

EMU 3

(Ver 1.00)

Installation & Commissioning Manual

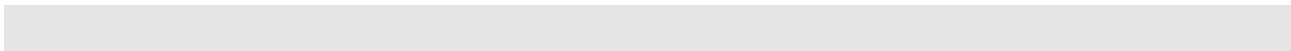
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1 INTRODUCTION

The EMU 3 Master unit comes in three variants depending on the type of communication module fitted. These are: - PSTN for standard telephone connections, GSM for mobile phone data communication, and MicroExchange, where a PSTN connection has to be shared between the EMU and an auto-dialler. Each type of communication has its own individual requirement, which are detailed later. The general installation is simplified by the easy removal of all the electronics from the EMU case, which enables the wiring to be routed in a convenient manner for the site, from an interface rail mounted within the controller to the EMU itself. When all the connections are made there is an initial setup procedure that commissions the EMU to the signals and features required for the site.

2 MOUNTING

The location should be chosen bearing in mind that the lid opens down and that if expansion units are to be fitted, that they attach to the right hand side of the enclosure and are connected through the ribbon slot in the side. Dimensions in mm :- 350 wide x 345 high x 105 deep

To help installation the electronics are mounted on an easily removed back plate. Unscrewing the top thumbscrew and disconnecting the back plate earth strap allows this assembly to be lifted out. The enclosure can then be mounted at a convenient location and the conduit entries drilled.

3 WIRING

EMU 3 requires a 240v mains supply, independent of the controller's supply, via 2.5mm² twin and earth from a 5A-fused spur. Main wiring runs should be installed with conduit protection compatible with the existing electrical installation.

The Main Inputs MI 1-16 at the bottom of the EMU mother board are provided for monitoring the equipments control signals while the inputs at the top right are for auxiliary low voltage signals. Space is provided behind the back plate to allow wires to be routed to their appropriate connectors before the back plate and its electronics are replaced. **Routing of wires across the surface of the motherboard or between the motherboard and the other processor cards MUST BE AVOIDED.**

A printed label on the inside of the lid details the signal designations for a Lift application and allows auxiliary signals and non-lift applications to be marked up. Use this to detail any special signals used for a specific application.

All controller signals are to be wired through the EMU 3 interface rail terminals, which provide suitable signal conditioning to prevent external wiring faults from affecting the controllers operation. Signals that share a common return path should be wired separately between the EMU 3 and the interface rail, but may be commoned up on the controller side of the interface rail. All the main lift input signals and the alarm circuit monitoring can be connected through a 36 way multi core cable, with the TFC and BFC output signals being wired separately. This signal separation is important as the output signals potentially carry unconditioned voltages. Table 2 – Lift I/O Mapping details the input allocation for a Lift application.

3.1 Voltage range selection

For the main equipment inputs the interface rail and the links SW 2-17 above each of the MI inputs determine the operating voltage range. The links are used to prevent false triggering in the same way as changing the opto-isolator would on EMU 1

Main Input MI 1- 16	Link to the Left (2-3) Standard sensitivity	Link to the Right (1- 2) Low sensitivity
Via standard 47K interface rail	70V – 240V AC/DC	195V – 240V AC/DC
Via low voltage 5.5K interface rail	20V – 175V AC/DC	55V – 175V AC/DC
Direct wire, no interface resistors	14V – 150V AC/DC	40V – 150V AC/DC

Low Voltage Inputs	
Auxiliary Inputs AI 1 – 4	9V – 30V AC/DC
Alarm Supply ALS & Alarm Push ALM	4.5V – 26V AC/DC
TAM	Is tracked to the WET supply and is not volt free.

Main Outputs MO 1 - 4	Contact Rating
AC	250V 5A
DC	30V 5A

Table 1 – Input & Output Voltage Ratings

Value	Resistor Only	Resistor + Bridge	Top Colour	
47k		2007100.1	CLEAR	EMU 1/ EMU 3
5.6k	2007100.7	2007100.8	RED	EMU 3
<i>All blocks with a bridge in have their terminals coloured Red, Black & Green.</i>				

Table 2 – Interface Rail resistor blocks

3.1.1 EMU specific I/O

The majority of the EMU’s I/O is general purpose with its function being dependent on the equipment being monitored and the allocations made during commissioning. There are however a few inputs and outputs that are specific to the EMU’s function and can’t be used for other purposes: -

