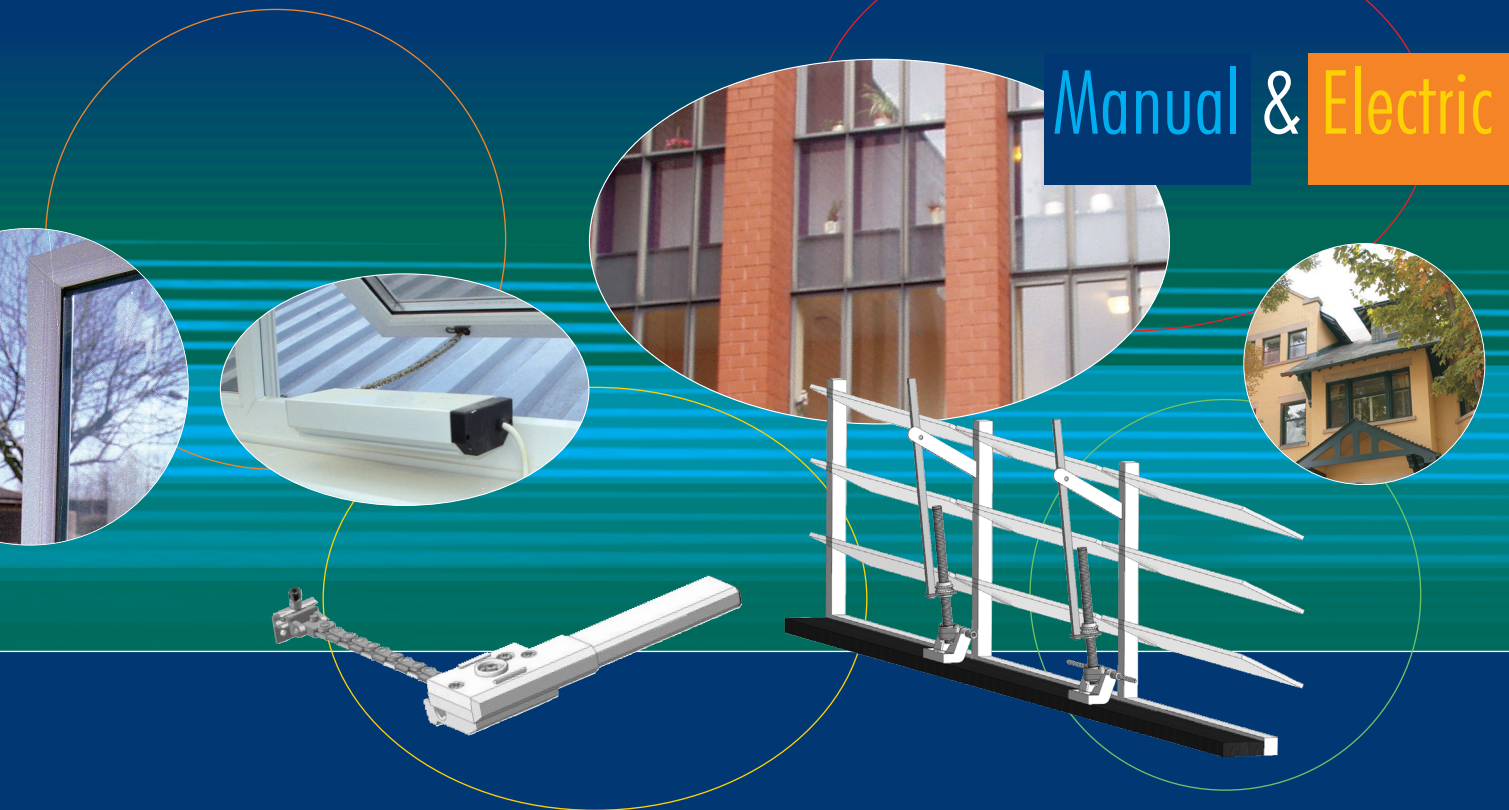


Manual & Electric



Window Control Systems

More than just Suppliers of Hardware & Accessories for Windows & Doors

Remote Controlled Window Systems

COMPANY PROFILE

Developments in the window industry since Building Profiles was founded in 1968 have been exceptional. Both basic frame materials and design concepts have pushed the innovation envelope wider. Even the glass substance itself is no longer simply glass. During this time the company policy has been and still is to recognise these changes and support manufacturers of window fittings through the medium of distribution.

Probably the oldest of the independent companies supplying accessories, Building Profiles is still very much a family run business. The success of the company has always been based on a real desire to provide an efficient genuine service supplying a wide range of products to an equally wide range of customers.

In 1998 we introduced a fabrication cell for the production of purpose made fixed louvre grilles and a complimentary range of extruded ventilation systems.

Meanwhile, our stocks of components and fittings cover the varied requirements of the window industry: new build, refurbishment or routine maintenance.



MANUAL & ELECTRIC

CONTENTS

Introduction to Manual Remote Control	1
Product Codes – Manual	2
Window Pulls	4
Operating Poles	5
System Guide	6
Manual Chain Openers	8
Applications & Accessories	10
Locking Opener	11
Operators	12
Screwjacks	14
Linear Drives	16
Transmission Accessories	17
Introduction to Electric Remote Control	18
Systems Diagrams	19
Product Codes – Electric	20
LM Motors & Accessories	22
EM Motors & Accessories	24
FM Motors & Accessories	26
M2 Linear Drive Motors & Accessories	28
Echo Chain Motors	30
Control Panels & Accessories	32
LON Works Systems	35
MZ Control Panel: Series 2	36
Smoke Dampers & Roof Lights	37

It is our policy to continually review products and details, whilst every care has been taken to ensure the contents of this brochure are accurate E&OE.



BS EN ISO 9001:2000 Certificate No. 5227

MANUAL

REMOTE CONTROL CONSIDERATIONS

Remote window controls in its various forms have been supplied by **BPL** for almost twenty years. We have gained a considerable understanding of the systems and their limitations and are on hand to offer advice and guidance especially to those unfamiliar with the principles of cable control operation.

Building Profiles manual window control systems feature a comprehensive range of economical, quality built products to operate high level or inaccessible windows. Single or multiple vents can be opened and closed from a single operator depending on the specification of the window(s) and the system selected.

When considering a cable driven installation, the installer should appreciate that pulling a cable through the system has a more powerful effect than pushing it. The general rule, for example, is to arrange for the cable to be pulled to open butt hinged windows and pushed on windows with slide stays. Naturally, this code of practice assumes that all hinge points are as friction free as possible. The freedom of the cable moving inside the conduit is paramount. This fairly obvious fact is sometimes overlooked with disappointing results. Sash & casement weight are the prime consideration in any system. However, weight is not the only consideration when specifying a system. Every push point, bend in the cable, junction box and metre run, will increase the load applied to the operator as it tries to moves the cable along its confined run.

It is important when designing this type of installation to avoid overloading the effort required to get things moving. The fewer obstructions the cable encounters, the more successful the installation. Introducing an extra operator to reduce a run length and its workload may be an additional cost, but ultimately, this could avoid extra time on site desperately trying to get a borderline arrangement working satisfactorily. In other words even the **Quick Line** system, effective as it is, has to comply with the laws of physics.

There is a point on some large or potentially complex installations, where the use of electric motors becomes a more cost efficient alternative for controlled natural ventilation. The **Echo** range of economic 230V actuators (see pages 30 & 31) could result in less labour intensive site work and ultimately a more competitive solution to your remote control requirements. Our sales desk will happily quote for both.

INTRODUCTION



Tel: (01789) 414044
Fax: (01789) 415273



Tel: (01789) 414044
Fax: (01789) 415273

Page 4

WP/24 600mm (24") window pull PC white	RC0560
WP/36 900mm (36") window pull PC white	RC0561

Page 5

RW76/S pole hook satin anodised silver	MC0420
SJP15 operating pole polished brass	RC0556
No16 1.5 – 3.0m (5' – 10') telescopic operating pole satin anodised silver	RC0555

Page 8

F300A 250mm chain PC white	RC0251
F300A 250mm chain PC black	RC0252
F300A 250mm chain PC grey	RC0253
F350A 380mm chain PC white	RC0254
F350A 380mm chain PC black	RC0255
F350A 380mm chain PC grey	RC0256

Page 9

F300B 250mm chain PC white	RC0677
F300B 250mm chain PC black	T.B.A
F300B 250mm chain PC grey	T.B.A
F350B 380mm chain PC white	T.B.A
F350B 380mm chain PC black	T.B.A
F350B 380mm chain PC grey	T.B.A

Page 10

FP10 'Quickfit' surface mounted fixing plate PC white	RC0710
FP10 'Quickfit' surface mounted fixing plate PC black	T.B.A
FP10 'Quickfit' surface mounted fixing plate PC grey	T.B.A
FP15 wide surface mounted fixing plate PC white	RC0715
FP15 wide surface mounted fixing plate PC black	T.B.A
FP15 wide surface mounted fixing plate PC grey	T.B.A
Unimount bracket for vertical fixings PC white	RC0038
F608 bottom hung kit PC white	RC0705
F608 bottom hung kit PC black	RC0706
F608 bottom hung kit PC grey	RC0707

Page 11

F200 locking opener PC white	RC0660
-------------------------------------	--------

Page 10

F100 operator with white plastic cover	RC0614
F100 operator with black plastic cover	RC0621
F920 operator with white plastic cover	RC0644
F920 operator with black plastic cover	RC0656
F920 operator with grey plastic cover	RC0652
MiniMax operator with white plastic cover	RC0625

Page 13

F100M operator with white metal cover	RC0617
F920M operator with white metal cover	RC0647
F920M operator with black metal cover	RC0662
Maxi operator with white metal cover	RC0505

Page 14

714661 louvre screwjack opener PC white	RC0445
714662 louvre screwjack extension arm	RC0448
138617 250mm screwjack for BH & CP applications PC white	RC0425
138600 380mm screwjack for TH & CP applications PC white	RC0438

Page 15

No10 325mm pole operated screwjack bright chrome plated	RC0550
SJ2 330mm pole operated screwjack polished brass	RC0546
SJ1 180mm pole operated screwjack polished brass	RC0545

Page 16

F840 700mm linear drive	RC0580
F850 1000mm linear drive	RC0585
F860 1300mm linear drive	RC0590
F820 250mm fork & swivel drive	RC0575
F601 conduit connector white plastic	RC0785
F601 conduit connector grey plastic	RC0790
F601 conduit connector black plastic	RC0795

Page 17

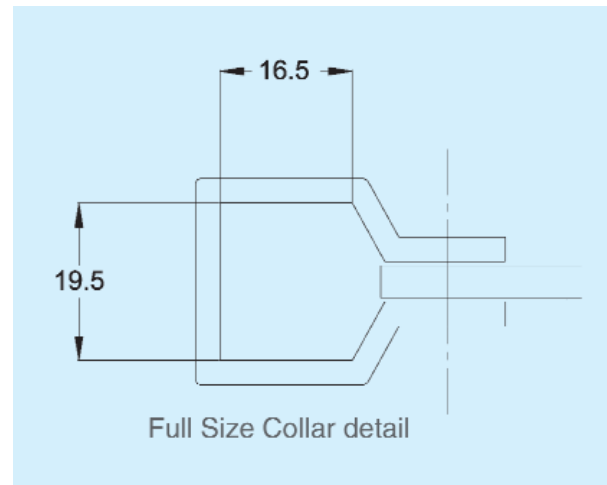
F111 conduit white	RC0730
F111 conduit grey	RC0735
F111 conduit black	RC0740
F112 end plug white	RC0820
F112 end plug grey	RC0825
F112 end plug black	RC0830
F121 conduit connector white	RC0787
F121 conduit connector grey	RC0788
F121 conduit connector black	RC0789
F617 550mm square tube PC white	RC0840
F618 square nut	RC0855
205690 three part metal conduit connector PC white	RC0055
205690P three part plastic conduit connector white	RC0054
F400 junction box with white plastic cover	RC0800
F601 conduit connector white plastic	RC0785
F601 conduit connector grey plastic	RC0790
F601 conduit connector black plastic	RC0795
Conduit tool	RC0060
F604 cable	RC0725
F600 bending former	RC0835
F619 conduit saddle for frame fixing white	RC0760
F619 conduit saddle for frame fixing grey	RC0765
F619 conduit saddle for frame fixing black	RC0770
F613 conduit saddle for masonry fixing white	RC0745
F613 conduit saddle for masonry fixing grey	RC0750
F613 conduit saddle for masonry fixing black	RC0755
F627 operator support	RC0640
F609 spring stop	RC0815

REMOTE CONTROL ... brings the out of reach – into reach!



The problem with casement window handles

Whether it be the open out single point with closing wedge arrangement or a sophisticated multi-point system, the chances are that the fitting or mechanism that locks the window is driven by a traditional rotating lever. Under normal circumstances this is fine, but occasionally the casement will be a fanlight in a kitchen that is over the sink or, it's in the lounge above a settee or some other bulky furniture. Cockspur handles have even been fitted to roof lights!



WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 2 & 3

WP/24 & WP/36 WINDOW PULLS

The **BPL** window pull is far from hi-tech but it certainly has a role to play in today's modern world. Manufactured in light aluminium, the WP series is designed to provide the simplest solution to those difficult to reach situations. Available in 600mm & 900mm lengths, with an end collar (illustrated above) to accommodate most conventional levers, the window pull will leisurely open most of these 'out of reach' windows.

In anticipation of possible resistance from little used casements, or that the homeowner may be frail or disabled, the window pull incorporates an additional arm that folds out to provide extra leverage.

Non standard lengths are available subject to individual requirements and minimum order quantities.



Photo courtesy of Studley Conservatories



POLES APART ...

Many high level windows are hinged on the bottom and open out into the room. These casements are more often or not, held closed by a single spring catch or alternatively two catches linked together with a coupling or tandem bar. This type of spring catch usually incorporates a ring for pole operation. Alternatively, casements fitted with folding openers or cam stays are also often situated beyond arms reach. Again, these fittings will feature a locating ring to accommodate a hook.

For reference, both spring catches and folding openers can be obtained from our central warehouse. For more information on these products, please contact our sales desk on (01789) 414044.

The **RW76/S** pole hook is especially designed to hook into the locating ring on this type of window fitting. Normally, the **RW76/S** is mounted on the end of a standard Ø22mm broom handle or timber dowel and secured with a single No 8 x 20mm screw. Standard finish is satin anodised aluminium.



