

# Howells Glazing Systems Ltd

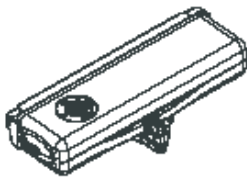
## THERMALLY BROKEN (ELECTRICAL) ROOF VENT



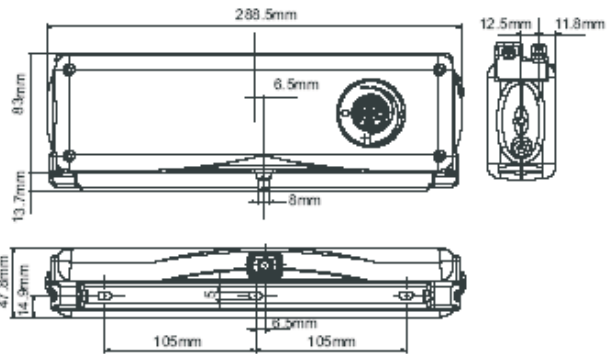
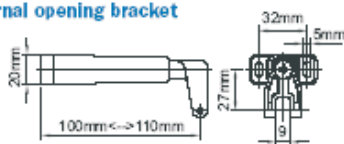
ACK4 Actuator



long bar bracket



internal opening bracket



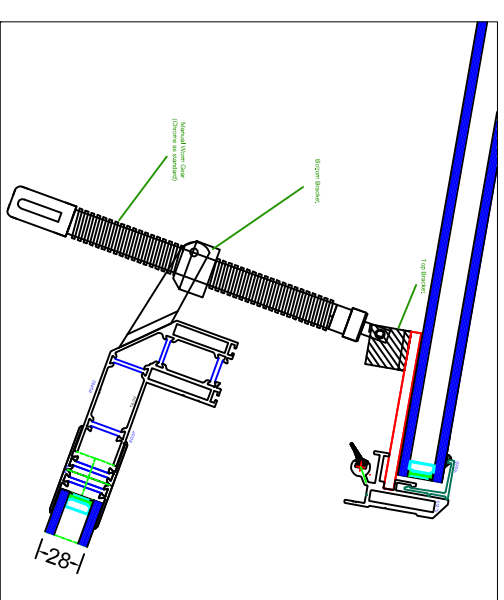
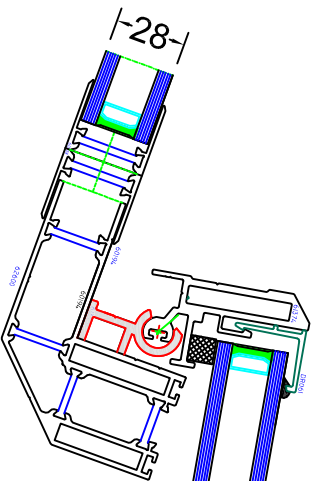
*( Manual option also available )*

**ALL ROOFS ARE MANUFACTURED TO YOUR SPECIFICATION**

[www.howellsglazing.co.uk](http://www.howellsglazing.co.uk)

HG Thermally Broken Roof Vent

Vent Assembly (Electric)



Manual Option also available

Aluminium Thermally Broken Polyamide Vent

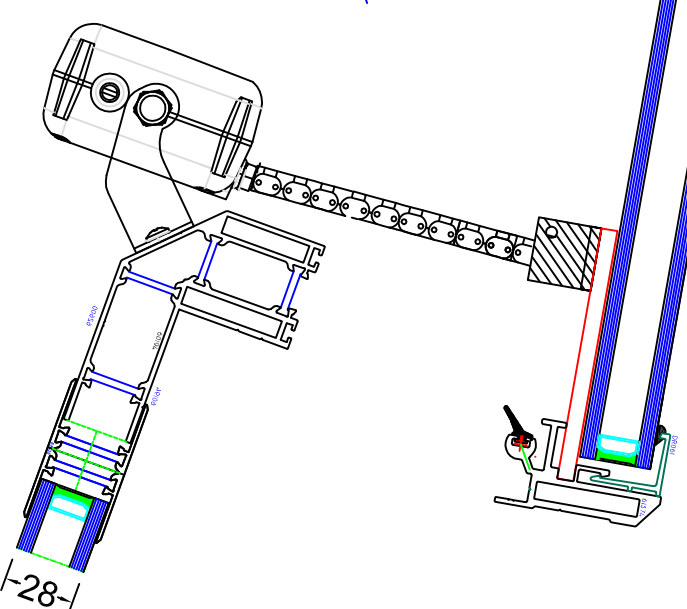
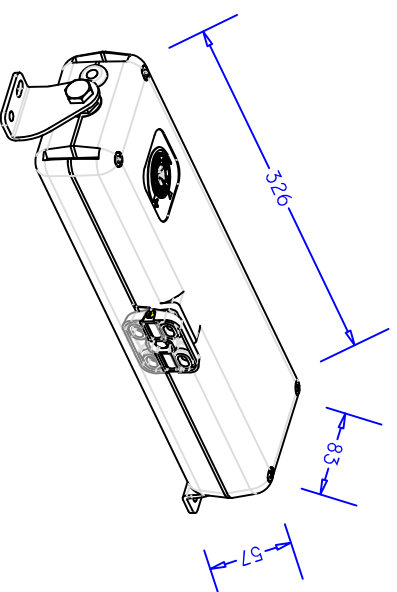
Manufactured to suit your exact sizes

