Thank you for purchasing a Screen Technics AV Lifter and please ensure to read the instruction fully before proceeding to install the unit.

GENERAL ADVICE

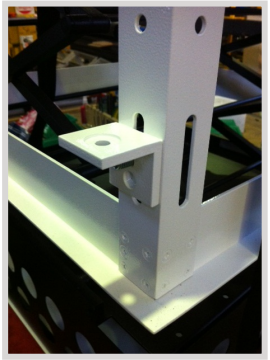
- The Interfit AV Lifter is a fully integrated unit that is designed to be installed above the ceiling line of the room and utilises bottom ceiling edge trim pieces to create a neat finish against the ceiling material cut-out.
- No plaster or paint trades are required for this standard installation.
- All electrical and control equipment is contained in the ceiling space. A standard 3 pin GPO for power supply is required.
- Review the cut-out dimension fact sheet attached to the top lid of the unit, as model sizes vary throughout the range.
- Before proceeding ensure that you have enough in-ceiling height to fit the unit. And that your model lifter will accommodate the projector that is specified for the project.
- Make sure you have reviewed the Lens Throw Distance Chart provided with the projector so that the Lifter will be the correct distance from the projection screen and to allow for any sideways lens off-set to achieve a perfect result.

INSTALLATION ADVICE

- Having decided on the position of the Lifter you must now cut the ceiling material to the stated cut-out dimension. We recommend that you divide the cut-out in two and remove one half at a time to prevent torn edges.
- Every above ceiling environment is unique and therefore there is no singular approach to securing the unit within the ceiling space. Following are some accepted install practices.

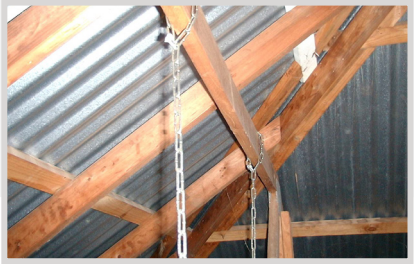
PLEASE NOTE: If the ceiling environment is going to be sealed without man-hole access up into the roof, then for later service removal, it is important to use the elongated vertical slots on the lower half of the frame uprights to secure the supplied angle brackets.

This will allow (with some difficulty) removal of the device from below if mechanical failure occurs.



CHAIN AND TURNBUCKLE

STEP 1. Secure the chain to a suitable structure, such as overhead timber beams, or dyna-bolted to an overhead concrete slab.



STEP 2. A minimum of 4 points to secure the chain is required and it is the installers responsibility to ensure the chain turnbuckle system chosen is strong enough for the safe installation of the unit.

STEP 3. Secure the chain to a suitable structure, such as overhead timber beams, or dyna-bolted to an overhead concrete slab.

STEP 4. Now raise the unit into the ceiling, hold in position from below while a second person secures the other end of the chain to the lifter using the supplied BLACK angle brackets and tighten the turnbuckles till the units ceiling edge trims are firmly pressing against the underside of the ceiling material.

STEP 5. Lock off the turnbuckles.

Continued Over.../

ALL-THREAD BROOKER ROD

STEP 1. Secure 4 x brooker rods to a suitable overhead structure with a proprietary loxin system designed to accept threaded rod.

STEP 2. Space around the outside corner dimensions of the unit.

STEP 3. Wind a set of nuts up the rods above the installation height and then insert the rods through the supplied angle brackets, now attached to the lifter unit.

STEP 4. Now wind on a set of nuts under the bracket till the ceiling edge trims are firmly pressing against the underside of the ceiling material, then wind the upper nuts down onto the angle brackets to lock off unit.

Installations are best achieved by have access into the roof space but this is not always possible, and in these instances we advise the following practices:

INSTALLING FROM BENEATH THE CEILING LINE

STEP 1. Connect power in a safe manner to the unit and support the lifter so you can motor the projector cage lower than the ceiling edge trims and you will see 6 Allen key bolts holding the cage assembly to the unit. Remove these and set aside the cage unit.

STEP 2. Remove the projector mounting plate by removing the 2 Allen key bolts at the front under side of plate and pull the forward to remove from the lifter assembly.

STEP 3. Motor the remaining assembly to the full up position (watch out for your fingers...) and you now have room to access the interior of the unit.

STEP 4. Inspect the 8 installation slots running up the corner frame uprights. These are used to secure the device to some suitable structure from below the ceiling line.

STEP 5. Either add some timber in the ceiling along two sides to coach bolt into place or suspend from threaded rod or some suitable angle brackets.

STEP 6. Raise the unit into the ceiling, fit the screws or bolts (as appropriate to selected method) and apply upward pressure to the unit so the ceiling edge trims are pressed firmly against the underside of the ceiling material and tighten off the screws or bolts.

