

STRATUS CONTROLLER MANUAL

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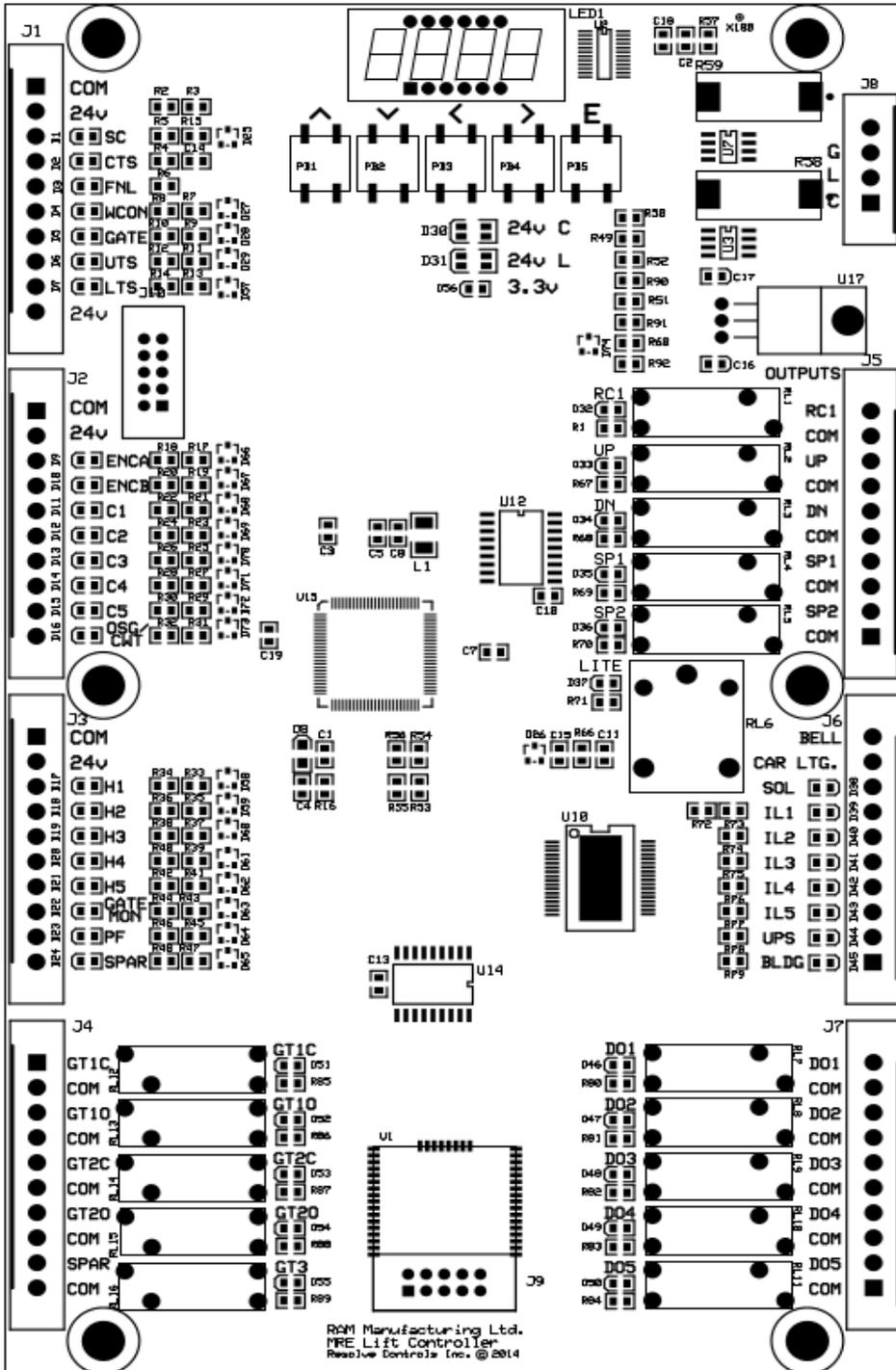


Fig.1

Wiring

The controller runs on 24vdc. Inputs are all 24vdc. Outputs are both relay-out dry contact (J4, J5 and J7) and 24vdc current limited/short circuit protected J6. The BELL and car lighting (CAR LTG.) are fed by a separate current limited/short circuit protected circuit so that the car lights and bell will remain functional in the event of a control short circuit.