Aux Supply	WET + & –	12V 400ma Auxiliary Supply	Provides wetting current for auxiliary input circuits or a supply for auxiliary equipment such as the MicroExchange.
AI 5	TAMP	EMU Cabinet tamper micro switch input. Internally tracked to draw its current from the wetting supply.	Provides an alert event if the EMU cabinet is opened without a TVC engineer login.
AI 6	AUXS	Wetting supply monitor. Internally tracked to monitor the supply.	Provides an alert event if the supply, and so possibly monitoring is lost.
AI 7	ALM	Low Voltage Input for the alarm verification circuit.	Lift alarm verification input with fail safe.
AI 8	ALS	Alarm Circuit Supply monitor	Monitors the alarm circuit voltage periodically when ALSC is triggered
MO 5	ALSC Alarm Supply Connect	LS 5 connects the alarm circuit supply to the EMU’s input for a periodic supply test.	The test can be triggered manually through the “Test Alarm Supply” Setup menu item 6.12 .
MO 6	ALV Verified Alarm	LS 6 output to trigger an autodialler when a verified trapping is detected.	If ALE is not enabled the ALM input is passed directly through to ALV as a fail safe alarm by-pass.
MO 7	ALE Alarm Enable	LS 7 enable the verified alarm circuit 15 seconds after an EMU reset.	This output provides a fail safe alarm by-pass if the EMU fails.
MO 8	DISC Disconnect Charger	LS 8 periodically disconnect the charger as part of the battery test.	The test can be triggered manually through the TEST option on the “Battery Status” screen in Setup 6.12.1 .

3.2 Equipment type wiring

When an application is selected as part of commissioning (See section [10.2](#)) the Input and Output terminals are automatically mapped to a set of logical I/O required for that application. This default configuration can be adjusted during commissioning to suit a particular application, but forms a starting point for that process.

3.2.1 Lift Equipment

When a Lift application is selected as part of commissioning (See section [10.2](#)) the Main Input terminals MI 1-16 are automatically mapped to the logical input signals required by the Liftwatch monitoring software. The majority of these signals are the same as those for EMU 1. However there are some important differences.

Door Open Limit (DOL) As its name suggests it requires a signal to indicate that the doors are fully open. If a signal is not available then this input can be disabled during commissioning. However the “Door open time” must be set to the time the door takes to open. (See Section [6.10.13](#))

Door Zone (DZ) This needs to be a true indication of the lift entering/leaving the door zone. While the lift is travelling it may be used to count floor levels and so determine lift position, provided this option is selected during commissioning. (See Section [6.10.6](#))

Demand (UDF) A new signal that picks up the early stage of a lift cycle such as a Ramp or Break lifting. *Was labelled as (DMD) before the Mk 2 Interface was released.*

Alarm Supply (ALS) A new low voltage input which monitors the alarm circuit power supply. This input is only activated periodically and so the LED input indicator will only illuminate when an alarm supply test is performed. (See Section [6.12](#))

3.2.1.1 Lift I/O Mapping (Mk 2 Interface)

Appropriate returns need to be selected for each of the connections described.

Term ID	Cable Colour	Signal	Connection	Notes
MI 1A	Yellow	MS	Wire to the supply that feeds the control panel and shaft after any input fusing.	
MI 1B	Yellow / Brown	Main Supply		
MI 2A	Yellow / Blue	TTR	Wire to a point that is supplied or cut by use of the car top or panel test control.	
MI 2B	Yellow / Green	Car top/panel test control		
MI 3A	Yellow / Purple	GF (PSC)	Wired to a point at the end of the primary safety circuit before the gate feed.	
MI 3B	Yellow / Red	Primary Safety Circuit		
MI 4A	Pink	CG	Wired to a point after the car gate locks.	
MI 4B	Light Blue	Car Gate		
MI 5A	White	GL	Wired to a point after the landing door locks.	
MI 5B	White / Brown	Gate Lock		
MI 6A	White / Blue	DZ	Wire to a point that is supplied or cut when the lift moves into the door zone.	Must remain active while lift is moving if it is to be used for lift position.
MI 6B	White / Green	Door Zone		
MI 7A	White / Purple	OC	Typically wired across the coil of the contactor that makes the door open.	
MI 7B	White / Red	Open Contactor		
MI 8A	Blue	CC	Typically wired across the coil of the contactor that makes the door close	
MI 8B	Blue / Black	Close Contactor		
MI 8A	Blue	PRLK	Landing doors closed (but not locked) signal.	Manual gates option – auto doors may use SUP for pre-lock monitoring
MI 8B	Blue / Black	Pre-Lock		
MI 9A	Gray	DOL	Wire to a point that is supplied or cut when the door is fully open	If not available disable the input and set the Door open time (See 6.10.13)
MI 9B	Gray / Brown	Door Open Limit		
MI 10A	Gray / Blue	UDF (DMD)	Signal to indicate the start of the lift cycle.	Monitor break or ramp lifting. If not available disable the input.
MI 10B	Gray / Green	Demand		
MI 11A	Brown	UP	Typically wired across the contactor that causes or indicates Up movement.	
MI 11B	Brown / Black	Up Contactor		
MI 12A	Red	DN	Typically wired across the contactor that causes or indicates Down movement.	
MI 12B	Red / Brown	Down Contactor		
MI 13A	Red / Blue	LPF	Wire to the supply that feeds the landing call buttons after any fusing.	For buttons that ground their inputs. Monitor the call card supply.
MI 13B	Red / Black	Landing Push Feed		
MI 14A	Purple	LIN	Wire to a point that is supplied or cut when on independent service.	
MI 14B	Purple / Black	On Independent Service		
MI 15A	Green	FS	Wire to a point that is supplied or cut by use of the fire service switch.	
MI 15B	Green / Red	On Fire Service		
MI 16A	Green / Blue	SPI	Spare input for supplementary reporting. Can be used for pre-lock monitoring on auto doors.	
MI 16B	Green / Black	Supplementary input		
MO 1A	Wired in Singles	TFC	Output 1 to place a car call to the highest floor level.	
MO 1B		Top Floor Call		
MO 2A	Wired in Singles	BFC	Output 2 to place a car call to the lowest floor level.	
MO 2B		Bottom Floor Call		
ALM 1	Orange	ALM	Wired across the bell or a contact that supplies voltage when the alarm is pressed.	See EMU Specific I/O (3.1.1)
ALM 2	Orange / Blue	Alarm Push		
ALS 1	Orange	ALS	Wired across the supply to the alarm circuit.	See EMU Specific I/O (3.1.1)
ALS 2	Orange / Green	Alarm Supply		
ALV 1		ALV	Output (LS6) to trigger an auto-dialler when a trapping is verified.	Also triggers if push is held for 10 seconds or EMU is faulty.
ALV 2		Verified Alarm		