STEP 7. Motor down the mechanism and refit the projector plate and cage assembly.

PLEASE NOTE: When utilising the above method of installation from beneath the ceiling, it is best to use a method of fixing to any structure that will allow you at a latter date to remove the lifter for any future servicing issues, without the need to break into the ceiling – please consider this issue before deciding on the best installation method.

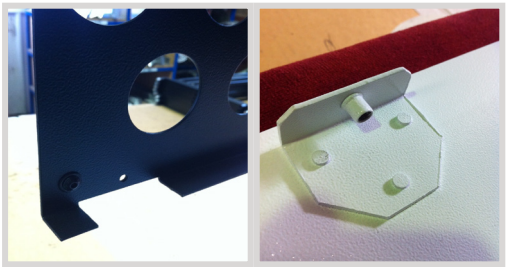
PROJECTOR INSTALLATION

STEP 1. This unit comes with a blank projector mounting plate that requires you to mark out the mounting holes and drill where appropriate.

STEP 2. Removal of the plate for drilling and fitting is achieved by undoing the 2 off Allen key bolts along the front underside edge of the mounting plate, and pulling the plate forward.

STEP 3. These 2 off Allen key bolts will later be the adjustment method used for yaw or side to side alignment of the projector, with the threaded adjustment winder used for pitch or up and down adjustment of projector.

STEP 4. For ease of adjustment and cable fitting the ceiling plate can be removed from the projector shroud assembly by undoing the 6 x Allen key bolts that surround the ceiling plate from the outside perimeter of the shroud, as below.



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CABLE MANAGEMENT FOR UNITS WITH 200MM TO 600MM TRAVEL

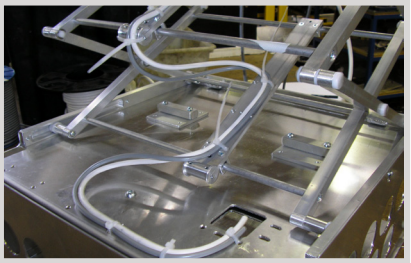
STEP 1. The rear of the projector mounting plate has a cable management access hole that allows you to run cables through and into the cable management channel.

STEP 2. Lay out the required cables and lock them into position utilising cable ties in the small regular holes running up the channel.

STEP 3. Be sure to allow enough slack in the cables at every hinged elbow point so the cables don't interfere with the travel of the lifter.

STEP 4. Exit cables through the supplied opening on top of the unit.

CABLE MANAGEMENT FOR UNITS OVER 600MM TRAVEL



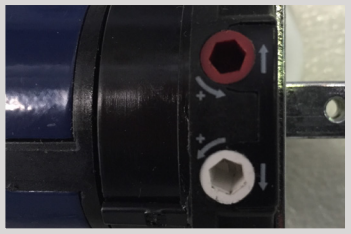
STEP 1. On units with longer travel a second type of cable management is required.

STEP 2. Above the projector mounting position is an access hole for the cables and various cable tie mounting holes, please see the picture below this text.

STEP 3. This allows the cables to run up the centrally mounted cable run planes, to the mid section of the plane, where the cable tie holes cease.

STEP 4. This is the point where you stop and run to the front of the upper cable run plane, leaving enough slack in the installation for so cables don't pinch or stretch.

LIMIT SETTING FOR INTERFIT PROJECTOR LIFTS WITH CONNECT - MODEL C (550MM CUTOUT)



The following instructions are for the adjustment of the limit switches that alter the upper and lower stop positions on Interfit Projector Lifts with 300mm of travel or longer

WHERE ARE THE LIMIT SWITCHES?

At the same end to the power cable (Right Hand Side). One switch is accessible either when the lift is down or when the side cover is removed

WHICH SWITCH IS FOR UP AND DOWN?

Up switch – Bottom Limit (WHITE) The one closest to the front of the lifter
Down switch – Top Limit (RED) The one to the rear of the lifter

WHAT TOOLS DO I NEED?

Either the limit setting tool (supplied), a narrow tip screw driver (less than 4mm) or a 4mm Allen Key

WHICH WAY DO I TURN THE SWITCH?

Anti Clockwise always increases the amount of rotation (travel) of the motor. (More)
Clockwise always reduces the amount of rotation (travel) of the motor. (Less)

Pick the switch responsible for the limit position, up or down. Anti-Clockwise turning of the limit switch will always let the motor travel further in that direction. Clockwise turning of the limit switch will lessen the amount of travel in that direction.

CAN I ADJUST THE SWITCH WHILE THE SCREEN IS SITTING ON THE LIMIT - IE FULLY UP OR DOWN?

