

A1S Group Evo System

Smoke and fire curtain systems

Technical Manual



Ver 1.05

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A1S
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FIRE AND SMOKE CURTAIN SPECIALISTS

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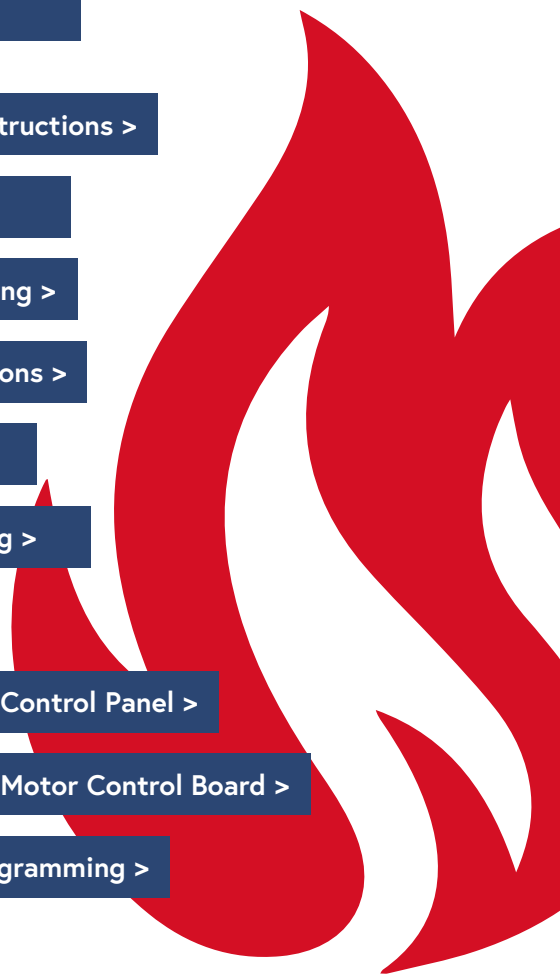
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Disclaimer

This technical manual contains information for the installation of our range of Evo System fire and smoke curtains, the manual should only be used by competent installers of fire and smoke curtains with relevant training and or experience, in no way should untrained individuals attempt to install this life critical fire / smoke protection range of products.

The installation guide is broken down to two sections Mechanical and Electrical Installation.

Mechanical

Head box

Side guides

Roller and curtain assembly

Bottom bar

Electrical

Wiring of main control board

Wiring of motor control board

Wiring of auxiliary's including:

switches, Initial connection procedure Initial tests and checks, Mains and PSU checks

Mechanical Installation Instructions



Mechanical Installation instructions

This product should only be installed by competent engineers/ installers.

All risk assessments for the installation should be site specific and carried out by a competent person prior to installation.

Prior to mechanical installation

All packaging must be removed with extreme care and no sharp tools should be used, the fabric is rolled around the roller assembly and will very easily be damaged.

Check carefully the structural measurements of the opening against the relevant drawing.

Ensure that all walls surfaces and closing surfaces are suitably fire rated, level and true.

The opening must be capable of carrying the weight of the complete assembly of the fire curtain, the weight is indicated on the approved working drawing.

The opening should be equal or greater than the required fire performance of the product.



Check the kit list is complete and all components are correct.

Approved fixings for smoke & fire curtains



Head Box

- 1, M6 loose bolt shield anchor with steel and nylon washer.
Drill size 14mm minimum hole depth 70mm
Embedded depth 55mm

Minimum embedded depth of 55mm

- 2, Concrete screws
M6 x 80, 100, 120 or 125mm with steel and nylon washer.
Drill size 6mm minimum depth 10mm deeper than fixing length.

Side Guides

- 1, M6 loose bolt shield anchor with steel and nylon washer.
Drill size 12mm minimum hole depth 55mm
Embedded depth 45mm

Minimum embedded depth of 45mm

- 2, Concrete screws
M6 x 80, 100, 120 or 125mm with steel and nylon washer.
Drill size 6mm minimum depth 10mm deeper than fixing length.



Steel and nylon washers must be used on each fixing, steel first followed by nylon then the head box or guide, in the event of a fire the nylon washer will melt and leave the fixing secure allowing the head box or guide to expand as required.

Each pre-drilled hole must be utilised and all fixings must achieve the minimum embedded depth into the structure.

Incorrect fixing will lead to impeded performance of the curtain in the event of a fire.

Head Box - Drawing ID 01/02

- The head box is manufactured from mild steel sheet, which depending on the length may come in pre-assembled sections. Each part of the head box is clearly marked inside. All roller support brackets and hood support brackets must be installed in the pre-drilled locations.
- Position the back cover of the box to the structure in accordance with the dimensions and fixing detail indicated on the approved drawing. It is important to use the central anchor point and position each bolt to the extremity of each slot as the product must expand either side of the anchor point in a fire situation.
- Check the box housing is level with a spirit level or laser device, mark the fixing holes and drill for the specified fixing type.
- Lift the box housing and fix to the structure using the fixings and fusible washers. Carry out a final check to ensure the box housing is level. If the box housing is not installed level this will result in the fabric travelling sideways along the roller tube when retracting. This will result in the curtain snagging.
- When smoke seals have been supplied they must be riveted to the head box using steel rivets into the pre-drilled holes, if the housing has been supplied in sections. Housings supplied in one section will have the smoke seals factory fitted.

Side Guides - Drawing ID 01/02

Now position the back section of the guide to the structure with the top edge entering into the head box housing by 40mm. Use a spirit level or laser device and set the guides plumb to the correct dimensions indicated on the working drawing. Mark the fixing holes at the top of the slots to allow for expansion. Drill for the specified fixing type.

Fix to the structure using the fixings and fusible washers. If required the guide must be suitably shimmed to ensure they remain vertical without any twisting.

Roller Assembly and Curtain - Drawing ID 03 + 04

- Using the correct lifting method (minimum two people) lift the curtain and roller assembly up to the head box. Install the dummy sliding end into the end plate cup and secure with the M8 x 40 Allen screw. Push the roller assembly as far as possible to the non-drive end allowing the dummy end to contract as far as possible. Now insert the motor drive end (ensure the motor cable is positioned on top of the shaft) into the end plate cup and secure with an M8 x 40 Allen screw.
- The box housing should now be drilled for the motor cable to pass through a stuffing gland, ensure the motor cable cannot snag as the roller operates. Unwind approximately 300mm of fabric from the roller.
- Now install the head box cover by steel riveting to the end plate returns and across the front lip. Ensure the fabric remains accessible through the slot in the head box.

Attaching the Bottom Bar - Drawing ID 04 + 06

- Pull the remaining fabric from the roller assembly through the gap in the head box. Ensure the motor cable wires are not touching each other or it will not be possible to rotate the roller mechanism without force, which in turn will damage the motor brake assembly. The roller should rotate freely.
- Determine the curtain drop and mark both edges of the curtain at the fully closed fire-safe position. Using a laser or chalk line, mark the curtain across the full width from both points.
- Place the angles of the bottom bar back to back with the 40 x 40 angle on the same side of the curtain as the roller assembly on the marked line. Ensure the fabric is pulled tight and clamp the angles to the marked line on the fabric. Slide the bottom bar guide retainers between the 2 angles sandwiching the fabric, the 2 m6 holes in the retainers holes will line up with the holes in the bottom bar. Pull the fabric flush with the bottom bar and push the two piece double cap rivets (6 at each side) through the retainers and fabric. Place a hammer on one side of the rivet and hit the other side crushing the rivets securely together.

Attaching the bottom bar cont.

- All 6 rivets must be fitted and secured to prevent the curtain pulling through the retainers.
- Drill through the fabric with a 6.5mm drill bit (the pre drilled bottom bar holes should align and you should only be drilling the fabric) the bottom bar has been factory assembled and no cutting or drilling is required. If the holes do not align then you have not arranged the angles correctly. The rail at either end when assembled has two 6.5mm holes drilled at 50mm and 100mm from each end. the front and rear angle joints never align and must be fully overlapped to maintain the rails strength. insert the M6 x 16 screw into the holes with the screwhead on the 40 x 20 angle side roller side of the bottom bar. Attach the nyloc nut on the opposite side and tighten accordingly. Proceed all the way along the bottom bar until the bolts have been installed. If the screws are fitted the opposite way round the nuts will hit the headbox and prevent the bottom bar pulling tight and closing flush with the headbox.
- Carefully trim the excess material which is below the now assembled bottom bar with a Stanley knife or similar, take extreme care as not to slip and cut the curtain above the bottom bar.
Nylon cover caps are provided for the nyloc nuts.
- Curtains require a minimum bottom bar weight of 10kg per motor to close under gravity failsafe. this allows for friction against the smoke seals and the fabric rubbing on the guide surfaces.
- For assemblies where multi rollers are used the bottom bar is one continuous rail. The curtain fabrics are overlapped. Where the fabrics overlap it is essential that the fabric is pulled tight prior to the angles being secured together which will provide a good seal to the overlapping fabrics. The fabrics should overlap true and plum.
- Wide roller assemblies will deflect due to their own weight and curtain assembly load. This deflection may cause the bottom bar to sag when fully retracted. To overcome this remove the bottom bar screws in the middle of the rail and pull the fabric through to replicate the sag at the head box. Re drill the curtain fabric and replace the fixings accordingly. Do not over exaggerate this and check when the bottom bar is in its fire safe position it still seals along the closing surface. If this does not rectify the issue then packers can be inserted between the roller tube and the fabric at the points of the sag. This will increase the circumference of the roll and give an increase in the travel distance, off cuts of the fabric should be used for the packers. Start small and slowly increase to achieve the required retract position and the bottom bar pulls up flush with the head box, It is possible to use both methods.

Guide fronts - Drawing ID 07

- Lift the guide front onto the rear part of the guide channel and align with the M6 studs, secure with M6 nuts provided, Nylon cover caps are provided for the nuts. if the guides are slightly pinched or overfolded then gently prise the guides open leaving a true gap of between 8 mm to 10mm from top to bottom between the internal running faces of the guides

MCC and MCB Fixing

- The main control panel should now be securely fixed to the building structure, the dimensions of the metal casing is

Width 39cm

Height 36cm

Depth 11cm

The panel should be installed allowing sufficient air flow of approx 10cm around the panel and the louvres must not be obstructed.