Corners mechanically fixed with specialist UV Stabilized adhesive silicone

Can accept a multitude of glazing thicknesses (28mm as standard)

Powder Coated to any standard RAL or BS Colour of your choice.

Please note roof vents over 1000mm width may require slave drive (i.e double motors or slave gear)



Howells Glazing. Woods Lane, Cradley Heath. West Midlands. B64 7AS. Tel. 01384 820060 Fax. 01384 860150

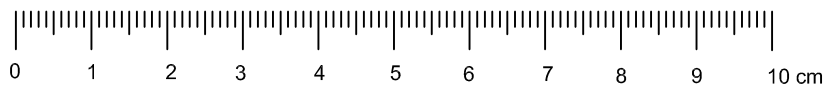
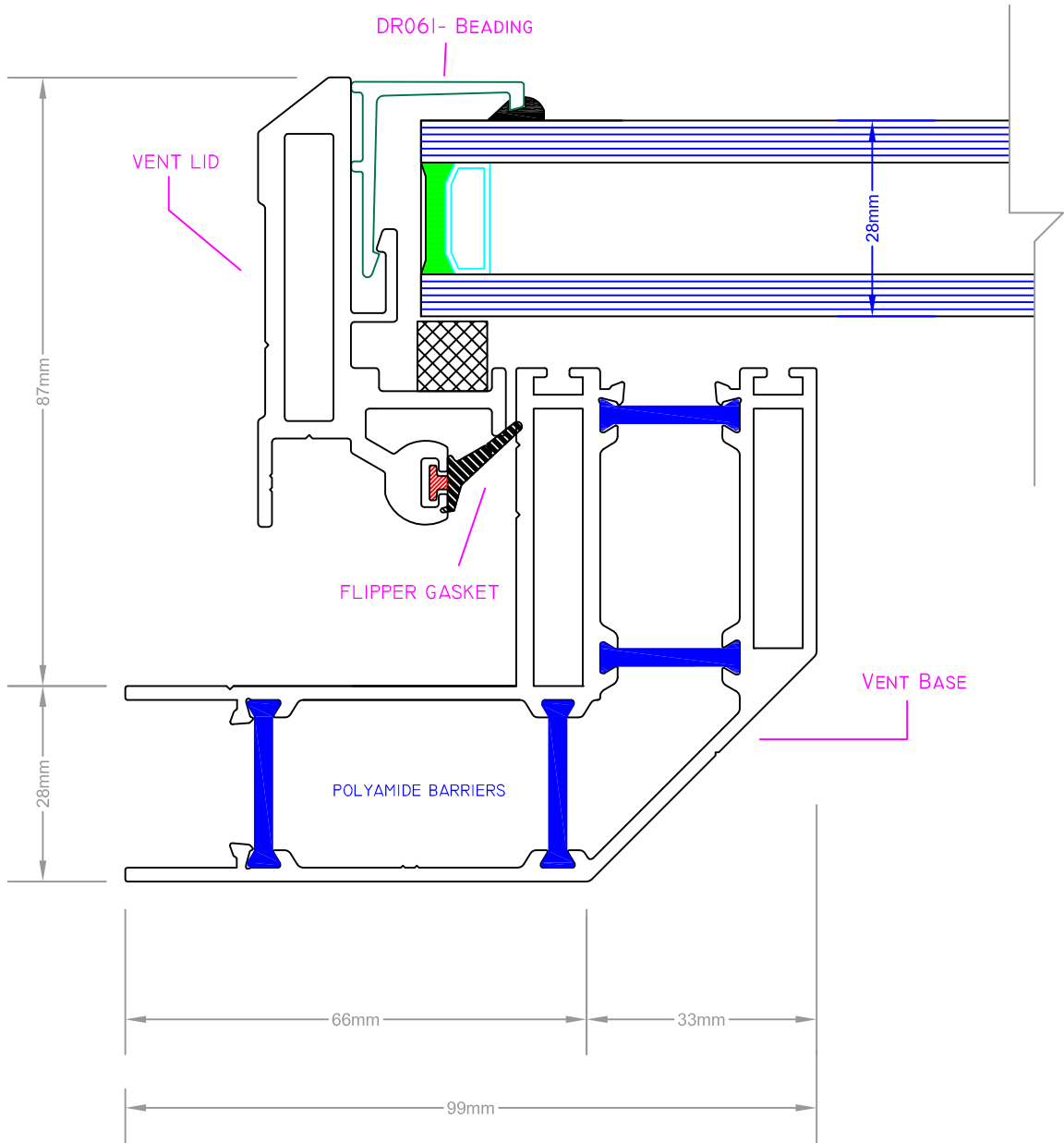
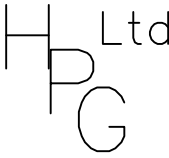
Email : [sales@howellsglazing.co.uk](mailto:sales@howellsglazing.co.uk) Web Site : [www.howellsglazing.co.uk](http://www.howellsglazing.co.uk)