Always back the lifter away from the limit and then adjust if you require less rotation.
After adjustment, you will need to run the lifter up and down to pick up the new limit.

WILL I VOID THE PRODUCT WARRANTY IF I DAMAGE THE LIFTER WHILST MAKING THESE ADJUSTMENTS?

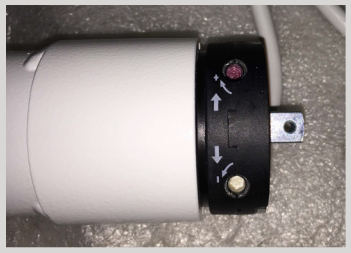
Yes, it is possible.

Should you have any questions regarding the installation of our products please call our sales desk on +61 2 4869 2100 for assistance

Continued Over.../

LIMIT SETTING FOR INTERFIT PROJECTOR LIFTS WITH CONNECT MODEL D 650MM CUTOUT) & MODEL F (800MM CUTOUT)

The following instructions are for the adjustment of the limit switches that alter the upper and lower stop positions on Interfit Projector Lifts with 300mm of travel or longer on the motor shown, with a White and Red limit switch



WHERE ARE THE LIMIT SWITCHES?

At the same end to the power cable (Right Hand Side). One switch is accessible either when the lift is down or when the side cover is removed

WHICH SWITCH IS FOR UP AND DOWN?

Down switch Bottom Limit (WHITE) – The one closest to the rear of the lifter
Up switch Top Limit (RED) – The one closest to the front of the lifter

WHAT TOOLS DO I NEED?

Either the limit setting tool (supplied), a narrow tip screw driver (less than 4mm) or a 4mm Allen Key

WHICH WAY DO I TURN THE SWITCH?

Top Limit Red – Turn Clockwise for more rotation of motor (towards the +) - If less rotation is required turn limit Anti Clockwise (away from the +)

Bottom Limit Red – Turn Clockwise for more rotation of motor (away from the -) - If less rotation is required turn limit Anti Clockwise (towards the -)

CAN I ADJUST THE SWITCH WHILE THE SCREEN IS SITTING ON THE LIMIT - IE FULLY UP OR DOWN?

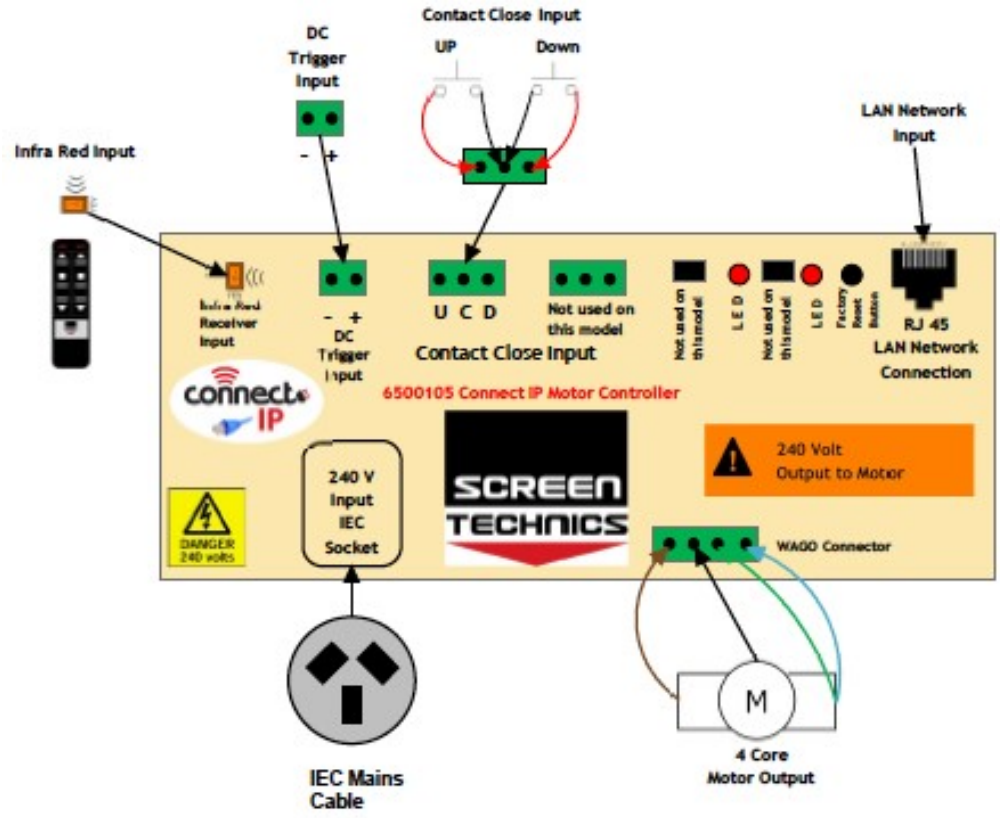
Always back the lifter away from the limit and then adjust if you require less rotation

WILL I VOID THE PRODUCT WARRANTY IF I DAMAGE THE LIFTER WHILST MAKING THESE ADJUSTMENTS?

