A comprehensive range of manual and electrically operated systems to provide natural ventilation or automated smoke control to a variety of window styles in timber, steel, aluminium or PVCu.

The manual system is used extensively in schools, libraries and other public buildings to control high level or difficult access windows.

The system can be used on most styles of windows and materials to operate individual or multiple sets of windows from a single operator. The connecting conduit can be bent around pillars, mullions and other obstacles in its path.

There is also a range of screwjack openers and winding poles to operate conservatory roof vents.

Electric window controls for single, group or zoned operation from manually operated switches or automated controls panels linked to sensors for everyday ventilation or smoke control requirements.

Numerous types of 24V dc and 230V ac actuators are available to operate most types of windows, louvres, roof lights and domes.
## Contents

### Manual
- Manual Systems 4
- T100&T150 6
- T250&T260 8
- T200 9
- T125 10
- Screwjacks & Poles 11
- Accessories 12
- Technical Data 14

### Electric
- Electric Systems 16
- ACK4 17
- C20 19
- Sintesi 20
- Powermaster 21
- Max 23
- Rack 24
- Dual Rack 25
- Double Rack 26
- SL60 27
- PL6 29
- ST70 30
- RRT 31
- Switches 32
- Tandem Panels 32
- Technical Data 33

### Smoke
- Smoke Control Systems 34
- VCS-1 Control Panel 35
- SVCS-1 Control Panel 36
- Purpose Made Panels 37
- Smoke Sensors 38
- Break Glass Switch 38
- Fireman’s Override Switch 38
- Fireman’s Key Switch 39
- Rain Sensor 39
- Wind sensor 39
- Thermostat 39
For single or group operation of high level windows. The chain opener can be fitted to most styles of aluminium, timber, or steel windows using the appropriate fixing brackets.

Controlled from a wall mounted operator connected via lengths of conduit and inner cable to the chain opener on the window. When the handle of the operator is turned the inner cable is driven forwards or backwards inside the conduit. The moving cable engages the cog wheel of the opener, driving the chain out to open the window.

Depending on height limitations, vents can be opened 250mm or 380mm, with suitable openers.

A very flexible system, as the conduit can be bent to go around pillars and other obstacles, using the special bending tool and fixed to the wall or framework with saddle brackets.

To allow for the forwards and backwards movement of the inner cable, a length of “spent travel” conduit, must be fitted at either end of the control path i.e. past the last chain opener and below the operator (except the T250 & T260 operators which have an integral “spent travel” tube).
Before ordering we need to know the following:

GENERAL INFORMATION - tick boxes below
1 Dimensions of opening sash? Width ...........mm Height ...........mm
2 Window material? PVC-U □ Timber □ Metal □ Other □
3 Type of hinge? Butt □ Friction □
4 Position of hinges? Top □ Side □ Bottom □
5 Direction of opening? Inwards □ Outwards □
6 Are the windows? Vertical □ In a pitch of roof □

LAYOUT INFORMATION - Please provide a sketch
Distance from operating handle location to the far end of last opening window? .................mm
Number of windows? .................. How are the sashes grouped? Individually □ Pairs □ Other □

SASH & FRAME DETAIL
Typical examples
To help specify the correct brackets for fixing to materials Timber, Aluminium and PVC-U please mark dimensions onto the drawings shown here. For PVC-U and Aluminium, the step (distance between face of sash and frame) is very important.

For safety reasons we recommend fitting side support stays to all bottom-hung windows.

Typical Styles of Window
- Side hung open out
- Horizontal pivot window
- Vertical pivot window
- Top hung open out
- Bottom hung open in
\textbf{Manual}

\textbf{T100 & T150 Chain Openers}

\textbf{T100}

The most popular type of window opener with 250mm travel. Can be used on most window styles and materials with the appropriate fixing brackets (see page 7). Available with zinc plated or stainless steel chain.

The T100 can control individual or multiple sets of windows from a single operator (see pages 8, 9).

\textbf{T150}

Similar to the T100 but with 380mm travel. The T150 cannot be used with the T250 operator. Available with zinc plated or stainless steel chain.