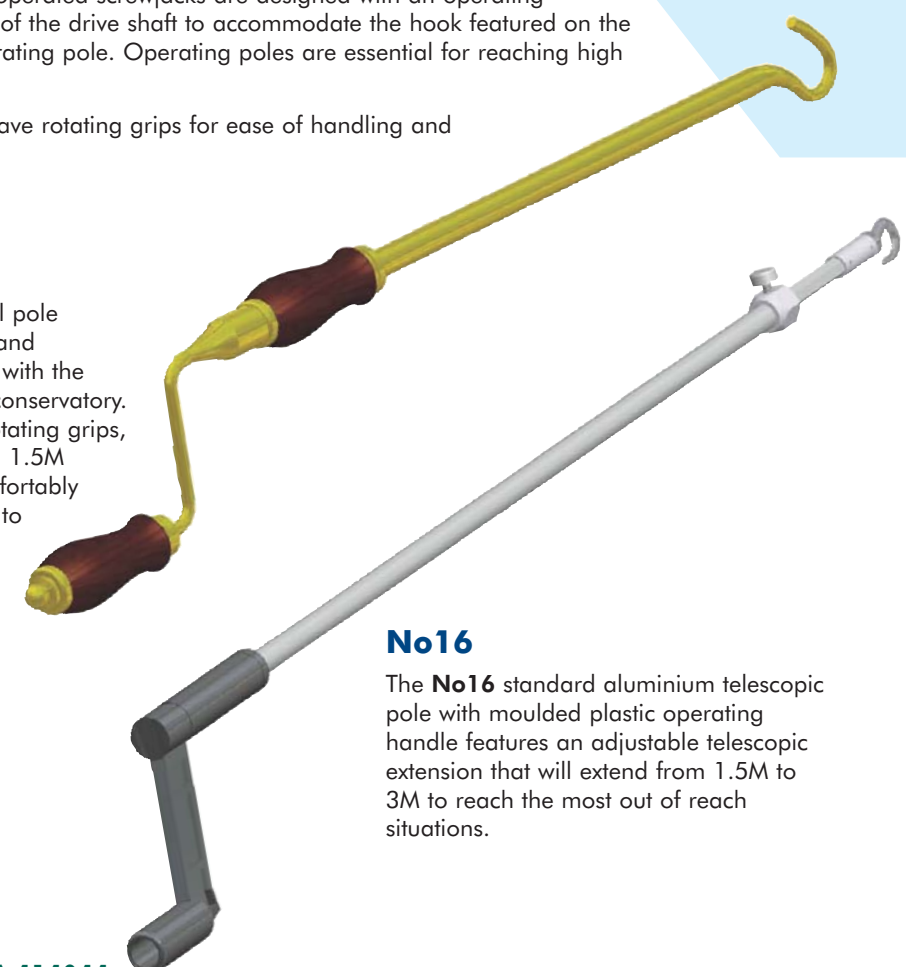
ROTATING OPERATING POLES

Screwjacks operate on a worm drive principle that produces a very powerful low geared movement requiring many revolutions to fully open high level roof lights or casements. With this in mind, pole operated screwjacks are designed with an operating ring situated at the end of the drive shaft to accommodate the hook featured on the business end of an operating pole. Operating poles are essential for reaching high level installations safely.

Poles supplied by **BPL** have rotating grips for ease of handling and increased efficiency.

SJP15

The **SJP15** is a practical pole manufactured in brass and modelled to harmonise with the classic Victorian styled conservatory. Fitted with hardwood rotating grips, the handsome standard 1.5M operating pole will comfortably access screwjacks fitted to roof lights on normal domestic installations and can also be supplied in special lengths if required.



No16

The **No16** standard aluminium telescopic pole with moulded plastic operating handle features an adjustable telescopic extension that will extend from 1.5M to 3M to reach the most out of reach situations.

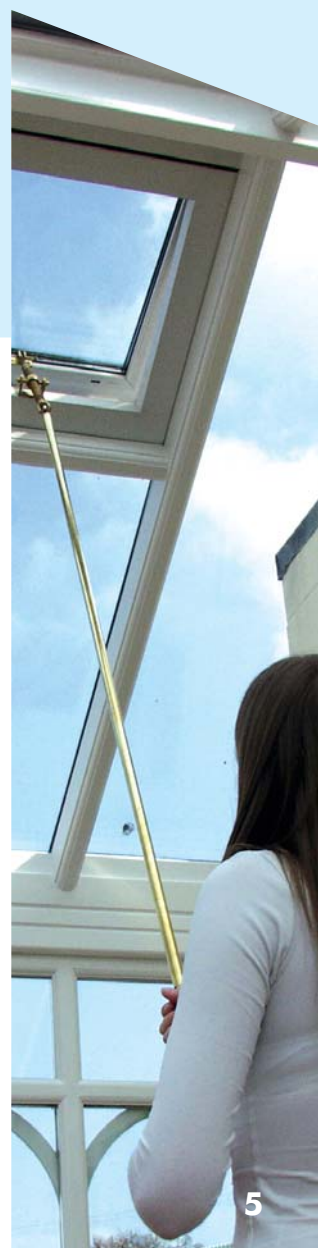


CHART GUIDE TO SELECT SUITABLE ACTUATOR (OPENER)

The guide refers to systems driven by a continuous steel cable linking the operator (handle) to each opener (actuator) or push point. The cable is 'over wound' with a helix wire that engages into drive wheels located within the opener and operator mechanism. The cable is pushed or pulled along nylon sleeved conduit runs by turning the drive wheel in the operator by way of its lever handle. When activated, the cable turns the drive wheel inside the actuator, which opens or closes the frame. The conduit runs are formed around the building contours using a special bending tool. Be as economic as possible with bends as they increase friction between the moving cable and sleeve, which could reduce the maximum number of opening frames per operator.

The guide is to help you select the most suitable system for your application, this, and other reference points in this brochure should help you provide efficient installations.

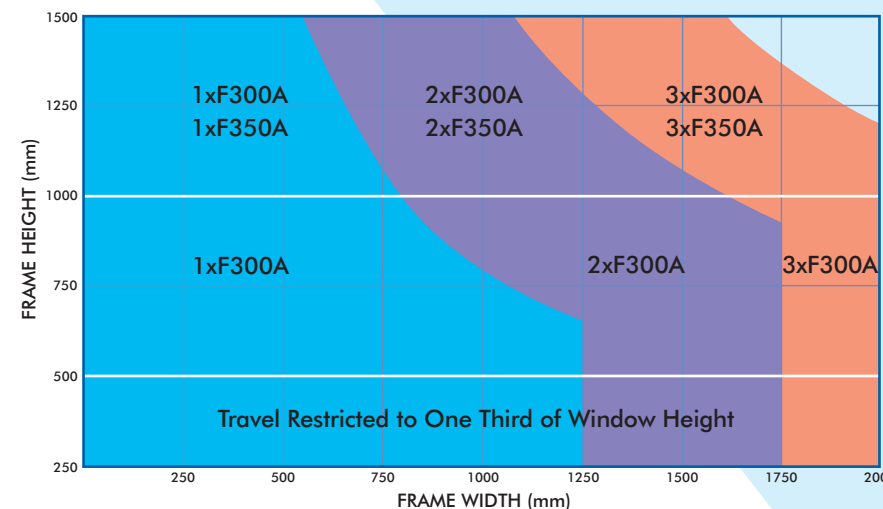
WINDOW TYPE	Chains	Locking Opener	Screwjack	Fork Drive	Fork & Swivel
TH Top Hung	F300A		138600*		
	F350A				
SH Side Hung	F300A				
HP Horizontal Pivot	F300A	F200	138600*		
	F350A				
VP Vertical Pivot	F300A				
BH Bottom Hung (Open in)	F300BH	F200	138617*		
	F350BH				
HS Horizontal Sliding				F840	
VS Vertical Sliding				F840	
Louvres			714661*		F820

CHART GUIDE TO SELECT SUITABLE OPERATOR (HANDLE)

OPERATOR	F100	F920	*MiniMax	*Maxi
F100				
F920				
*MiniMax				
*Maxi				

*Quick Line compatible products

CHAIN SELECTOR GUIDE



Suggested number of actuators per casement frame*

Unless severely restricted, chain openers are not recommended for moving frames with sides adjacent to the hinge side of less than 350mm. The F350A and F350BH will also need to be restricted in frames less than 1000mm high. Although window size plays an important part in deciding the number of chains required to operate the casement, additional chains to attain an effective perimeter seal should also be a consideration.

*This chart is intended as a general guide only.

MANUAL OPERATOR SELECTION CHART

This table is intended as a general guide to assist in selecting the appropriate window operator for your control line.

The Factor level can be calculated as follows: **FACTOR = Number of Actuators + Number of 90° Bends**

OPERATOR	FACTOR	Maximum recommended cable length*				
		5	10	15	20	25
F100 F920	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
+MiniMax	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	+Maxi	17				
18						

*Reduce maximum recommended cable run approximately one metre for every bend in the conduit.

+Quick Line compatible products

Maximum Cable Runs

F100 & F920	18 Metres
MiniMax	26 Metres
Maxi	30 Metres

IMPORTANT: The above recommendations assume that all frames are vertical, fitted with butt hinges and free of friction devices. Allowances must be made for pivoting windows and windows fitted with friction stays. If in doubt, refer to our technical sales desk.

MANUAL CHAIN OPENERS

MANUAL

MANUAL

MANUAL CHAIN OPENERS

F300A & F350A TOP HUNG APPLICATION

Quick Line chain openers are predominantly all metal assemblies manufactured from substantial zinc castings and aluminium extrusion. The chain itself is designed to remain rigid when extended and secured to the moving window frame.

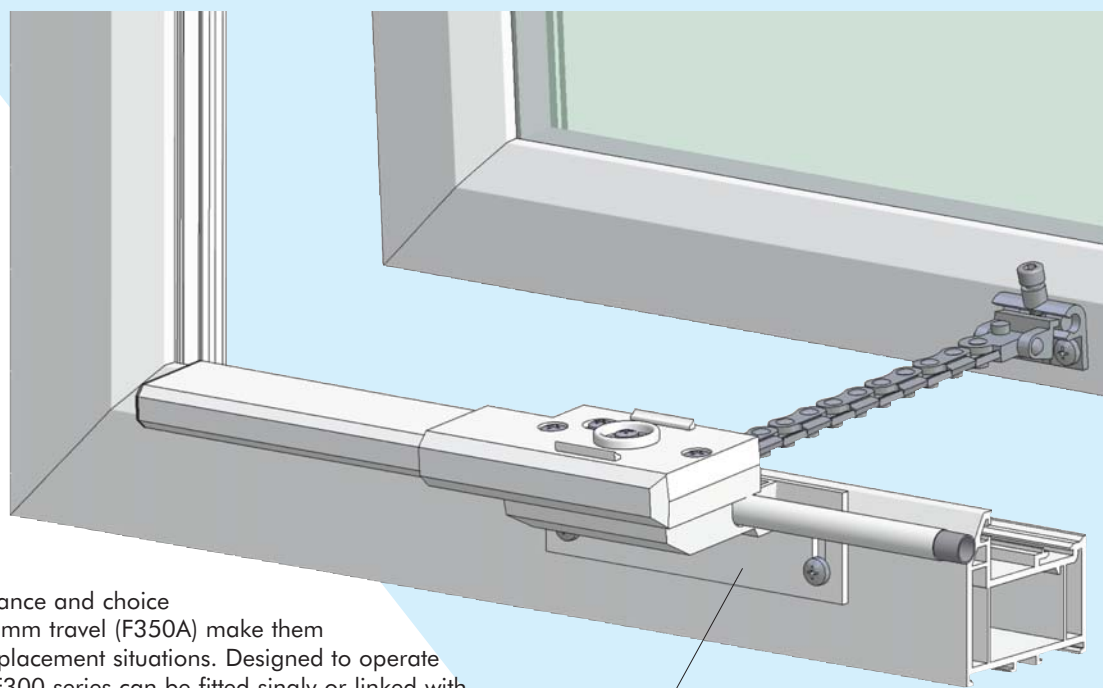
These compact actuators are easily the most popular window openers in the range.

Their neat inconspicuous appearance and choice of 250mm travel (F300A) or 380mm travel (F350A) make them very versatile in both new and replacement situations. Designed to operate hinged or pivoting windows the F300 series can be fitted singly or linked with additional chain openers, to operate a bank of windows from a single operator.

Generally, frames wider than 1200mm should be fitted with a pair of chain openers.

A selection of fixing plates and brackets are available for most window profiles.

(See page 10)



Optional FP15 fixing plate

F300B & F350B CHAIN OPENERS FOR BOTTOM HUNG APPLICATIONS

These chains are designed to open bottom hung windows that open inwards and require the F608 bottom hung fixing kit to complete the installation.

The F300BH & F350BH incorporate an extra plate fitted to the drive box to enclose the drive sprocket. This is to keep the sprocket captive when fitting the box to the head of the outer frame of the window. The special brackets F610 & F605 (page 10), in the F608 fixing kit, are necessary to provide a suitable descending angle or path for the chain. Minimum distance between soffit and inward moving frame 50mm.

Details of special brackets are shown on page 10.

NOTE: For safety reasons we strongly recommend fitting side supports to all bottom hung casements. A range of supports and restrictors are available. Contact our sales desk on (01789) 414044 for further details.