Yes, it is possible.

Should you have any questions regarding the installation of our products please call our sales desk on +61 2 4869 2100 for assistance

6500105 Connect IP 4 Core Motor Controller



Inputs on Motor Controller

1. CONTACT CLOSE INPUT

- Contact Close Input for local control
- Requires 2 x Momentary contacts duration minimum 50 milliseconds
- Dedicated contact for Up & Down
- Stop command is close opposite travel contact or both Up & Down together

2. DC TRIGGER INPUT

- Down command is sent when a DC Voltage of 3 Volts @ 1mA minimum is applied to input
- Up command is sent when a DC Voltage of less than 1.0 Volts DC @ 1mA is applied to input
- Maximum cable length 75 meters approximately based 24 AWG gauge cable

Continued Over.../

3. INFRA-RED INPUT

- Supplied with 2 channel IR transmitter
- Supplied with IR receiver with 300mm and 1.2M input lead
- IR operates on Group 1 default – can be changed in set up

4. RJ45 LAN INPUT

- DHCP or Static IP addressable
- Internal Web Browser
- TCP/IP controllable
- DHCP as standard

5. 240 VOLT INPUT

- Connection with supplied IEC power cable

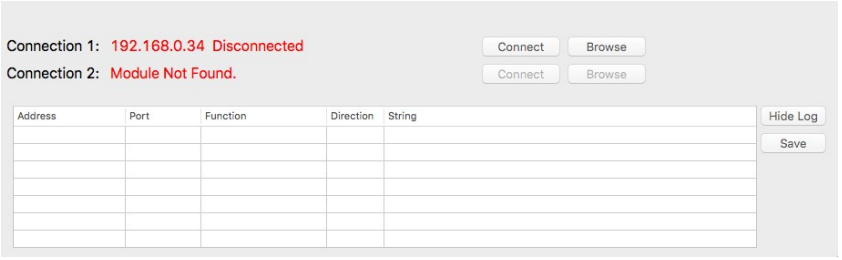
6. 240 VOLT OUTPUT TO MOTOR

- Connected by supplied WAGO connector
- Wiring
  - Pin 1 – Brown
  - Pin 2 – Black
  - Pin 3 – Yellow/Green – Earth
  - Pin 4 - Blue – Neutral