\textbf{Standard Colours}

- White (RAL 9010)
- Black (RAL 9005)
- Grey (RAL 9006)
Fitting Notes

T100
• For the full 250mm travel the vent must be 500mm high.

T150
• For the full 380mm travel the vent must be 900mm high.
• Travel on chain openers fitted to shallower windows must be restricted to 30% of vent height using T700 spring stops or T720 square nuts to shorten cable travel. All bottom-hung open-in applications require a minimum of 50mm head clearance.

PLEASE NOTE: For safety reasons we recommend fitting side support stays to all bottom-hung, open-in windows.

Accessories & Tools

- **T740 Narrow Fixing Plate**: For surface fixing the chain opener to aluminium windows. Available in white, black or grey.
- **T750 Wide Fixing Plate**: For surface fixing chain opener to PVCu windows. Available in white, black or grey.
- **T760 Angled Fixing Plate**: For surface fixing chain opener to timber window sills. Available in white, black or grey.
- **T850 Bottom-Hung Fixing Kit**: Set of frame and vent brackets for fitting chain openers to bottom hung, open-in windows. Available in white, black or grey.
Operators – T250 / T260

**T250**

The standard or “Midi” type operator with long metal case enclosing the “spent travel” conduit and cable. Supplied complete with handle.

**Please Note:** The T250 cannot be used with the T150 chain opener – Use the longer T260 operator.

**T260**

Similar to T250 but with longer body to use with the T150 chain opener.

**Standard Colours**

White (RAL 9010)
Black (RAL 9005)
Grey (RAL 9006)
Operators – T200 / T210 / T300

**T200**

Heavy duty, metal cased operator designed for multiple window operation beyond the capability of the standard T250 and T300 operators.
- Supplied complete with handle.
- Recommended for use with the SJ138600 screwjack opener.
- Available in white or black.

**T210**

Budget priced heavy duty, metal cased operator. Ideal for multiple window operation beyond the capability of the standard T250 and T300 operators.
- Supplied complete with handle.
- Available in white, black or grey.

**T300**

Small, metal cased operator for single or light multiple window control. Spent travel conduit will be exposed below the operator.
- Supplied complete with handle.
- Available in white, black or grey.
**Openers – T125 / T175 / T190 / SJ138600**

**T125, T126, T127**
Manual chain operator for low level top hung windows with T126 handle or lightweight roof vents with T127 eyelet and W3041 winding pole (see page 11).
Available in White, Black or Grey finishes.

**T175**
Use with the T250 or T300 operator to open/close bottom-hung, open-in windows, fitted with butt hinges. Minimum head clearance 25mm.
Available in White, Black or Grey finishes.

**T190**
Stainless steel telescopic fork drive to use with suitable operator to control banks of pivoting louvre blades.
Maximum travel 250mm.

**SJ138600**
Sill mounted screwjack to use with T200 or T210 operators to control roof vents.
Available in white finish only.

**Please Note:** For safety reasons we recommend fitting side support stays to all bottom-hung open-in windows.
Screwjacks & Poles – W3029 / W3030 / W3041

Screwjack opener available in 150mm, 200mm or 300mm sizes.
Available in polished lacquered brass or bright chrome finish.

Telescopic screwjack opener available in 250mm or 300mm sizes.
Available in polished lacquered brass or bright chrome finish.

Chrome or brass finished winding poles with wooden handles.
Available in 2.01m, 2.53m & 3.25m lengths.
Available in polished lacquered brass or bright chrome finish.
Accessories and Tools

**T270 Large Grip Handle**
Replacement large grip handle to suit all operators except T200. Available in white, black or grey.

**T275 Spare Handle**
Replacement handle to suit all operators except T200. Available in white, black or grey.

**T350 Rotary Junction Box**
Used to connect satellite drive system to main control. Available in white, black or grey.

**T400 Conduit**
Plastic covered metal tube with nylon inner liner. Used to connect operator to chain opener. Supplied in 3 metre lengths. Available in white, black or grey.

**T410, T411 Square Conduit**
Mill finished aluminium spent travel to use with the T720 brass nut when both drives of the T250 (T410) or T260 (T411) operator are used.