Table 3 -Lift I/O Mapping

3.2.2 MRL Lifts

Term ID	Cable Colour	Signal	Connection	Notes
AI 1A AI 1B		Eng	Engineer Key Switch	
AI 2A AI 2B		NIS2	Not In Service Indicator	
AI 3A AI 3B		ALM	Alarm Pressed (Across the Bell)	
AI 4A AI 4B		NOP5	Not Operational Indicator	Active Low

3.2.3 Escalator

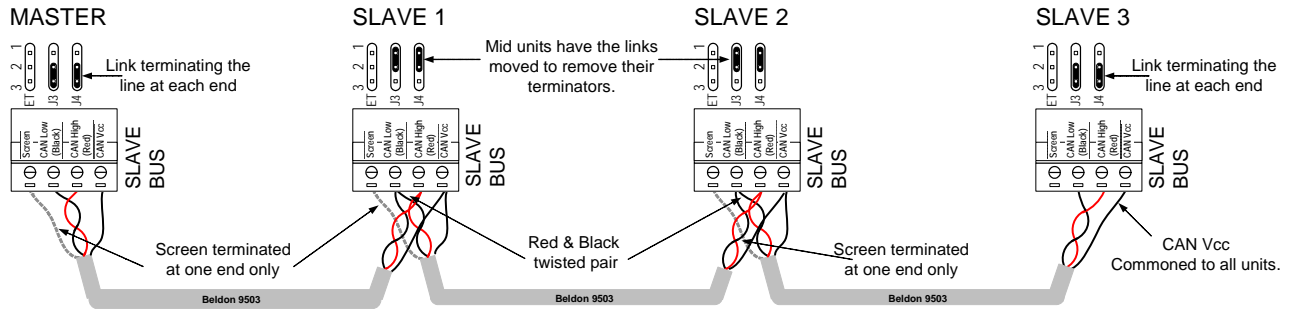
Term ID	Cable Colour	Signal	Connection	Notes
MI 1A MI 1B	Yellow Yellow / Brown	UP Up Contactor	Typically wired across the contactor that causes or indicates Up movement.	Loss of UP and DN sets the equipment to service not available.
MI 2A MI 2B	Yellow / Blue Yellow / Green	DN Down Contactor	Typically wired across the contactor that causes or indicates Down movement.	Loss of UP and DN sets the equipment to service not available.
MI 3A MI 3B	Yellow / Purple Yellow / Red	MS Main Supply	Wire to the supply that feeds the control panel and safety circuit.	Loss of UP, DN and MS sets the equipment to Not Operational.
MI 4A MI 4B	Pink Light Blue	UDF Primary Safety Circuit	Wired to a point at the end of the primary safety circuit before the safety latch.	Loss of UP, DN and PSC sets the equipment to Not Operational.

3.2.4 Airbridge

Term ID	Cable Colour	Signal	Connection	Notes
MI 1A MI 1B	Yellow Yellow / Brown	Eng	Engineer Key Switch	
MI 2A MI 2B	Yellow / Blue Yellow / Green	NIS2	Not In Service Indicator	
MI 3A MI 3B	Yellow / Purple Yellow / Red	FLT3		
MI 4A MI 4B	Pink Light Blue	NIS4	Not In Service Indicator	
MI 5A MI 5B	White White / Brown	NOP5	Not Operational Signal	
MI 6A MI 6B	White / Blue White / Green	NOP6	Not Operational Signal	
MI 7A MI 7B	White / Purple White / Red	NOP7	Not Operational Signal	
MI 8A MI 8B	Blue Blue / Black	NOP8	Not Operational Signal	

3.3 Linking to Slaves

The wiring of a Master EMU 3 to Slave EMU 3's is via a CAN Bus system. This is different to and NOT COMPATIBLE WITH EMU 1. The most significant difference is the need for the bus to be terminated with 120-Ohm resistors at the two ends of the Bus; jumpers J3 & J4 are provided for this purpose. On the EMU's at both ends of the linking cable, these jumpers should link pins 2&3, while on all the intermediate units they should be moved to link pins 1&2.