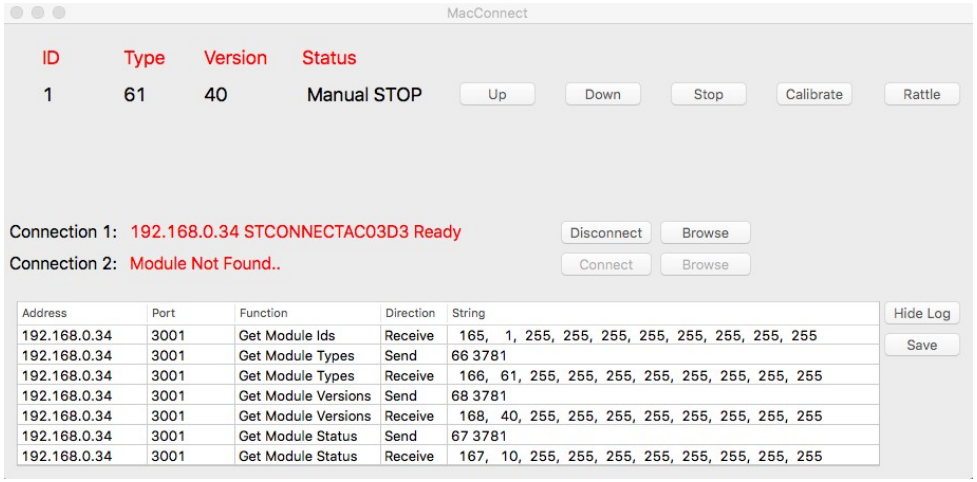
IP OPERATION OF MOTOR CONTROLLER

7. PC OR MAC CONNECT SOFTWARE

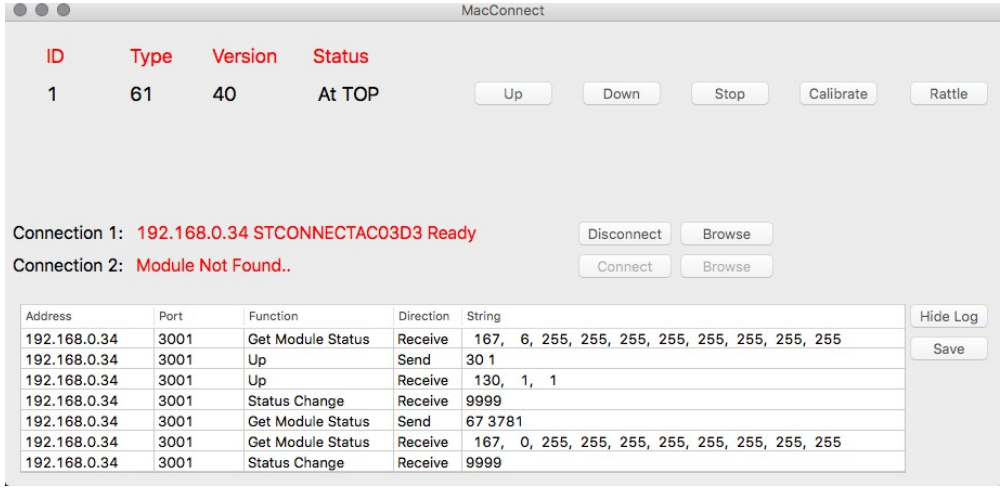
- As the motor controller is DHCP default, this software will allow simple operation and identification of DHCP IP address allowing for operation and programming
- Connect motor controller to network
- Run PC Connect or Mac Connect software -
- Software looks for Connect IP products on the network (Maximum 2)
- Screen shot below showing that software has found IP connect motor controller showing allocated IP Address



- Connect to module using "connect button"
- Screenshot below shows GUI screen
  - Lifter can be operated from this GUI
  - Status shows current position



- GUI shows IP address, port number and command structure for commands
- UP command is IP address, port number 30 1
- Software updates string after all commands



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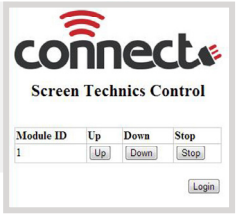
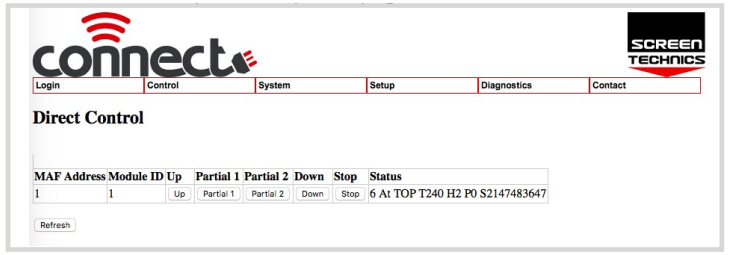
8. SIMPLE WEB BROWSER OPERATION

- Selecting browse button on GUI opens simple control web browser page
- Screen or Lifter can be operated from this page



9. FULL OPERATION AND PROGRAMMING OF CONNECT IP MOTOR CONTROLLER

- Select LOGIN from Screen Technics Control Page
- Connect Login screen will be shown
- Input User Name : Admin - Password : Connect
- Direct Control page is displayed
  - Module can be operated from this page
  - Status indication of screen – use refresh to obtain latest status update
  - MAF address and Module ID shown
  - Partial 1 & 2 operate as stop unless programmed