Section/ Page	
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Scale Factor	Scaled to fit
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**28mm ROOF VENT**

**CROSS SECTION**



# Howells Glazing Systems

## [100J] Digital Control Panel with rain sensor & thermostat

230v / 110v / 24v Options



(SEE WIRING INSTRUCTIONS FOR CODE)



### Technical Specification

Power Supply Voltage	230v
Output Voltage	230v
Max Output Current	5 amps, upgrade to 20 amps
Max No. of Zones	1
Programmable Temperature Range	-19c to +60c
Colours	white
Overall Dimensions	Fits 2-gang steel or white plastic pattress box (50mm deep)
Temp Sensor	3m cable included
Rain Sensor	12m cable included
Mounting	flush or surface

### Product Summary

- Fully automated and manual options
- Rain and temperature sensors
- Separate open and closing temperature settings
- Choice of flush or surface mounting
- Available in white. Upgrade to brass or chrome front plate
- Magnetic key lock
- Detachable rain sensor for easy cleaning
- Digital display
- Manual override
- Also available in 110v and 24v versions

(Digital Control Panel)

**£ 275.00 + VAT**

(Delivery Not Included)

### OTHER AVAILABLE ACCESSORIES



Smoke Detectors



Rain Zones



TF Radio Control



7 Day Control



Wind Speed



Power House



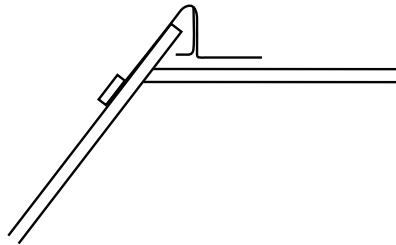
Remote Alarm Switch



Group Command Station

# 100J

## Thermostatic and Rain Controller



### Rain Sensor Fitting Instructions.

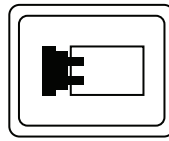
The position of the rain sensor should be on the glass roof or glazing bar. Clean the surface and remove the double sided tape cover on the back of the bottom half of the box. (Press down firmly inside the box).

Make sure the cable faces down. Take the top of the rain sensor and plug into the lid top where the gold pins stand up. The plug will fit either way round position. Run the cable down the roof and secure with clips. Make off the other end as the instructions for the unit.

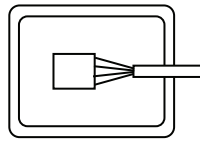
### Replacement Instructions For Worn Out Sensor Top.

Hold the bottom of the rain sensor with for finger and thumb and pull the top off, remove the plug and plug in the new top, fit the new top to the bottom with the word top facing up.

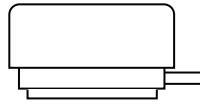
Inside view top section



Inside view bottom section

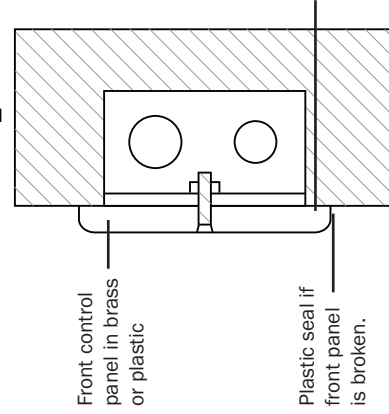


Double sided tapped back



Steel back box fitted into wall.  
The box is a standard two gang back box and measures 132mm x 71mm x 36mm deep.