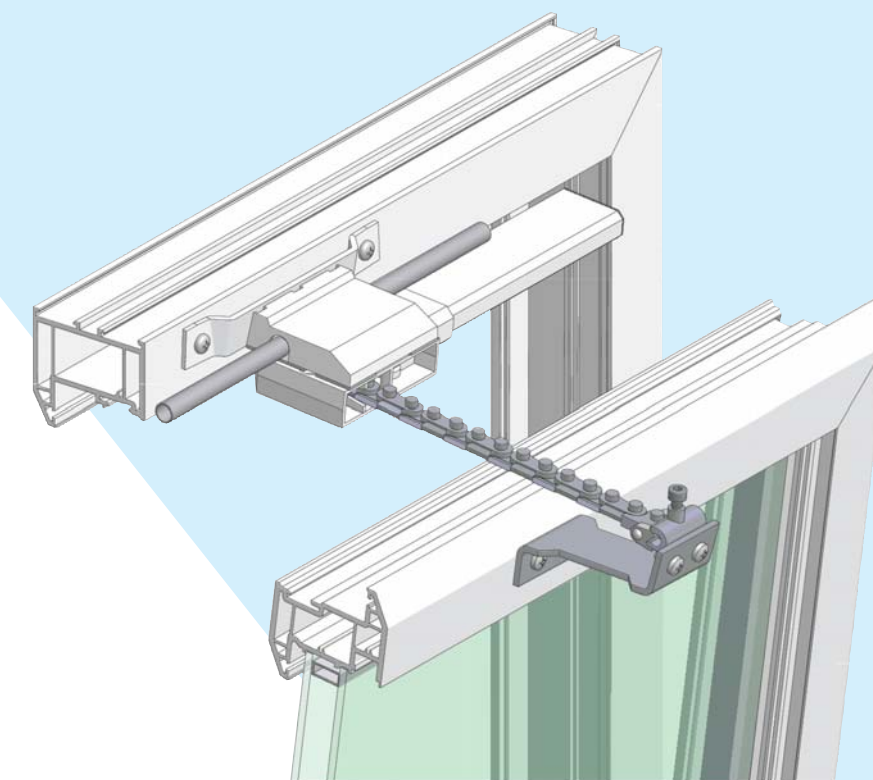
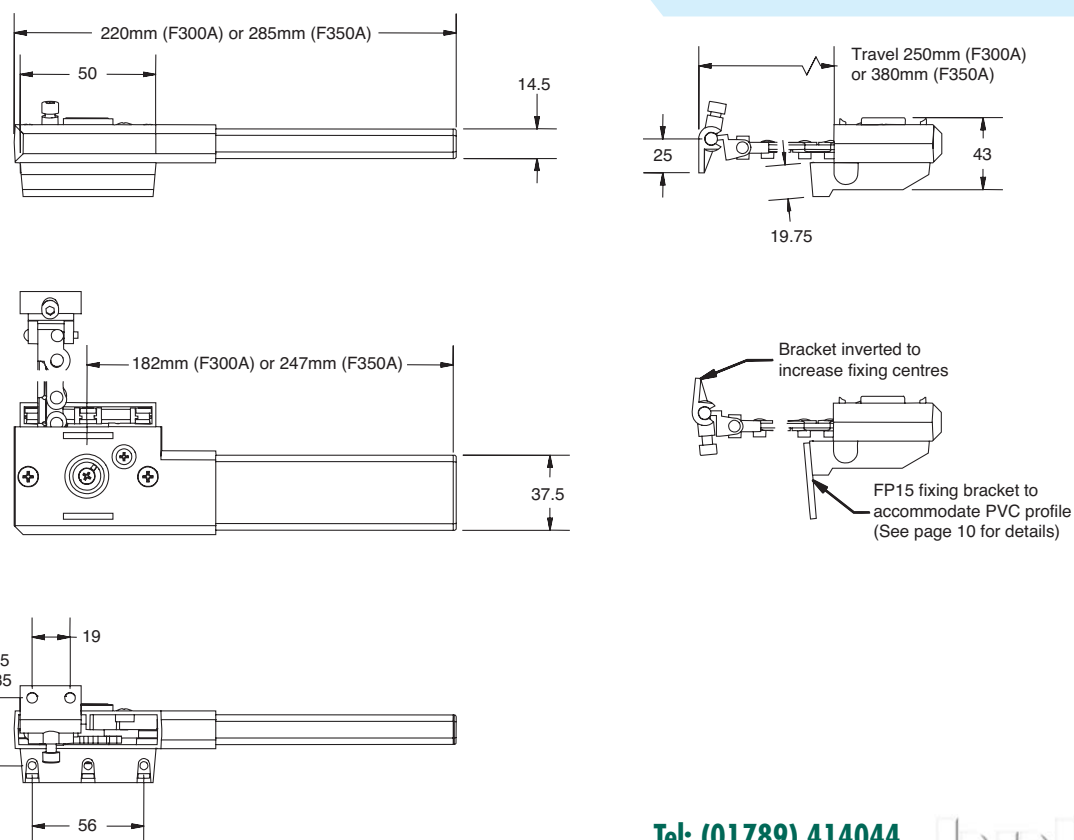


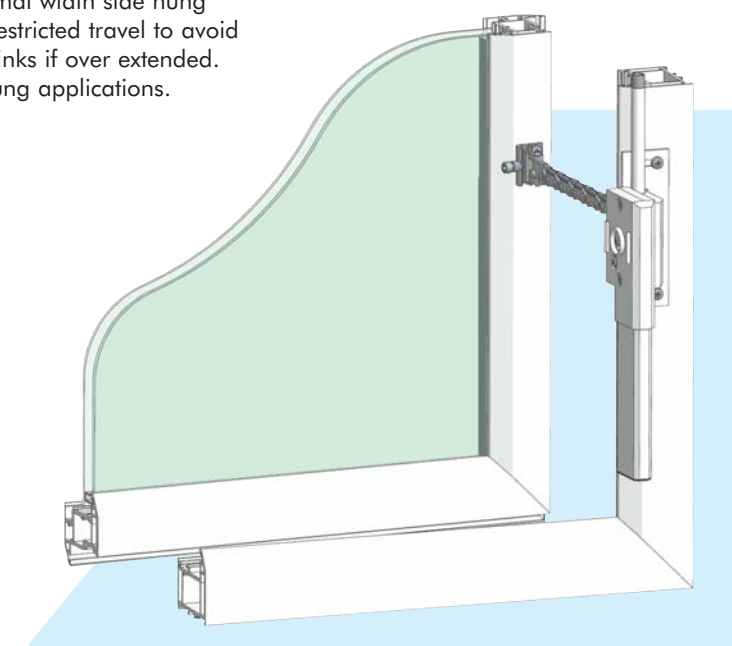
Illustration shows F300B c/w F608 fixing kit



F300A SIDE HUNG APPLICATION

The standard F300A can be fitted to normal width side hung windows. Narrow casements may need restricted travel to avoid the risk of straining the individual chain links if over extended. F350A chains are not suitable for side hung applications.

WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 2 & 3



APPLICATIONS & ACCESSORIES

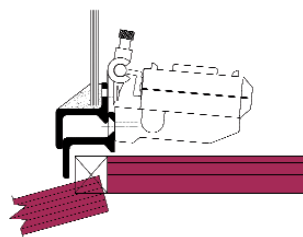
MANUAL

MANUAL

LOCKING OPENER

METAL

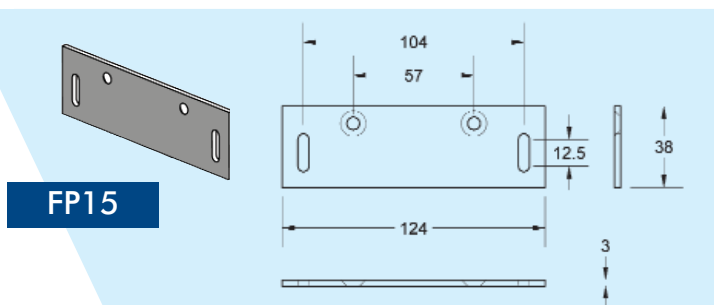
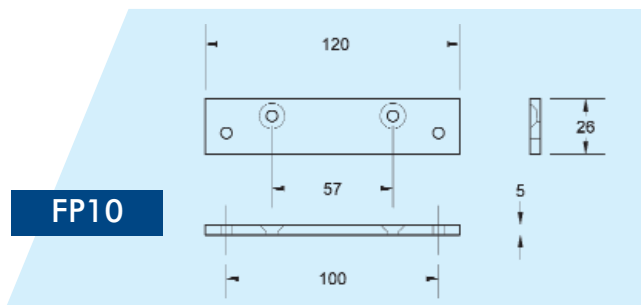
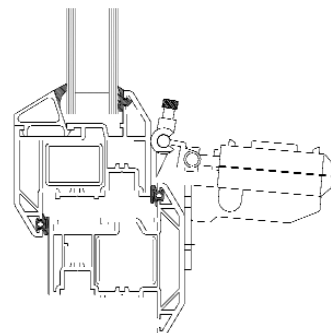
Standard metal window application. Where the chain unit is secured by back fixing through the outer frame upstand into the floating tapped holes featured in the gearbox casing.



Standard 'Quickfit' surface mounted fixing plates.

uPVC

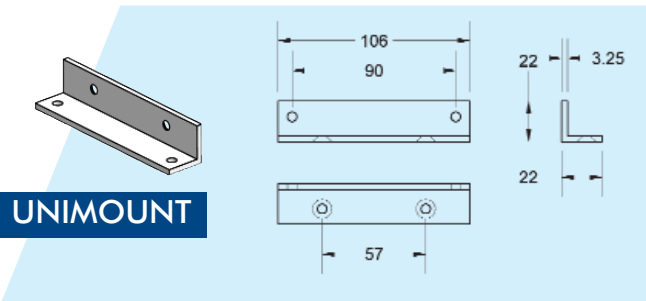
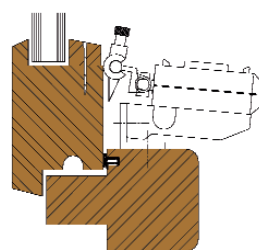
FP10 & FP15 Surface mounted fixing plates for uPVC profiles. This illustration shows the FP15 fixing plate being used to overcome deep bevelled profiles.



TIMBER

Unimount bracket for vertical fixing into timber profiles.

Typical timber profiles can be accommodated using the 'Unimount' fixing bracket where fixing is directly into the transom or sill.



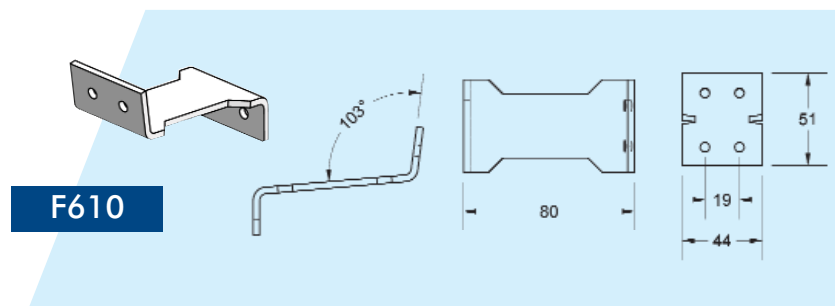
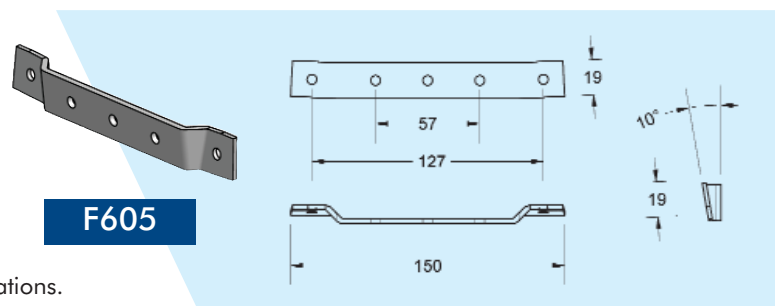
F608 Fixing Kit – comprises:

F605 Bevelled fixing plate.*

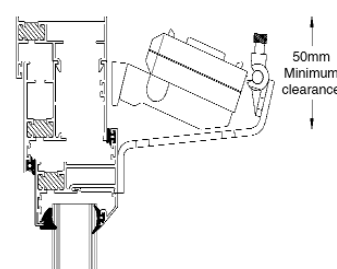
Fits to fixed frame on bottom hung applications. The 10° deflection is also useful to clear predominant rebates featured on some profiles.

F610*

Fits to the face of the moving frame on 'open in' applications.



Bottom hung applications need at least 50mm clearance between the top of the moving frame and underside soffit. This type of arrangement will require the F608 bottom hung fixing kit.



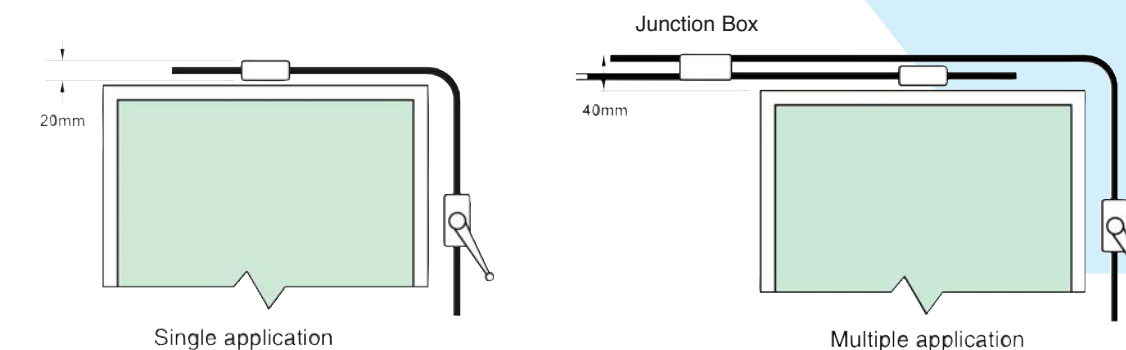
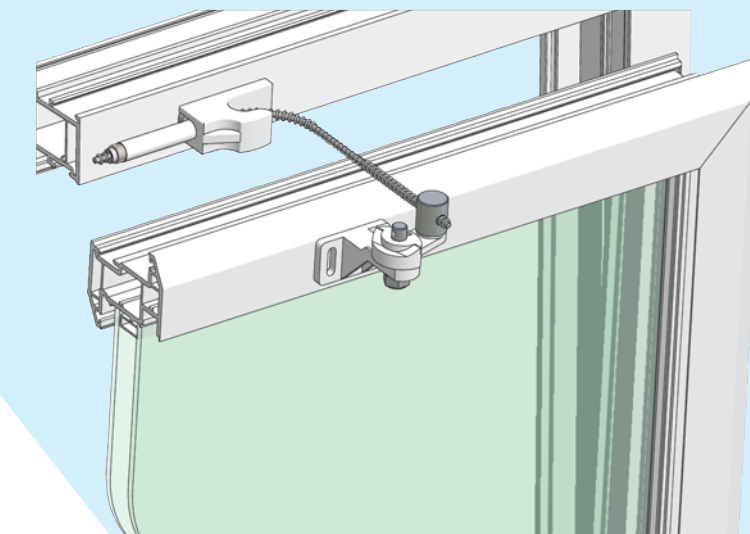
F200 LOCKING OPENER

This simple opener can only be used on bottom hung applications fitted with butt hinges or 'Hopper' type casements. The moving frame is literally pushed open by the F604 transmission cable without the support of its conduit. Little or no resistance during the initial opening movement is therefore essential.