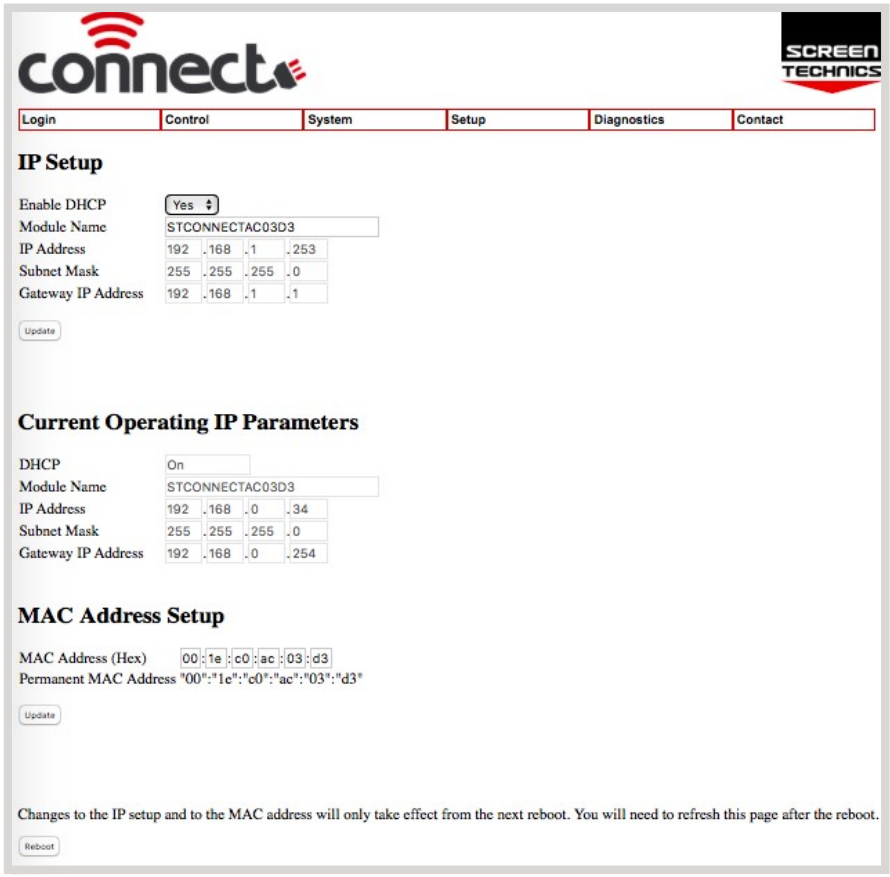


10. GROUP CONTROL

- Group feature will only operate module that is currently connect via IP
- This future utilises the "Connect Network Feature" not available on this motor controller model

11. IP CONTROL SETTINGS

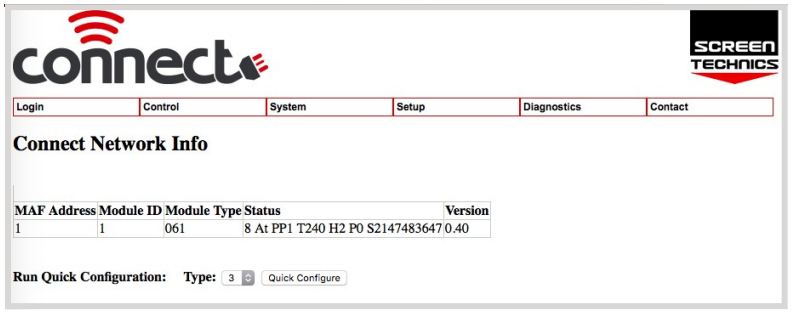
- Select IP SET UP from setup drop down menu
- Enable DHCP on/off (Default is on)
- Shows Default IP address & Current IP address (DHCP)
- Change "enable DHCP to NO for static IP
- Mac address set up (If replacing on network)
- Reboot required after IP address or MAC address change



Continued Over.../

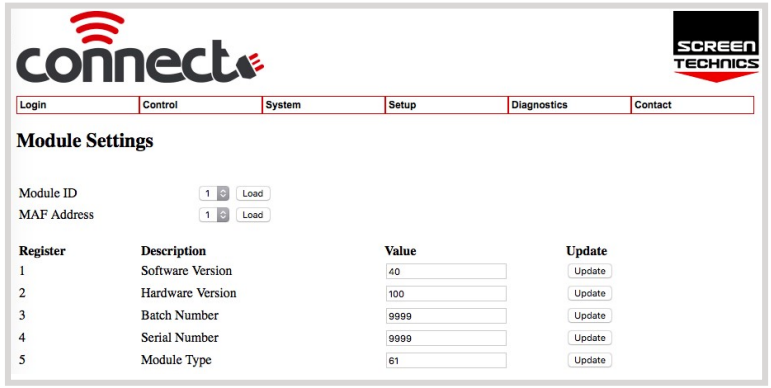
12. CONNECT NETWORK INFO

- Select system on top menu
- Select Connect Network Info in drop down menu
- Window shows
  - Software version
  - Module type
  - MAF Address & Module ID



13. REGISTER SETTINGS

- Select system on top menu
- Select module settings on drop down menu
- Select Module ID or MAF address and load
- This menu will enable changes of features within the module
- 127 registers in total
- Screen shot below showing register page



Register	Description	Value	Update
1	Software Version	40	Update
2	Hardware Version	100	Update
3	Batch Number	9999	Update
4	Serial Number	9999	Update
5	Module Type	61	Update
64	EEPROM Valid Check 1	65261	Update
65	Operation Pin	999	Update
66	Programming Pin	123	Update
67	Partial Position 1 Low / Switch Group Relay 1	100	Update
68	Partial Position 1 High / Switch Group Relay 2	0	Update
69	Partial Position 2 Low / Switch Group Relay 3	0	Update
70	Partial Position 2 High / Switch Group Relay 4	0	Update
71	Switch Mode / Switch Group Relay 5	1	Update
72	Partial Open 1 Mode / Switch Group Relay 6	1	Update
73	Partial Open 2 Mode / IR Group Relay 1	1	Update
74	Switch Group Mask / IR Group Relay 2	2	Update
75	IR Remote Group Mask / IR Group Relay 3	6	Update
76	T Up / IR Group Relay 4	1	Update
77	T Down / IR Group Relay 5	1	Update
78	Screen ID / IR Group Relay 6	1	Update
79	Motor Trip Current / Unused	42	Update
80	Motor Run Timeout / Unused	240	Update
81	Diagnostics Log Time / Unused	3600	Update
82	Time Delay Up / Unused	5	Update
83	Time Delay Down / Unused	5	Update
84	EEPROM Valid Check 2	1816	Update