- The motor control board should be securely fixed to the headbox the dimensions of the metal casing are

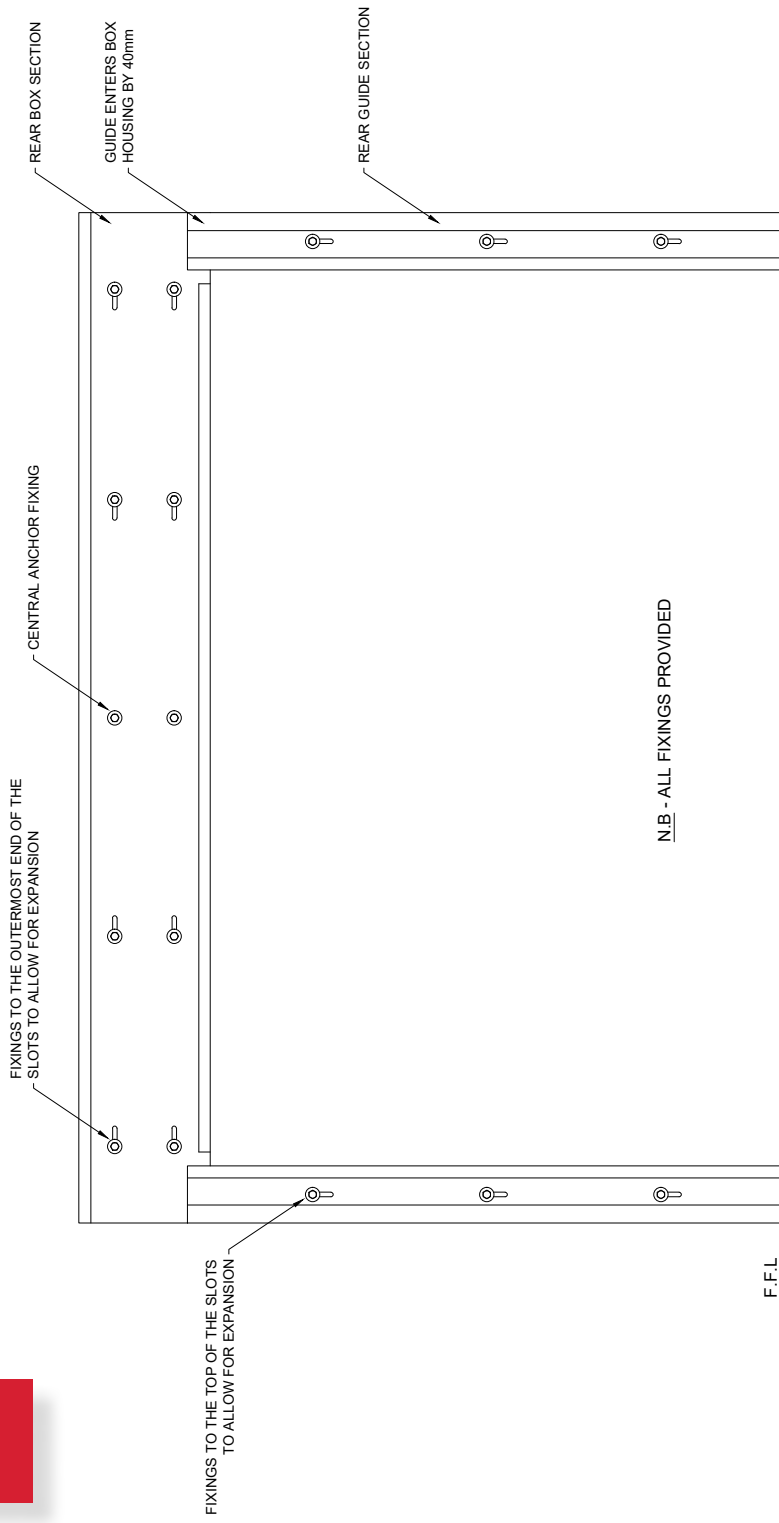
Width 24cm

Height 16cm

Depth 6cm

- The mechanical install is now complete and wiring of the Main control Board and Motor control board should now be carried out in accordance with the wiring instructions provided in this manual.

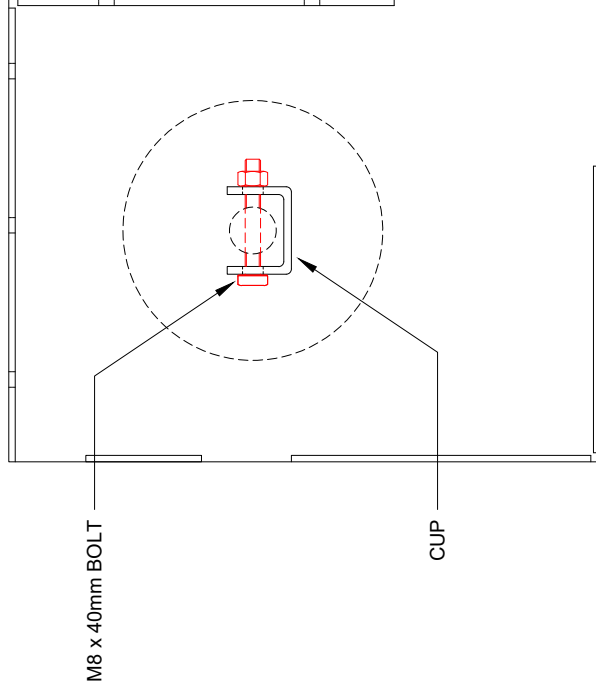
HEADBOX AND GUIDE FIXING DETAIL



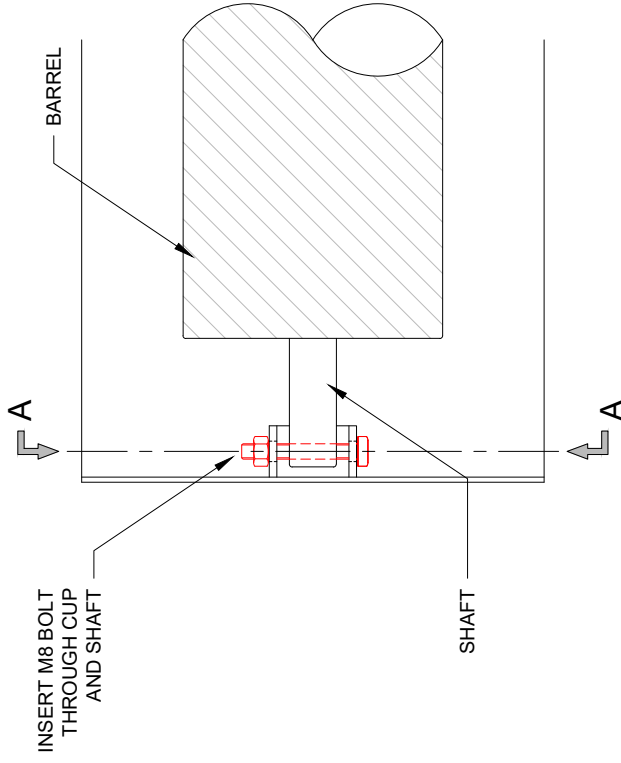
[SHAFT TO ENDPLATE INSTALLATION](#)