Power

The Control Board has two power input connections. Both connections are on connector J8. Pin1, J8 labelled “C” is for the control power. Pin2, J8 labelled “L” is for car lighting and bell power. Pin3, J8 labelled “G” is a common ground connection. Both Control and Lighting power are short circuit protected. The control and lighting circuits have bi-color LEDs labelled “24vdc C” and “24vdc L”. These LEDs are located below the setting push buttons. The LEDs will light green if the power is applied to the J8 input. If the Bell or Light outputs are shorted to Ground the “L” LED will be red. If any of the power connections on J1, 2 or 3 are shorted to Ground the “C” LED will be red.

The other power outputs SOL, IL1-5, UPS and BLDG are all individually short circuit protected. If any of these outputs are shorted to ground the output will be current limited the LED indicating the output is activated will be not light up. The output will recover as soon as the short is removed with no need to reset. The SOL output has the same protection however the LED will still be lit in the case of a short.

LED Display

There is a four digit display to read the parameters. Underneath the display are five push buttons. Four directional, UP, DOWN, LEFT, RIGHT and one labelled E for ENTER. The UP & DOWN push buttons are used to scroll through parameters while the LEFT and RIGHT buttons are used to change the value of certain parameters. To save the changes push the ENTER button after changing the parameter value. The appropriate parameter settings must be selected before running the lift for the first time. **Note some parameters are display only and cannot be changed**

<u>Parameter</u>	<u>Description</u>
runX	Display only you must scroll to the run parameter using the up push button for the lift to operate. If X = 0 the safety circuit is open and the lift cannot run. If X = 1 the safety circuit is closed and the lift can run.

Fl X “X” is the top floor number. Select the top floor using the LEFT and RIGHT buttons. ie. For a 3 stop lift select 3 then ENTER.

t XX Lift Control Type

t cP Constant Pressure Operation. The lift runs only when the call button is being pressed. The lift will run automatically when in the levelling zone which occurs as the first encoder is activated when approaching a landing.

t Au Automatic Operation. On one press of a call button and the carriage will continue to the requested landing. If any safety device is activated and stops the carriage, another press of the call button is needed to re-activate the lift.

ct xx Lift position count “display only” Used for trouble shooting.

The count displayed is as follows.

Floor	1	2	3	4	5
Count	0	8	16	24	32

5Lxx Door Solenoid Voltage. “display only” Used for trouble shooting. Monitors the voltage to check for wiring and Reed Switch integrity.

Carriage Position	Door Solenoid (ON/OFF)	Door Reed SW. (Open/Closed)	Door Solenoid Voltage (DCV)	Operation
At Landing	ON	Either	22-24	Normal
At Landing	OFF	Closed	3.5-4	Normal
At Landing	OFF	Open	10.5-12	Door Not Unlocking- Bad Reed Switch or No Magnet
Mid Landing	OFF	Open	10.5-12	Normal
Mid Landing	OFF	Closed	3.5-4	Error1-Welded Reed Switch or No Magnet
Mid Landing	OFF	Open	22-24	Error2- Welded Solenoid or wiring error

t x Run timer. The number selected here will allow the call buttons to select a landing for a fixed number of days. Note the run timer will always allow the carriage to travel to the selected floor before making the call buttons inoperable.

t0	Lift will not run.
t1	Lift will run for 15 days.
t2	Lift will run for 45 days.
t3	Lift will run for 90 days.
t4	Pay Program Removed

Fx y Carriage auto gate opener settings.
“x” is the floor number selected with the up down buttons.
“y” is the gate to be activated on that landing. “n” for no gate,
“1” for gate 1, “2” for gate 2, “3” for gate 3.

Locx Door Lock type. “H” for Honeywell, “E” for EUCHNER and “n” for Mechanical.

tE5t Test mode. This is for bench testing of controller I/O and not to be used while wired to a lift. To enter test mode push the right button so the display reads “Ye5”. Push enter to accept or exit with up or down. If you entered yes then the display will read “0utP”. Push right activate and cycle through all the outputs starting at RC1. After the last output the display will read “1pt5” to begin testing the inputs. Activate each input consecutively and the up relay will confirm the input works.

Er x Last error “display only”. This parameter indicates the last error condition. If an error occurs the display changes to this display.