COMMONLY USED REGISTERS

Register Number	
75	IR GROUP Bitmap Register Below
78	MODULE_ID

Continued Over.../

14. INFRA-RED GROUP BITMAP CALCULATOR

- Add the value of IR groups
- If you wish the module to operate on Group 1 only – change register 75 to a value of 2
- If you wish the module to operate on Group 1 & 2 only – change register 75 to a value of 6

INFRA-RED GROUP BITMAP REGISTER 75

- Calculate the register number by using following
- table:-
- Transfer the Value for each required group to the right column.
- The Total of the values in the right column then becomes the Register
- Value E.g. to set groups 1, 2 then the Total value is 6.

Group	Value
1	2
2	4

15. CONTACT CLOSE SWITCH GROUPS

- Default setting is 2 and should not be changed

16. IP CONNECT SERIAL PROTOCOL

- This serial command protocol is essentially the same for all console channels
  - TELNET via TCP/IP (2 ports 3001)
  - HTTP via port 80

FORMAT

The stream is made up of messages. A message consists of 1 to 80 printable ascii characters followed by and end of message. An end of message is one or more of CR and LF optionally combined with any number of delimiters.

A message is made up of unsigned numerical value fields in decimal format separated by one or more delimeters. A delimiter is any single or combination of space, comma or tab.

Examples of valid messages to the IP Connect module are given below. All these messages have the same meaning.

1,3,45<CR>
1,3,45<LF>
1,3,45<CR><LF>
,1,3,45<CR><LF>
1,3,45,<CR><LF>
1,3,,45,<CR><LF>
1,3, 45,<CR><LF>
1,3,45,<CR>, ,<LF>
01,3,45<CR><LF>
000000001,3,45<CR><LF>
1 3 45<CR><LF>
1, 3, 45<CR><LF>

A message is not a valid message if:

- It contains more than 80 characters before an end of message character is received.
- It contains a character that is not <CR>,<LF>,<TAB>,<SPACE>,0,1,2,3,4,5,6,7,8,9,",".
- A numerical field exceeds 65535
- It contains more than 10 fields

If a packet is determined to be not a valid message it is ignored. If a message is determined to be invalid before the end of message is ignored then all characters received are ignored until an end of message character is received.

Messages from the IP Connect module comply with the requirements of the incoming messages but in addition are fixed width formatted. Each numerical field is made of 5 characters (leading spaces and digits). A comma delimiter is included.

An Example is shown below:

1, 3, 45<CR><LF>

17. CONTROL COMMANDS

- These commands are used to control the operation of screens.
- Unified address is MAF address plus 16 e.g. Module 1 is Unified address 17

OPERATE MODULE DIRECT

COMMAND	VALUE	DESCRIPTION
30	Module ID	Operate Module UP
31	Module ID	Operate Module PARTIAL 1
32	Module ID	Operate Module PARTIAL 2
33	Module ID	Operate Module DOWN
36	Module ID	Operate Module STOP

Example of direct command:

- Connected to 192.168.0.32:3001 – command 30 1 using module ID would see the lifter move to up position
- Connected to 192.168.0.32:3001 – command 30 17 using MAF address would see the lifter move to up position

Continued Over.../

IR GROUP COMMANDS

- Each module will require programming via register 75, as per point 15 in document
- Example of direct command Connected to 192.168.0.32:3002 – command 20 1 ,would see all lifter programmed to operate on IR group 1 move to up position

OPERATE IR GROUP

COMMAND	IR GROUP	DESCRIPTION
20	IR Group 1 or 2	Operate IR Group UP
23	IR Group 1 or 2	Operate IR Group DOWN
26	IR Group 1 or 2	Operate IR Group STOP

SWITCH GROUP COMMANDS

Example of direct command:

- Connected to 192.168.0.32:3001 – command 30 1 using module ID would see the lifter move to up position
- Connected to 192.168.0.32:3001 – command 30 17 using MAF address would see the lifter move to up position

