for.

IMPORTANT Notes

- If sash width/height falls between column or rows always use the recommendation for the larger sash size.
- The window design and construction must provide sufficient rigidity to ensure that the sash and frame remain square.
- A single Elevation actuator holds the window closed at a single sash attachment point. ASSA ABLOY provides no undertakings of product suitability for applications with a sash width greater than 900mm.
- A pair of Elevation actuators holds the window closed at a two sash attachment points. It's important that the window design and construction must provide sufficient rigidity and completely seal when connected to two sash attachment points. These points need to be determined by the window system provider.
- The Elevation Actuator may be capable of handling large window sashes, its important you cross reference the capability of your stays and window system
- Shorter windows need to be **restricted** according to the guidelines above.

Applications outside of these factors or with sash sizes greater than those plotted should be verified by ASSA ABLOY on a case by case basis.

Lockwood is the leading brand in the Australian locking industry. With an established reputation for high quality products, this iconic brand provides a wide range of locking solutions to residential housing, commercial, semi-commercial, building and industrial application markets. Lockwood is supported by an extensive distribution and after-sales support network. Our customers include retailers, architects, trade and industrial personnel, locksmiths and security dealers.

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience.

ASSA ABLOY is represented in all major regions, in both mature and emerging markets, with leading positions in Australia, Europe and North America.

The Lockwood 25 Year Mechanical Warranty

Our belief that we manufacture the finest premium products available in today's market place is backed by the Lockwood 25 Year Mechanical Warranty, ensuring that Lockwood continues to keep Australians safe by delivering security and peace of mind.

For warranty terms and conditions, please visit **www.lockweb.com.au** or call **1300WARRANTY**

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