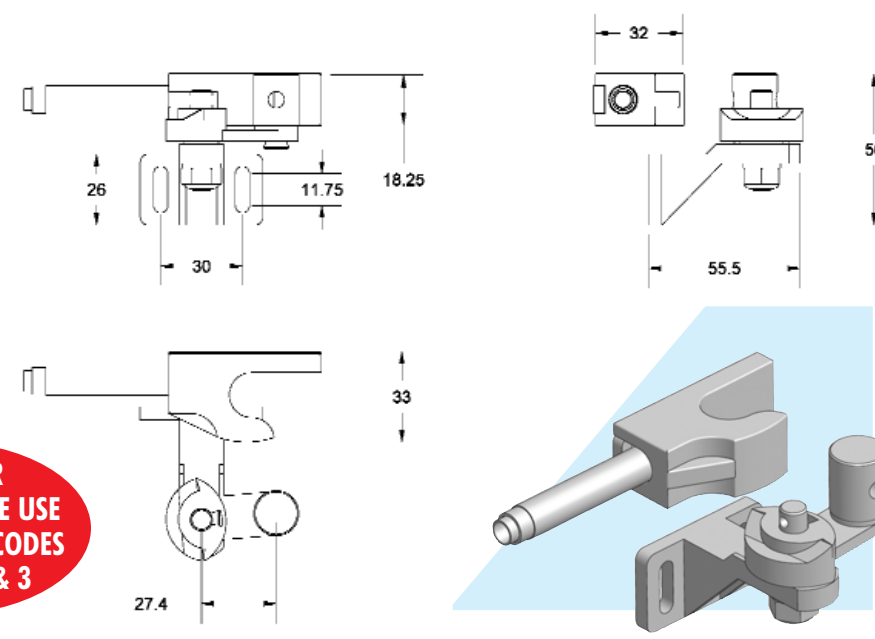
The F200 locking opener needs only 20mm to operate. The compactness makes it ideal where there is limited space between the soffit and the moving frame.

The relationship between panel width and height are important considerations with this type of fitting. Clearly, wide panels need more effort to move than tall ones. The general rule is; panels less than 500mm high should only open 1/3 of their height and that no opening should exceed 250mm.

Where opening multiple small vents, F200 locking openers can be linked on wide frames using an F400 junction box as illustrated below right.



WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 2 & 3



*NOTE: The F605 & F610 form part of the F608 bottom hung kit and are not available separately.

OPERATORS with PLASTIC COVERS

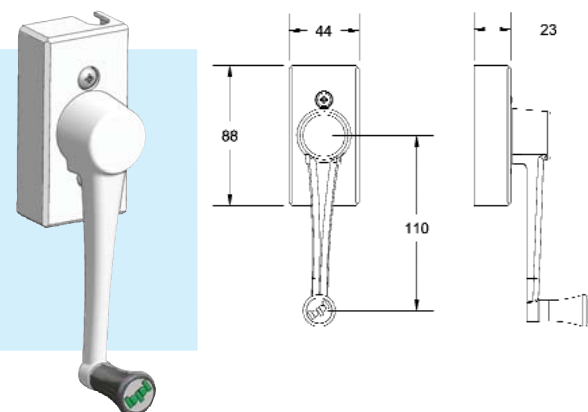
MANUAL

MANUAL

OPERATORS with METAL COVERS

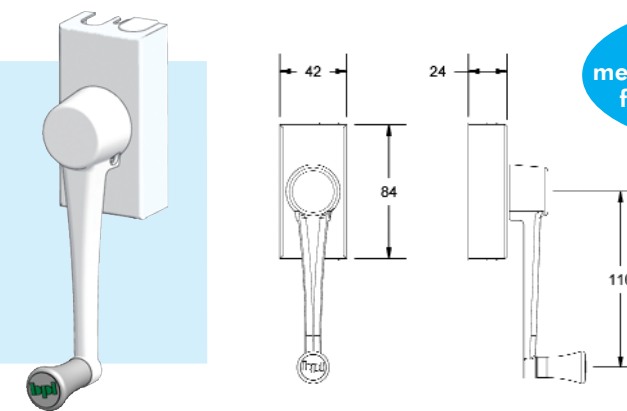
F100

Can be used with all of the cable controlled openers. The drive wheel, inner body, clutch and rotating handle are manufactured from die cast zinc and finished powder coat paint where visible. Standard colours are white, black and grey. The rotating knob is injection moulded black with logo insert.



F100M

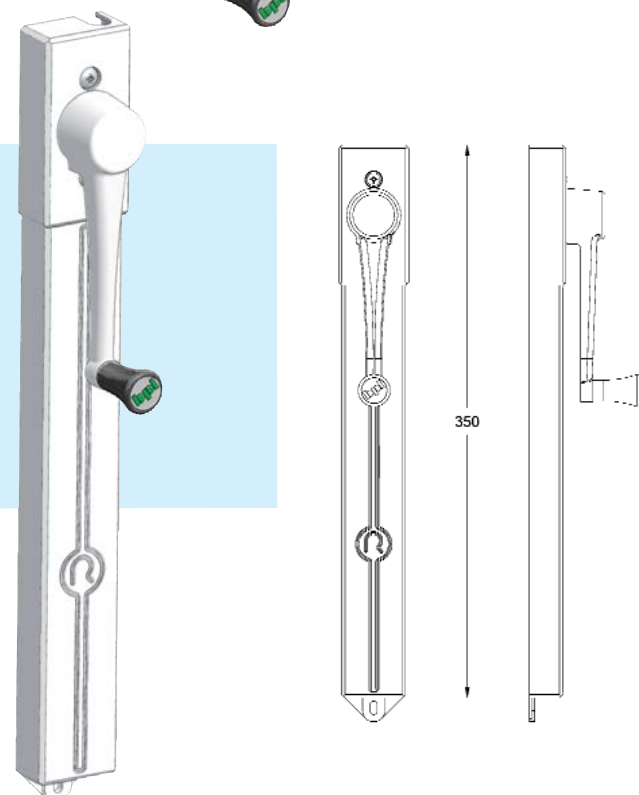
Can be used with all of the cable controlled openers. The drive wheel, inner body, clutch and rotating handle are manufactured from die cast zinc and finished powder coat paint where seen. Standard colours are white, black and grey. The rotating knob is injection moulded black with logo insert.



We recommend metal covered operators for commercial use.

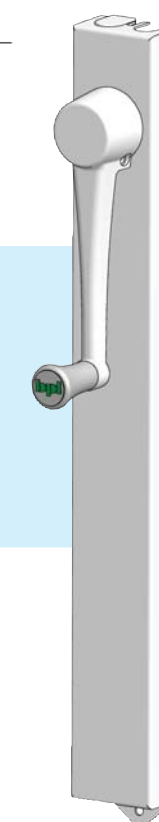
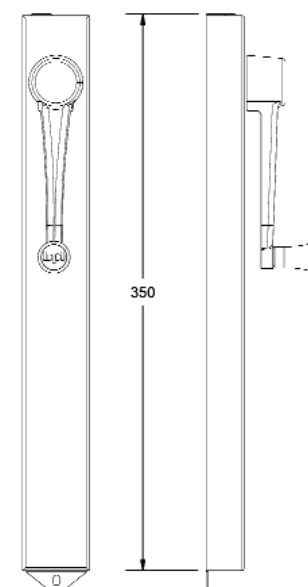
F920

The specification is as the F100 including the standard finishes. Can only be used with the F300A & F300BH chains due to the limitations of its enclosed elongated cover designed to accommodate the F300's modest spent travel.



F920M

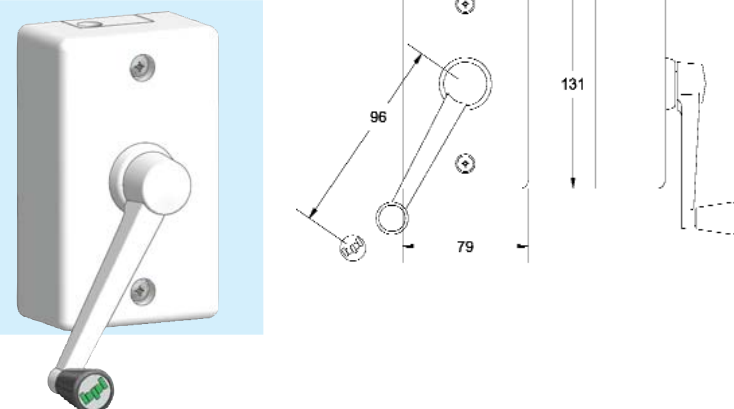
Can only be used with the F300A & F300BH chains due to the limitations of the enclosed elongated cover designed to accommodate the F300's modest spent travel. The specification is as the F100M including the standard finishes.



WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 2 & 3

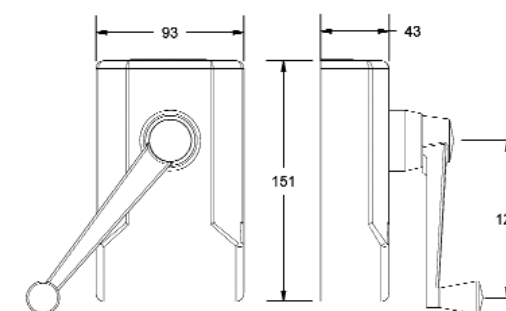
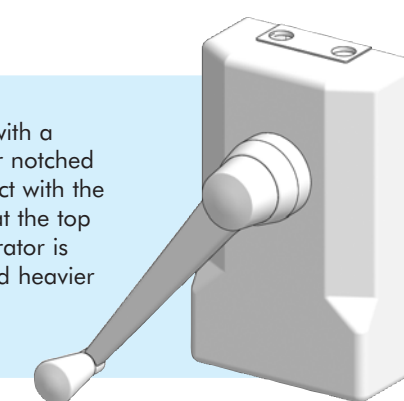
MINIMAX

A robust heavy duty operator fitted with a gearbox that provides twice as much contact with the cable than the F100 & F920 operators. Most suited for multi linked cable runs and heavier casements. Standard colour is white with a black rotating knob and logo insert.



MAXI

A robust heavy duty operator fitted with a gearbox that drives a large diameter notched drive wheel offering over 50% contact with the cable. Cable entry and exit feature at the top of the fitting only. This powerful operator is suited for multi linked cable runs and heavier casements. Standard colour is white.



LINEAR DRIVES

MANUAL

MANUAL

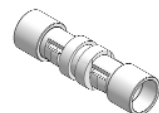
TRANSMISSION ACCESSORIES

LINEAR DRIVES

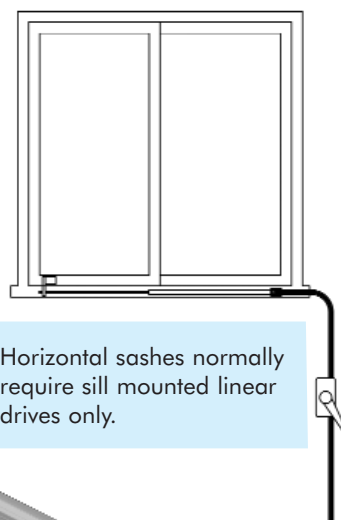
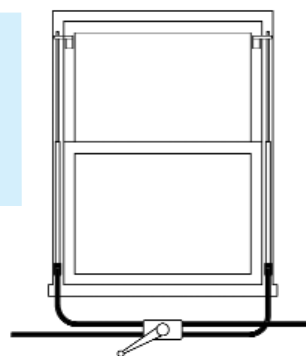
Remote controlled sliding sashes are possible using **F840, F850 & F860** stainless steel telescopic linear drives. The lower angle bracket is secured in a convenient position on the fixed frame. Depending on the sash profile, an additional plate or bracket is attached to the moving frame by way of the top clamping nut.

On double hung windows, freedom of sash movement is important. Symmetrical cable runs will minimise the tendency of the sliding frame to crab. (See illustration).

NOTE: Individual sash fixing assemblies are not included but can be supplied to special order. Use the **F601** conduit connectors for these applications before passing the control cable through the hollow rods and securing with the captive screw.



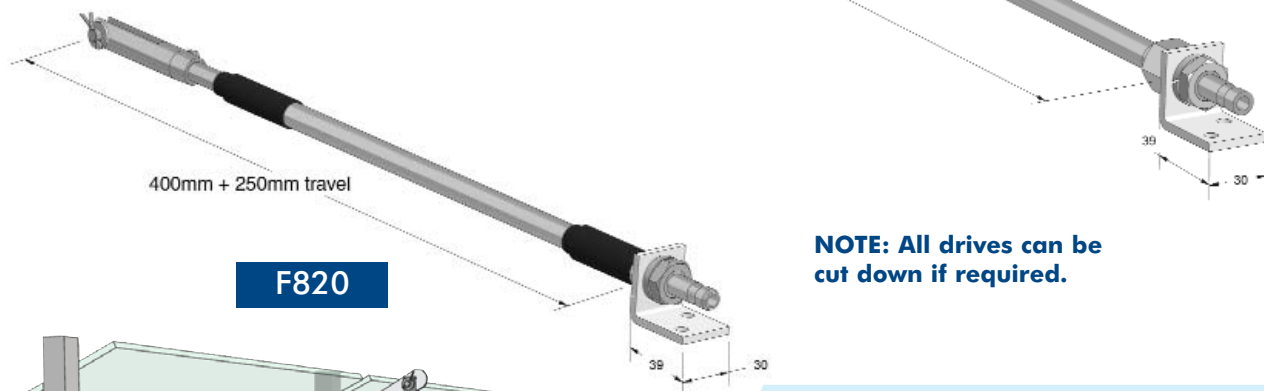
F601 Conduit connector



Horizontal sashes normally require sill mounted linear drives only.

Model	Retracted Length	Travel
F840	790 mm	700 mm
F850	1090 mm	1000 mm
F860	1440 mm	1300 mm

See Table



F820

NOTE: All drives can be cut down if required.

FORK & SWIVEL DRIVE

Remote controlled adjustable louvres are possible using the stainless steel **F820** Fork and Swivel arrangement, where the lower bracket is fixed to the sill or transome, and the fork attached to the operating lever on the louvre system.