When fitting the back box into the wall it is most important to set the box back from the front of the wall by 10mm, as shown on the drawing, to allow room for the internal panel.



### Auto mode

Lock will be become active and the 'LOCK' led will illuminate when no buttons are pressed for 30 seconds.

Unlock button sequence **2, 1, 3, 4, A** maximum of 5 seconds is allowed for each button press in the unlocking sequence. If this time is exceeded at any point, the code will need to be re-entered from the start. Pressing a wrong button will also need re-entering the code from start. The controller will wait for 30 seconds after the high/low temperature threshold has been exceeded before the actuator will open/close. When rain is detected the 'RAIN' led will illuminate. When the sensor has dried off the 'RAIN' led will turn off after 30 seconds.

### Manual mode

The open/close is controlled manually in this mode. The high/low temperature settings and rain activity are ignored. Lock is activated 30 seconds after the last button has been pressed. When the 'lock' is activated in 'manual' mode it is possible to view both open and close temperature settings as when 'locked' in the 'auto' mode.

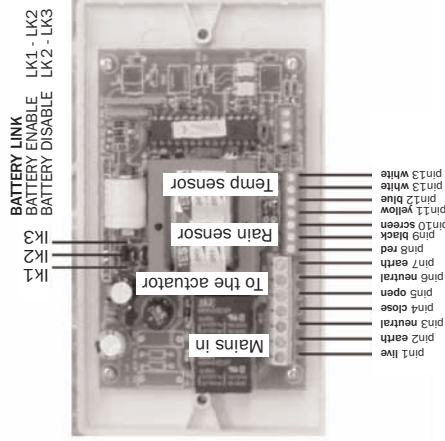
### Rain sensor

The rain sensor with a 50R heater is a gold plated PCB. Temperature Sensor Wiring does not concern the polarity. Readings are taken every second.

### Contents

- 1 100J Controller face plate and circuit board
- 1 Temperature sensor and cable
- 1 Rain sensor and cable
- 1 Surface mount back box or flush mount back box

# 100J Thermostatic and Rain Controller



Face plate identification	PCB identification	Locked	Unlocked	Raining	Auto mode	Manual mode
Power	LED1	On	On	On	On	On
Rain	LED2	X	X	On	X	X
Auto/manual	LED3	X	X	X	Off	On
Lock	LED4	On	Off	X	X	X

Face plate identification	PCB identification	Description
Open	SW1	View/set open temperature and manual open
Auto/man	SW2	Toggle between automatic and manual modes
Set+/-	SW3	Set open or close temperatures
Close	SW4	View/set close temperature and manual close

## Temperature Module

Check that the temperature module displays the ambient temperature: - e.g. TEMP 20.0 °C

Check LK1 pins 1 and 2 are linked (see Fig one). This connects the on-board battery BT1 to the

module and charging circuit. If the temperature probe is not connected to the module, the following will be displayed: TEMP --- °C  
 Switch off mains power to the controller and check the temperature module remains on.

## Lock Mode Test

The unit is in 'lock' mode ('lock' LED4 illuminated) at power on. The 'lock' function will activate in either auto or manual modes if no buttons have been pressed on the unit for approximately 30 seconds. The SET+/- and AUTO/MAN switches are then disabled. The 'OPEN' and 'CLOSE' switches can be used to view temperature settings, but not change them.

Press 'OPEN' SW1 to view opening temperature. (DEFAULT = \_\_\_ °C)  
 Press 'CLOSE' SW4 to view closing temperature. (DEFAULT = \_\_\_ °C)

## Unlock

To unlock the controller, the unlock sequence must be entered. Press the buttons in the following order: -

Visual	Button number
Auto/man	SW2
Open	SW1
Set	SW3
Close	SW4

Approximately 5 seconds is allowed for each button press. If the time from the previous button being pressed exceeds this, or the wrong button is pressed, then the sequence will have to be re-entered from the start.

When successfully unlocked, the 'lock' [LED4] will be extinguished and all buttons will be functional.

## Auto/Manual Modes

Check that the unit toggles between automatic and manual modes by pressing 'AUTO/MAN' [SW2]. The 'AUTO/MAN' [LED3] turns on in manual mode and off in automatic.

## Automatic Mode

- Enter automatic mode by pressing the 'AUTO/MAN' [SW2] button so that the 'AUTO/MAN' [LED3] is off.
- Set 'OPEN' temperature by pressing and holding the 'OPEN' button [SW1] while pressing the 'SET +/-' button to increment the temperature setting. Set the temperature to 30 °C.
- Set 'CLOSE' temperature by pressing and holding the 'CLOSE' button [SW4] while pressing the 'SET +/-' button to increment the temperature setting.