**T420 End Plug**
Plastic moulded plug to seal the open end of the conduit. Available in white, black or grey.

**T450 Inner Cable**
Helical steel cable which fits inside the conduit to drive the gearbox of the operator, chain opener or screwjack.

**T600 Saddle Bracket**
Frame Fix – Moulded plastic saddle bracket to fit conduit to window frame. Available in white, black or grey.

**T650 Saddle Bracket**
Wall Fix – Moulded plastic saddle bracket to fit conduit to wall. Available in white, black or grey.
**T700 Spring Stop**
Helical spring stop that can be threaded onto the end of the cable to restrict the travel of the chain opener/window opening.

**T720 Square Nut**
Brass nut used in conjunction with T410 / T411 square conduit when both ports of T250 or T260 operator are used.

**T740 Narrow Fixing Plate**
For surface fixing the chain opener to aluminium windows. Available in white, black or grey.

**T750 Wide Fixing Plate**
For surface fixing chain opener to PVCu windows. Available in white, black and grey.

**T760 Angled Fixing Plate**
For surface fixing chain opener to timber window sills. Available in white, black or grey.

**T800, T800M Conduit Connector**
Moulded plastic (T800) or Metal (T800M) collar and sleeve used to connect lengths of conduit. Available in white, black or grey.

**T850 Bottom Hung Fixing Kit**
Set of frame and vent brackets for fitting chain openers to bottom-hung, open-in windows. Available in white, black or grey.

**T900 Conduit Tool**
Tool used to form groove in the end of the conduit, enabling it to be located securely in the collar of the operator or chain opener.

**T950 Bending Tool**
Curved metal tool used to bend the conduit to the correct radius.
Minimum window height for full 250mm travel of T100 = 500mm
Minimum window height for full 380mm travel of T150 = 900mm
Travel on chain openers fitted to a window less than recommended must be restricted to 30% of the vent height using the T700 spring stops or T720 square nuts to shorten the cable run. Use only T200, T210, T260 or T300 operator with the T150 (380mm) chain opener.

For safety reasons we recommend fitting side support stays to all bottom-hung, open-in windows. For bottom-hung applications you must fit the T850 fixing kit (sold separately see page 13).

**Maximum Control Run**

**Operator**
- T200 – 30 metres
- T210 – 30 metres
- T250/T260 – 18 metres
- T300 – 18 metres

**“Spent Travel” Conduit**

To allow for the forward/backward movement of the inner cable a length of “spent travel” conduit must be fitted at either end of the control path i.e. past the last chain/screwjack and below the operator (except the T250 & T260 operators which have an integral “spent travel” tube).

<table>
<thead>
<tr>
<th>Type of Operator</th>
<th>Spent Travel Conduit</th>
</tr>
</thead>
<tbody>
<tr>
<td>138600 Screwjack</td>
<td>2.5m (for full 380mm travel)</td>
</tr>
<tr>
<td>T100 Chain Opener</td>
<td>0.3m</td>
</tr>
<tr>
<td>T150 Chain Opener</td>
<td>0.45m</td>
</tr>
</tbody>
</table>

LOAD = No. of chain openers + No. of bends in conduit

The above figures are based on a single bend in the conduit path. For each additional bend deduct 1 metre from the Vented Length total.

The figures used in these charts are based on windows with 4mm double glazed units fitted to butt hinges or free pivots, not friction stays. Please refer to our sales or technical department for advice if friction stays are fitted.
Single, group or zoned operated window control systems. From manually operated switches to automatic control panels, there is something for every type of natural ventilation or smoke control requirement.

A wide variety of 24V dc and 230V ac actuators to operate top, side, pivot and bottom-hung windows, louvres, roof vents and domes.
Before ordering we need to know the following:

Please note: Ancillary items such as electrical cable, fused spurs etc. are to be supplied by others.