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SECTION A - A



TOP VIEW

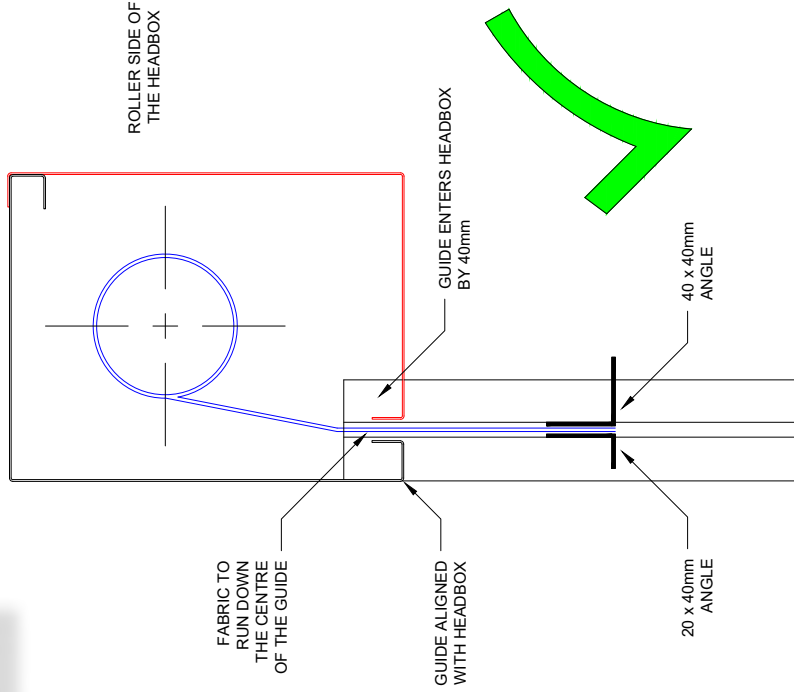


DRAWING ID - 03

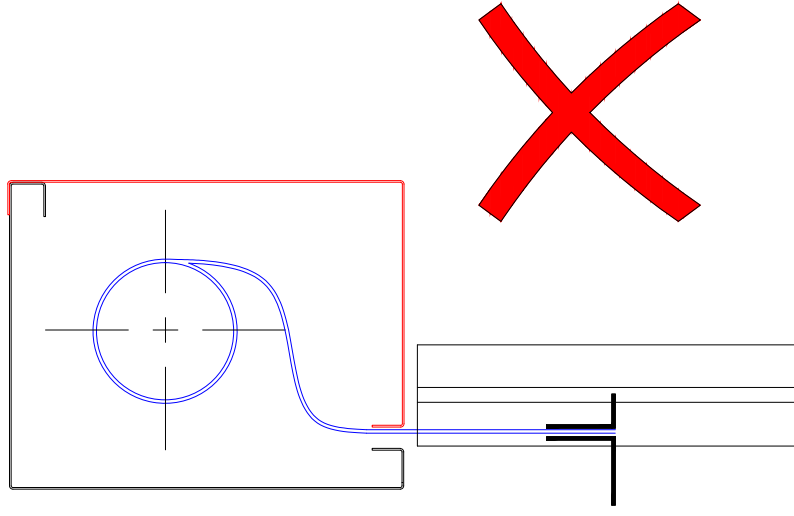


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CORRECT INSTALLATION

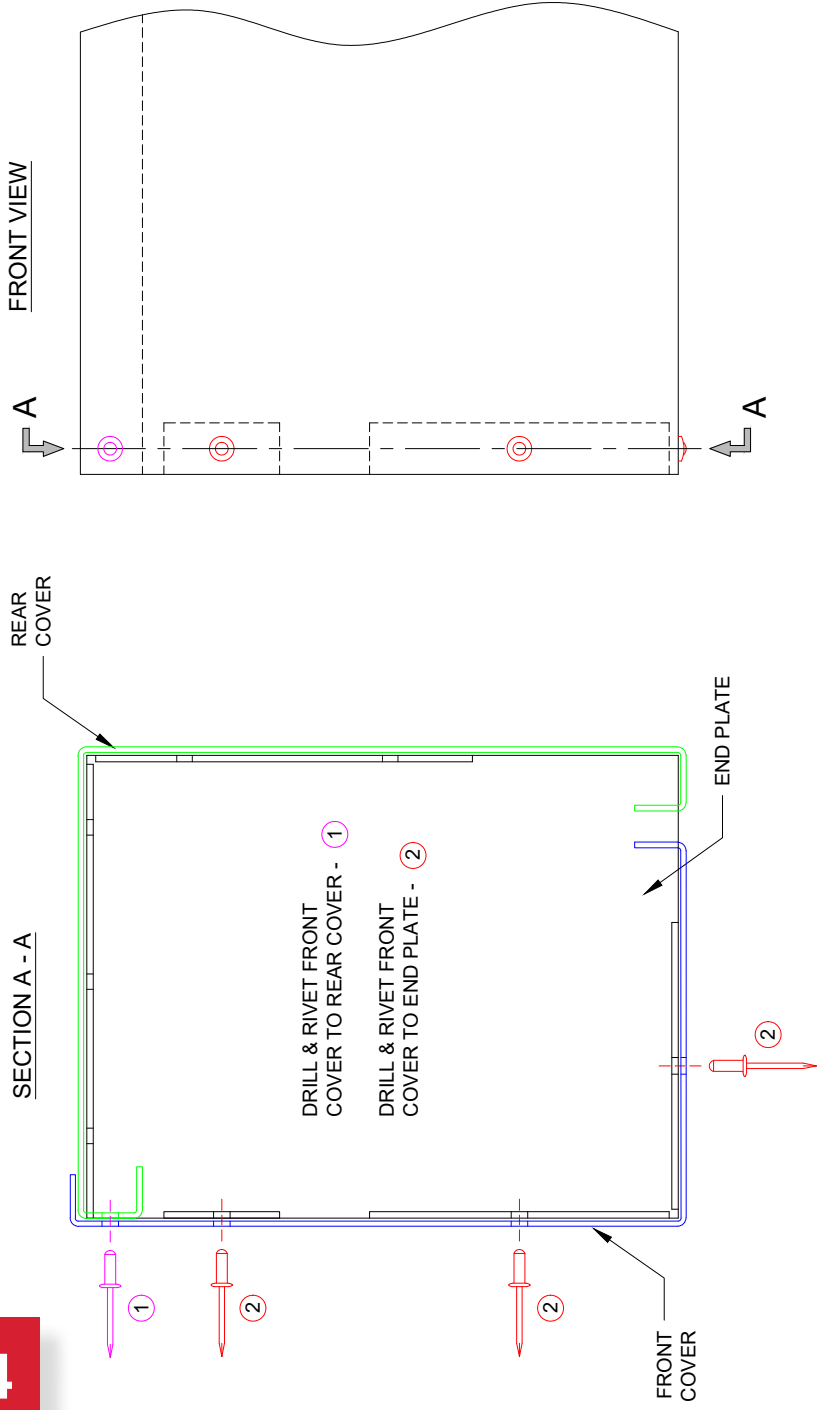


IN-CORRECT INSTALLATION



HEADBOX FRONT COVER INSTALLATION

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DRAWING ID - 05

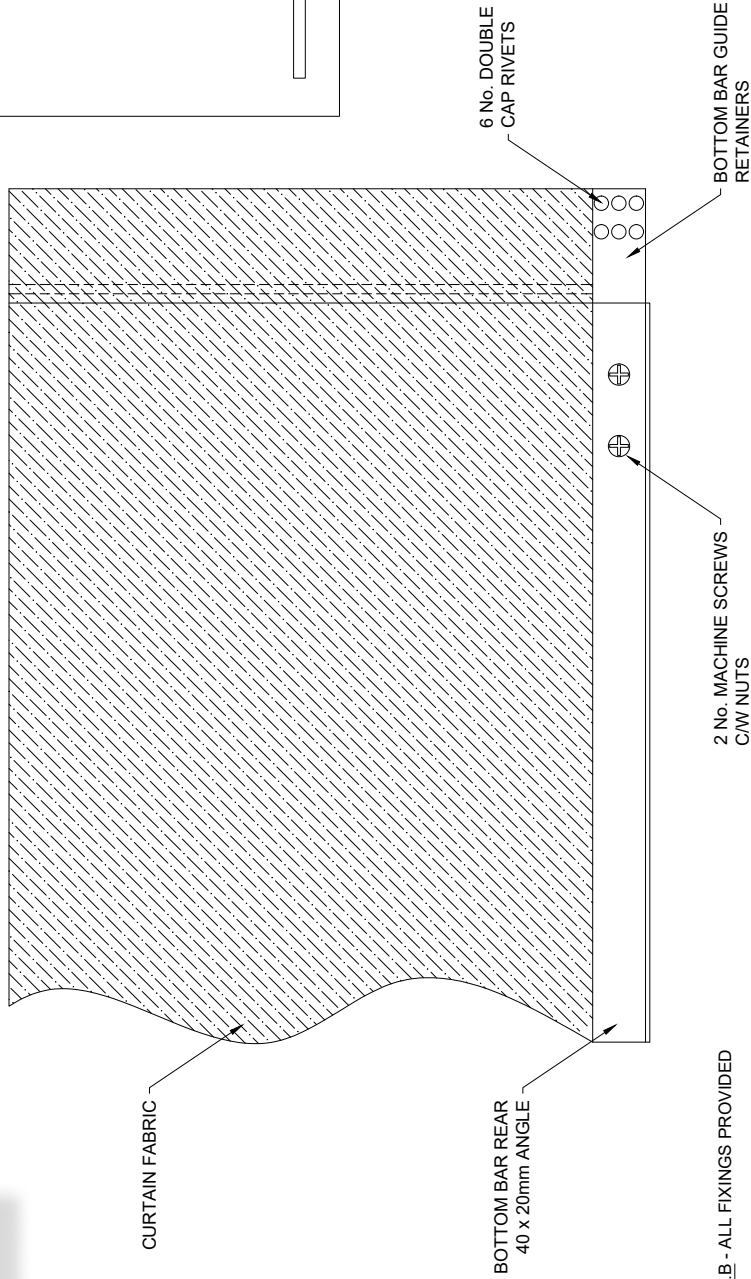


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BOTTOM RAIL FIXING DETAIL

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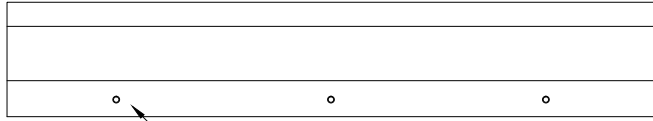
N.B. - ALL FIXINGS PROVIDED

DRAWING ID - 06

GUIDE INSTALLATION

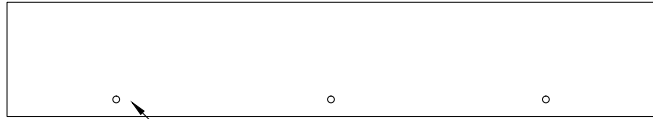
16

REAR GUIDE SECTION



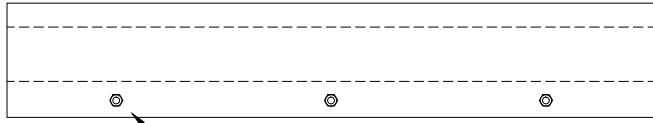
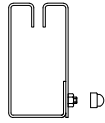
THREADED
STUD - M6

FRONT GUIDE SECTION



PRE-DRILLED
M6 HOLE

COMPLETE GUIDE



M6 NUT AND
NYLON CAP

DRAWING ID - 07

Control Panel Lighting



Control Panel Lighting



Normal	Green power on	Retracted
Alarm signal activated	Green power on Red alarm on Panel beeps	Closing or Closed
Low battery fault / Power failure	Amber light on	Open or Closed
Delay	Blue light on	Alarm Delay set in programming
Override	Amber light on	Override activated by switch during alarm
Control panel malfunction	Red light on	Control panel fault



- A Green light Power on indicates the panel has a healthy mains supply to the PSU.



- Amber light Low battery fault on indicates either there is a mains failure to the panel or the batteries are below the required voltage and will require charging, the panel constantly monitors the battery voltage and will detect when low, once recharged the light will go out.

If the light does not go out after 2 hours the batteries will require replacing. If the panel has had no mains supply the batteries will hold the curtains in the retracted position until the low voltage close system has been triggered, the curtains will then close in a controlled decent but will no longer retract until the mains supply is reinstated. If the batteries have totally depleted the LCD screen will be blank and both batteries will require replacement.



- Alarm red light on indicates there is an active signal to one of the panel inputs, this could be the main alarm terminal or either input 1 or input 2, this will not go off until the signal has returned to normally closed.



- Delay blue light indicates there is an active alarm signal been received and the panel is holding the curtains for the programmed time in the stored settings.



- Override amber light on indicates there is an active signal to one of the panel inputs, this could be the main alarm terminal or either input 1 or input 2 and the override button has been pressed, once the curtain has returned to its fire safe position the light will go out.

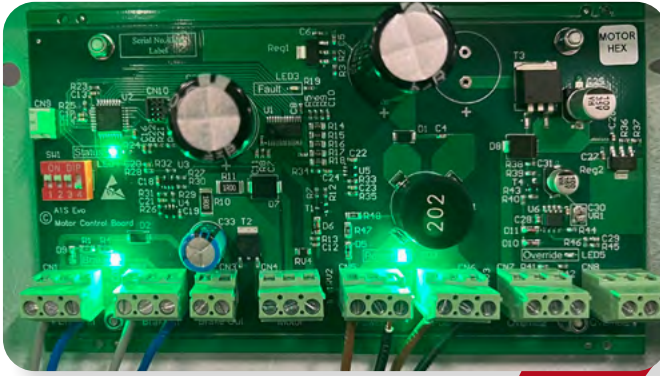


- CPM red light on indicates there is a system malfunction on the panel programming, wiring or PCB failure.

Motor Control Board Lighting



Motor Control Board Lighting



Motor control board lighting sequence

The MCB has 3 green lights Power Brake, status and one Red fault light. When the curtain is retracting after an alarm, test or initial power up the following lighting sequence should take place.

- 1) The power light illuminates and the status light flashes the curtain retracts until the bottom bar hits the head box.

The mcb will detect an increase in amperage and reduce the voltage to hold the motor to prevent it from rolling back

- 2) The close timer counts down and the power transfers to the brake illuminating the brake light which then turns off the power light.
- 3) The status light stops flashing and the system is now armed awaiting a fire signal in its standby mode with just the brake light illuminated.

once the panel receives a fire signal the intelligent system will release the brake and use the energy the motor produces whilst closing to apply the brake at intervals to close the curtain in a controlled decent



The red fault light will illuminate if there is a direct fault or short to the board.

General Overview Instructions



General Overview Instructions prior to mains connection

If the below instructions are followed correctly you should have a very secure balanced system that will give a minimum of 850 cycles.

The Control Panel must be mounted vertically and have sufficient air flow around the perimeter Approx 10cm, the side louvres must not be obstructed this could cause overheating of the power supply unit.

- A 240/230 volt 13 amp maintained supply is required to power the Control Panel and set up the system, without a mains supply the panel will not activate by the batteries.
- Connect the battery cables to the batteries including the 24 volt jump wire. Incorrect polarity will blow the Control Panel so care must be taken.
- The batteries will not power the panel until a mains supply has initially been connected, the batteries are purely for a backup system in case of power failure.
- The fire alarm loop wire must be left in the main control panel until the curtains have been fully commissioned, this will eradicate any issues with the fire signal which is not our responsibility.
- A maximum of 70 metres of loop wiring cable will run 4 motors from one Control Panel.
- 2.5mm 2 4 core cable is required for any cable runs of loop wiring greater than 25metres, the installer must check there is a 24v supply at each MCB. Any drop in voltage below 24v will result in failure of the system. For long distance runs it is recommended to return the final MCB wire to the Control Panel by doubling up the wiring to the terminals on the board to form a loop.
- If the override facility is to be used on the Control Panel or the MCB then fire rated cabling must be used on all loop and switch wiring from the Main control panel (MCP).
- All cabling in and out of the MCB and control board must be in 20mm glands through the pre drilled holes.
- The control panel can power upto 4 motors.
- A volt free normally closed contact from the fire alarm and or any auxiliary device is required to trigger the alarm activation in the panel. When a signal or test has been received the red light on the panel door will illuminate and the curtains will close under a controlled descent.