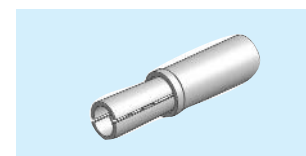
The F820 'swivels' to accommodate the sweeping arc of the louvre operating lever.



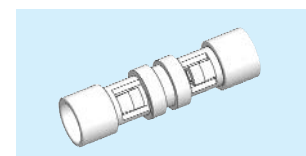
F111 CONDUIT
Plastic covered metal tubing with nylon inner sleeve. Supplied in 3 Metre lengths.



F121 CONDUIT CONNECTOR
For extended conduit runs. Simply clear outer plastic covering off opposing ends, form groove with Combination tool and position to locate grub screws using the observation slot.



205690 CONDUIT CONNECTOR
Three part metal connector. Groove end of conduit with ridges on taper collets and slide on out sleeve securely. For an 'all plastic' version of the above refer to our sales desk.



F601 CONDUIT CONNECTOR
All plastic connector for attaching conduit end to fork and linear drives only.



F604 CABLE
Dry lubricated helical over wound steel control cable.



F619 CONDUIT SADDLE
Plastic snap over cable clip for fixing to non-masonry surfaces.



F613 CONDUIT SADDLE
As above but with expansion plug feature for fixing into masonry.



F609 SPRING STOP
Steel coil acts as stop or can restrict travel when threaded along helical cable.



F112 END PLUG
Push fit plastic end cap to seal off open end of 'spent travel' conduit.



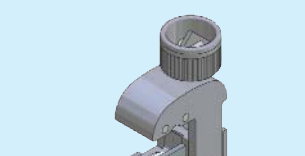
F617 SQUARE TUBE
To accept spent cable travel on F100 operators and F920 operator when both drive ports are utilised.



F618 SQUARE NUT
Threaded onto the end of cable and crimped to act as anti-torque stop inside the **F617** spent tube.



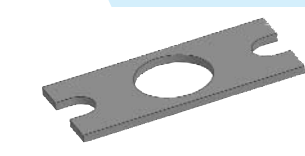
F400 JUNCTION BOX
Rotary junction box connected to main conduit control path to operate satellite openers.



CONDUIT TOOL
Prepares the conduit end with anchor groove to locate into ridges on operators and openers clamping plates.



F600 BENDING FORMER
Used for bending conduit to a minimum radius of 90mm.



F627 OPERATOR SUPPORT
Gives flush finish to back of operator fixing plate. Especially useful when fixing to soft surfaces.

WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 2 & 3





NATURAL VENTILATION (NV)

The alternative to manual remote control is powered remote control. This can be anything from a simple installation with one or more manual switches, to a fully automatic window system incorporating rain, wind, and temperature sensors and an electronic panel linked to the building's management system to control selective banks of windows.

From an environmental point of view we can use 230vAC mains electricity for natural ventilation.



SMOKE & HEAT EVACUATION (SHE)

Smoke is the single biggest killer in a building fire. It makes breathing impossible and obscures exit routes. Smoke Heat Evacuation (SHE) systems are designed to reduce this problem by linking Automatic Opening Vents (AOVs) to smoke detectors and the Building's Management System (BMS). SHE also works to protect the building as effective heat evacuation will delay eventual structural damage and give the emergency services more time to get things under control.

AOVs or Automatic Opening Vents are simply automatically controlled openings to allow smoke and heat to escape. They can be windows, doors, dampers (louvres) or roof lights. SHE systems are safety critical, and consequently built to a standard that requires the system to operate independently of the mains electricity supply. SHE operates on 24vDC batteries that are mains float charged for optimum performance in the event of power failure.

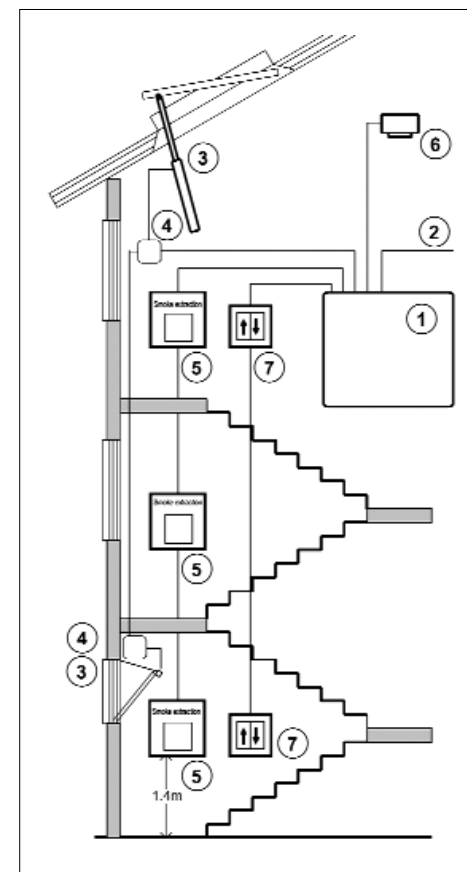
Our Smoke Heat Evacuation systems also allow for natural ventilation in either manual or automated modes.

Both of the above will require various control parameters and this is accomplished with the application of a variety of sensors linked to an electronic panel or building management system (BMS). We illustrate control panels on page 32. Invariably, panels have to be customised to suit individual need and requirements. Our technical sales will advise on the most appropriate option for your application.

SHE systems are designed to allow smoke and heat to escape from the building in the most efficient manner to give the emergency services quicker access to the source of the fire. The appropriate positioning of manual call points gives the emergency services the option to close selective smoke vents if required.

The basic components of a Smoke Heat Evacuation system are:

- **Motors:** 24v in Chain or Linear versions to allow selected windows to be driven open remotely.
- **Smoke Detectors:** may be fitted if the SHE system is to be 'stand alone'. They send trigger signals to the control panel which in turn will activate the motors.
- **Switches:** to provide manual control over the system and also 'feed back' on the system status
- **Cabling:** screened 'Firetuf' cabling is used to connect the system components.
- **Control Panels:** with battery back up to control the system, its components and provide links to other building systems. They can also maintain system monitoring.



Key to System Diagram

1. **Control Panel:** MZ/TRZ with 72hr battery back up in case of mains failure.
2. **Mains Power 230vAC:** termination being via a non-switched fused spur.
3. **Vents:**
 - a. inlet vent: typically bottom hinged open in window.
 - b. outlet vent: rooflight with linear actuator, may also be by chain motor on rooflight or bottom hinged open out window.
4. **Junction Box:** with ceramic cable connectors. All cables are monitored for line faults.
5. **Master Call Point:** showing system status, including fault monitoring and enabling control of the system.
6. **Smoke Detector:** to activate the smoke venting system. Various standard types available for stand alone systems. Activation can also be by signals from fire alarm or building management systems by others.
7. **Ventilation Switch:** to enable day to day ventilation.

Page 22 & 23

LM chain motors are available 24v or 230v with individual specifications to suit natural ventilation operated by manual rocker switch, control panel or linked to a BMS by others.

Applications for Smoke Heat Evacuation available with 24v power supply only.

Chain stroke range to all the above is 120, 200, 250, 300 & 350mm and can be supplied in synchronised tandem (coupled) arrangements.

Standard colour: powder coated white or silver grey.

NB Brackets for chain motors are supplied separately. Refer

Page 24 & 25

EM chain motors are available 24v or 230v with individual specifications to suit natural ventilation operated by manual rocker switch, control panel or linked to a BMS by others.

Applications for Smoke Heat Evacuation available with 24v power supply only.

Chain stroke range to all the above is 189, 258, 327, 419, 511, 603 & 810mm and can be supplied in synchronised tandem (coupled) arrangements or twin chain assemblies.

Standard colour: powder coated white or silver grey.

NB Brackets for chain motors are supplied separately. Refer

Page 26 & 27

FM chain motors are available 24v or 230v with individual specifications to suit natural ventilation operated by manual rocker switch, control panel or linked to a BMS by others.

Applications for Smoke Heat Evacuation available with 24v power supply only.

Chain stroke range to all the above is 194, 309, 401, 501, 600, 700 & 800mm and can be supplied in synchronised tandem (coupled) arrangements.

Standard colour: powder coated white or silver grey.

NB Brackets for chain motors are supplied separately. Refer

Page 28 & 29

M2 linear drive motors are available 24v only, with individual specifications to suit natural ventilation, operated by manual rocker switch, control panel or linked to a BMS by others and also Smoke Heat Evacuation.

Stroke range available is 200, 300, 500, 750 & 1000mm and can be supplied in synchronised tandem (coupled) arrangements. Refer

Page 30

E.ch.O 2000 230v 250/380mm chain motor PC white	RC0860
E.ch.O 2000 230v 250/380mm chain motor SA silver	RC0865
E.ch.O 2000 230v 250/380mm chain motor SA black	RC0870
E.ch.O 3000 230v 250mm chain motor PC white	RC0856
E.ch.O 3000 230v 250mm chain motor SA silver	RC0854
E.ch.O 3000 230v 250mm chain motor PC brown	RC0858

Page 31

E.ch.O MAXI 230v 380mm chain motor SA silver	T.B.A
E.ch.O MAXI 230v 380mm chain motor SA black	T.B.A

Page 33

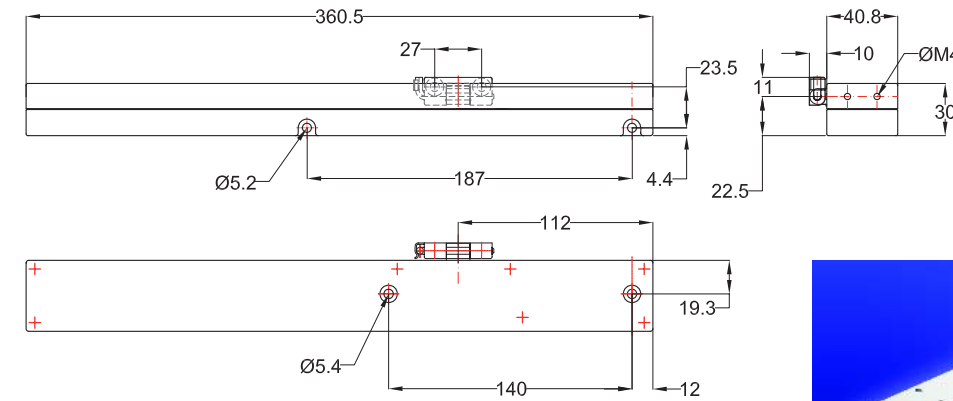
Ventilation switch	Refer
LT 11/UP flush mounted centre off rocker switch	SB6130
LT 11/AP surface mounted centre off rocker switch	SB6132
LT12/S/AP surface mounted keyswitch	SB6136
SZ10 euro profile cylinder	SB6142
RI-05 ZS adaptor	WN0216
RI-05 adaptor	WN0214
SI-1 interface	WN0522
SW15 rocker switch	RC1070

Page 34

WRM-24V wind & rain sensor	SB6162
RM-24V heated rain sensor	SB6164
TS1030 temperature sensor	SB6150
FS3095 humidity sensor	SB6156
TSE-53 electronic temperature sensor	Refer



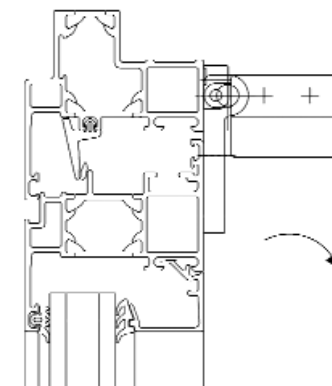
**SYSTEM DESIGN,
INSTALLATION AND
COMMISSIONING
SERVICE AVAILABLE**



LM Tandem Pair with built in synchronisation



LM Pivot Bracket
Allows motor to be mounted on vents smaller than the stated minimum casement height



LM Pivot Bracket Application:
Bottom hung open in vent

Basic Features

- 24v smoke heat evacuation or 230v & 24v natural venting applications
- Available in Single and Tandem versions at all stroke lengths
- Internal electronic power cut off and limit switches for open and closed positions and integrated motor overload protection
- 24v version rated at 0.5A/ 230v version rated at 0.15A
- Rated at 200N capacity (350mm stroke version 150N)
- Tight closure (200N closing force) using electronically monitored closing pressure
- Stainless steel corrosion resistant low maintenance chain
- Corrosion resistant slim-line motor housing
- Available in silver grey, white and standard RAL on request
- Motor may be directly mounted or mounted with optional pivot brackets
- Wide range of standard brackets with custom options for non-standard applications

Chain Stroke mm	Motor Case Dimensions			Minimum Casement Height mm
	Length mm	Height mm	Depth mm	
120	360.5	30	40.8	350
200	360.5	30	40.8	400
250	360.5	30	40.8	550
300	360.5	30	40.8	650
350	360.5	30	40.8	750

CAUTION: If casement height is below the suggested minimum, use pivot bracket.

LM Motor Technical Data

Input/operating voltage: 24vDC (-10%/ +25%) or 230vAC 50 Hz
 Power consumption: approx. 0.5 A at 200N full load 24v & 0.15 A at 200N full load 230v
 Closing/tractive force: max. 200 N (at 350 mm stroke – 150N)
 Locking pressure: 2000N
 Stroke: Fixed: 120, 200, 250, 300 or 350 mm
 Electrical connection: 2-pole plug-in screw terminal 24v
 4-pole plug-in screw terminal with approx. 2M cable 230v
 Power cut-off 'open' position: built-in limit switch
 Power cut-off 'closed' position: integrated electronic power cut-off
 Operating time: approx. 13 sec per 100 mm
 Start-up time: 60 sec. (ED/ON) 120 sec. (AD/OFF)
 Protection rating: IP 20 to DIN 40 050
 Operating temperature range: + 5°C to + 70°C
 Chain type: stainless steel low maintenance
 Chain housing material: zinc casting.
 Standard colour: powder-coated white RAL 9016
 Special colours: silver grey or standard RAL colours
 Included components: chain end bracket
 TUV certification: TUV No. 1082/01 24 V & TUV No: 1837/02 230v

Note: Motor brackets are supplied separately.

WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21





WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21

Basic Features

- 24v smoke heat evacuation or 230v & 24v natural venting applications
- Available in Single, Tandem or Twin Chain versions at all stroke lengths
- Slim-line motor housing available in silver grey, white and standard RAL colours on request
- Internal electronic power cut off and limit switches for open and closed positions and integrated motor overload protection
- Low power consumption: 24v 0.7A, 230v 0.225A
- Rated at 300N capacity
- Tight closure (300N closing force) using electronically monitored closing pressure
- Stainless steel corrosion resistant low maintenance chain
- Corrosion resistant slim-line motor housing
- Wide range of standard brackets with custom options for non-standard applications

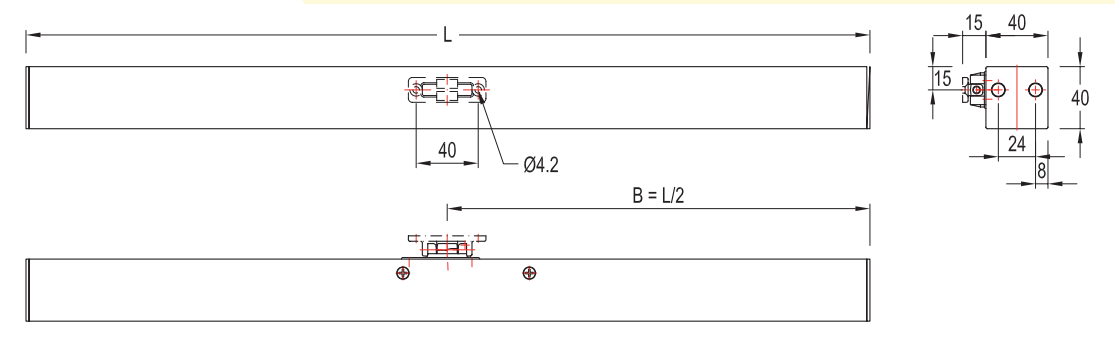
Chain Stroke mm	Motor Case Length					Minimum Casement Height mm
	Single Motor		Twin Motor	Tandem Motor		
	24 volt	230 volt	24 volt only	24 volt	230 volt	
189	544	636	1206	636	820	255
258	544	636	1206	636	820	355
327	544	636	1206	636	820	445
419	637	636	1298	636	820	590
511	820	820	1666	820	820	725
603	820	820	1666	820	820	855
810	1012	1027	1800	1012	820	980



Type: EM Twin



Type: EM Tandem



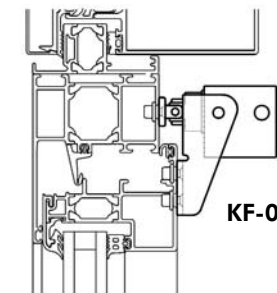
Technical Data

Input/operating voltage: 24vDC (-10% / +25%) or 230vAC 50 Hz
 Power consumption: approx. 0.7 A at 300N full load 24v & 0.225 A at 300N full load 230v
 Closing/tractive force: max. 300N
 Locking pressure: 3000N
 Stroke: Fixed: 189, 258, 327, 419, 511 or 603 mm
 Electrical connection: 2-pole plug-in screw terminal 24v
 3-pole plug-in screw terminal 230v
 Power cut-off 'open' position: built-in limit switch
 Power cut-off 'closed' position: integrated electronic power cut-off
 Operating time: approx. 11sec per 100mm
 Start-up time: 60 sec. (ED/ON) 120 sec. (AD/OFF)
 Protection rating: 24v: IP 20 to DIN 40 050. 230v: IP 40
 Operating temperature range: 0°C to +70°C
 Chain type: stainless steel low maintenance
 Chain housing material: aluminium extrusion
 End caps: aluminium casting in motor unit colour
 Standard colour: powder-coated white RAL 9016
 Special colours: powder-coated silver grey or standard RAL colours
 TUV certification: TUV No. 3230/98

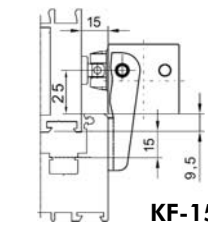
CAUTION: If casement height is below the suggested minimum (refer to table on page 24), use pivot bracket.

Standard Mounting Bracket Details

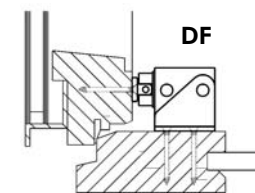
EM Pivot bracket type KF-0: Flush vent & Frame
EM Pivot bracket type KF-15: 15mm Stepped Vent & Frame
 For pivot mounting of chain motor on top, bottom or side hinged casement windows, inward or outward opening on flush profile. Allows motor to be mounted on vents smaller than the stated minimum casement height.
EM Pivot bracket type DF
 For pivot mounting of chain motor on outward opening top, bottom or side hinged casement windows, or rooflight applications. For mounting on profiles requiring a bracket position of 90° to the opening vent. Allows motor to be mounted on vents smaller than the stated minimum casement height.
Pivot mounting brackets are supplied in pairs and finished in standard powder coated white. The chain end bracket is mill finished.
Note: Motor brackets are supplied separately.



KF-0



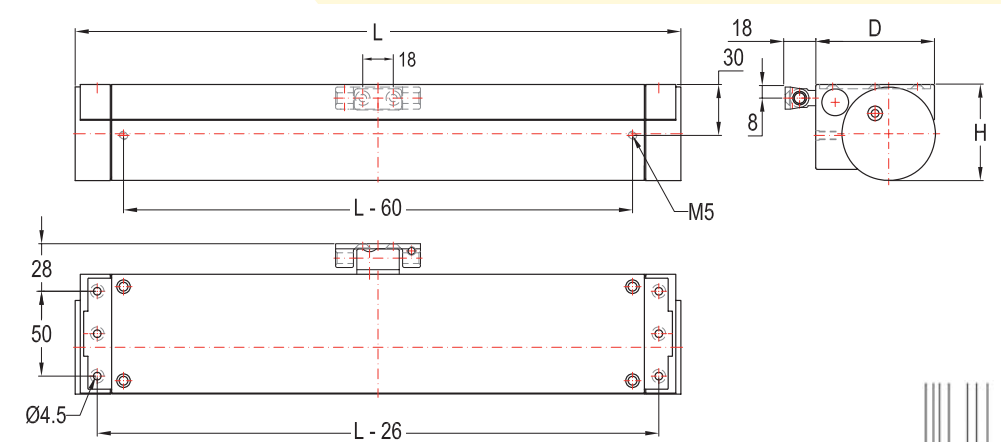
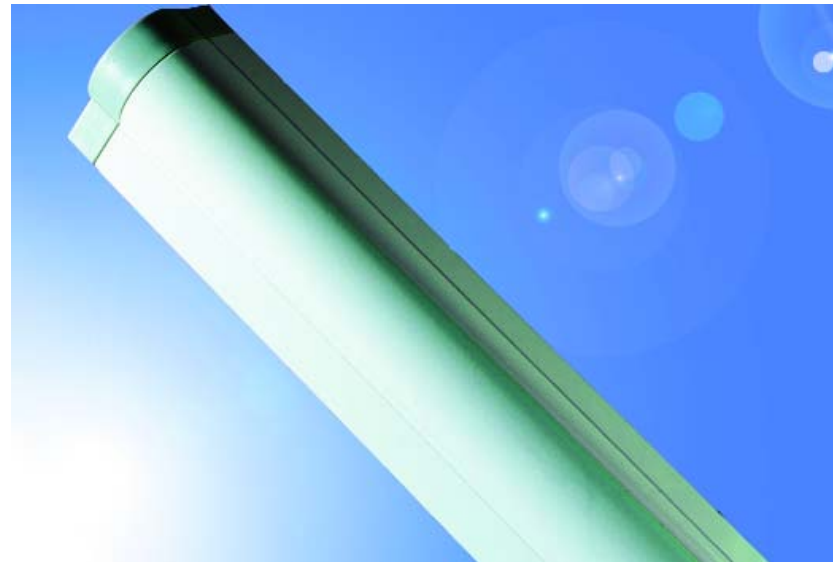
KF-15



DF

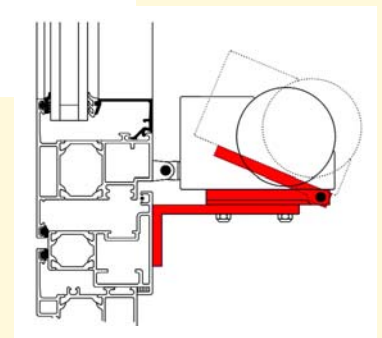
Basic Features

- 24v smoke heat evacuation or 230v & 24v motors for natural venting applications
- Available in single or tandem pair versions with built in synchronisation rated IP 20/DIN 40 050
- Internal electronic power cut off and limit switch for 'open and closed' positions and integrated motor overload protection
- Closing/tractive force: 300N to 700N dependant on motor type
- Tight closure using electronically monitored closing pressure
- Two part interlocking high strength stainless steel corrosion resistant low maintenance chain supplied with chain end bracket
- Corrosion resistant sculptured extruded aluminium motor housing with grey or black plastic end caps; available in standard powder-coated silver grey, white or standard RAL colours; TUV approval No. 3462/97
- Comprehensive range of mounting brackets available: please refer to sales desk



Chain Housing Dimensions & Minimum Casement Heights

Chain Stroke mm	Case Length mm	Case Height mm	Case Depth mm	Minimum Casement Height mm
194	357	56.5	70	300
309	449	56.5	70	600
401	541	56.5	70	800
501	643	66	100.5	800
600	744	66	100.5	1000
700	846	66	100.5	1100
800	948	66	100.5	1300



CAUTION: If casement height is below the suggested minimum use pivot bracket type:

Technical Data

Input/operating voltage: 24vDC (20v – 48vDC) or 230vAC 50 Hz
 Operating time: Approx. 10mm/sec.
 Start-up time: 60sec (ED/ON) 120sec (AD/OFF)
 Protection rating: IP20 to DIN 40 050
 Operating temperature range: 0°C to 70°C
 Chain type: Low maintenance stainless steel
 Chain housing: Extruded aluminium
 End caps: Moulded plastic, grey or black
 Standard colours: White RAL9016 or silver grey
 Special colours: Standard RAL colours
 Included accessories: Chain end bracket
 TUV certification: TUV No. 3462/97
 Electrical connection: 2-pole plug-in screw terminal 24v
 3-pole screw terminal 230v
 Power cut-off: integrated electronic power cut-off 'open & closed' safety overload protection 'open & closed'

Pivot Brackets

FM Pivot bracket type SBFM 1
 For pivot mounting of chain motor on outward opening top hinged casement windows up to 401mm chain travel.

FM Pivot bracket type SBFM 2
 For pivot mounting of chain motor on outward opening top hinged casement windows from 501 to 800mm chain travel.

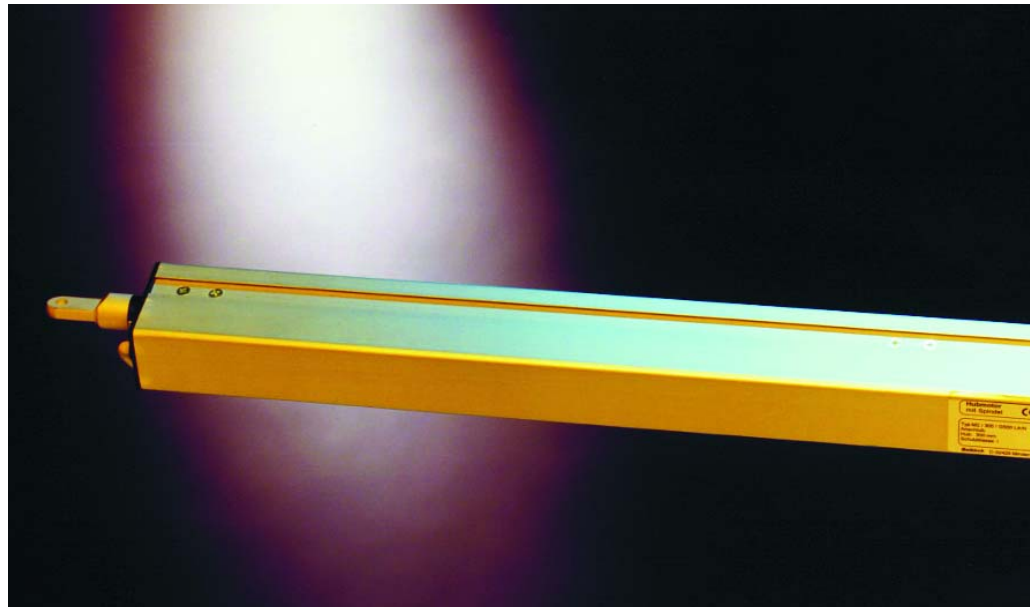
FM Pivot bracket type SBFM 4
 For pivot mounting of chain motor on inward opening bottom hinged casement windows up to 401mm chain travel.

Pivot brackets allow motors to be mounted on vents smaller than the stated minimum casement height.
 Supplied as a pair comprising two, two-part pivot mounts finished anodised aluminium.

Note: Motor brackets are supplied separately.

Motor Stroke mm	Motor Force: Locking Pressure & Stroke					Locking Pressure N
	Motor Power Rating 300N	Motor Power Rating 450N	Motor Power Rating 500N	Motor Power Rating 600N	Motor Power Rating 700N	
194	✓	✓				2000N
309	✓	✓				2000N
401	✓	✓				2000N
501	✓		✓		✓	2000N/2500N
600	✓		✓	✓		2000N/2500N
700	✓					2500N
800	✓					2500N
Power Consumption 24v	0.7A	1.0A	1.6A		2.5A	
Power Consumption 230v	0.15A	0.23A				

WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21



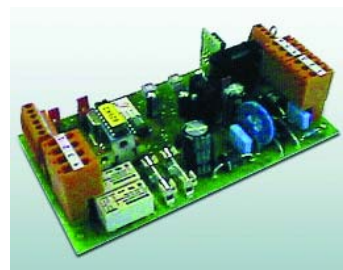
WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21

Basic Features

- Available for 24v smoke heat or natural venting applications with 1A power consumption
- Versions with or without electronic power cut off and Synchro for paired operation
- Motor power off when end stop is reached via integrated electronic power cut-off
- Rated at 500N capacity with 2000N locking pressure
- Extruded aluminium motor housing
- Wide range of mounting brackets for various applications
- Available in silver anodised, white and standard RAL on request
- Available in various standard stroke lengths from 200mm to 750mm and non standard to 1000mm
- Supplied with 2 x 0.75mm² or 4 x 0.5mm² power cables
- TUV approved

CAUTION: Order Synchro Modules for tandem operation. Damage will occur to motors with non-integrated 'cut off' if used without either external 'cut off' modules or Synchro Modules.