**GENERAL INFORMATION** - tick boxes below

1. Number of windows?
2. Do you require?
   - 230v AC normal
   - 24v DC low voltage
3. Operation?
   - Switch
   - Wireless remote (fob)
   - Control unit c/w thermostat and rain sensor
   - Other
4. How are the sashes grouped?
   - Individually
   - In pairs
   - Other
5. Dimensions of opening sash?
   - Width
   - Height
6. Window material?
   - PVC-U
   - Timber
   - Metal
   - Other
7. Type of hinge?
   - Butt
   - Friction
8. Position of hinges?
   - Top
   - Side
   - Bottom
9. Direction of opening?
   - Inwards
   - Outwards
10. Are the windows?
    - Vertical
    - In a pitch of roof

**TYPICAL STYLES OF WINDOW**

For safety reasons we recommend fitting side support stays to all bottom-hung windows.
ACK4 Stroke Adjustment

Product Summary

- Chain-type actuator with adjustable travel.
- 7 positions from 100mm to 400mm.
- Strong die-cast aluminium body.
- Rigid or pivot fixing options and various brackets and extension pins to suit most applications (all sold separately).
- High protection degree IP55.
- A robust, centrally positioned double link stainless steel chain with an acoustic device that warns of any eventual incorrect installations.
- All electrical parts are double insulated and supplied with 1.5m cable.
- Available in white (RAL9010), silver (RAL9006) or black.
Various brackets available to suit most applications (see below).

Extension pins to suit:
- **E**: 30-40mm step
- **F**: 20-30mm step
- **G**: 10-20mm step

### Technical Specification

<table>
<thead>
<tr>
<th></th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voltage</strong></td>
<td>24V dc</td>
<td>230V ac</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>100-400mm</td>
<td>100-400mm</td>
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<td><strong>Thrust Force</strong></td>
<td>300N</td>
<td>300N</td>
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<td><strong>Absorbed Current</strong></td>
<td>1.35A</td>
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<td><strong>Speed</strong></td>
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<td><strong>Protection Class</strong></td>
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<td>IP66</td>
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<tr>
<td><strong>Wiring</strong></td>
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<td>3 Core</td>
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<td><strong>Colours Available</strong></td>
<td>White/Black/Silver</td>
<td>White/Black/Silver</td>
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<tr>
<td><strong>Limit Stop</strong></td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
<tr>
<td><strong>Safety Stop</strong></td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
</tbody>
</table>

### Optional Extras

Various brackets available to suit most applications (see below).

- **Standard Bracket**
- **Small Pivot Bracket**
- **Large Pivot Bracket**
- **Bottom hung fixing Bracket**
**Product Summary**

- Slim style actuator with strong double link chain.
- Selectable 250mm or 380mm stroke.
- Central chain position.
- Double insulated electrics.
- Supplied complete with top-hung bracket.
- Bottom-hung & sill mounting brackets available separately.

**Technical Specification**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
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<td>240/360mm</td>
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<td>Thrust Force</td>
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<td>Wiring</td>
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<td>Colours Available</td>
<td>White/Silver/Black</td>
<td>White/Silver/Black</td>
</tr>
<tr>
<td>Limit Stop</td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
</tbody>
</table>
**Sintesi**

**Product Summary**

- Aluminium bodied electric chain window opener with selectable 250mm or 380mm travel.
- 24V dc or 230V ac (Sintesi 2000) versions available.
- High speed operation on 230V ac version.
- Supplied complete with slide bracket for fixing to vertical leg section of frame profile.
- Bottom hung brackets available separately.
- Quick chain release system for easy window cleaning.
- Extended eyebolt available for timber or PVCU windows.

**Technical Specification**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24V dc (Sintesi)</th>
<th>230V ac (Sintesi 2000)</th>
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</thead>
<tbody>
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<td>Stroke</td>
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</tr>
<tr>
<td>Thrust Force</td>
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<td>180N (250, 90N (380))</td>
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<tr>
<td>Absorbed Current</td>
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<td>0.65A</td>
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<td>Speed</td>
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<td>40mm/s</td>
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<td>Protection Class</td>
<td>IP20</td>
<td>IP20</td>
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<tr>
<td>Wiring</td>
<td>2 Core</td>
<td>4 Core</td>
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<td>White/Silver/Dark Brown</td>
<td>White/Silver/Dark Brown</td>
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<td>Limit Stop</td>
<td>Micro-Switch</td>
<td>Micro Switch</td>
</tr>
<tr>
<td>Safety Stop</td>
<td>Electronic</td>
<td>Thermic</td>
</tr>
</tbody>
</table>
SuperMaster