- It is important to check the motor cable is correctly wired into the Motor control board {MCB} the power+ and - terminals and the brake out + and - Incorrect wiring will damage the motor and board.
- If the motor control board {MCB} is to be install remotely from the curtain head box then the motor cable must be fire protected. It is recommended to install the MCB onto the curtain head box.
- The Multi Control Panel can power upto 4 motors.
- The sequence below must be adhered prior to connecting the Control Panel to the mains supply.
- Turn the key switch to the test position.
- Remove the main fuse in the bottom left of the board at the mains input
- Connect the mains supply cable.
- Replace the main fuse.
- The MCB will start up and go through its test sequence and the green power light will illuminate, the panel will then start to beep and the red alarm light will illuminate.
- Flameshield Evo 1 Curtain Control will display on the LCD screen.
- If the low battery fault is illuminated this will turn off once the mains supply is connected and the panel charges the batteries to the required voltage.
- The MCB will illuminate
- Turn the test key to the stand by position the red alarm light will turn off and the audible beep will stop, all curtain connected to the Control Panel will now start to retract to the headbox.
- The dip switches must now be set.

Control Panel Wiring

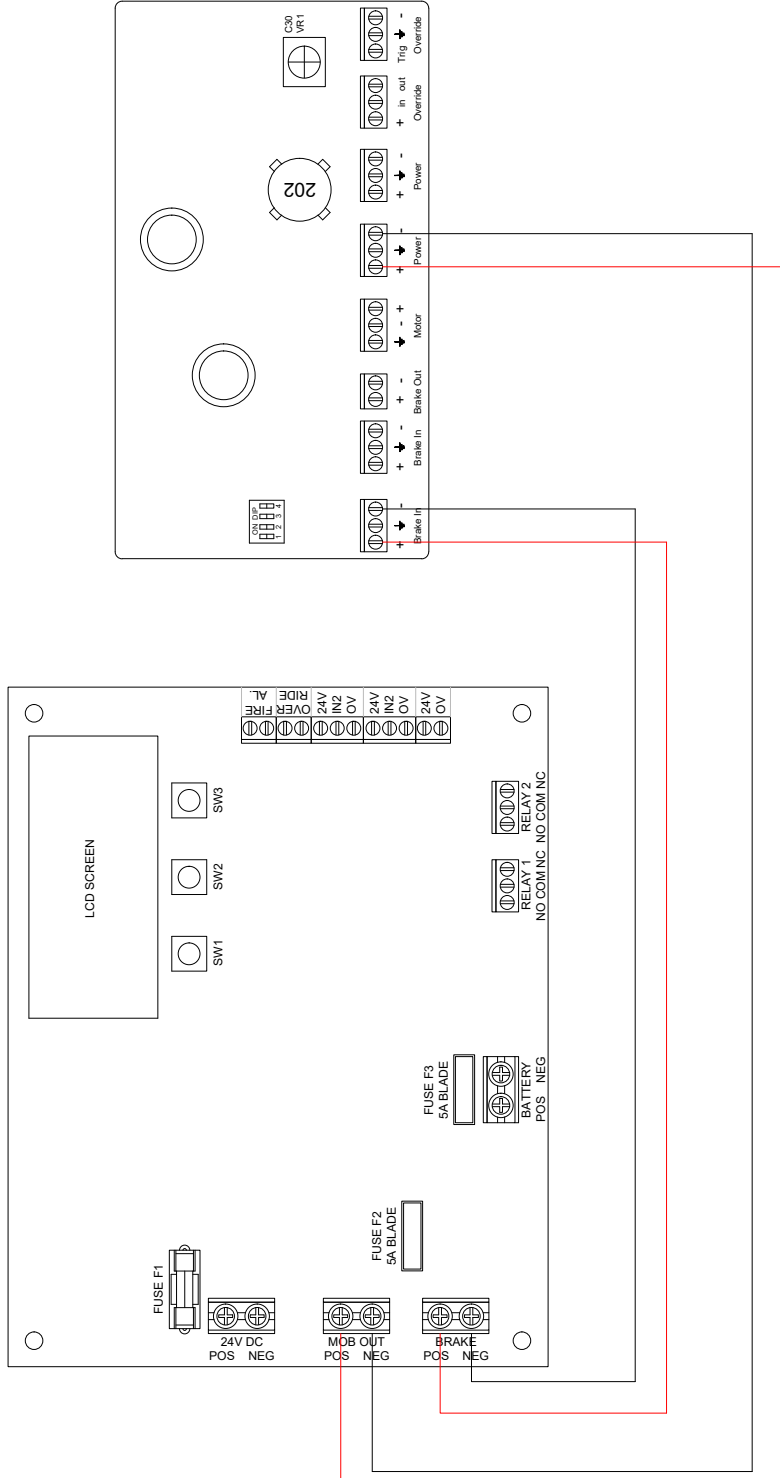


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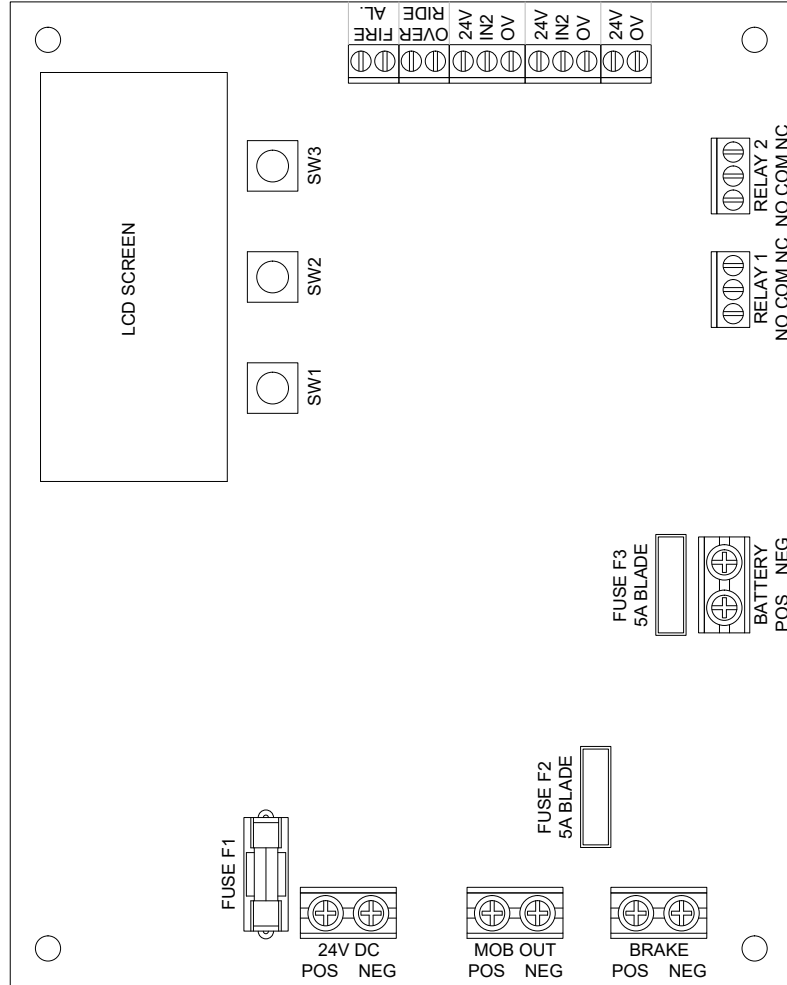
MAIN CONTROL PANEL TO MOTOR CONTROL BOARD WIRING



Rev	Description	Date	Drawn By: DD
-	Component: EVO PANEL BOARD TO MCB BOARD Description: WIRING CONNECTIONS BETWEEN THE MAIN CONTROL PANEL & MOTOR CONTROL BOARD	14-12-2022	
			Drawing: EVO_EEC 03



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Rev	Description	Date	Component: AIS EVO PANEL MAIN CIRCUIT BOARD	Drawn By: DD
-	-	-	Description: MAIN PANEL CIRCUIT BOARD	Date: 27-09-2022
				Drawing:



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Main Control Panel



Do not remove the fire signal loop wire until the curtains have been fully commissioned as this will eradicate any issues there could be with the fire signal which is not our responsibility.



Wiring main control panel to first Motor control board

- Brown to MDB out - pos
- Black to MDB out - neg
- Blue to brake - pos
- Grey to brake - neg



see general notes prior to mains connection overview instructions prior to mains connection.



Typical standard mains connection

- Brown or red to live
- Blue to neutral
- Yellow/green to earth

Battery and mains connections



Battery connections

Firstly install the link wire using the negative terminal on one battery and the positive terminal on the second battery.



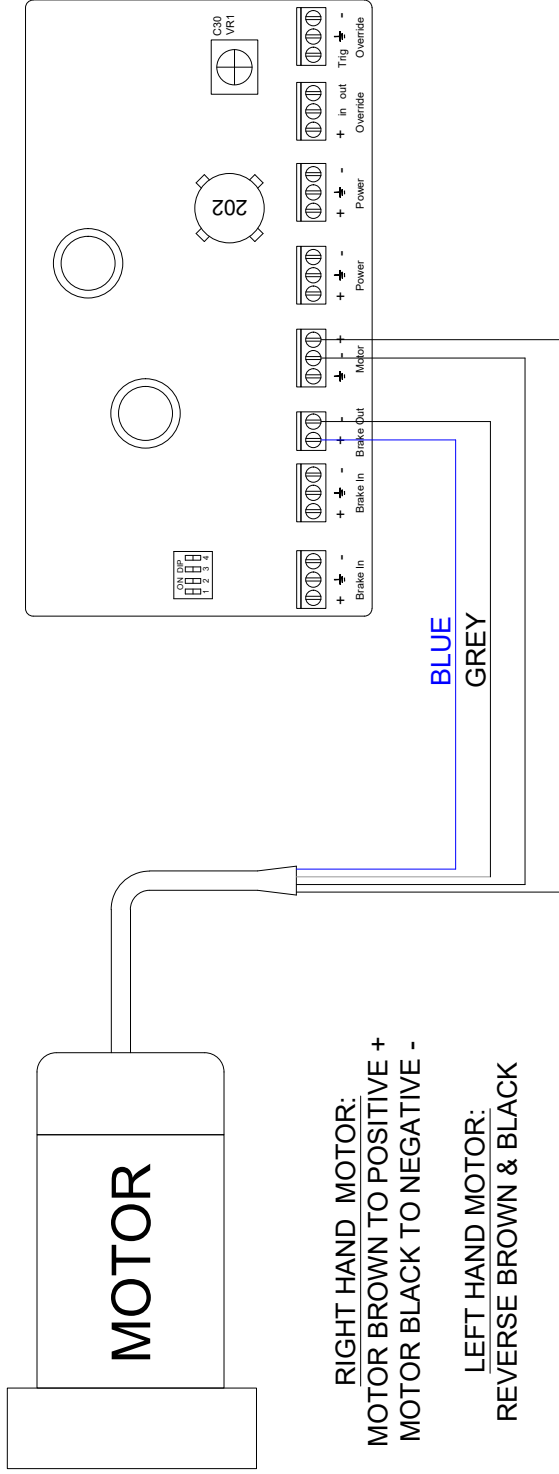
Now connect the battery wires from the PCB Red wire to the positive terminal on one battery Black wire to the negative terminal on the second battery.

