

AUTOMATIC SCREEN CONTROLLER

ASC-1

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WARNING

This unit is intended to be installed by a competent person or an electrician.
High voltages present on circuit board.

IMPORTANT

This unit must be connected to the mains supply via a 5 Amp switched fused spur outlet or 5 Amp fused plug.

General

The ASC-1 is an automatic projection screen controller that will control any mains powered electric screen. This unit monitors the power being drawn by the projector and when the power exceeds a threshold, the screen is driven down. After the projector is switched off, the screen will be driven back up to it's rest position.

- Fully automatic operation of screen
- Microcontroller logic
- High quality relay outputs
- Auxiliary relay (house lights control)
- Adjustable threshold
- Manual over ride facility
- Mains outputs for screen

Operation modes

Automatic mode.

The unit is connected in-between the mains supply and the projector to allow the unit to monitor the power being drawn by the projector. A mains powered screen is connected directly to this unit also.

As soon as the projector is switched on, its power draw will increase from a few watts in standby up to at least 100Watts as the lamp warms up. This increase in power is sensed by the microcontroller and triggers the unit to apply mains power to the 'down' output. This output will remain live as long as the projector remains on.

Thirty seconds after the projector is turned on, the auxiliary relay will also energise which can be used to switch low voltage signals such as a relay coil or dimmer control signal which in turn can dim the house lights or close blinds.

As soon as the projector is turned off, the power drawn will reduce to less than 100 Watts causing the unit to provide power to the 'up' output and de-energising the auxiliary relay to raise the houselights if connected.

Manual mode.

Provision is made for a manual over ride button* to allow the screen to be controlled without the projector being monitored. This would be useful if the installed projector had to be removed for service and a temporary projector was being used on a desk for instance.

As soon as the manual button is pressed, the screen will either drive down or up depending on it's current position. Pressing the button will also disable the automatic sensing until automatic mode is next required.

To re-enable automatic mode.

Press and hold the manual push button for greater than five seconds. The screen will then either retract or come down depending on the status of the projector being monitored.

*The push-button is not supplied with the ASC1.
Any normally open momentary push-button can be used.

Connections & Indicators

Mains in.

Connect to the mains supply via either a 5 amp fused plug or switched 5 amp fused spur.

Projector Feed.

The video projector mains feed is taken from these terminals. Maximum load is 5Amps.

Screen Control.

The electric screen motor is connected directly to these terminals. Only use a projection screen that has mains rated motor windings as these terminals output mains potential when operating.

Auxiliary Output.

This output provides a volt free changeover contact that can be used to control an external relay, contactor or logic input of external equipment such as house lights, sound system or curtain controls. The aux relay activates 30 seconds after the projector is switched on and de-activates immediately the projector is switched off. Maximum load 32v 250mA.

Manual Control.

You may connect a momentary push button to these terminals such as a bell push switch to be able to control the screen manually. An earth is provided which should be connected to the switch front plate if using a metal front plate.

Indicators.

There are two LED's to indicate status.

The RED LED will illuminate when mains power is being delivered to the screen motor. It will extinguish after 2 minutes once the screen is retracted.

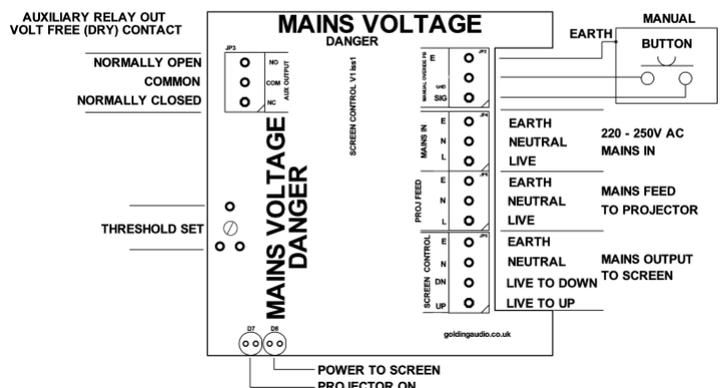
The GREEN LED will illuminate to indicate that the controller is sensing current draw from the projector and that the screen should be down.

Threshold Set.

This screwdriver adjustable control has been set at the factory to operate when the projector draws more than 100Watts which should be sufficient for most video projectors. At this setting, the projector on standby or cool down should not be drawing enough power to operate the screen.

Connection Details.

SCREEN CONTROL PCB



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Troubleshooting

Problem:

The screen does not go down when the projector is switched on or go up when the projector is switched off.

1. Check the projector is taking it's feed from the controller and not plugged directly into the mains.
2. Check the projector's lamp is actually lit.
3. Confirm the screen is connected to the controller correctly.
4. Does the green LED light when the projector's lamp is on? If not, see 'adjusting the threshold'
5. Press and hold the manual over-ride button for more than 5 seconds to ensure manual mode is cancelled then retry switching off and on the projector .

Problem:

The screen operates in reverse.

1. Check the 'down' and 'up' wires are not reversed at the screen or controller.

Adjusting the threshold

WARNING. Mains voltages present.

Only perform this adjustment if you are qualified or competent to work on live equipment.

This adjustment should only be performed if the controller is not sensing the projector correctly.

1. Disconnect the mains feed from the controller and remove the cover from the controller.
2. Locate the threshold set adjustment and find a suitable **insulated** terminal screwdriver to fit.
3. Apply mains to the unit and turn on the projector then wait at least two minutes for the lamp to reach full brightness.
4. Make sure that the lamp is set to ECO mode or low brightness mode while setting up the threshold.
5. **DANGER! DO NOT TOUCH ANY PART OF THE BOARD.** Carefully adjust the threshold (anticlockwise) until the green led just lights up.
6. While imagining a clock face, adjust the threshold a further 3-5 minutes.
7. Set the projector to standby and check that the green led goes out while the cool down fans are running.

Specification

Controller supply:

Voltage 220-250VAC 50Hz
(to be fused externally at 5Amps maximum)
Power < 2W

Projector output:

Voltage 220-250VAC
Current 5 Amps maximum

Screen output:

Voltage 220-250VAC
Current 3 Amps maximum
Down 'on' time Continuous while projector on
Up 'on' time Off after two minutes

Auxiliary Relay:

Voltage DRY contact (no / com / nc)
32v ac / dc max
Current 250 mA max
On Active 30 seconds after projector on
Off Immediately projector goes off

Manual input:

Switch type Single pole momentary push button

Sensing range

Default 20W to 200W approximately

100W