4 INITIAL SETUP

Check the slide switch on the left of the CPU card. This should be in its lower position for normal running. The middle and upper settings are for testing and software loading, respectively.

4.1 Commissioning

Before EMU 3 can start reporting, it needs to be commissioned and then see a successful lift cycle. The following section outlines this procedure and references more detailed sections that describe the commissioning in more detail. Selections are made using the Left Hand Soft Key (LHSK) and Right Hand Soft Key (RHSK) and the Navigation Buttons, while Text and Numeric entries are made using the mobile phone style keypad.

Step	Section	Operation
Login as TVC from the Main Status Screen.	5.5	LHSK to get login list and LHSK again to select “TVC” . Enter the login code on the keypad & OK with the LHSK. Engineer on site LED comes on.
Check Date and time.	6.13	This is shown at the top of the display. If not showing the current time select Main MENU with LHSK and scroll down to the 12th item, “Set Time / Date” . Use LHSK to select. RHSK to return BACK to the previous level.
Start Commissioning	6.10	From the top of Main MENU select the 9 th item “Commission”, and then scroll down to “Restart from default” and select with LHSK.
Board Groups	6.10.1	Select Finish with LHSK , or scroll down to add and expansion unit.
Equipment Type	6.10.2	Select the Equipment Type to be monitored with LHSK. i.e “LIFT”
Manual Gates	6.10.3	<i>This Screen is only seen if “LIFT” was selected in 6.10.2</i> Select NO if powered doors are fitted, and then OK with LHSK
CSL Module	6.10.4	<i>This Screen is only seen if expansion unit was added as 6.10.1</i> Select Finish with LHSK
Monitor Rear Doors	6.10.5	<i>This Screen is only seen if expansion unit was added as 6.10.1</i> Select Finish with LHSK
Monitor Safety Chain	6.10.6	<i>This Screen is only seen if expansion unit was added as 6.10.1</i> Select Finish with LHSK
Floor Level Type	6.10.7	If DZ is wired to a signal that registers each level as it passes, then floor level can be left at “COUNT” otherwise change to “NO” Scroll down until LHSK label show Finish and then select it.
<u>From this point on settings can be changed later using “Configuration”</u>		

Group Setup Set the number of Slaves	6.10.8	If no slaves are present then just scroll down to Finish. Otherwise use LHSK to change the Number of Slaves in this group, and if this is not the Master to set the group ID of the slave. Scroll down until LHSK label show Finish and then select it.
Identification	6.10.9	The following must be set by selecting CHANGE with LHSK. EMU Identifier. Enter a 4 digit identifier in the form “0133” Other entries are made as a mobile phone text message would be. Scroll down until LHSK label show Finish and then select it.
Phone Number A	6.10.10	The following must be set by selecting CHANGE with LHSK. Number. Enter the primary telephone number to dial for the central system using the keypad. Scroll down until LHSK label show Finish and then select it.
Reporting	6.10.11	Scroll down until LHSK label show Finish and then select it.
Input Config	<u>6.10.12</u>	Selecting “LIFT” as the Equipment Type sets the default state of most inputs. However some lift types may require individual signals to be Inverted, Delayed or Disabled. For each input: - Scroll down until LHSK label show Finish and then select it.
Output Config	6.10.13	As for Input config check default output configuration. Scroll down until LHSK label show Finish and then select it.
Liftwatch	6.10.14	Review the default settings for the Lift monitoring timers. If no DOL input set “Door Open Time” to the actual opening time for this lift.
Commission review complete		Select BACK with RHSK to display the Main Status Screen
Run the Lift		Review the “Waiting for” sequence until a full cycle is seen.
Return to Commission		Select Main “Menu” and then “Commission”.
Start Monitoring		Select Item 5 “Start Monitoring” If a complete lift cycle has been monitored the screen will confirm that monitoring has started.

Table - Commissioning steps

4.2 Configuring

Configuration is the 8th Item on the Main Menu and allows the changing of some of the settings made during commissioning and the addition of a number of optional EMU features which may be require for a particular installation.