Motor Control Board Wiring




MOTOR TO MOTOR CONTROL BOARD WIRING

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Rev	Description	Date	Component: EVO PANEL BOARD TO MCB BOARD	Drawn By: DD
-	-	-	Description: WIRING CONNECTIONS BETWEEN THE MOTOR AND THE MOTOR CONTROL BOARD	Date: 27-09-2022
				Drawing: EVO REC 04

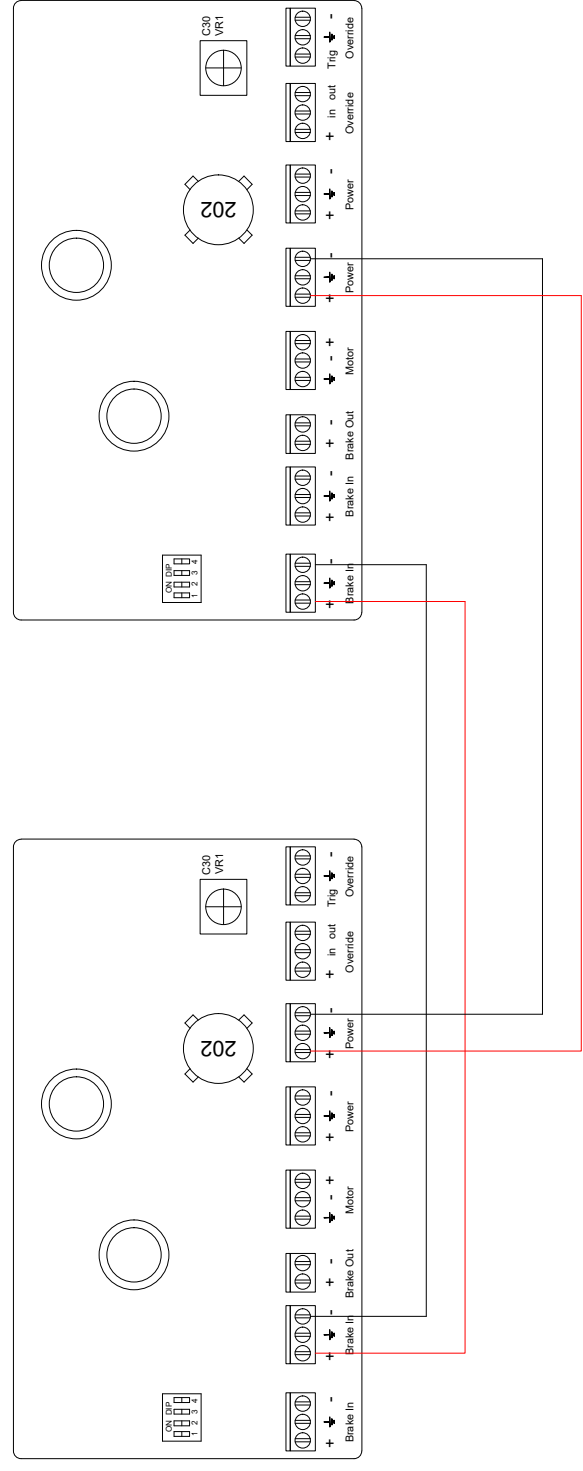


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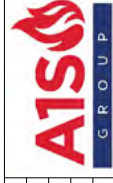
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LOOP WIRING - MOTOR CONTROL BOARD TO MOTOR CONTROL BOARD

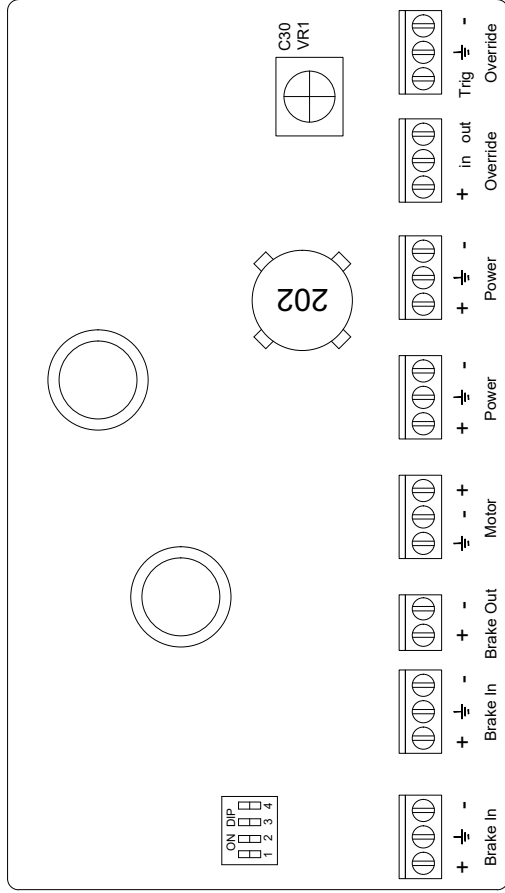


Rev	Description	Date	Drawn By: DD
-	-	-	Date: 14-12-2022
Component: LOOP WIRING - MCB TO MCB			Drawing: EVO REC 05
Description: WIRING CONNECTIONS BETWEEN MOTOR CONTROL BOARD AND MOTOR CONTROL BOARD			



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All dimensions in millimetres - DO NOT SCALE



Rev	Description	Date	Component: AIS EVO MCP CIRCUIT BOARD	Drawn By: DD
-	-	-	Description: SMALL PANEL CIRCUIT BOARD	Date: 27-09-2022
				Drawing:



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Motor Control Board



Wiring Motor Control Board from Main Control Panel

- Blue to brake in ⊕
- Grey to brake in ⊖
- Brown to power ⊕
- Black to power ⊖



If the brown and black wires are to be removed from the board the curtains must be in the closed position or the bottom bar must be chocked in the guide channel prior to disconnection, the curtains will free fall at speed and damage will occur.



Wiring motor to MCB

- Blue to brake out ⊕
- Grey to brake out ⊖
- Brown to motor out ⊕
- Black to motor out ⊖



The above 2 motor wires are for right hand motors viewed from the roller side for a left hand motor swap over brown and black.



Wiring motor to MCB

- Blue to brake out ⊕
- Grey to brake out ⊖
- Brown to motor out ⊕
- Black to motor out ⊖



The above 2 motor wires are for right hand motors viewed from the roller side for a left hand motor swap over brown and black.



Loop wiring MCB to MCB

- Blue to brake in ⊕
- Grey to brake in ⊖
- Brown to power ⊕
- Black to power ⊖

To loop wire (daisy chain) to next MCB use the additional power and brake terminals with 4 core cable as below. ▼

Dip Switch Settings





Dip switch settings

The dip switches are used to adjust the Current required to lift the curtain.

Dip switch	Current limit %
1	25%
2	50%
3	75%
4	100%



It is important to set the switches correctly, if set too low the motor will stall, too high the motor will pull the bottom rail off the curtain when retracted.

Dip Switches

The dip switches on the MCB must be correctly set to suit each curtain, this is the current limit used to drive the motor which requires setting for the stall feature of the bottom bar hitting the head box.

Start with dip switch 1 up and the remaining switches down if the curtain will not lift then push dip switch 1 down and lift dip switch 2, carry out this across the dip switches until the curtain lifts and by holding against the bottom bar you are able to stop the motor without too much force being applied.

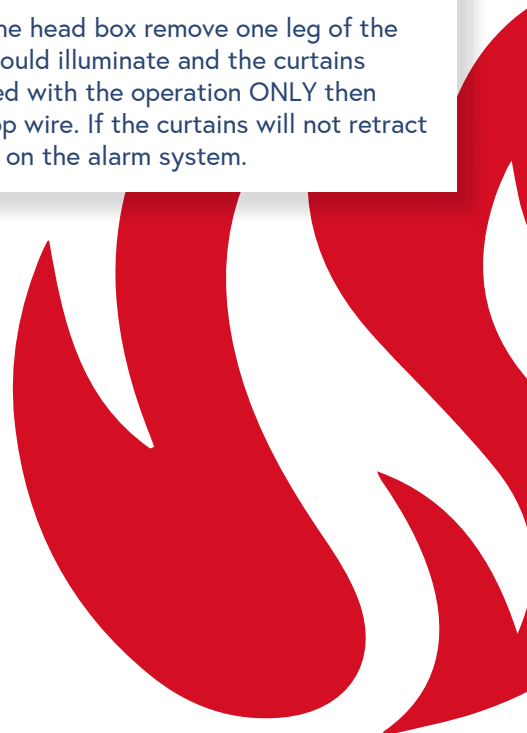
Dip Switches Cont.

This balance is very important and if not enough current is applied the motor will stall prior to a full retract, if too much power is applied the bottom bar will hit the head box with too much power and possibly detach from the curtain.

Careful setting and balancing is very easy and very important.

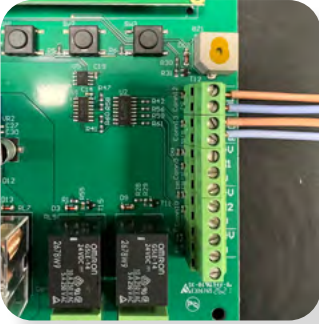
If 2 motors are in one roller assembly then equal out the dip switch settings, the dip switches in both MCB,s should be on the same setting.

Once the curtains have fully retracted to the head box remove one leg of the fire alarm input loop, the red alarm light should illuminate and the curtains should begin to close, once you are satisfied with the operation ONLY then connect to the fire alarm or replace the loop wire. If the curtains will not retract when the key is in stand by there is a fault on the alarm system.



Override Switch Wiring to Control Panel





Override switch wiring to main control panel

Brown to override

Blue to override

The above wires can connect to either of the override terminals as this is a volt free signal.



Wiring to the push switch access or retract
Only use the yellow pair of wires (normally open)

Brown to yellow

Blue to yellow



When the override is connected to the main control panel all curtains connected will retract for the programmed travel time

Override Switch Wiring to Motor Control Board



Override Switch wiring to the motor control board (MCB)



Fire rated cable is required for all external wiring when using override switches.

2 Core fire rated cable is required

When switches are wired to the motor control board (MCB) only the motor connected to the board will retract

The egress switch (green) will retract the curtain whilst the button is held pressed, once released the curtain will close back to the fire safe position.

The access switch (red) will retract the curtain to a set distance by a single press of the button (impulse) the curtain will travel the set distance then the curtain will close back to the fire safe position.



Wiring of an egress switch

The link wire must be used to power the override circuits,

Link out Brake in + to override +

Use right hand override terminal

Brown to trig

Blue to -



Wiring of an access switch

The link wire must be used to power the override circuits,

Link out Brake in + to override +

Use left hand override terminal

Brown to+ on the override terminal (double up with the link wire) Blue to In on same override terminal



Wiring to the push switch access or retract

Only use the yellow pair of wires (normally open)

Brown to yellow

Blue to yellow




The curtain retract distance when the Access switch is being used can be adjusted by the pot number C30 VR1 on the bottom left of the MCB.