Set the temperature to 15 °C.

- Warm the temperature probe so that temperature rises above 30 °C. The actuator will open after approximately 30 seconds in unlocked mode and within a second or two in locked mode. Power to the 'open' relay [RL2] will be cut after a further 30 seconds.

- Cool the temperature probe so that temperature falls below 15 °C. The actuator will close after approximately 30 seconds in unlocked mode and within a second or two in locked mode. Power to the 'close' relay [RL1] will be cut after a further 30 seconds.

- Check 'lock' [LED4] comes on after 30 seconds without pressing any buttons. The 'AUTO/MAN' [LED3] should remain off.

## Manual Mode

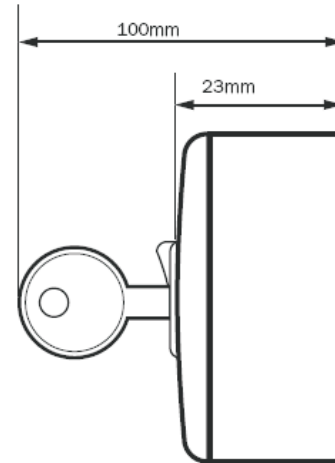
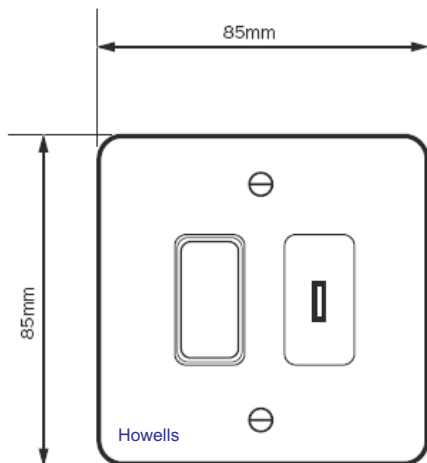
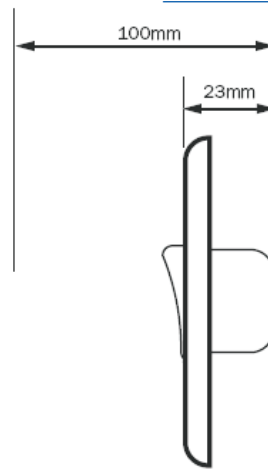
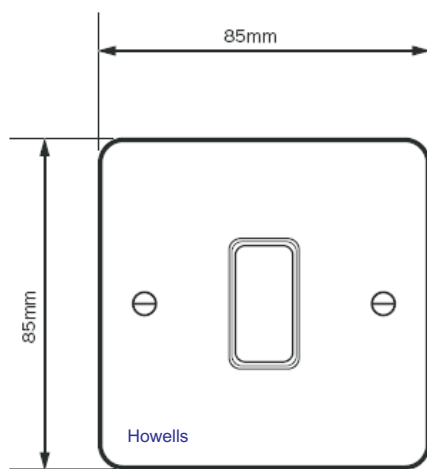
- Enter manual mode by pressing the 'AUTO/MAN' (SW2) button so that the 'AUTO/MAN' [LED3] is on.
- Press and hold 'OPEN' button [SW1] to fully open the actuator.
- Press and hold 'CLOSE' button [SW4] to fully close the actuator.
- Check 'lock' [LED4] comes on after 30 seconds without pressing any buttons. The 'AUTO/MAN' [LED3] should remain on.

## 6.0 Rain Sensor Test (Automatic Mode Only)

- Enter automatic mode by pressing the 'AUTO/MAN' [SW2] button so that the 'AUTO/MAN' [LED3] is off
- Warm the temperature probe so that temperature rises above the open temperature (e.g. 30 °C). The actuator will open after approximately 30 seconds in unlocked mode and within a second or two in locked mode.
- Spray water onto the rain sensor surface.
- The 'RAIN' led [LED2] will illuminate and the actuator will close after approximately 30 seconds in unlocked mode and within a second or two in locked mode.
- Leave the unit for a few minutes, with water on the sensor surface. Then dry off the sensor surface with a cloth and after approximately 30 seconds the 'RAIN' led [LED2] should turn off.