4.2.1 **Optional Features**

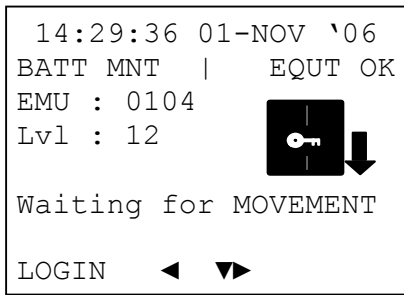
Lift Test	6.9.9.1	Sets when and how many times the EMU will actively test the lift. As the EMU 1 LSA test program.
Manual Gates	6.9.9.2	Sets if the Lift is operating with Manual Gates.
Eng. Safety Alert	6.9.9.3	Enable the Engineer Safety alert feature for EOS protection. Will trigger an alert event if the Engineer does not re-login when the Confirmation timer expires. The EMU will issue a warning sound for the Warning time before conformation timer expires.
Motor Room Intruder	6.9.9.4	Enables the Motor Room Intruder feature. This requires the feature to be enabled, and then a spare Physical input to be mapped to the Logical Input 5 (MRINT) using “Input Config”
Shaft Intruder	6.9.9.5	Enables the Shaft Intruder feature. This requires the feature to be enabled, and then a spare Physical input to be mapped to the Logical Input 4 (SHAFT) using “Input Config”
Cabinet Tamper	6.9.9.6	Allows the cabinet tamper feature to be disabled and the timers adjusted.
Alarm Trapping	6.9.9.7	Allows the alarm verification feature to be disabled and the timers adjusted.
Time Switch	6.9.9.8	Enables the Time Switch feature, which allows an output to be turned on and off at set times. The Logical Output 15 (TIMSW) must be mapped to a Physical Output using “Output Config”
Rear Doors	6.9.9.9	Allows the feature set during commissioning to be Enabled/Disabled.
CSL	6.9.9.10	Allows the feature set during commissioning to be Enabled/Disabled.
Safety Chain	6.9.9.11	Allows the feature set during commissioning to be Enabled/Disabled.
Floor Level	6.9.9.12	Allows the feature set during commissioning to be Enabled/Disabled.
Daylight Saving	6.9.9.13	Enable/Disable automatic BST/GMT time change and allows the setting of when the changes will be made.

Table - Optional Features

5 STATUS & LOGIN SCREENS

Before an engineer logs in it is possible to view the following status screens. These show the condition of both the EMU and its associated equipment, and if the EMU is part of a Master/Slave group, the status of the other member of the group.

5.1 Main Status Screen



The Main Status Screen is in generally the first screen displayed and can always be reached by repeatedly pressing the RHSK (Back) or by resetting the unit. For a fully commissioned EMU this screen will have an animated Lift Icon displaying the current state of the lift.

The top line shows the current time and date as set in the EMU. The second line shows the status of the EMU and the equipment it is monitoring.

5.1.1 The EMU statuses can be: -

- “CAN DUPL” – No CANBus comms as another node with the same ID has been detected
- “CAN FAULT” – the node has stopped broadcasting on the CANBus
- “ON BATT” – EMU power has failed
- “TAMPER” – cabinet tamper has been detected
- “BATT MNT” – EMU battery failed its monitoring
- “EMU MNT” – EMU maintenance required (MS or PSC signal faulty)
- “EOS” – an engineer is on site
- “CALL LIMIT” – daily call limit has been reached
- “NOT COMMIS” – EMU not commissioned
- “EMU OK” – none of the above

5.1.2 Monitored equipment statuses can be: -

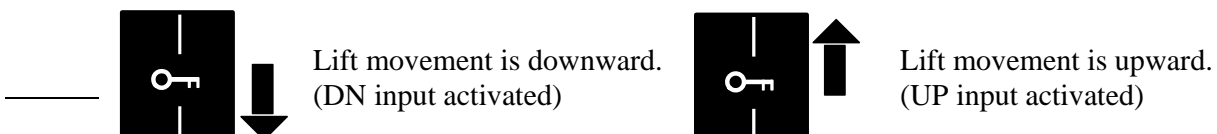
- “TRAPPING” – confirmed trapping
- “EQUOT FAULT” – equipment is not operational
- “SEC ALERT” – security breach in the equipment or monitoring unit (EMU cabinet tamper, motor room intruder, or shaft intruder)
- “NO SERVICE” – equipment is operational, but will not respond to user requests
- “MAINT DUE” – reserved for future implementation of planned maintenance schedules
- “ALM SUPP” – alarm supply low, it failed its monitoring test.
- “EQUOT OK” – none of the above

The left hand side of the third line shows the EMU ID. The left hand side of the fourth line shows the current floor level, if known. The right hand side of the third to fifth lines shows the lift animation. The sixth line shows the current state of the Liftwatch algorithm.

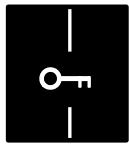
5.1.3 Equipment Status Display

5.1.3.1 Lift Mimic Graphic

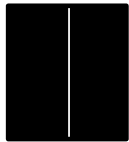
Lift equipment door and motion status is graphically on the main display. The current direction of travel is shown as a directional arrow to the right of the door mimic. The arrow indicates the lift’s current direction of travel and is dependent upon the movement inputs UP and DN.



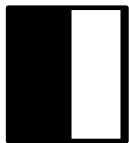
Seven door states are derived and are displayed as shown below together with a brief indication of input status and door status text (in quotes) as viewed in the LMDO display (see section [5.4.1](#)): -



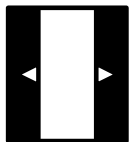
Car and landing doors are closed and locked (CG and GL inputs active).
 “CLSD LCKD”



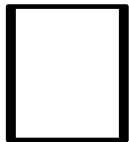
Car and landing doors closed but not locked (CG and PRLK inputs active).
 “CLOSED”



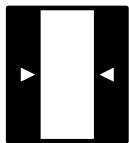
Car or landing door closed but not both (CG or GL active).
 “PART CLSD”



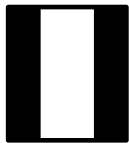
Doors are opening (CG and GL inputs inactive, OC input active).
 “OPENING”