A fine flat blade jeweller type screwdriver is required, the adjustment is $\frac{3}{4}$ of a turn from minimum to maximum.



The adjustment is very fine and care must be taken.

Control Panel Function Programming



Control Panel functions and programming

Press and hold the right hand button for 2 seconds to enter the programming mode, keep pressing the right hand button to scroll through the menu, when a function is visible the configuration on the bottom line can now be adjusted.

```
ENTER PIN  
PIN = 1234
```

Enter PIN

This is the pin code required to enter the programming mode, the pin is factory set at 1234, press the right hand button 4 times to enter programming mode.

```
FACTORY CONFIG  
RESET = OPTIONS YES/NO
```

Factory Config Reset

The will erase any settings previously stored and will default to the settings below:

- Delay close 10 seconds
- Delay open 20 seconds
- 2 stage drop time 40 seconds
- 2 stage hold time 25 seconds
- Curtain open 60 seconds
- Curtain close 60 seconds

DELAY BEFORE
CLOSE = 0

Delay before close

After a fire alarm signal has been detected a delay can be set in seconds between 0 and 600 seconds, once set the curtain will remain in the retracted position for the required time. This feature can be set in Increments of one second.

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

DELAY BEFORE
OPEN = 0

Delay before open

After an alarm has been ceased a delay can be set in seconds between 0 and 600 seconds, once set the curtain will remain in the closed fire safe position for the required time. This feature can be set in Increments of one second.

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

TWO STAGE DROP

TIME = 0

Two stage drop time

The Two stage Drop function upon a fire alarm signal will allow the curtain to close to the timed distance of the close travel and stop, the travel distance can be set between 0 and 120 seconds.

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

TWO STAGE HOLD

TIME = 0

Two stage hold time

Two stage Hold time function will hold the curtain in the position set in the two stage drop time between 0 and 600 seconds in Increments of one second. Once timed out the curtain will commence its travel to the fire safe closed position

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

LOW BATTERY DROP
TIME = 5

Low battery drop time

Low Battery Drop time in seconds between 5 and 60 seconds.
Increments of one second.

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

LOW BATTERY DROP
HOLD TIME = 10

Low battery hold time

Low Battery Hold time in seconds between 5 and 60 seconds.
Increments of one second.

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

LOW BATTERY DROP
CYCLES = 1

Low battery hold/drop cycles

Low Battery Hold cycles can be set between 1 and 10 cycles. Increments of one cycle.

- Press and release the centre button to increase cycles.
- Press and release the left-hand button to decrease the cycles.
- Press and release the right-hand button to move onto the next option.

CURTAIN OPEN
TIMEOUT = 60

Curtain open

This must be set 10 seconds greater than the curtain with the longest run time for the bottom bar to fully retract and hit the head box.

Once the timer has counted down the power to the motor is transferred to the brake and the motor stall power is switched off.

If set to disabled the motor will remain in stall and the power will not transfer to the brake unit. This feature is programmed to enable the use of non braked motors.

- This can be set between Disabled 0 and 600 seconds
- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

CURTAIN CLOSE
TIMEOUT = DISABLED

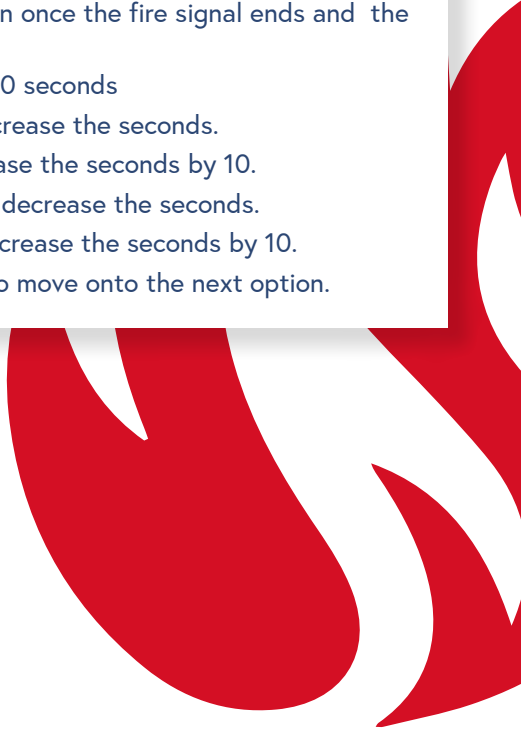
Curtain close

This is the time which the curtain will remain in the fire safe closed position after the alarm signal has ceased prior to commencing an auto reset which can be set between Disabled 0 and 600 seconds.

Disable will instantly auto reset each curtain once the fire signal ends and the circuit returns to normally closed.

This can be set between Disabled 0 and 600 seconds

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.



OVERRIDE INPUT
DISABLE

OPTIONS ENABLE /DISABLE

Override input

Enables or Disables the main PCB Override input, when enabled whilst in alarm a momentary press of the override button will open the curtain for the configured override time.

- Press and release the centre button to toggle between Enable and Disable.
- Press and release the right-hand button to move onto the next option.

OVERRIDE TIME
SECONDS = 0

Override time

If the override is enabled the Override Time can be set between 5 seconds and 1200 seconds. This is the travel time that the curtain will retract for.

- Press and release the centre button to increase the seconds.
- Press and hold the centre button to increase the seconds by 10.
- Press and release the left-hand button to decrease the seconds.
- Press and hold the left-hand button to decrease the seconds by 10.
- Press and release the right-hand button to move onto the next option.

CHANGE USER PIN?
NO.

OPTIONS YES NO

Change user PIN

The four-digit user PIN can be adjusted. When a line is under a digit it can be adjusted using the centre button, to go to the digit on the right press and release the right-hand button, to go to the previous digit press and release the left-hand button. Once changed the board will now be inaccessible by our team if the code is lost.

BATTERY =
SUPPLY =

Display Voltage

The Battery and Power Supply voltage will be displayed.

SOFTWARE VERSION
1.00.00

Software Version

Press the middle button at any time to display the software version programmed to the Main Control panel

SPARE INPUT 1
DISABLE

OPTIONS DISABLED FIRE ALARM INPUT OVERRIDE INPUT

Spare Inputs 1 & 2

These input can be configured to accept a second fire signal or additional remote over ride switches

- Disabled
- Fire Alarm Input
- Override Input

Press and release the centre button to move through the various options. Once the required option is displayed press and release the right-hand button to move to the next option.

SPARE OUTPUT 1
DISABLE

OPTIONS DISABLED FIRE ALARM INPUT OVERRIDE INPUT

Spare Outputs 1 & 2

This output can be configured for the normally open contacts to be closed for the following conditions:

- Disabled
- Fire alarm
- Curtain close
- Override time

Press and release the centre button to move through the various options

Once the required option is displayed press and release the right-hand button to move to the next option.

Optional Extras



Optional extras



Smoke detector

The detector is wired to the fire alarm port or to the second fire alarm port and will activate the curtain in a localised position in addition to the the fire signal, once activated the curtain will deploy in a active alarm condition. The unit is wired directly into the Main control panel and is powered by the 24volt output.



Heat detector

The detector is wired to the fire alarm port or to the second fire alarm port and will activate the curtain in a localised position in addition to the the fire signal, once activated the curtain will deploy in a active alarm condition. The unit is wired directly into the Main control panel and is powered by the 24volt output.

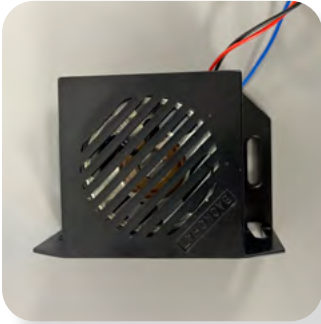


Emergency retract single or group

When the curtain is in a active alarm condition the curtain will retract to a programmed timed distance, this can be wired to the main control panel and will lift all curtains attached to the panel or can be wired to the MCC and the travel set in the MCC to a programmed travel time.



Optional extras Cont.



Voice audio alarm

Normally located adjacent to the curtain, activated by a fire signal with a voice warning of "caution fire curtain closing" as standard however other play back messages can be requested.



Audio visual unit

This is normally located adjacent to the curtain to warn the curtain is deploying or about to deploy if close wait is programmed.



Additional remote test key switch

The remote key switch is wired directly into the main control panel, the key can be removed in either position. the remote test key switch is normally used when the control panel is installed in a roof space where access is difficult. the key switch will simulate a fire signal for testing purposes.

Optional extras Cont.



Standard beacon and sounder

This is normally located adjacent to the curtain to warn the curtain is deploying or about to deploy if close wait is programmed.



Wiring of Optional Extras

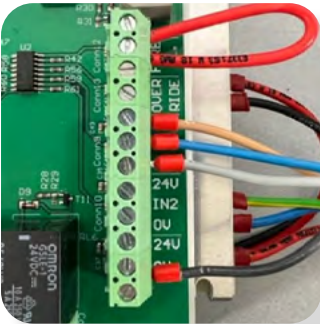




Wiring of a smoke/heat detector to the detector head

4 core cable is required

- IC ⊕ Brown
- IC ⊖ Black
- C Grey
- NC Blue



Wiring of a smoke/heat detector To the control panel input 1 or 2

- 24v Brown
- OV Blue
- IN1 Grey
- OV Black

Either input 1 (IN1) or 2 (IN2) can be configured

- Press right hand button on the control panel for 2 seconds to enter programming mode, scroll by continually pressing until "spare input 1"
- Press the middle button to "fire alarm"
- Once set store by pressing the right button for 2 seconds "Save changes" on LCD screen press middle button until "yes" Press the right button for 2 seconds the screen returns to "Flameshield Evo 1" and is now out of programming mode and in standby.



Wiring of beacon and sounder

Standard beacon and sounder

2 core cable is required



- Install the loop wire from 24v to common on relay 1 or relay 2
- Connect the blue cable to 0v
- Connect the brown cable to NO on relay



- Connect the brown cable to ⊕ VDC
- Connect the blue cable to ⊖ VDC
- Use the Dip switches to adjust the volume

Either relay 1 or relay 2 can be configured

- Press the right hand button on the control panel for 2 sec to enter programming mode, scroll by continually pressing until "spare output 1 or 2" is displayed Press the middle button and set to "fire alarm"
- Once set store by pressing the right button for 2 sec "Save changes" on LCD screen press middle button until "yes"
- Press the right button for 2 sec the screen returns to "Flameshield Evo 1" and is now out of programming mode and in standby.



Wiring of audio visual panel (AV)

Standard audio visual panel

2 core cable is required



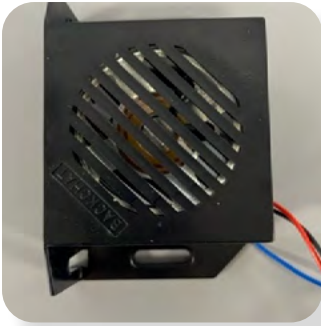
- Connect the brown cable to the red cable at the connector block
- Connect the blue cable to the black cable at the connector block



- Install the loop wire from 24v to common on Relay 1 or relay 2
- Connect the blue cable to 0V connect the brown cable to NO on the relay

Either relay 1 or relay 2 can be configured

- Press the right hand button on the control panel for 2 sec to enter programming mode, scroll by continually pressing until "spare output 1 or 2" is displayed Press the middle button and set to "fire alarm"
- Once set store by pressing the right button for 2 sec "Save changes" on LCD screen press middle button until "yes"
- Press the right button for 2 sec the screen returns to "Flameshield Evo 1" and is now out of programming mode and in standby.