Product Summary

- Heavy duty actuator with powerful thrust and strong, double link stainless steel chain.
- Ideal for heavy windows or windows requiring large opening.
- Choice of 450mm, 600mm, 800mm or 1000mm travel.
- High speed and virtually noiseless operation.
- Minimum window height when using Slide Brackets:
  - 900mm for 450mm stroke
  - 1200mm for 600mm stroke
  - 1600mm for 800mm stroke
  - 2000mm for 1000mm stroke
- Minimum window height when using Pivot Brackets:
  - 450mm for 450mm stroke
  - 600mm for 600mm stroke
  - 800mm for 800mm stroke
  - 1000mm for 1000mm stroke
- All types of fixing brackets supplied separately.

Standard Colours
- White (RAL 9010)
- Silver Anodised
- Dark Brown Anodised
**Technical Specification**

<table>
<thead>
<tr>
<th></th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voltage</strong></td>
<td>24V dc</td>
<td>230V ac</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>450/600/800/1000*mm</td>
<td>450/600/800/1000*mm</td>
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<tr>
<td><strong>Thrust Force</strong></td>
<td>400N (*300N)</td>
<td>400N (*300N)</td>
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<tr>
<td><strong>Absorbed Current</strong></td>
<td>2A</td>
<td>0.8A</td>
</tr>
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<td><strong>Speed</strong></td>
<td>20mm/s</td>
<td>23mm/s</td>
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<tr>
<td><strong>Protection Class</strong></td>
<td>IP20</td>
<td>IP20</td>
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<tr>
<td><strong>Wiring</strong></td>
<td>3 core</td>
<td>4 core</td>
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<tr>
<td><strong>Colours Available</strong></td>
<td>White/Dark Brown/Silver</td>
<td>White/Dark Brown/Silver</td>
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<tr>
<td><strong>Limit Stop</strong></td>
<td>Micro Switch</td>
<td>Micro Switch</td>
</tr>
<tr>
<td><strong>Safety Stop</strong></td>
<td>Thermic</td>
<td>Thermic</td>
</tr>
</tbody>
</table>

**Additional Information**

- **Dimensions**
  - Stroke: 450, 600, 800, 1000
  - Overall Length A: 574, 650, 764, 860
  - Body Height: 50, 50, 50, 50

- **Brackets**
  - Slide Bracket
  - Pivot Bracket
  - Bottom Hung Bracket
Powermaster

Product Summary

- Powerful 300N, 230Vac or 24Vdc actuator.
- Strong double link chain.
- Choice of 380mm, 660mm or 860mm (24Vdc only) strokes.
- Other strokes available subject to special order.
- Supplied complete with pivot brackets.
- Bottom hung and sill fixing brackets available separately.
- Supplied with 1.5m cable.

Technical Specification

<table>
<thead>
<tr>
<th></th>
<th>24V dc</th>
<th>230V ac</th>
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<tbody>
<tr>
<td>Voltage</td>
<td>24V dc</td>
<td>230V ac</td>
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<tr>
<td>Stroke</td>
<td>380/660/860mm</td>
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<td>Thrust Force</td>
<td>300N</td>
<td>300N</td>
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<tr>
<td>Absorbed Current</td>
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<td>Speed</td>
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<td>Wiring</td>
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<td>Limit Stop</td>
<td>Microswitch</td>
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<tr>
<td>Safety Stop</td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
</tbody>
</table>
Max

Product Summary

- Linear actuator for roof vents and domes.
- Load transmission by rigid spindle.
- High speed and virtually noiseless operation.
- High protection degree IP65.
- Standard unit supplied with end fixing bracket.
- Supplied with 1.5m cable.
- Slide bracket available as optional extra.
- Choice of 300mm or 500mm travel.