Doors have fully opened (CG and GL inputs inactive, OC has timed on, DOL input active).
 “OPENED”



Doors are closing (CG and GL inputs inactive, CC input active).
 “CLOSING”



Door state is indeterminate.
 “NOT CLSD”

5.1.3.2 Lift Status Text

The current focus of the EMU’s lift monitoring algorithm is displayed immediately below the lift mimic graphic. Upon completion of each phase of the monitoring cycle the EMU outputs the lift state it is waiting for next: -

- “STIMULUS” Waiting for the start of a new lift cycle, EMU is looking for demand, insertion of a test call or movement.
- “DOORCLOSE” Waiting for the lift doors to close. The doors are considered closed when the inputs CG and PRLK are active. This step is bypassed if the door inputs CG and GL are active.

- “DOORLOCKD” Waiting for the car and landing doors to locked i.e. inputs CG and GL active.
- “MOVEMENT” Waiting for lift movement, assumed when UP or DN inputs are active for a period of *Move Dly Time*.
- “LCKCONFRM” Indicates the doors are being confirmed as closed and locked prior to a door opening cycle. To satisfy this condition CG and GL must still be active at the end of the *Move Dly Time*.
- “DEST. FLR” Waiting to see the gate-locks break after entering DZ. The check for door zone is made as the gate locks break. (Message was “DOOR ZONE” in previous versions).
- “DOOR OPEN” Waiting for the doors to open by checking for activation of DOL after OC has been active for at least *Door Open Time*, whilst CG and GL are inactive.
- “FINAL CHK” The final check ensures each of the preceding states, if applicable, have been observed and that the lift has stopped moving (UP and DN inputs inactive).
- “PARK CHK” Waiting to see if the doors attempt to close. If no CC is seen within the set time the lift has parked with its doors open.
- “_____” No text indicates the EMU has yet to be commissioned, follow the commissioning procedure (see section [6.10](#)).

5.1.4 Soft key options and navigation arrows: -

The bottom line shows the LHSK & RHSK options, which are LOGIN|<blank> if no-one is logged in, or MENU|<blank> after login.

The down arrow displays the Group Status screen (see below), and the left and right arrows adjust the LCD contrast

5.2 Group Status Screen

0104	OK	OK	1
0111	PWR	FLT	12
>0112	BATT	FLT	4
0113	TAMP	OK	2
0114	OK	OK	11
0115	EOS	OK	0
0116	OK	FLT	21
			BACK

This screen shows the status of the whole group of EMUs connected to the same master EMU. It is accessed by pressing the DOWN key on the keypad. Return to the main status screen is by pressing the RHSK (labelled BACK). The master EMU is shown at the top, and the slave EMUs below it. The first column is the EMU’s identifier, the second an abbreviated form of the EMU’s status, the third column is an abbreviated form of the lift (equipment) status, and the last column is the lift floor level or blank if floor position is disabled.

By scrolling down to select a member of the group and then pressing the RIGHT arrow, or the LHSK, the EMU statuses screen be reached.

EMU status can be: -

- “DupID” – Another EMU with the same CAN bus ID has been detected.
- “CanFt” – CAN Fault; Can bus wiring problem or unit powered down.
- “OnBat” – EMU power has failed, operating on battery.
- “Tamp” – Cabinet tamper has been detected.
- “BatFt” – EMU battery failed its monitoring test.
- “Maint” – EMU maintenance required (MS or PSC signal faulty)
- “EOS” – An engineer is on site
- “Limit” – Daily call limit has been reached

- “NtCom” – EMU is not yet commissioned.
- “OK” – None of the above

Lift (equipment) statuses can be: -

- “Trap” – Confirmed a passenger trapping.
- “NOP” – Equipment is not operational.
- “NIS” – No service (equipment is operational, but not providing service to the public)
- “Maint” – Reserved for future implementation of planned maintenance schedules.
- “AlmSp” – Alarm supply failed its monitoring test
- “SecAl” – Security breach in the equipment or monitoring unit.
- “OK” – None of the above.

5.3 EMU Statuses

```

    EMU STATUSES
    TRAPPING
    EQUT FAULT
    NO SERVICE
    CAN DUPL
    BATT MNT

                                     BACK
```

To allow more detailed information about the status of any unit in the group a particular unit can be selected from the Group Status Screen. It shows all the equipment statuses, followed by all the EMU statuses for the selected EMU.

5.4 Toolbox Menu

The toolbox key reveals a supplementary Menu Screen for diagnostic routines. Currently with three selections.

5.4.1 LMDO Status

```

    LMDO STATUS
    Wait. For: STIMULUS
    Doors (F): CLOSED
    Rear (R): CLOSED
    Monitor T:
    Delay Tim:
    Tst Calls:
    MORE                                     BACK
```

This screen provides more detailed information on the Lift Moving Door Opening (LMDO) tests performed by the EMU. The information is split between two screens, the second screen being accessed by the MORE key.