Wiring of speak easy voice warning

2 core cable is required

The standard box has 3 cables

The red cable message is:
"Caution Fire Curtain Closing"

The blue cable is not used .



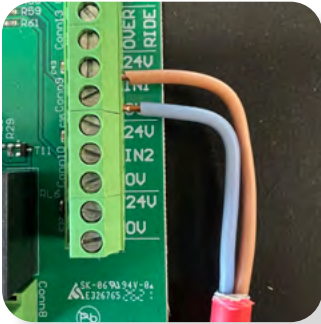
- Install the loop wire from 24v to common on Relay 1 or relay 2
- Connect the black cable to 0V
- Connect the red cable to NO on the relay

Either relay 1 or relay 2 can be configured

- Press the right hand button on the control panel for 2 sec to enter programming mode, scroll by continually pressing until "spare output 1 or 2"
- Is displayed Press the middle button and set to "fire alarm"
- Once set store by pressing the right button for 2 sec "Save changes" on LCD screen press middle button until "yes"
- Press the right button for 2 sec the screen returns to "Flameshield Evo 1" and is now out of programming mode and in standby.

Wiring of additional remote test key switches

2 core fire rated cable is required



Wiring of remote test key switch to the main control panel Input 1 or 2

IN1 Brown
OV Blue



Wiring of remote test key switch to the key switch

Use only the yellow pair of wires normally open.

Brown to Yellow
Blue to Yellow

Either input 1 (IN1) or 2 (IN2) can be configured

- Press right hand button on the control panel for 2 seconds to enter programming mode, scroll by continually pressing until "spare input 1"
- Press the middle button to "fire alarm"
- Once set store by pressing the right button for 2 seconds "Save changes" on LCD screen press middle button until "yes" Press the right button for 2 seconds the screen returns to "Flameshield Evo 1" and is now out of programming mode and in standby.

Key Positions

OFF = Stand by

ON = Test

The key can be removed in either position.

Fault Finding



Fault Finding

The curtains fail to close or part close on receipt of a fire alarm signal or test.

- Check there has been no modifications to the ceiling or walls that could prevent the curtain and bottom bar from deploying.
- Check the curtain security tabs are correctly positioned within the guide channel.
- Check the bottom bar is not snagged in the guide channels by the guides being pinched.
- Check there is a minimum tolerance in the guide channel mouth of 8mm for the full length of the guide channel.
- Check the bottom bar has sufficient weight to deploy the curtain.

The curtains fail to retract fully.

- Check the brake light on the MCC is not illuminated if so the open time is not greater than the travel time of the curtain in the open time settings of the MCB.
- Check there is a minimum tolerance in the guide channel mouth of 8mm for the full length of the guide channel.
- Check the curtain security tabs are not pulling through onto the guide channel running face.
- Check there is 24volts at the MCB motor terminal and power terminal.
- Check the dip switch settings within the MCC and increase the power if required.
- Check the curtain has not snagged on the guide fixings.

Fault Finding Cont.

Curtains close on power failure.

- Replace the batteries and check the panel is charging by the LCD display.

Power light not illuminated

- Check the mains supply.
- Check the mains fuse.
- Check if The power supply unit has failed check the voltage at the MCB 24v DC.
- Check Positive and negative terminals for 24v.

Maintenance & Service



Maintenance

Although our products have been through stringent cyclic testing, over 1000 cycles for a 8m drop curtain on our smoke curtain to obtain BS EN 12101-1 at our maximum width, our fire curtain has also been cyclic tested to over 850 cycles to achieve the requirement of annex D (BS8524) there is still a requirement to carry out weekly or monthly tests and an annual full service.



Correct service and maintenance will increase the life expectancy of our product .

Weekly/monthly inspection and test

- Initially inspect the installation paying particular attention to the guide channels to check there has been no pinching which in turn could prevent the curtain from closing, there should be a continual gap of approx 8mm top to bottom.
- Check there are no obstruction in the curtain line to prevent the curtain from deploying correctly.
- Check no modifications have been made to the head box or ceiling slot which again would prevent the curtain from deploying correctly.
- Turn the key on the Main control Panel from stand by to test, the curtain or curtains should deploy if there is a delay set in the programming check the wait time, if a split drop descent is programmed then this will activate at the programmed position. If multi curtains are controlled by the MCP then they will all close.
- Check all curtains reach their fire/smoke correct position.
- Check the LCD on the display is not indicating any faults.
- Turn the key to stand by and all curtains should fully retract into the open position and the bottom bar should touch the box housing.

Annual Service



This should be carried out by fully trained fire/smoke curtain engineers.

In addition to the above the following should be carried out:

- Open the front cover of the Main control panel.
- Remove one leg of the fire alarm and the curtain or curtains should deploy and close to their correct position without any snagging .
- Inspect the curtain for any visual damage pay particular attention to the bottom bar.
- Remove the guide fronts and inspect the curtain retainer system, check the smoke seals condition if installed.
- Check the guide to structure fixings are secure.
- Refit the guide front.
- Remove the box housing front and inspect the security bolts on either end of the roller assembly.
- Check the curtain to roller fixing are secure.
- Check the motor cable for damage.
- Replace the box housing front
- Check the operation of any emergency retract switches if installed.
- Check the function of any auxiliary devices.
- Refit the alarm signal leg.
- The curtain should safely retract to the open position
- Check the voltage of the batteries this should be greater than 24 volts. The voltage is displayed on the LCD display screen or a multimeter should be used.

Annual Service Cont.

- Remove the mains supply fuse in the panel, this will switch the panel over to battery back up operation and the panel lcd should display a mains fault by the green light goes out and the amber battery light illuminates.
- The curtains should remain open for up to two hours pending on the number of MCB,s attached , if the curtains deploy the batteries will require changing. New batteries should be date marked and replaced every 2 years.
- Restore the mains supply by refitting the fuse.
- The steel components if powder coated or painted can be cleaned with a clean cloth and WD40 or T Cut, the curtain fabric should only be wiped with a dry cloth. Under no circumstances should aggressive chemical cleaners be used.
- This is a life critical fire rated product and should be treated accordingly, its functionality is more important than appearance.



EVO System Maintenance Record

Date

Engineer

Action Taken

Date

Engineer

Action Taken

Date

Engineer

Action Taken

EVO System Maintenance Record

Date

Engineer

Action Taken

Date

Engineer

Action Taken

Date

Engineer

Action Taken

EVO System Maintenance Record

Date

Engineer

Action Taken

Date

Engineer

Action Taken

Date

Engineer

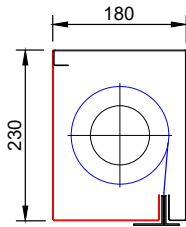
Action Taken

Standard Drawings Headbox and Guides



FIRE CURTAIN HEADBOX INFORMATION

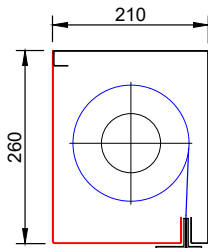
HEAD BOX 1



HEAD BOX 1 - 180 x 230mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 1634	up to 5000mm	up to 4000mm
EW 120	up to 5000mm	up to 3500mm

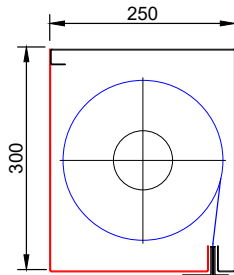
HEAD BOX 2



HEAD BOX 2 - 210 x 260mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 1634	up to 5000mm	4001 - 6000mm
EW 120	up to 5000mm	3501 - 5000mm

HEAD BOX 3



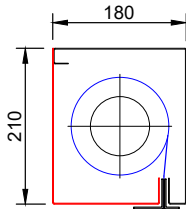
HEAD BOX 3 - 250 x 300mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 1634	N/A	N/A
EW 120	up to 5000mm	5001 - 6000mm

- THE ABOVE INFORMATION IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE
- MAXIMUM 32m² PER SINGLE CURTAIN

SMOKE CURTAIN HEADBOX INFORMATION

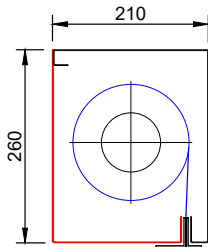
HEAD BOX 1



HEAD BOX 1 - 180 x 210mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 12101	up to 5000mm	up to 5000mm

HEAD BOX 2



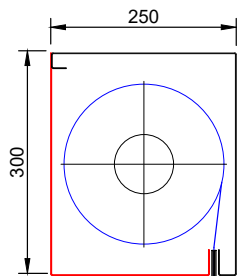
HEAD BOX 2 - 210 x 260mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 12101	5001 - 8000mm	up to 5000mm

- THE ABOVE INFORMATION IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE
- MAXIMUM 32m² PER SINGLE CURTAIN

MAX & MULTI ROLLER FIRE CURTAIN HEADBOX INFORMATION

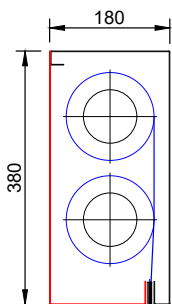
MAX HEAD BOX



MAX HEAD BOX - 250 x 300mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 1634	up to 6000mm	5001 - 10000mm

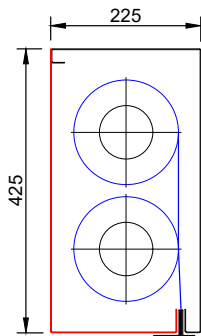
OVERLAPPING HEAD BOX 1



OVERLAPPING HEAD BOX 1 - 180 x 380mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 1634	up to 3800mm	10001 - Unlimited

OVERLAPPING HEAD BOX 2



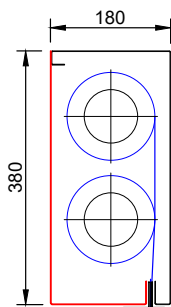
OVERLAPPING HEAD BOX 2 - 225 x 425mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 1634	up to 8000mm	10001 - Unlimited

- THE ABOVE INFORMATION IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE

MULTI ROLLER SMOKE CURTAIN HEADBOX INFORMATION

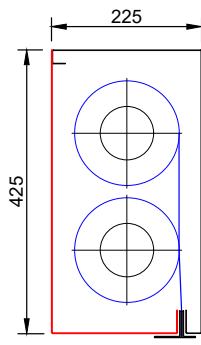
OVERLAPPING HEAD BOX 1



OVERLAPPING HEAD BOX 1 - 180 x 380mm

PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 12101	up to 3800mm	up to 30000mm