# Howells Glazing Systems

## On/Off Rocker Switch



### Technical Specification

Voltage supply  
Output voltage  
Max amps  
Zones  
Colours

**R SWITCH**  
230v/110v/24v  
230v/110v/24v  
10 amps  
1,2,3,4  
white, satin or  
brushed chrome or brass

**KEY SWITCH**  
230v  
230v  
10 amps  
1  
white

### Product Summary

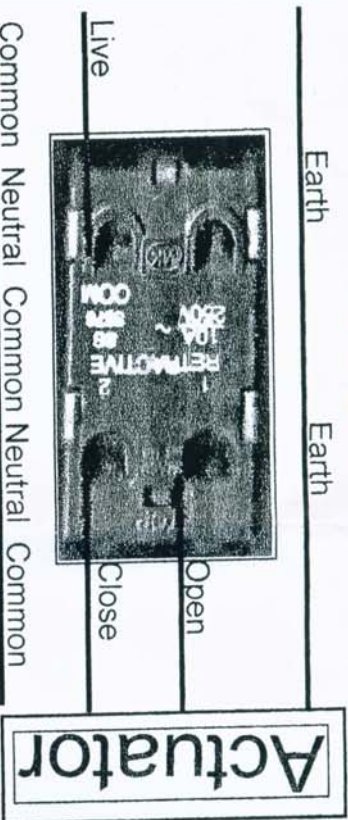
- Single pole, double throw, sensor off function
- Stylish retractive switch
- For use upto 10amps
- Available in white, satin or brushed chrome and brass

*(Rocker Switch)*

**£35.00 + VAT**  
*(Delivery Not Included)*

## Retractive Switch Wiring And Installation (10amps)

SWITCH



From Retractive Switch to actuator: Run 4 core flex (.75mm or larger) from controller - the earth wire is connected to controllers earth.

To Retractive Switch: A 1.5mm 3 core flex supply connected to a switched fused spur (fused at between 3-5amp).

Common Neutral Common Neutral Common

**D6 Linear Actuator** -Blue =Common (Neutral), Close = Black, Open = Brown, Earth =Yellow/Green

Some D6 have 6wires if you have supplementary red and white wire connect them together and leave them on their own.

**Micro L+xl chain Actuators** -Blue = common, Open = Black, Close = Brown, Earth = Yellow/Green.

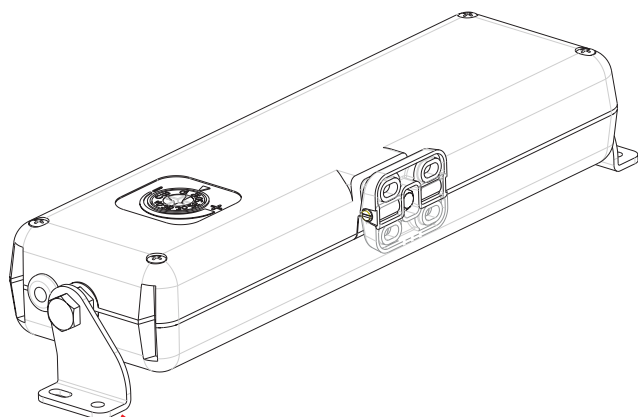
**ACK4=C20 Chain Actuator** - Blue/Grey = Common, Open = Black, Close = Brown.

**WE DO RECOMMEND THAT A QUALIFIED ELECTRICIAN INSTALLS THESE UNITS.**

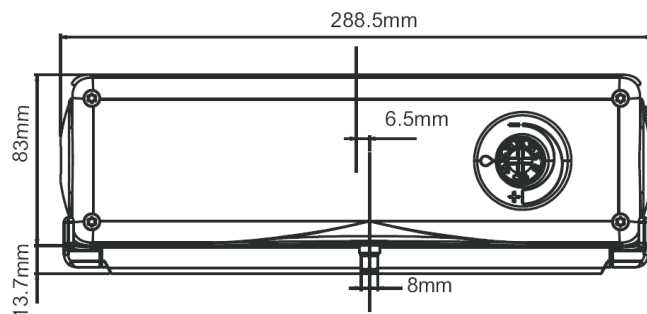
Call for any technical enquiries in relation to the motors or controllers **ONLY** on 01202 744958

# Howells Glazing Systems

## 230v / 24V Electric Chain Motor



Many various brackets to choose from



### Technical Specification

Voltage Supply	230v	24v
Thrust Force	350N	350N
Traction Force	350N	350N
Stroke	100 - 400mm adjustable	100 - 400mm adjustable
Absorbed Current	0.32 amps	2.1 amps
Time Rating	S2 2mins	S2 3mins
Limit Stop	electronic	electronic
Safety Stop	electronic	electronic
Wiring	3 core	2 core
Speed	~ 28mm/s	~ 18mm/s
Double Insulated	yes	no
Protection Class	IP55	IP55
Parallel Connection Option	ACK4-USA2/3	ACK4-USA2/3
Weight	1.9kg	1.9kg
Colours Available	white / black / silver	white / black / silver

### Product Summary

- Adjustment of stroke in 7 positions from 100 to 400mm
- Central exit of double link chain.
- Double insulated electrics
- Simple swivel back planes, fast and suitable for windows of any type and size (not included in the packaging).
- Buzzer to indicate wrong installation.
- High protection degree IP 55.
- Collection and synchronisation possibility for 2 or 3 actuators on the same window (USA2 or USA3 control unit).
- Available in black, silver and white.