Error 1 is a door solenoid reed switch welded contact indication. One or more of RS1-5 are closed out of the landing zone. The lift will stop immediately and restart once the condition is cleared.

Error 2 is the solenoid power was on when it should be off. Either through a wiring error or a faulty output on the board. The lift will stop immediately and restart once the condition is cleared.

Error 3 is that the lift has run for more than 2 minutes indicating something is keeping it from reaching the landing. The lift will stop immediately and the control power must be cycled to remove this error.

Error 4 is the gate monitoring fault. The gate input and the gate monitoring input should activate at the same time. If there is a difference between these inputs that indicates a faulty switch. The gate contacts must cycle once correctly to clear this fault.

Error 5 is the Bypass fault error. This error indicates that the bypass switch remained activated outside the landing zone which is defined by when the encoders have passed the floor magnet. This error latches and is reset by cycling the power.

Error 6 is the terminal switch fault. This fault is caused by both terminal switches being activated at once. This error is reset by removing the fault condition.

Error 7 indicates that the run timer has timed out. The timer needs re-setting on the 8th parameter “t x” to activate the lift.

Error 8 is the terminal switch welded fault. This error occurs when either of the terminal switches is activated for more than 3 seconds while the lift is running. This error is reset by removing the fault condition.

PPXX Run time remaining “display only” “PP--” if the run timer is inactive and “XX” = the number of active days left if the timer is still active.

Gate Safety

The Controller monitors the Carriage Gate Safety Switch. If the Gate Safety Switch welds closed the lift will not allow a call to be made. Once the gate has cycled proving the Gate Safety Switch integrity a new call can be made.

Door Lock Monitoring Safety.

The controller monitors the Door Solenoid Reed Switch. If the Reed Switch fails closed, the lift will stop. The problem must be solved before the lift will move. If the Door Solenoid output is shorted to 24vdc power in or outside the board the lift will stop. The problem must be solved before the lift will move.

Floor Counting

The controller clears the count to 0 on the Lower Terminal Switch. The count is increased by 4 when the counting magnet passes the encoder reed switches. This causes a count of 8 between landings. The Upper terminal switch also sets the count to the top floor count.

Homing the Lift

The lift will Home at the first level on the first cycle after power up using slow speed. In constant pressure mode the lift travels to the bottom no matter which call is pressed. Once the bottom floor is reached the lift will travel to the selected floor. In automatic mode, when any call is made the lift will travel to the bottom first. Then a new call can be made to any level.

Connector Wiring - (See Figure 1)

J1 Connector:

COM - 0vdc common connection for the 24vdc field wiring.

24v - 24vdc 500mA output field wiring. Used to power switches and sensors for elevator inputs. This power output is common with the other 24v pins on J2 and J3. This power is supplied from J8 pin "C" (control). The Bi-colored LED labelled 24v C indicates the 24v status. The LED will light red for one second on start-up then will turn green indicating 24vdc present on the 24v pins. The LED will turn red if there is a short to COM or an over current condition. The output will stay low current till the short is removed.

SC - 24vdc Safety Circuit input. This pin has a green LED indicator. The safety circuit is a series circuit using resistors and LEDs so this green LED indicator varies in brightness depending on how many contacts are open. When the circuit is closed the LED is at it's brightest and the display will read "run1". If any part of the circuit is open the display will read "run0". Note if the safety circuit is made up fully you can measure 24VDC at this terminal.

CTS - Car Top Stop terminal. This is a wiring point for the safety circuit and not an input. There is a red LED indicator for this terminal that lights if the Safety circuit is open at car top location.

FNL - Final Limits terminal. This is a wiring point for the safety circuit and not an input. There is a red LED indicator for this terminal that lights if the Safety circuit is open at either of the Upper or Lower limits.

WCON- This input monitors the redundant contactor for welded contacts. It must be on for the lift to start. This input has a green LED indicator.

UTS - This input is for the Upper Terminal Switch. It has a green LED indicator.

LTS - This input is for the Lower Terminal Switch. It has a green LED indicator.

24v - Same as previous 24v terminal.

J2 Connector:

COM - Same as previous COM terminal.

24v - Same as previous 24v terminal.

ENCA - This 24vdc input is for the Top Sensor for encoding the lift position. It has a green LED indicator that lights when the sensor senses a magnet.

ENCB - This is the bottom Sensor input for encoding the lift position. It works the same as ENCA.