OVERLAPPING HEAD BOX 2



OVERLAPPING HEAD BOX 2 - 225 x 425mm

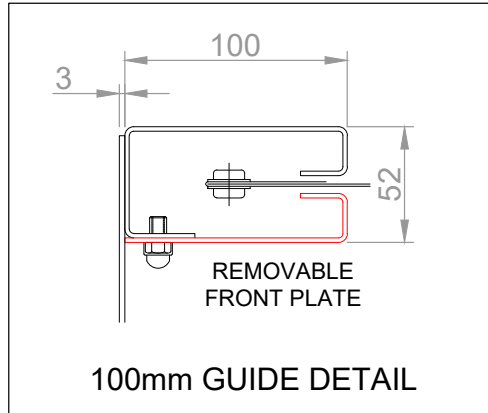
PRODUCT	CURTAIN DROP	OVERALL WIDTH
BS EN 12101	up to 8000mm	up to 30000mm

- THE ABOVE INFORMATION IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE

FIRE CURTAIN GUIDE INFORMATION

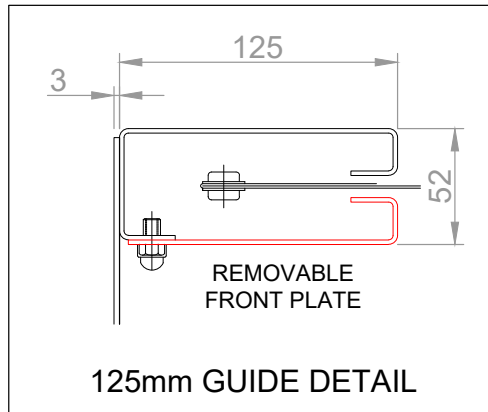
APPLICATION:

- SINGLE FIRE CURTAINS UP TO 5000 X 5000mm



APPLICATION:

- SINGLE FIRE CURTAINS WITH A CURTAIN DROP OVER 5000mm
- 'MAX' FIRE CURTAINS
- MULTI ROLLER FIRE CURTAINS

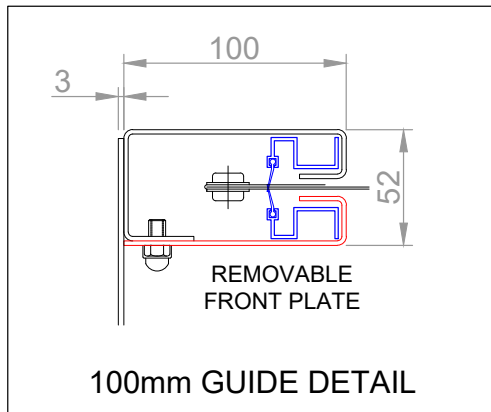


- THE ABOVE INFORMATION IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE

FIRE CURTAIN GUIDE INFORMATION - SMOKE SEALS

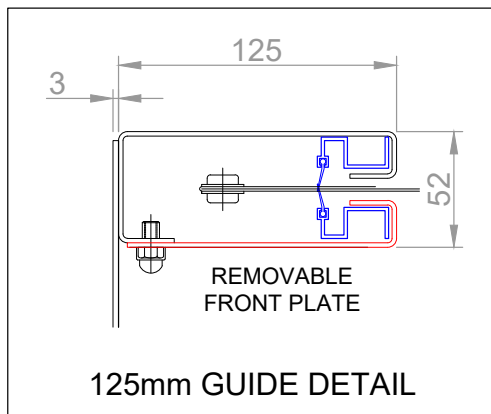
APPLICATION:

- SINGLE FIRE CURTAINS UP TO 5000 X 5000mm



APPLICATION:

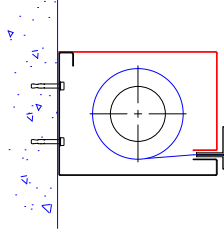
- SINGLE FIRE CURTAINS WITH A CURTAIN DROP OVER 5000mm
- 'MAX' FIRE CURTAINS
- MULTI ROLLER FIRE CURTAINS



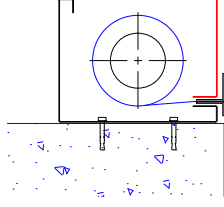
- THE ABOVE INFORMATION IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE

HEAD BOX FIXING OPTIONS

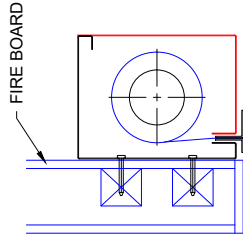
TOP FIX - MASONRY



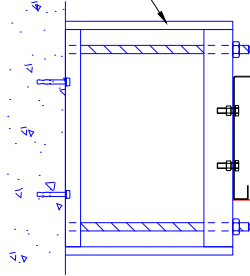
BACK FIX - MASONRY



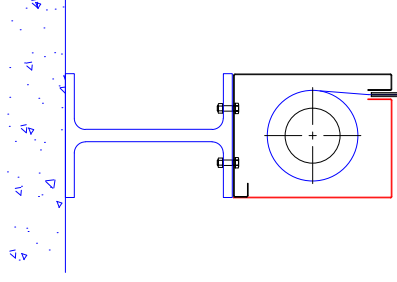
BACK FIX - STUD WORK



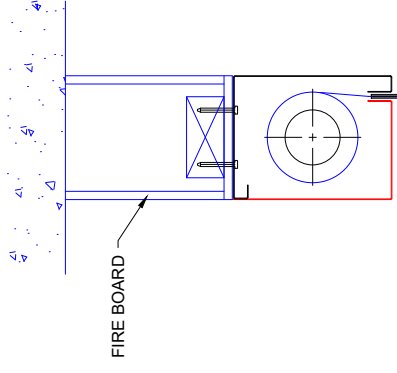
TOP FIX - UNISTRUT & ROD



TOP FIX - STEEL



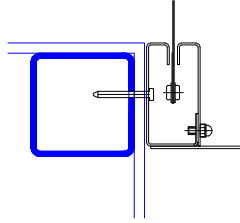
TOP FIX - STUD WORK



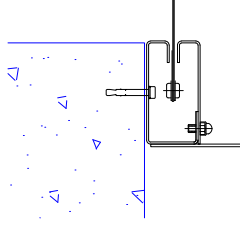
FOR ILLUSTRATION PURPOSES ONLY

GUIDE FIXING OPTIONS

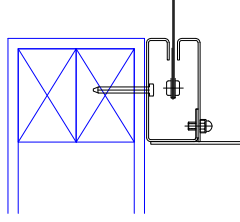
BACK FIX - STEEL



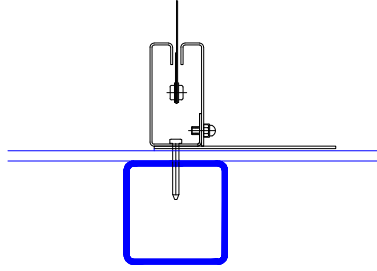
BACK FIX - MASONRY



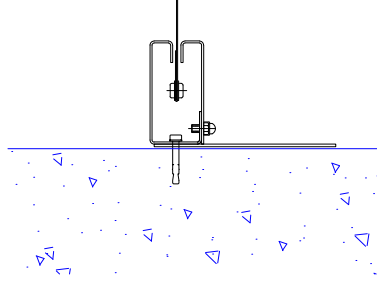
BACK FIX - STUD WORK



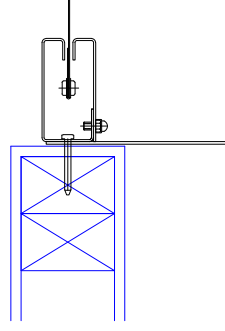
SIDE FIX - STEEL



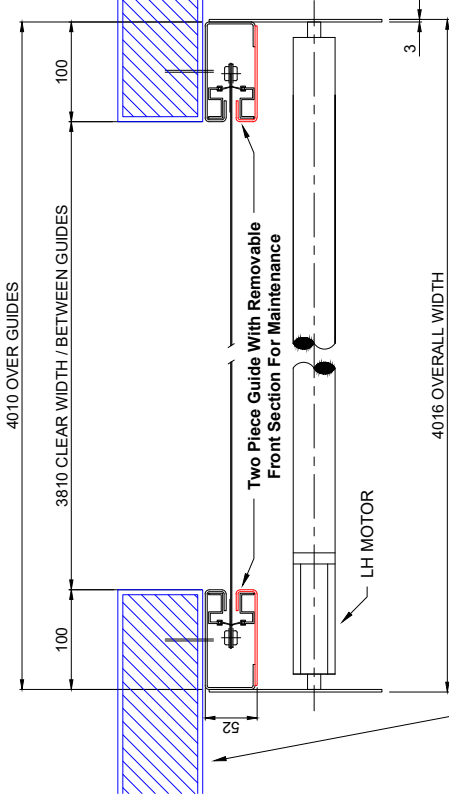
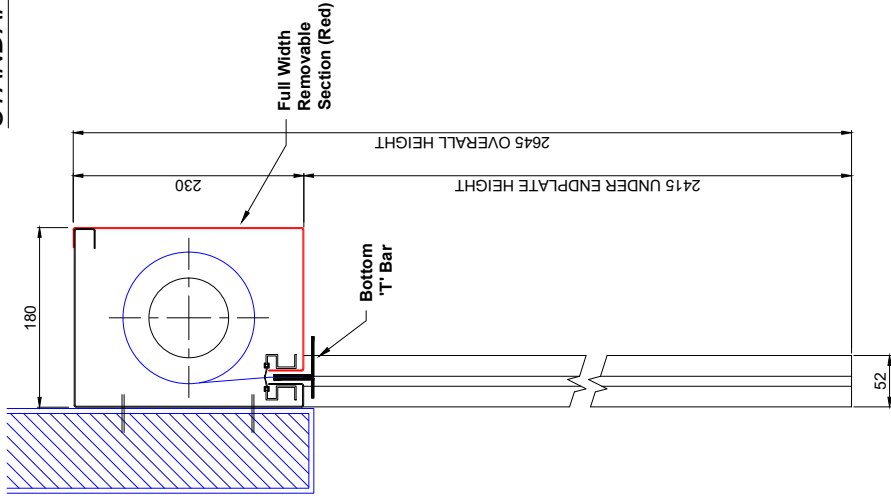
SIDE FIX - MASONRY



SIDE FIX - STUD WORK



STANDARD APPROVED WORKING DRAWING



- EVO 1 CONTROL PANEL - 385 x 355 x 110mm
- MCC PANEL 230 x 155 x 55mm

PLAN

HARDWARE REQUIRED:	
24VDC TUBE MOTOR	YES
EVO CONTROL PANEL	YES
GREY FABRIC FIRE CURTAIN	YES
HEADER & GUIDE SMOKE SEALS	YES
CONTRACT No.	CLIENT: XXXXXXXX
DATE	XXXXXX
DESCRIPTION:	FACE FIT FIRE CURTAIN - LEFT HAND
PROJECTION	XXXXXX-XX
FIRST ANGLE	XXXXXX-XX
DRAWN BY	SITE/REF: XXXXXXXX
DATE	DWG No. XXXXX-XX
	DO NOT SCALE

FINISH REQUIRED	
PPC RAL COLOUR 9010	

PANELS REQUIRED	
EVO 1	1
MCC	1
GMC	0

ELEVATION

FIRE RATING	2 HOUR
STRUCTURE	MASONRY
QUANTITY	ONE
HANDING	LEFT
WEIGHT (KGS)	80

ALL DIMENSIONS IN MILLIMETRES



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FIRE AND SMOKE CURTAIN SPECIALISTS