# Topp Motor Wiring And Installation Guide

We Do Recommend That A Qualified Electrician Installs These Units

## 230v

Common = Grey/Blue

Open= Black

Close= Brown

### To The Controller:

A 1mm 3 core flex supply connected to a switched fused 230v spur (fused at between 3-5 amp).

### To The Actuator:

Run 4 core flex (.75mm or larger) from controller -the earth wire is connected to controllers earth.

## 24v

Close = Blue

Open = Brown

### To The Controller:

See Controller instructions

### To The Actuator:

Run 2 core flex (1.5mm or larger depending on cable run) from controller

If looping to other actuators continue flex (inc 230v earth) wire to others actuators. If running more than 8 actuators check cable size. Before attaching the chain to the upper bracket, please power each actuator, so it fully opens and fully closes.

Adjuster Screw	Length of Opening	Buzzer
<p><b>Please Note</b> that if the V3 adjuster screw (Pic.21 in ACK4 manual) is not adjusted properly before the actuator is switched on (i.e. If the window closes before the actuator has finished its closing travel). This will result in the teeth of the cog being stripped. (See Buzzer)</p>	<p>To adjust the length of opening, turn dial from 100mm (marked as 10 on dial) to 400 (marked as 40 on dial)</p>	<p>If the buzzer sounds this means that the chain has been stopped from retreating fully or a blockage has occurred.</p>

Extension Pins	Technical Support	Guarantee
<p>Extension Pins upto 88mm are available if required. The ACK4 chain has to be fully retracted inside housing with motor <i>powering off otherwise it will damage itself</i></p>	<p>For Any Technical Enquiries In Relation To Any Of Our Motors Or Controllers Please call us on 01202 744958</p>	<p>Opening Actuator Casing Invalidates All Guarantees.</p>