- **Wait For** Shows the current state of the lift cycle, as detailed in Section [5.1.3](#).
- **Doors (F)** The state of the Front Doors.
- **Doors (R)** State of the Rear Doors if monitored independently through an expansion unit.
- **Monitor Time** Starts with a lift cycle and shows the time allowed for the run to complete. If this timer expires before all the stages of a lift cycle have been seen then the test fails. This can then result in EMU placing a second call in the opposite direction, and if that fails recording a lift fault. *The initial value is set by the Liftwatch parameter “LMDO Cmpl Time” (LCT), or “Alarm LCT” (ALCT) depending on the reason for the test. (See [6.10.13](#))*

- **Delay Time** Is the time the EMU will wait before placing its own test call on the lift if there are outstanding test calls remaining. *The initial value is set by the Lift Test Feature “Idle Time” (IDLE).* (See [6.9.9.1](#))
- **Tst Calls** Is the number of remaining test calls the EMU is able to make on the lift. *The initial value is set by the Lift Test Feature “Max Lift Tests” (MXTST).* (See [6.9.9.1](#))

5.4.1.1 More LMDO Status

Select MORE to show the continuation screen.

```

STATUS cntd
Test Calls   : 23
Passed      : 32
Failed      : 18
Last Failure:-
State = GATELOCK1

                                     BACK
    
```

- **Test Calls** the number of active calls made by EMU.
- **Passed** the number of successful lift runs (passive + active).
- **Failed** the number of failed lift runs (passive + active).
- **Last Failure** the point of failure of the last faulty lift run.

5.4.2 CAN 1 Status

5.4.3 Remote Port Diag.

See [Section 6.15.1](#)

5.5 Login Screens

To allow the EMU to provide accurate information, it is important that any engineer logs onto the EMU before starting work on the lift. This enables the EMU to ignore any fault conditions that might arise from the work he is performing and prevents the EMU from placing any test calls on the lift and so causing unexpected movement. Depending on the role the engineer is to perform there are a set of user levels with appropriate access rights, as shown below.

```

          LOGIN
TVC
Repair
>Callout
Maint
Insur

SELECT   ▼   BACK
    
```

This screen is entered by pressing the Left Hand Soft Key (LHSK) on the main status screen while not logged in. A list of the defined User Ids is presented, which the user selects by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to select.

```

ENTER PASSWORD

Callout

6666

OK   ◀   BACK
    
```

This screen is presented when the user has selected a user id on the LOGIN screen. The engineer uses the keypad (in multi-tap mode) to enter the password, which is displayed on the screen as he types, then presses the LHSK when finished. The LEFT cursor key deletes the last character entered.

6 MAIN MENU

The management and settings of the EMU 3 are accessed through a series of cascading menu screens, with each item on a screen leading either to a further menu screen, or to detailed items.

```

MAIN MENU
Logout
>Reason for Visit
Change Passwords
View Inputs&Outputs
View Events
Test Phone Call
SELECT  ▲±▼  BACK
    
```

This screen appears when the user has pressed the LHSK on the main status screen after logging in. The user selects a menu option by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to select. Where there are more than six items in the menu, the items will scroll when the selection point reaches the top or bottom of the screen.

For the TVC engineer, the following menu items will be available:

- [Logout](#)
- [Confirm presence](#)
- [Reason for Visit](#)
- [Change Passwords](#)
- [View Inputs&Outputs](#)
- [View Events](#)
- [Fixcodes](#)
- [Test Phone Call](#)
- [Configuration](#)
- [Commission](#)
- [Trace Log](#)
- [Setup](#)
- [Set Time/Date](#)
- [Switch Applications](#)
- [Modem Status](#)

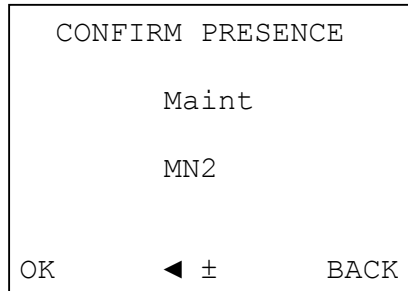
For a client engineer, the following restricted menu items may be available, depending on the engineer’s configured capabilities:

- Logout
- Confirm Presence
- Reason for Visit
- Change Passwords *if configured with OWNPWD capability*
- View Inputs&Outputs
- View Events
- Test Phone Call *if configured with TESTCALL capability*
- Configuration
- Trace Log
- Setup *if configured with SETUP capability*
- Modem Status

6.1 Logout

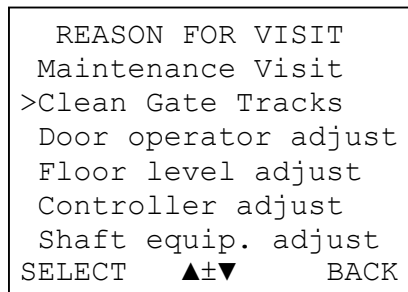
Select with LHSK to logout. Some users are required to select a reason for visit before they are allowed to logout. This is done from the “Reasons For Visit” Main Menu Item.