C1-5 - These 24vdc inputs are for the Carriage Call Buttons. They have green LED indicators that light when activated.

OSG/CWT - This 24vdc input is for a Counter Weight or Over Speed Governor monitoring switch. It has a green LED indicator.

J3 Connector:

COM - Same as previous COM terminal.

24v - Same as previous 24v terminal.

H1-5 - These 24vdc inputs are for the Hall Call Buttons. They have green LED indicators that light when activated.

GATE - This 24vdc input is for the monitoring contact on the gate. It has a green LED MON indicator. If this input does not activate at the same time as the Gate input on J1 then Error "Er4" is activated and the lift will not move. The gate contacts must both open then close successfully to clear the fault.

PF - This 24vdc input is fed from a power monitoring relay. It has a green LED indicator. This input is used for the Auto Lowering control mode.

SPAR - This 24vdc input is a spare. It has a green LED indicator.

J4 Connector:

GT1C – COM - These pins connect to a normally open relay contact for the Gate 1 Close signal. It has a green LED indicator.

GT1O – COM - These pins connect to a normally open relay contact for the Gate 1 Open signal. It has a green LED indicator.

GT2C – COM - These pins connect to a normally open relay contact for the Gate 2 Close signal. It has a green LED indicator.

GT2O – COM - These pins connect to a normally open relay contact for the Gate 2 Open signal. It has a green LED indicator.

SPAR-COM - These pins connect to a normally open relay contact for a spare output. It has a green LED indicator.

J5 Connector:

RC1 – COM - These pins connect to a normally open relay contact for the Redundant Contactor. It has a green LED indicator.

UP – COM - These pins connect to a normally open relay contact for the Up Contactor or VFD input. It has a green LED indicator.

DN – COM - These pins connect to a normally open relay contact for the Down Contactor or VFD input. It has a green LED indicator.

SP1 – COM - These pins connect to a normally open relay contact for the VFD Seed input 1. It has a green LED indicator.

SP2 – COM - These pins connect to a normally open relay contact for the VFD Seed input 2. It has a green LED indicator.

Note: SP1 and SP2 select four preset speeds from the VFD.

	SP1	SP2
Slow	0	0
Medium slow	0	1
Medium Fast	1	0
Fast	1	1

J6 Connector:

BELL - This 24vdc output is fed from J8 “L”. It is used to supply power to the Emergency Bell circuit. This output is short circuit protected. With a short to Common (0vdc), the bi-color power LED labeled 24v L will light red. When the short is removed the power will resume and the LED will light green.

CAR LTG. - This 24vdc output is fed from J8 “L” through a normally closed relay. It is used to supply power to the Carriage Lighting circuit. This output is short circuit protected. With a short to Common (0vdc), the bi-color power LED labeled 24v L will light red. When the short is removed the power will resume and the LED will light green.

SOL - This 24vdc output powers the Door Solenoid Circuit. It has a green LED indicator. This is a monitored output. The controls sense two errors with this output:

1. If the door solenoid reed switch is welded. Error “Er1”.
2. If the door solenoid output is shorted to 24vdc. Error “Er2”.

IL1-5 - These 24vdc outputs power the floor call indicator lights. They have green LED indicators. If these outputs are shorted to common the LED will not light. If the short is removed the output will resume and the LED will light.

UPS - This 24vdc output operates the UPS (Uninterruptable Power Supply) contactor for an auto lowering Lift. If this output is shorted to common the LED will not light. If the short is removed the output will resume and the LED will light.

BLDG - This 24vdc output operates the Building Power Contactor for an auto lowering lift. If this output is shorted to common the LED will not light. If the short is removed the output will resume and the LED will light.

J7 Connector:

DO1-5 – COM- These pins connect to a normally open relay contact for the Auto Door 1-5 Open signal. It has a green LED indicator. This output closes for 0.5 seconds after reaching a landing or after a Car or Hall call input when at the associated landing.

J8 Connector:

G - This pin is for the 0vdc power input. It is a common connection for both “C” and “L” input power connections.

L - This pin is for 24vdc power input to run the car lighting “CAR LTG.” and “BELL” outputs on J6. It uses the same common 0vdc connection “G”.

C - This pin is for 24vdc power input to run the control board and the field wiring J1,2&3 24v. It uses the same common 0vdc connection “G”.