Technical Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Voltage</td>
<td>230V ac</td>
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<tr>
<td>Stroke</td>
<td>300/500mm</td>
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<tr>
<td>Force in push-pull action</td>
<td>450N/350N</td>
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<td>Absorbed Current</td>
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<td>Speed</td>
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<td>Protection Class</td>
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<td>Wiring</td>
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<tr>
<td>Colour</td>
<td>Silver</td>
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<tr>
<td>Limit Stop</td>
<td>Microswitch</td>
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<tr>
<td>Safety Stop</td>
<td>Thermic</td>
</tr>
</tbody>
</table>

End Bracket

413 (300mm) 613 (500mm)

Slide Bracket
**Product Summary**

- Linear type actuator for use on roof vents or domes.
- Low noise operation.
- High protection degree IP55.
- Supplied with 1.5m cable.
- Available with end brackets or slide brackets, to be ordered separately.
- Choice of 180mm, 350mm, 550mm, 750mm or 1000mm travel.

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**Technical Specification**

<table>
<thead>
<tr>
<th></th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
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<tbody>
<tr>
<td><strong>Voltage</strong></td>
<td>24V dc</td>
<td>230V ac</td>
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<tr>
<td><strong>Stroke</strong></td>
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<td>180/350/550/750/1000mm*</td>
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<td><strong>Thrust Force</strong></td>
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<td><strong>Speed</strong></td>
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<td><strong>Protection Class</strong></td>
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<td><strong>Wiring</strong></td>
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<tr>
<td><strong>Colour</strong></td>
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<td><strong>Limit Stop</strong></td>
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<td>Electronic</td>
</tr>
<tr>
<td><strong>Safety Stop</strong></td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
</tbody>
</table>
**Product Summary**

- Dual drive linear actuator and slave unit for large, wide roof vents and domes.
- Low noise operation.
- High protection degree IP55.
- Supplied with 1.5m cable.
- Require a pair of end brackets, and connecting rod, sold separately.
- Choice of 1000mm, 1500mm and 2000mm connecting rods.
- Available with 180mm, 350mm, 550mm, 750mm or 1000mm travel.

**Technical Specification**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>180/350/550/750/1000mm*</td>
<td>180/350/550/750/1000mm*</td>
</tr>
<tr>
<td>Thrust Force</td>
<td>650N (*350N)</td>
<td>650N (*350N)</td>
</tr>
<tr>
<td>Absorbed Current</td>
<td>1A</td>
<td>0.1A</td>
</tr>
<tr>
<td>Speed</td>
<td>8mm/s</td>
<td>8mm/s</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP55</td>
<td>IP55</td>
</tr>
<tr>
<td>Wiring</td>
<td>3 Core</td>
<td>4 Core</td>
</tr>
<tr>
<td>Colour</td>
<td>Silver</td>
<td>Silver</td>
</tr>
<tr>
<td>Limit Stop</td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
<tr>
<td>Safety Stop</td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
</tbody>
</table>
**Double Rack**

**Product Summary**

- Strong dual drive linear actuators for very heavy, wide roof vents and domes.
- Low noise operation.
- High protection degree IP55.
- Supplied with 1.5m cable.
- Require a pair of end brackets and connecting rod, sold separately.
- Choice of 1000mm, 1500mm and 2000mm connecting rods.
- Available with 180mm, 350mm, 550mm, 750mm or 1000mm travel

**Technical Specification**

<table>
<thead>
<tr>
<th></th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voltage</strong></td>
<td>24V dc</td>
<td>230V ac</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>180/350/550/750/1000mm*</td>
<td>180/350/550/750/1000mm*</td>
</tr>
<tr>
<td><strong>Thrust Force</strong></td>
<td>1300N (*700N)</td>
<td>1300N (*700N)</td>
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<tr>
<td><strong>Absorbed Current</strong></td>
<td>2A</td>
<td>0.2A</td>
</tr>
<tr>
<td><strong>Speed</strong></td>
<td>8mm/s</td>
<td>8mm/s</td>
</tr>
<tr>
<td><strong>Protection Class</strong></td>
<td>IP55</td>
<td>IP55</td>
</tr>
<tr>
<td><strong>Wiring</strong></td>
<td>3 Core</td>
<td>4 Core</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Silver</td>
<td>Silver</td>
</tr>
<tr>
<td><strong>Limit Stop</strong></td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
<tr>
<td><strong>Safety Stop</strong></td>
<td>Electronic</td>
<td>Electronic</td>
</tr>
</tbody>
</table>
Actuators – SL60

SL60

Product Summary

• Linear actuator for roof vents and domes.
• High protection degree IP55.
• High speed operation.
• Supplied with 1.3m cable.
• Supplied complete with slide brackets as standard.