230v

# USA2/3 - ACK4

24v

600N  
800N

60kg  
80kg

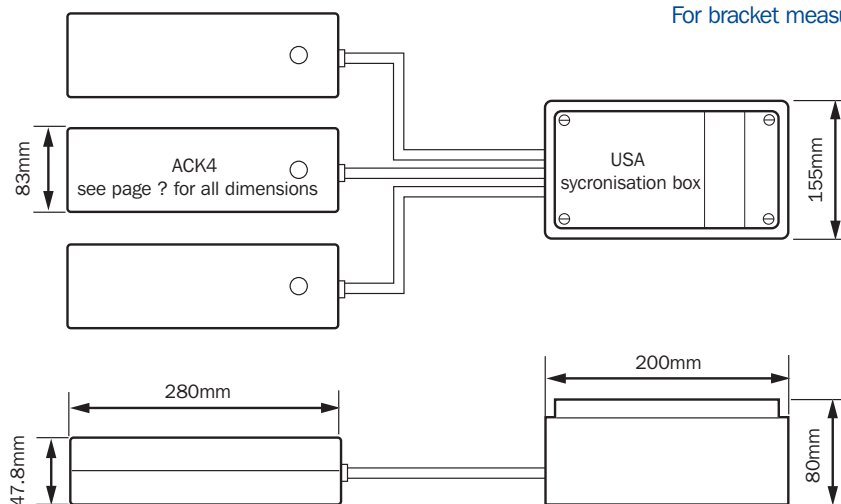
100-400mm  
adjustable

CHAIN  
ACTUATOR

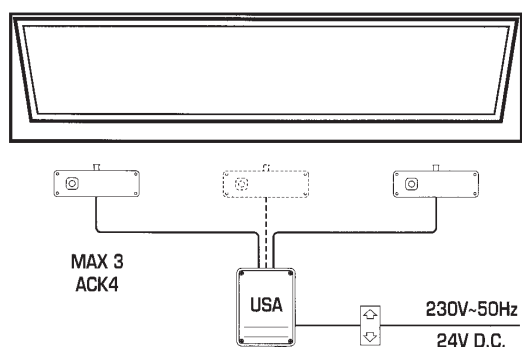


## DIMENSIONS

For bracket measurements see ACK4 p55



## INSTALLATION LAYOUT



**230v****24v****600N  
800N****60kg  
80kg****100–400<sub>mm</sub>**

# USA2/3 – ACK4

## TECHNICAL SPECIFICATIONS

	<b>USA2/3-ACK4 230v</b>	<b>USA2/3-ACK4 24v</b>
Voltage Supply	230v	24v
Thrust Force	600N/800N	600N/800N
Traction Force	400N/600N	600N/800N
Stroke	100 - 400mm adjustable	100 - 400mm adjustable
Absorbed Current	0.64/0.96 amps	4.2/6.3 amps
Time Rating	S2 2mins	S2 3mins
Limit Stop	electronic	electronic
Safety Stop	electronic	electronic
Wiring	3 core	2 core
Speed	~ 28mm/s	~ 18mm/s
Double Insulated	yes	no
Protection Class	IP55	IP55
Parallel Connection Option	yes	yes
Weight	3.8kg, 5.7kg	3.8kg, 5.7kg
Colours Available	white / black / silver	white / black / silver

## PRODUCT SUMMARY

- The electronic control of the chain allows seven stroke end positions. It is easily adjustable at any moment by acting on the width adjusting screw, situated on both sides of the actuator.
- The aesthetic design makes the actuator suitable for most locations.
- The electric parts are double insulated (therefore earth wire is not necessary).
- On the chain end (double-linked and made of STAINLESS steel) it is possible to effect a 10mm adjustment. The maximum available stroke is 400mm.
- Comes with 8 metre cable option
- The actuator is **CE** marked and complies with the CEE EN 60335-1, 89/336 CEE (electromagnetic compatibility) regulations.

## PRODUCT CODES

<b>PRODUCT CODE</b>	<b>PRODUCT DESCRIPTION</b>
<b>AT-USA2-230</b>	ACK4-USA2 230v
<b>AT-USA2-24</b>	ACK4-USA2 24v
<b>AT-USA3-230</b>	ACK4-USA3 230v
<b>AT-USA3-24</b>	ACK4-USA3 24v
<b>AT-USA2-230-8M</b>	ACK4-USA2 230v with 8 metre cable
<b>AT-USA2-24-8M</b>	ACK4-USA2 24v with 8 metre cable

<b>BRACKET CODE</b>	<b>BRACKET DESCRIPTION</b>
<b>BRAT-L</b>	ACK4 long bracket
<b>BRAT-LS</b>	ACK4 large swivel bracket
<b>BRAT-S</b>	ACK4 small swivel brackets
<b>BRAT-U</b>	ACK4 'u' shaped brackets

# FULL THERMALLY BROKEN ROOF VENT SYSTEM



## MANUAL ROOF VENTS (inc. manual worm gear)

## ELECTRICAL ROOF VENTS (inc. electrical chain motor)

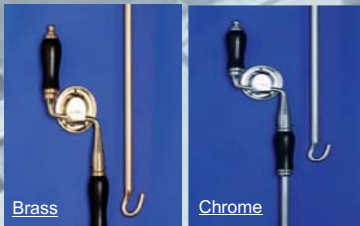
### Manual Options



#### SPINDLES

180 - 280mm  
Telescopic Spindles

### Crank handled operating Poles



Brass

Chrome

Standard Lengths 1500mm **£ 25.00 + VAT**

Telescopic 1750-3000mm **£ 35.00 + VAT**

### On/Off Switch



### Features

- \* Voltage supply 230v/110v/24v
- \* For use up to 10 amps
- \* White Brushed Chrome or Brass
- \* 1/2/3/4/ Zones
- \* Surface of recess mounting

**£ 35.00 + VAT**

### Electrical Options

#### Electrical Chain Motor



- \* Adjustment of 7 stroke positions from 100-400mm
- \* Buzzer to indicate incorrect installation
- \* 230 / 24 Volt options
- \* Powder coated White, Silver or Black as a standard
- \* Others colours available on request

#### Control Panel - Digital

with rain sensor & thermostat



### Features

- \* Fully automated and manual options
- \* For use up to 5 amps
- \* Separate open/ closing temp. settings
- \* Available in white / Brass or Chrome
- \* Complete with rain sensor / Thermostat
- \* Digital display
- \* Manual override
- \* Optional remote control
- \* Surface or recess mounting

**£ 275.00 + VAT**

### OTHER ACCESSORIES (ELECTRICAL)



Smoke Detectors



Rain Zones



7 Day Control



TF Radio Control



Wind Speed

For more tech. info + wiring diagrams :- visit our web site:- [www.howellsglazing.co.uk](http://www.howellsglazing.co.uk) (Roof vents)