NOTE: Please order brackets separately, dependant on application. Our technical desk is available to help with the choice of motor type.

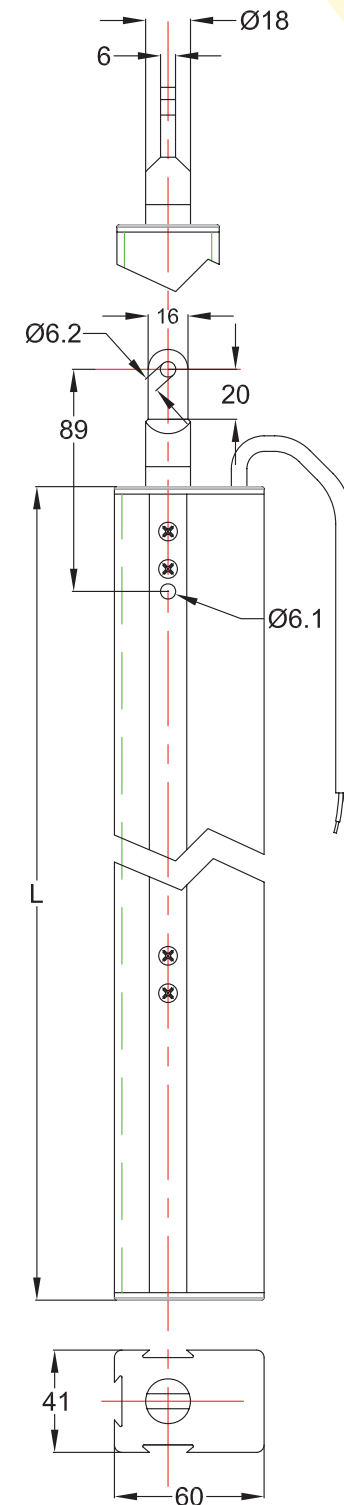


Synchro Module



Parallel Power Cut Off

Stroke mm	Motor Case Dimensions		
	Length mm	Height mm	Width mm
200	428	60	41
300	528	60	41
500	728	60	41
750	978	60	41
1000	1290	60	41



Technical Data

Input / operating voltage: 24vDC (-5% / +25%)
 Power consumption: approx. 1A at 500N full load 24v
 Closing / tractive force: max. 500N
 Locking pressure: 2000N
 Stroke: Fixed: 200, 300, 500, 750 or 1000 mm
 Electrical connection: 2-wire 0.75mm² pre-wired white silicone cable approx. 1.5 m long
 4-wire 0.50mm² pre-wired similar to the above for synchronous operation

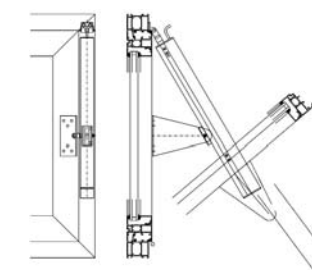
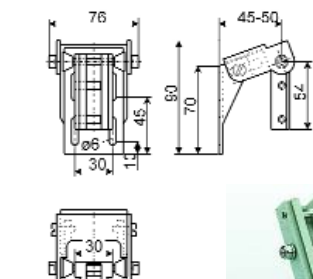
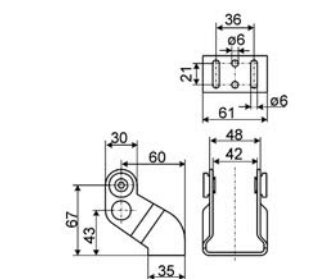
Power cut-off 'closed' position: integrated electronic power cut-off version
 Operating time: approx. 15sec per 100mm travel
 Start-up time: S3 30% ED
 Protection rating: IP 54 to DIN 40 050
 Operating temperature range: -5°C to +75°C
 Housing material: aluminium profile
 End caps: black plastic
 Standard colour: standard silver anodised
 Special colours: white RAL 9016 or standard RAL colours
 Brackets to be ordered separately dependant on application



K29/B Bracket



K27/B Bracket

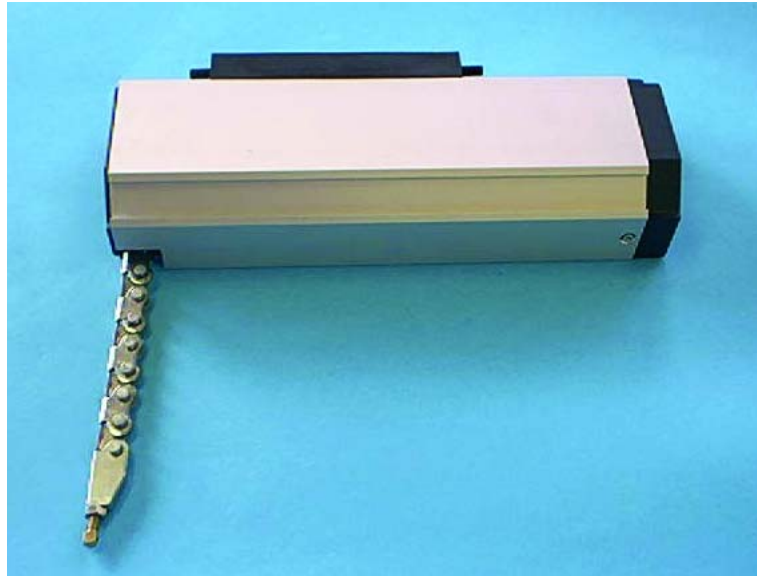


Typical application using K9 stand off brackets



K9-M2 Stand off bracket

FOR CONTROLLED NATURAL VENTILATION



E.Ch.O 2000

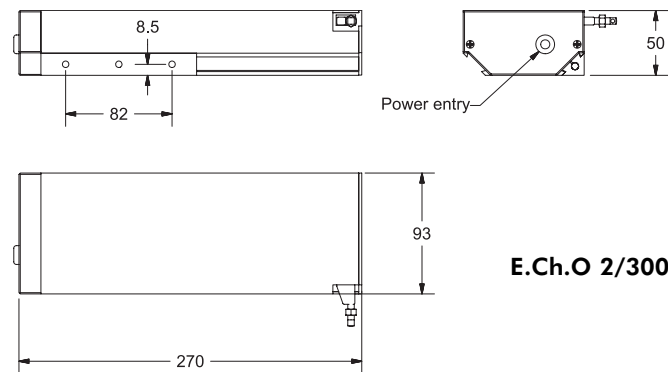
Designed primarily for top hung open-out or bottom hung open-in applications, the 2000 offers the choice of 250mm or 380mm chain travel.

Standard finish: Anodised silver, black and PC white.

E.Ch.O 3000

A low cost alternative offering a 250mm stroke only. This particular model achieved over 110,000 cycles before being dismantled from the test bed whilst still in working order.

Standard finish: Anodised silver, black and PC white.



E.Ch.O 2/3000

WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21

Technical Features

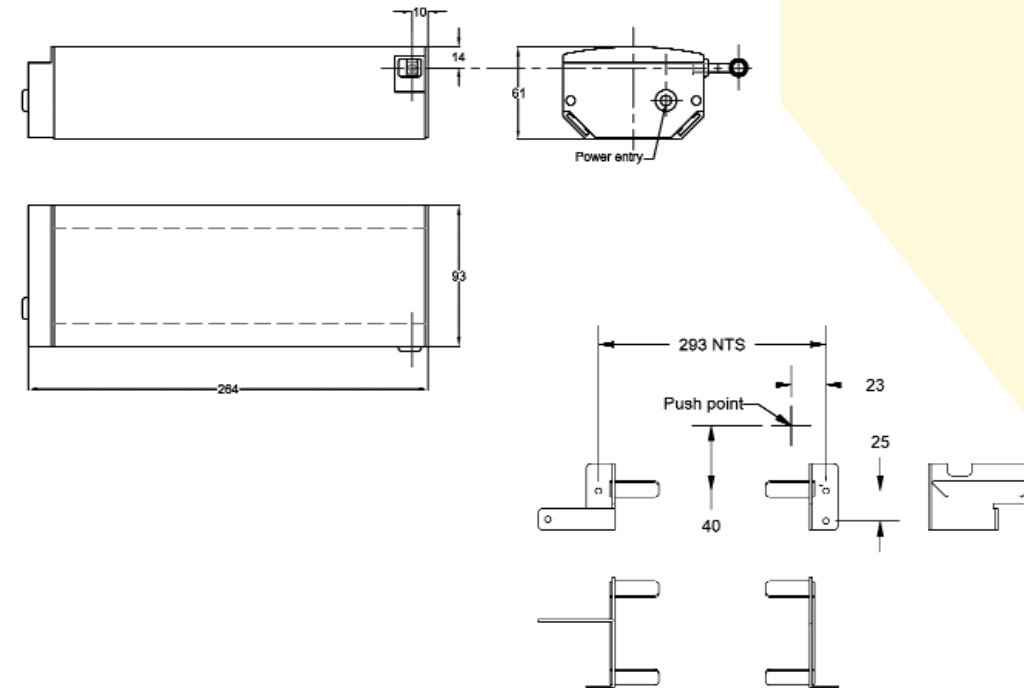
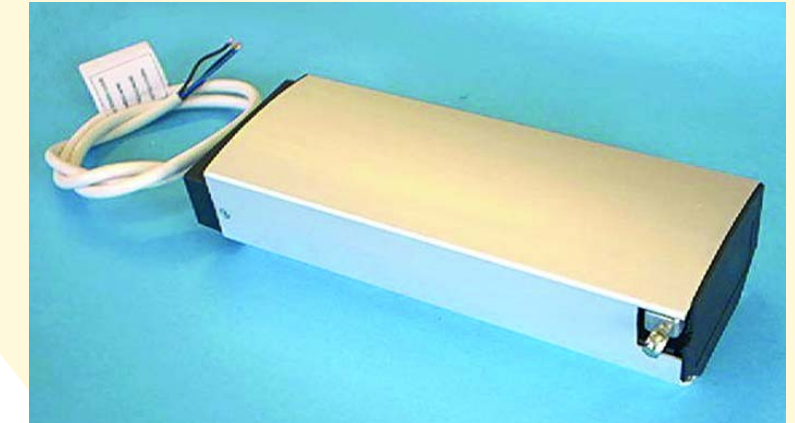
	E.Ch.O. 2000	E.Ch.O. 3000
Operating Voltage	230vAC ± 8% – 50Hz	230vAC ± 8% – 50Hz
Power consumption	0.6A	0.6A
Thrust	150N (250) 90N (380)	150N
Stroke	250mm and 380mm	250mm
Temperature cut-out	Yes	Yes
Operating temperature	-20°C + 56°C	-20°C + 56°C
Weight	1.5Kg	1.5Kg
Dimensions	270 x 93 x 50mm	270 x 93 x 50mm
Frequency of use	Max 10 cycles/25 sec. On. 75 sec. Off.	
Minimum frame height	500mm (250mm travel)	1500mm (380mm travel)

E.Ch.O MAXI

Developing a capable 250N thrust, the E.Ch.O Maxi also features a patented spring located inside the front terminal that guarantees a snug fit against the fixed frame when in the closed position.

Attachment eye to moving frame has 10mm adjustment.

Standard finish: Anodised silver and black.



Technical Features

Operating Voltage	230vAC ± 6% – 50Hz
Power consumption	0.6A
Thrust	250N
Stroke	380mm
Temperature cut-out	Yes
Operating temperature	-20°C + 56°C
Weight	1.65Kg
Dimensions	270 x 93 x 61mm
Frequency of use	Max 10 cycles/25sec. On. 75sec Off.
Minimum frame height	1500mm

