

Automatic Control

A guide to control options for motorised shading

There are several benefits to specifying motorised shading. The control system should be carefully considered to maximise the effect but the best advice is to keep it simple.



Ensuring that your shading is in position to match the weather conditions maximises the energy and comfort benefits whilst still allowing you to over-ride to suit your life style and comfort needs. The sun brings us warmth and light in the winter season providing free energy and your shading has to be able to react to maximise that benefit. In the summer season with temperature increase predicted the need to control and react to the movements of the sun is essential.

Your windows are the weakest point in energy conservation and dynamic shading is the most cost effective solution to provide control. So selection of an effective solution is an investment for the future.



Visit our website to realise how automated shading will improve wellness, productivity & company performance

This step by step guide is compiled in sections that enable you to consider the options and select the most suitable system for your needs.

Section One

Describes most of the methods of control available.

Section Two

Asks questions to determine the most appropriate system.

Section Three

Other points that need consideration.



Section 1 Method of Control

Control systems can be made to perform virtually any sequence of functions. It is up to the specifier to decide the priorities of the ones that are required.

Radio Remote Control

Controlled with a hand held transmitter or wall mounted battery transmitter. The receiver is normally mounted above the blind or within the motor. Our recommendation is that this is a solution for domestic installations as transmitters may be lost or the need for battery replacement may be overlooked in commercial facilities.

Radio eliminates the need for hard wiring from motor to switch and is especially beneficial to avoid disturbance to finished surfaces. However in built up areas there is potential for signal interference especially near embassies so care should be taken to check suitability.

Floor or Facade Control

Allows the blind controls to be overridden from one central control point for uniformity of appearance on a floor or facade of a building or to operate all blinds in an area together.

Master or Building Control

Allows override of the blind system from one central point with the option of an interface with the fire alarm system to retract all of the blinds.

Individual Control

Override of the master control to allow some or all of the blind functions to be controlled by a switch local to each blind.

Control From Two Switch Locations

Allows a single or group of blinds to be operated from two switching points and is normally a requirement in video conference rooms.

Solar Sensor Control

This operates the blind at two pre-determined light (lux) levels. The blinds are lowered when the high level is reached and raised if the light drops to the lower level. A time delay is built into prevent the system operating with each passing cloud. Light levels are identified by a solar sensor that is normally placed on the wall opposite the window.

Wind Control

A Safety device for external blinds to retract them if the wind speed exceeds a pre-set level. Wind speed is identified by an anemometer located above the blinds on the same facade.

Time Control

A daily or weekly timer to operate the blinds at pre-set times that is usually used to ensure that all blinds are lowered in the morning and raised at night. Where blinds are required for insulation it can lower them at night for heat retention.

Thermostat Control

Thermostat control can be used to isolate external blinds to prevent them operating in freezing conditions.

Light Level Control

Suitable for Art Galleries and Museums a three lux level control unit allows the maintenance of light levels within a selected bandwidth. Light levels are identified by a photocell that is normally fitted to the wall opposite the blinds. The option of a lighting interface allows the blinds to be operated in conjunction with the building lights to conserve lighting energy costs.

Interface with home management system

Integration with most systems is possible with an interface unit. The system though must have a stop function and not just a simple up and down signal.

WI-FI Control

Control boxes enable instructions on control to be sent remotely and programmes and scenarios for automated control that can be altered and monitored remotely.

Venetian Blind Tilt Control

When the direction is changed the blind tilts a full cycle before moving in the new direction. This function slows the motor to enable a more accurate adjustment of the tilt angle.

PV Control

PV control is available for Tectonic roof blinds, a photo voltaic cell provides the power, control is by a radio remote handset.

Heater Control

This is an additional control for awnings fitted with a patio heater for those cooler evenings.



Section 2: Which are required?

There are so many options for controlling your motorised blinds that it can be difficult to be sure that you have specified the correct components. Before designing a system it is recommended basic questions are considered.

1. What functions do we really need?
2. Why do we need them?
3. How would we use them?
4. Will it meet the needs of the user?
5. Will it assist with Building Regulation Compliance?

These answers will lead you to solutions for most methods of control, for others contact our technical advisor. By following this sequence you will now have reference numbers that will enable us to identify the components and wiring diagram that most accurately meet your requirements. List the sequence of numbers from the list and email them with your enquiry.



To Maximise the energy saving benefits of shading it needs to be automated to react to changing weather conditions

Sustainable shading can save nearly 60 times as much CO₂ as that generated throughout its lifecycle

Motors

Choose 1, 2 or 3, and then **Go to "Type of Switch"**.

1. One motor (240v)
2. Several motors (240v)
3. Low Voltage DC motors (12v or 24v)

Type Of Switch

Choose one of the following and then **Go to "Type of Switching" Sequence**.

11. Hard wired switches
12. Radio remote transmitter
13. Wi-fi
14. Automated control

Type Of Blind

Choose one of the following and then **Go to "Controls"**.

31. Roller blind or shutter
32. Rooflight non-retractable or external louvres
33. Venetian blind
34. Vertical louvre blind
35. External awning

Type of Switching Sequence

Choose one of the following and then **Go to "Type of Blind"**.

20. Single switch for each blind
21. Single blind with automated control
22. Two switch locations for each blind
23. Two switch locations for several blinds
24. Several blinds from one switch
25. Several blinds with individual and separate master control*
26. Several blinds with individual and automated controls*
27. Several blinds with individual and automated controls and separate master control*
28. Several blinds with automated control, no individual control*
29. Several blinds with automated control and separate master switch, no individual control*

Controls

Do you want any automated controls?
If YES **Select** from the following.

41. Solar sensor control
42. Wind control
43. Timer control
44. Thermostat control
45. Light level control
46. Interface with Building or Home Management System
47. Wifi control
48. Fire alarm interface
49. Venetian blind slow tilt
50. PV powered
51. Patio heater

For and accurate calculation of components of options marked * a layout plan will be required



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Section 3 Other Considerations

Site Wiring

Normally blind makers will not undertake wiring as part of their work as this is included in the site electrical contract or done by an electrician familiar with the building. Thus electrical items are usually supplied only for installation by others whilst setting the motor limits and final commissioning and testing would be part of the blinds contract.

Power

Most motors are single phase using standard three core mains supply to the switch. The cable from the switch to the motor is usually four core, that is two for supply (one raise and one lower), a neutral and an earth. The load requirement is normally less than one amp for each motor.

Control System Design Considerations

On multiple blind installations, relays must be used to prevent current feed back (except low voltage motors).

Motor running speeds can vary very slightly so it is not normally possible to have blinds operating exactly in line. They will of course limit to the same position.

Motorised blinds must be fitted to a secure fixing as any vibration will substantially increase the operating noise level. Motors are insulated to minimise vibration but will have an operating noise level that is noticeable.

It is preferable to use momentary position switches as this ensures that power is isolated from the motor when the operation has completed. Where two positions are used for switching, momentary position switches must be used to prevent conflicting signals being sent. Alternatively an isolating relay must be used.

Motors are normally supplied with a minimum 1 metre length of flex (flying lead). For ease of removal of the blind for maintenance, a junction box or plug must be allowed for adjacent to the motor.

And finally, do not forget the most important component of any system - the user. Total automation can be resented and some degree of local control or additional manual blinds should be considered.