Technical Specification

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24V dc</th>
<th>230V ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>180/230/350/550/750mm</td>
<td>180/230/350/550/750mm</td>
</tr>
<tr>
<td>Thrust Force</td>
<td>600N</td>
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<td>Absorbed Current</td>
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<td>18mm/s</td>
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<tr>
<td>Protection Class</td>
<td>IP55</td>
<td>IP55</td>
</tr>
<tr>
<td>Wiring</td>
<td>2 Core</td>
<td>3 Core</td>
</tr>
<tr>
<td>Colour</td>
<td>Silver</td>
<td>Silver</td>
</tr>
<tr>
<td>Limit Stop</td>
<td>Microswitch</td>
<td>Microswitch</td>
</tr>
<tr>
<td>Safety Stop</td>
<td>Thermic</td>
<td>Thermic</td>
</tr>
</tbody>
</table>
Product Summary

- Very strong pair of linear actuators for large/heavy windows, roof vents and domes.
- Provide maximum opening for roof vents, domes and windows.
- Supplied complete with tandem control panel.
- For smoke and heat exhaust systems (SHEVS) and natural ventilation.
- Supplied complete with brackets.

Technical Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24V dc</td>
</tr>
<tr>
<td>Stroke</td>
<td>300-1000mm</td>
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<tr>
<td>Thrust Force</td>
<td>1200N</td>
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<tr>
<td>Absorbed Current</td>
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<tr>
<td>Speed</td>
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<tr>
<td>Protection Class</td>
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<td>Colour</td>
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<tr>
<td>Limit Stop</td>
<td>Electronic</td>
</tr>
<tr>
<td>Safety Stop</td>
<td>Electronic</td>
</tr>
</tbody>
</table>
No more hot and stuffy conservatories. The 10 Amp panel automatically controls the operation of 230Vac Actuators fitted to conservatory roof vents to maintain a comfortable environment on those warmer days. There is an integral open / close switch and remote thermostat to control temperature and a rain sensor to close roof vents during rain storms.
Radio Control – RRT 230

**RRT 230**

230V ac Radio receiver with single channel transmitter to control a single actuator or single bank of actuators simultaneously. Can also be used with the PS24 Transformer Unit to operate 24V dc actuators (type of PS24 dependent on number of actuators).

**RRT KEY 2**

2 Channel Radio Transmitter to use with the RRT Unit to individually operate 2 actuators or 2 banks of actuators from a single key fob.

**RRT KEY 12**

12 Channel Radio Transmitter to use with RRT Unit to individually operate up to 12 actuators or 12 banks of actuators from a single key fob.
Switches / Transformer – PS24 / Tandem Panel – TP

**S50**

A choice of 1, 2, 3 or 4 gang switches with surface boxes.

10 amp rated, single pole, double throw (centre off) switch for 230V power supplies. Can be used with 24V dc systems linked to VCS panels or relay panels with their own power supplies. Can also be used with the PS24 Transformer.

**RRT KEY**

230V ac, 10Amp rated key switch. Supplied complete with 3 keys.

**PS24**

2 Amp (50Va) transformer to use with the S50 switch or RRT unit to operate 24V dc actuator/s.

(8 amp version also available by special order).

**TP24 / TP230**

Tandem Panel to control a pair of actuators fitted to a single vent.

24V dc or 230V ac versions available.
Calculating Force Requirements

\[ F = \frac{W \times S \times 10}{H} \]

- \( W \): Weight (KGS)
- \( F \): Force (newtons)
- \( S \): Stroke (mm)
- \( H \): Window height (mm)

Example

60 kg window / 1000mm tall / opening 500mm

\[ F = \frac{60 \times 500 \times 10}{1000} = 30 \times 0.5 \times 10 \]

\[ F = 150 \text{ Newtons} \]

Cable Requirements

General electric installation cable*. The cross-sectional area of which must be calculated to ensure there is not a voltage drop that exceeds 2V at any point from control panel/switch to actuator.