OPERATE SWITCH GROUP

COMMAND	IR GROUP	DESCRIPTION
10	SWITCH Group 1 or 2	Operate Switch Group UP
13	SWITCH Group 1 or 2	Operate Switch Group DOWN

18. MODULE STATUS FEEDBACK

- A module status buffer (20 record FIFO) is updated as a automatically generated Send Register Commands with register number = 0x20 are sent from each module.
  The module status buffer contains the Module ID (1 byte), and Module Status (2 bytes)

COMMAND
050

Response from module e.g. 150, 1, 1, 6 – value 6 indicates screen at top

COMMAND	VALUE 1	VALUE 2	VALUE 3
150	Status	Module ID	Module Status Register (0x20)

Note: Status=1 is returned if valid data and no further records in the status buffer
Status=2 is returned if valid data and there are still records in status buffer
Status=3 is returned if valid data but the buffer is full (eg may have lost data)
Status=6 is returned if there are no new records

This buffer is updated when screens are moved. It is also updated automatically every 60 seconds. It needs to be polled regularly to clear the stored data otherwise it will get full and records will be lost. Even though screens may not be moving the data is being updated even though the status is the same.

RESPONSE TYPE NO	CONNECT IP MODULE
0	Moving top
1	Moving bot
2	Moving PP1
3	Moving PP2
4	Moving PPT
5	Moving PPB
6	At TOP
7	At BOTTOM
8	At PP1
9	At PP2
10	Stopped manual
11	Error
12	Spare
13	Fail-timeout
14	Fail – current
15	Rattle
16	At PPT
17	At PPB

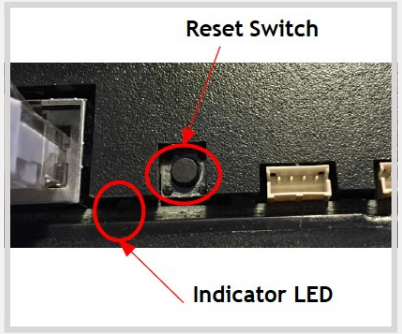
Continued Over.../

19. AMX Device Discovery

- This feature allows the IP CONNECT module to be identified by AMX AV Control Systems. When polled the IP CONNECT module responds with a Beacon message which contains device specific information. (Eg Make, Model, Version) With this information the AMX system is able to then configure itself with the correct protocol to be able to control the IP Connect Module.
- The protocol works for any of the Serial ports, and over TCP/IP.
- The AMX "Device Discovery White Paper.Doc" defines, The Dynamic Device Discovery Protocol - the connection methods and data interactions required to dynamically connect a third party device to a NetLinx Master via either serial or IP connectivity.
- AMX Discovery is enabled using Register 80 or via internal web browser

20. FACTORY RESET SWITCH

- Single long press for 5 seconds approximately
  - Factory Default Mode selected.
  - LED double flashes.
  - Pressing button again exits mode.
  - Power cycle off / on for 10 seconds or receiving an IR command exits this mode.



- Puts module into Static IP Mode
  - Default IP address is 192.168.1.253
  - Module can be accessed via web browser

- Single short press for 3 seconds approximately
  - Screen Rattle command.
  - 3 seconds down 1 second up.
  - LED single flashes while in this function.
  - Pressing button again stops screen.
  - Function is exited when screen operation finished or another screen operate command is acted on.

- Double short press for 2 seconds approximately per button press
  - Screen Up command. Screen travels to up limit.
  - LED single flashes while in this function. Pressing button again stops screen.
  - Function is exited when screen travels to up position or another screen operate command is sent.

- Triple short press for 2 seconds approximately per button press
  - Screen Down command. Screen travels to down limit.
  - LED single flashes while in this function.
  - Pressing button again stops screen.
  - Function also exited when screen operation finished or another screen operate command is acted on.

REGULAR MAINTENANCE

Screen Technics lifters are designed to provide many years of trouble free operation.
If the unit ever does anything abnormal or has been affected by an outside event the unit should be isolated and advise requested from Screen Technics (Phone 02 48692100)

When servicing the projector / changing globes we suggest carrying out the following (around every 12 months)

1. Check for any signs of rubbing or wear on the lifter chassis and any cabling.
2. Check that the top and bottom limits stop the unit in the proper position.
3. Run the lifter up and down in a quiet environment to listen for any unusual noise or movement.
4. Check the fall arrestor, if fitted, operates as designed (give the belt a sharp tug to ensure it locks correctly and then release it) This works on the same principle as a seat belt in a car.
5. Check that the projector is still securely mounted within the lifter.
6. Check that the lifter is still securely mounted to the building structure.
7. When raising and lowering lift it is recommend that no person is directly below the lift.

Should you have any questions regarding the installation of our products please call our sales desk on +61 2 4869 2100 for assistance