

smartglass

Bright Thinking

Technical Document

Version 1.9

BlackOut Smartglass™

BlackOut Smartglass™

BlackOut Smartglass™ is a unique glass solution that allows users to instantly block out 99.5% of light that passes through a window. As an alternative to blinds or curtains, BlackOut Smartglass can be used in commercial or residential applications to instantly control the atmosphere of a room by immediately plunging the space into near total darkness.

BlackOut Smartglass™ is a dual-interlayer laminate (DIL) that combines cutting edge film and glass lamination processes to create a product that is re-defining what is possible within glass technology. By combining two different film technologies in the one laminate panel, Smartglass International has created a product that can switch instantly between four distinct states:

Clear	Tinted
Opaque	BlackOut

BlackOut Smartglass™		Liquid Crystal Film	
		<i>On</i>	<i>Off</i>
SPD Film	<i>On</i>	Clear	Opaque
	<i>Off</i>	Tinted	BlackOut

Sizes

Maximum 1000 x 3200mm
Minimum 200mm x 300mm

Thickness

Standard: 13mm
Custom: 11mm – 27mm
Please contact for bespoke solutions.

Environmental

Storage/Operation -10° C to 55° C

Electrical

Driving voltage of 110VAC at 14W/m²
Transformer dimensions: 223mm x 117mm x 117mm (4.9 kg) as standard.
Cable exits top centre of panel unless specified otherwise and is of double insulated 0.5mm² dual core flex.

Variations Available

All Shapes/Curved/Ballistic/X-Ray/Tinted.
Please contact for bespoke solutions.

Optical & Sound Data

	Clear	Tinted	Opaque	BlackOut
Light Transmission	42.6%	0.8%	25.5%	0.5%
Light Reflectance	11.9%	8.4%	10.9%	8.4%
Haze Factor*	9.5	n/a	88	n/a
U Value (W/m ² K)	5.6	5.6	5.6	5.6
g-value	57	34	47	32
UV Transmission	0%	0%	0%	0%
Sound control	37dB	37db	37dB	37dB

*Approximation for Haze was calculated using the following formula: (Diffuse T/Total T) x 100.

Values are nominal ($\pm 3\%$) and are dependent upon glass configurations used.
Above data based on standard 13mm glass panel

Technical Data

Operating Voltage	2 x 110Vac @50HZ
Power Consumption	14W/m ² in Clear (on) state, 0W/m ² in BlackOut (off) state
IP Classification	IP X7
Bathroom Classification	Zone 1 & 2, Conformity to EN/HD 60364-7-701

Durability & Testing

As BlackOut Smartglass™ is a dual-laminate glass, it offers exceptional strength and safety.

BlackOut Smartglass™ has been tested in accordance with relevant standards and is compliant with all applicable EU Directives and standards.

BlackOut Smartglass™ panels have been tested in excess of 1 million switch cycles in-house.

Certification list and test results are available upon request.

Installation Methods

Glazing Methods

- Wet Glazing must only be completed by using Smartglass approved silicone.
- Dry jointing can be used.
- Fixed or opening frames.
- Pivot door systems with top and bottom rails.
- Can be incorporated into double glazed units.

Installation Specifics & Precautions

- Avoid any **point pressure** upon the surface of the panel.
- Short term **exposure** to be within -10°C to $+55^{\circ}\text{C}$.
- **Avoid edge contact** with any material not authorised by Smartglass.
- Transformer can be located remotely, but requires **access** for maintenance
- Electrical control, either via wall switch or remote system, to be provided upon **primary** side of power conditioner.
- All electrical connections to be made by **certified electrician** and in line with local rules and regulations.
- Setting blocks to be used of standard width and thickness of all glass panels.

Maintenance

Once installed maintenance is as simple as keeping the Smartglass clean. Regular cleaning using only neutral materials is recommended for optimal transmission performance.

An annual check of all the electrical equipment is recommended to ensure all is working as it should.