- 24V actuators require 2 core & earth**
- 230V actuators require 3 core & earth***

* FP200 or equivalent where required
** Blue +- Brown -+ polarity reversal
*** Blue/Grey neutral, black open, brown close, green/yellow (where fitted) earth.

Installation of cabling and termination should be in accordance with BS7671 Ver 17.
Before ordering we need to know the following:

QUESTIONS ABOUT THE SYSTEM
1. What specification/products have been asked for?
2. How many windows are to be controlled?
3. Where are the window/s located? i.e. stairwell etc.
   - please provide a floor plan with windows clearly indicated
4. How is the system to be operated? i.e. connected to an existing building fire alarm system*
5. Are any additional inputs required? i.e. smoke detectors

QUESTIONS ABOUT THE WINDOWS
1. What is the window material?
   - PVC-U
   - Timber
   - Metal
   - Other

2. Dimensions of windows?
   - Width \[ \text{mm} \]
   - Height \[ \text{mm} \]

3. Sash and frame details with dimensions would be useful
   - see drawings shown.

4. Position of hinges?
   - Top
   - Side
   - Bottom

5. Direction of opening?
   - Inwards
   - Outwards

6. Are the windows?
   - Vertical
   - In a pitch of roof

*Stand alone or interlinked smoke detector not forming part of a building fire alarm system i.e. control panel, detectors etc. are not suitable for linking to a smoke control panel.

Note: These points are intended to serve as a guide only and should not be considered as definitive. No responsibility can be accepted for errors or omissions.

TYPICAL STYLES OF WINDOW

For safety reasons we recommend fitting side support stays to all bottom-hung windows.
• Single Zone 10Amp 24V dc Control Panel.
• 72-hour battery back-up on mains failure.
• 300mm x 200mm x 150mm IP65 steel enclosure.
• Sealed lead acid batteries.
• Auto cut off to protect batteries.
• Relay to provide volt free fault indication.
• Close-Auto-Open Function. Front of panel keyswitch to control open, close function of actuators/vents (full override priority).
• Facility to connect smoke heads to automatically reset once smoke has cleared.
• Variable opening of vents option available as special order.
• Multi-Zone versions available by special order.

Inputs for:
• Fire alarm signal
• Break glass call points
• Smoke detectors
• Heat detectors
• BMS
• Fireman’s override switch
• Thermostat
• Rain sensor
• Wind sensor (subject to special order)
Panel – SVCS-1

Smoke Panel – SVCS-1

SVCS-1

- Single Zone 2Amp or 2-10Amp 24Vdc Control Panels.
- When installed correctly are compliant with EN12101-10.
- 72 hour battery back up on mains failure.
- 300mm x 200mm x 150mm IP65 steel enclosure.
- Sealed lead acid batteries.
- Auto shut down to protect batteries (open vents to fail safe condition first).
- Relay to provide volt free fault indication (when not used for auto-reset feature).
- Open circuit cable detects power supply failures, removal of batteries etc (code fault signal).
- Auto-test – Front of panel keyswitch enables testing and opening and closing of all actuators/vents connected.
- Facility for smoke heads to be automatically reset.
- Multi-Zone versions available by special order.

Inputs for:
- Fire alarm signal
- Break glass call points
- Smoke detectors
- Heat detectors
- Fireman’s override switch
- Thermostat (subject to special order)
- Rain sensor (subject to special order)
- Wind sensor (subject to special order)
Purpose Made Panels

Purpose made, single or multi-zone panels which can be designed and manufactured for most smoke control or natural ventilation requirements.
Smoke Sensors / Break Glass / Fireman’s Switch

**Smoke**
Smoke Sensor and Sounder base.

**SSS**
Smoke Sensor and base.

**SS**
Smoke Sensor and base.

**BG1/S**
Break glass call point (smoke).

**BG1/FOS**
Fireman’s Override Switch (smoke).
**Fireman’s Switch / Sensors / Thermostat**

- **BG2/F05**: Fireman’s override keyswitch (smoke).
- **RS1**: Rain Sensor
- **WS1**: Wind Sensor
- **TS1**: Thermostat