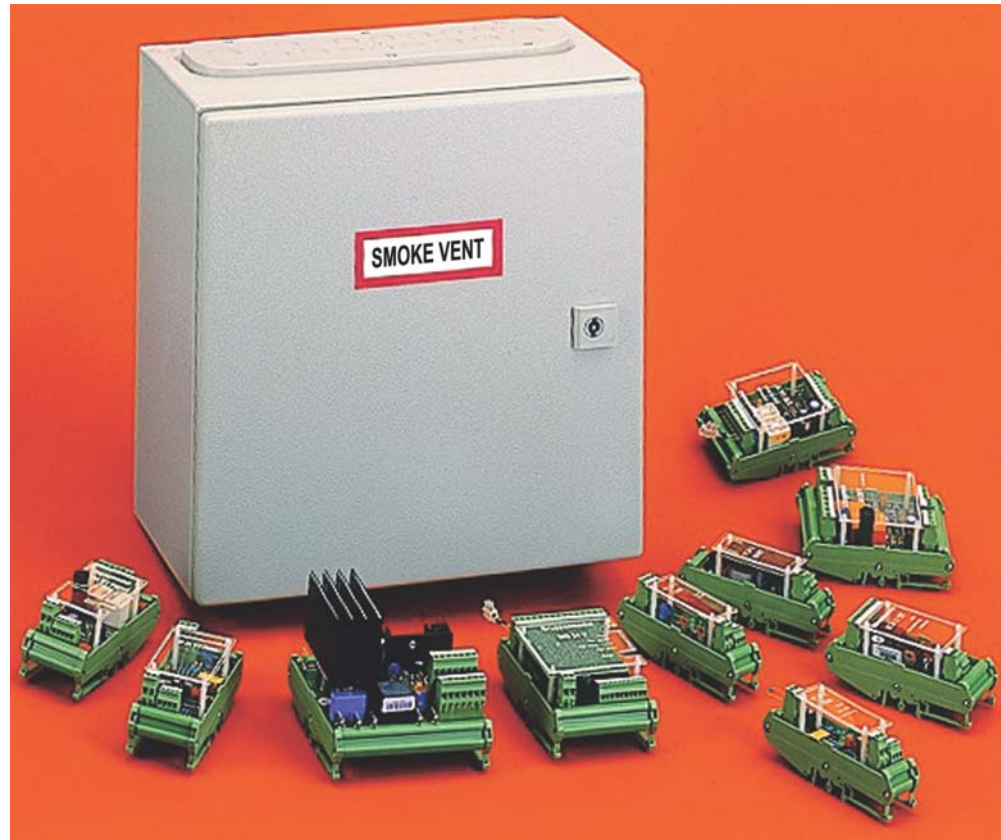


CONTROL PANELS & ACCESSORIES

ELECTRIC

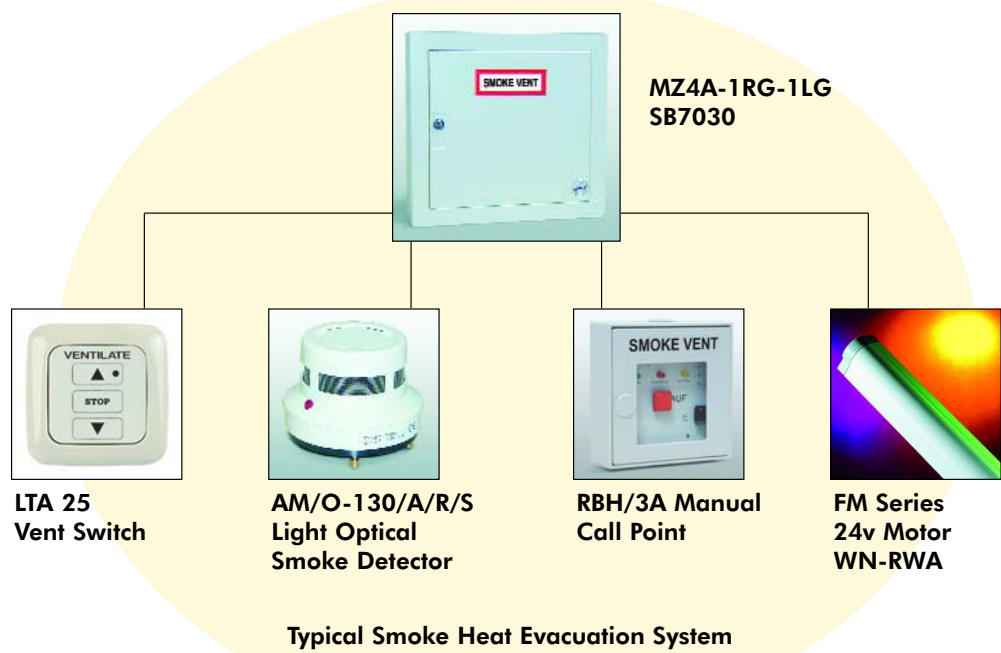
ELECTRIC

SYSTEM ACCESSORIES



MZ Control Panel

The MZ series Control Panel is modular in design giving flexibility to any system. A wide range of modules is available to provide system control facilities.



Typical Smoke Heat Evacuation System



TRZ Control Panel

The TRZ series Control Panel is designed to provide cost effective control in a compact package. Rated at 2A it is ideally suited to small stairwell projects.



Manual Call Point

Enables manual activation of the system and indicates system status



Smoke Detector

Detects the presence of smoke, or a rise in temperature dependant on type.



Ventilation Switch

Incorporates LED to indicate vent(s) open for natural ventilation. In an emergency this control is overridden by the SHE system.



LT 11/AP

Surface mounted reverse polarity momentary, centre off switches for 24v natural ventilation window motor operation, colour grey.



SW15

Momentary, centre off, rocker switch for 230v motors, 10A surface mounted. Colour white.



LT11/UP

Flush mounted reverse polarity momentary, centre off switches for 24v natural ventilation window motor operation, colour white.



RI-05 ZS

5 to 2-pin adapter for local and central control of 2 wire motors with 5 wire control elements such as sensors, and also manual switches.

RI-05

5 to 2-pin adapter for the local control only of 2 wire motors by 5 wire control elements, e.g. sensors, and also manual switches.



LT12/S/AP

Surface mount keyswitch for ventilation control; use with SZ10 euro profile cylinder.



SI-1

Sensor interface for grouping individual window motor control sensors. Features an integral on/off switch for automatic operation. Surface mounted housing, colour grey.

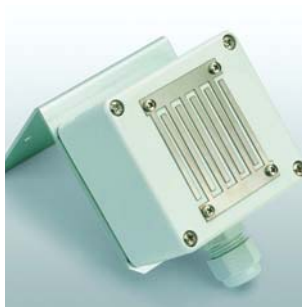
WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21



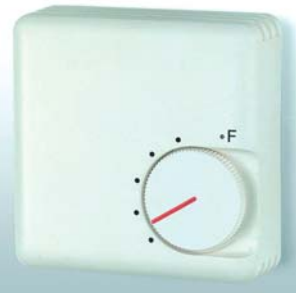
Sensors & Controllers



WRM-24v Combined wind and rain sensor for automatic vent closing in the event of rain and/or high winds. IP65 housing, surface mount, colour grey. 5 Wire products.



RM-24v Heated rain sensor for automated window closing in the event of rain. IP65 housing, surface mounting version, colour white. 5 Wire products.



TS1030 Temperature & **FS3095** Humidity sensors for automatic activation of window motors. Surface mount housing, colour white. 5 Wire products.

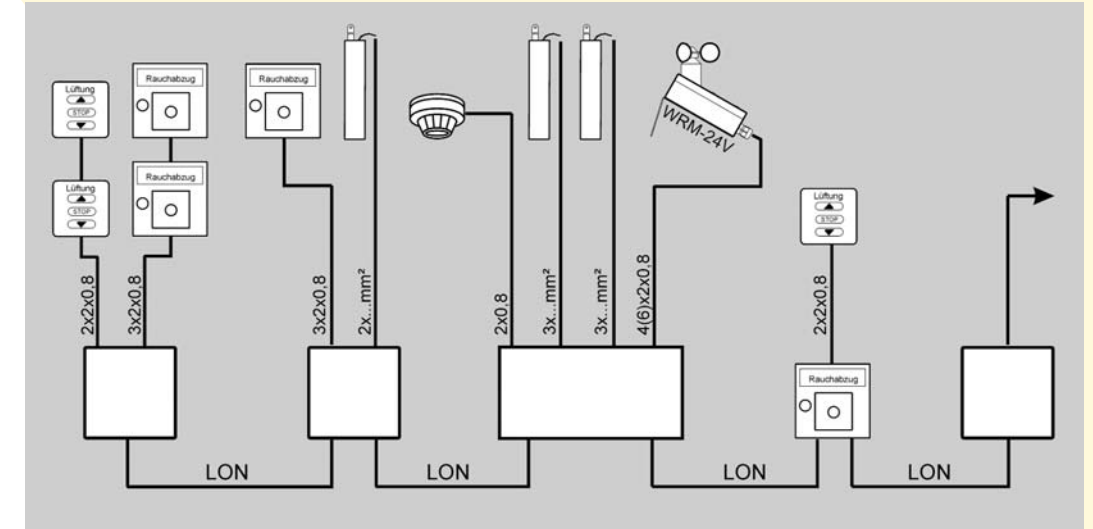


TSE-53 Electronic temperature sensor: this sensor has a remote sensor probe connected to the main unit via a cable allowing the controller to be located remotely from the point at which the temperature is recorded.

WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21

Typical LON Works System Schematic

- The LON system (Local Operating Network) is a computerised system, with 'intelligent' control boxes spread across the system. Each intelligent unit talks to its neighbours via signalling cables as used in a computer network to connect computers together. This distribution of intelligence coupled with multiple networking routes provides greater fault tolerance in the event of a failure in either wiring or equipment.
- LON works is also used within Building management Systems (BMS). This allows LON systems to be easily interfaced, for example, a BMS could control opening window vents for natural ventilation purposes.
- Each component in the system has its own unique address allowing faults to be traced by the BMS.
- The LON works system is for large installations and currently only available as a supply and fit package.



LON TRZ Panel
This panel is rated at 2A capacity and will act as a local control unit having control and monitoring facilities. Output voltage is 24 volts and is battery backed in case of mains failure. The unit has integrated ventilation control buttons and a display LED for 'Open' status.



LON Motor Node
Has two separate programmable monitored motor outputs working in solo or tandem modes. Inputs for smoke detectors with line monitoring and wind/rain detection are provided, as well as a transducer input for digital stroke length control of motor units. Nodes are available in several power ratings up to 12A capacity.



LON Call Point
This master call point enables manual control of the system and the relay of information regarding the status of the system.



MZ CONTROL PANEL: SERIES 2

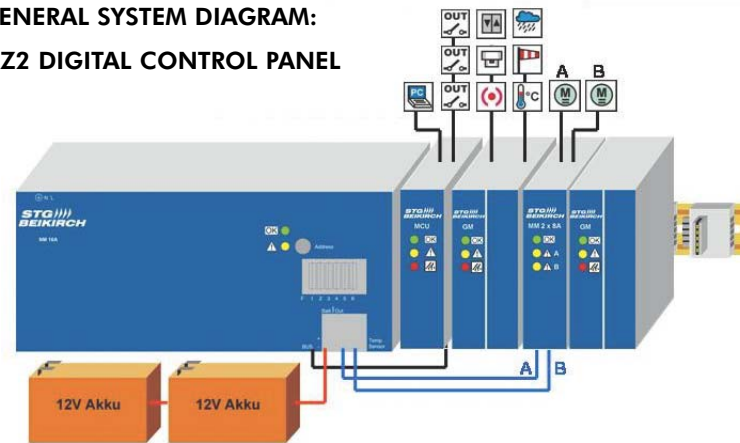
ELECTRIC

ELECTRIC

SMOKE DAMPERS & ROOF LIGHTS

The **MZ Series 2** Control system marks a significant step forward in Control Technology for Smoke Heat Evacuation and Natural ventilation systems. It is a fully Digital programmable control system, using bespoke software via a PC.

GENERAL SYSTEM DIAGRAM: MZ2 DIGITAL CONTROL PANEL

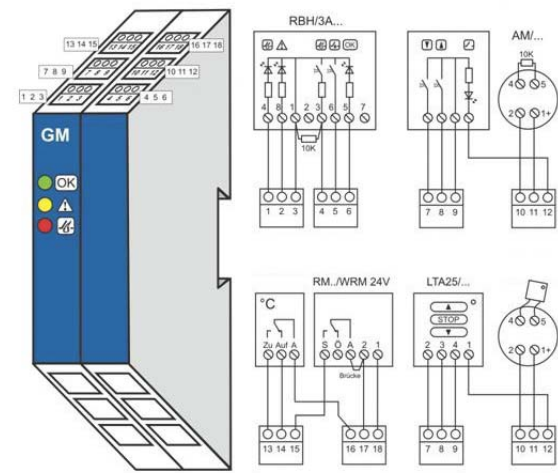


PLUG-IN EXPANSION OF MODULES



SYSTEM PROGRAMMING TOOLS

GROUP MODULE SCHEMATIC



In standard analogue control systems the internal electronic modules are linked together using connecting cables. The Digital **MZ2** modules are plugged into an electrical Bus, which automatically interconnects the modules. No hardwiring is required.

The advantage of this system is that any change can be quickly achieved using a PC to re-programme the control panel.

MZ2 Group modules have the ability to accept information directly from multiple sources alleviating the need for dedicated sensor modules within the control panel.

The combination of improved module functionality, removal of hardwiring and sensor modules reduces cabinet size, cost and installation space requirements.



MASTER MODULE

- 1 Address control switch
- 2 Status report LED set
- 3 PC interface socket
- 4 Reset button
- 5 Relay Contacts



GROUP MODULE

- 1 Address control switch
- 2 Status report LED set
- 3 Reset button
- 4 Function DIP switches
- 5 Contacts for external switches and sensors

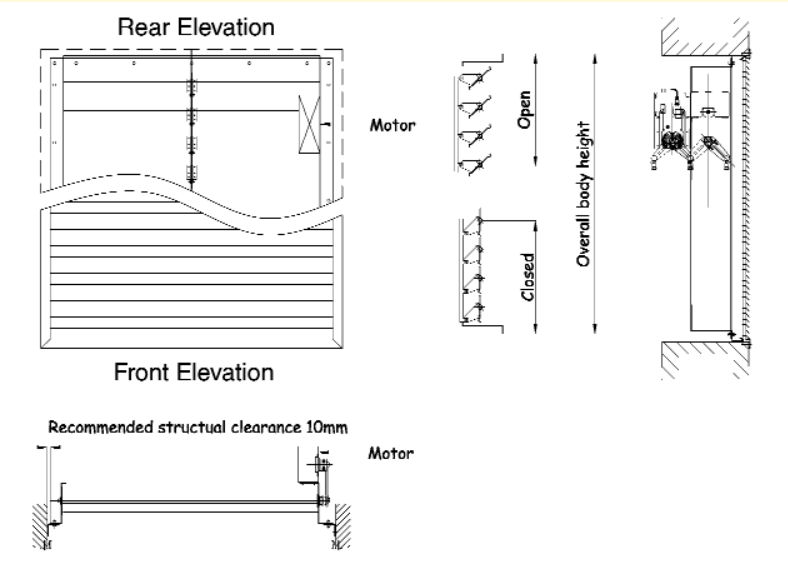


MOTOR MODULE

- 1 Address control switch
- 2 Status report LED set
- 3 Motor contacts

SMOKE DAMPERS

The **BPL** smoke damper unit has been designed to satisfy smoke evacuation applications, particularly for smoke evacuation shafts.



Features

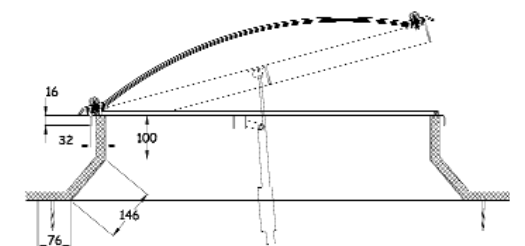
- 1.5 mm galvanised steel construction
- Motor open, motor close or spring return operation
- Smooth parallel blade operation
- Low leakage rate
- High free area design
- Optional decorative fascia louvre grilles

ROOF LIGHTS & SMOKE DOMES

The **BPL** smoke dome unit has been designed to satisfy smoke ventilation applications.

Features

- Available in a wide range of sizes
- Opal, Double Skin, UV protected Polycarbonate Dome
- 175mm high cork insulated base curb in Zintec steel finished in a grey white spray applied egg shell finish paint.
- Twin M2 24v Linear Actuators complete with SM2M tandem controller for automatic release and powered operation.



WHENEVER POSSIBLE PLEASE USE OUR PRODUCT CODES ON PAGES 20 & 21