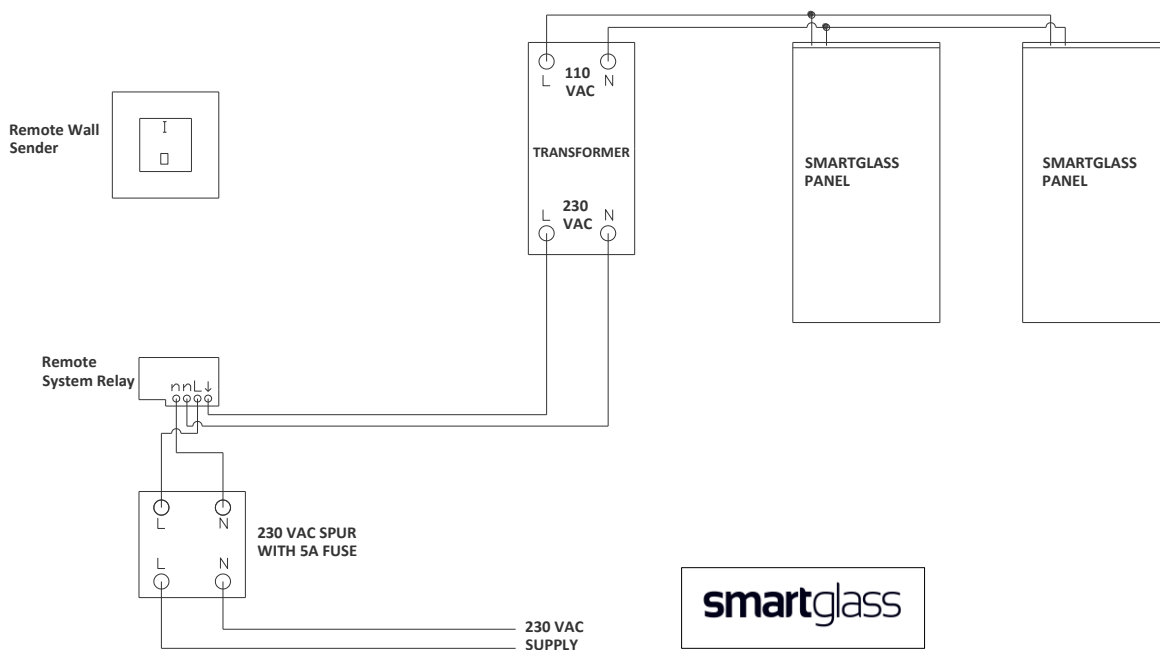
Fault Finding

In the unlikely event of electrical failure, please ensure correct voltage is present at glass panel. If not, check all fuses relevant to circuit. If in doubt, please contact Smartglass for further information.

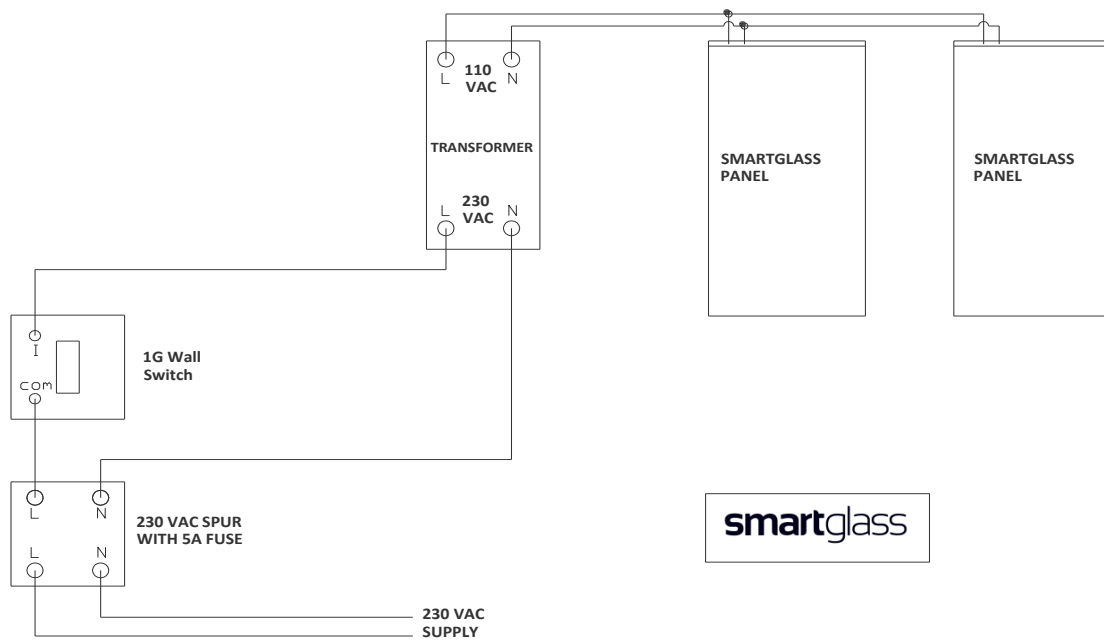
Warranty

Smartglass warrants that the physical glass products supplied by Smartglass should be free from defects in materials and workmanship, assuming normal use, for a period of 5 years from the date of dispatch unless otherwise specified. The consumable items, such as, but not limited to, transformers, remote control systems or any other type of switching mechanism will be warranted for a period of 2 years from the date of dispatch.

Remote Wiring Diagram



Hard-wired Wiring Diagram



smartglass

Bright Thinking