6.2 Confirm Presence



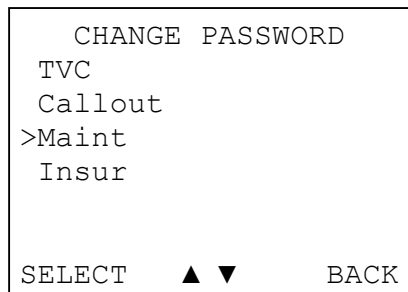
This screen is presented when the user has selected the “Confirm Presence” main menu item. It is used if the engineer’s safety alert feature is enabled and allows the engineer to confirm he has not had an accident. When the alert period sounds the engineer is required to enter his password using the keypad (in multi-tap mode) and then LHSK. This confirms he is still OK and prevents a safety alert message being sent to the central system. The LEFT cursor key deletes the last character of the password entered.

6.3 Reason For Visit

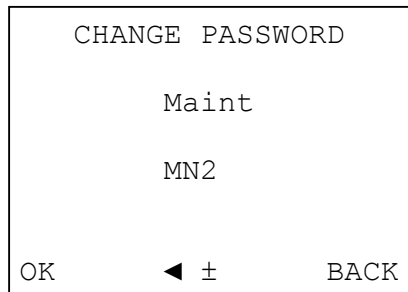


This screen is displayed when the user selects the “Reason for Visit” main menu item, and displays a list of the reasons that are valid for the logged-on user. Uses the UP and DOWN cursor keys to move to the required entry, and then press the LHSK to select. Each selection operation causes the corresponding event to be added to the database. Multiple reasons for visit may be given, and the screen remains displayed until the user presses the RHSK.

6.4 Change Password

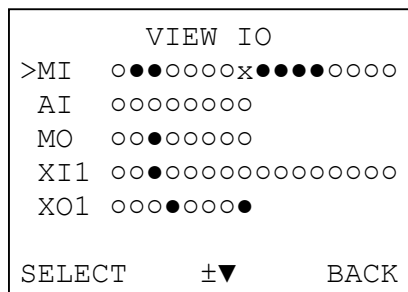


This screen is presented when the user has selected the “Set Passwords” main menu item. A list of the defined User Ids is presented, which the user selects by using the UP and DOWN cursor keys to move to the required entry, and pressing the LHSK to select.



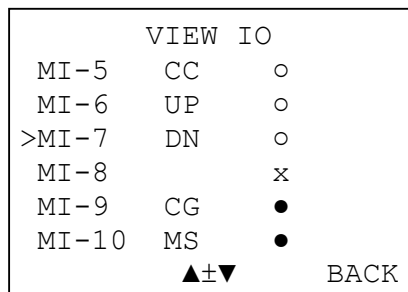
This screen is presented when the user has selected a user id on the CHANGE PASSWORD screen. The engineer uses the keypad (in multi-tap mode) to enter the password, which is displayed on the screen, then presses the LHSK when finished. The LEFT cursor key deletes the last character entered.

6.5 View Inputs & Outputs



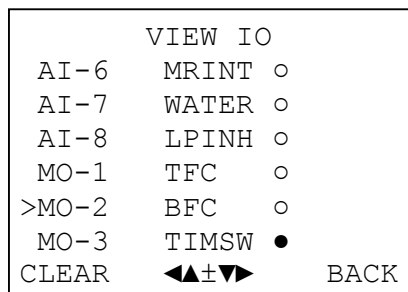
This screen appears when the user has selected the “View Inputs & Outputs” main menu item. The list of configured input and output groups (the three fixed ones and those on any expansion cards) and their states is presented to the user. Un-commissioned I/O are shown as an x while asserted I/O is shown as a spot ●; this being a combination of the applied signal and invert status of the I/O. More detailed information can be seen by scrolling to a particular I/O block and selecting it with the LHSK.

6.5.1 View IO Screen (Input Selected)



This screen is displayed when the user has selected a starting group of inputs or outputs on the screen above. The user scrolls through the list using the UP and DOWN cursor keys. Pressing UP at the beginning of a group displays the last point in the previous group, and pressing DOWN at the end of a group displays the first point in the next group. For an output point, the soft key options are different (see below).

6.5.2 View IO Screen (Output Selected)



With this screen, the user can use the LEFT and RIGHT cursor keys to cycle the LHSK between the three output control operations of SET, CLEAR and PULSE. Pressing the LHSK performs the operation on the selected output point.

6.6 View Events

```

VIEW EVENTS
View Latest Event
>View Oldest Event
Find Record Number
Find Event Code
View Marked

SELECT  ▲±▼  BACK
    
```

This screen is displayed when the user has selected the “View Events” main menu item. The user selects a menu option by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to select.

- View Latest Event
- View Oldest Event
- Find Record Number
- Find Event Code
- View Marked Event

Display the most recent event in the events database.
 Display the oldest record in the events database.
 Enter a record number and select the FIND LHSK.
 Enter an event code and select the FIND LHSK.
 Display a record previously marked. **See 6.6.1**

6.6.1 Main View Event Screen

```

VIEW EVENTS
Rec 31692      Code 123
Doors Not Closed Over
time
S/W  0000100000000000
Lvl 13        E/P 0x0000
Fri 02/06/06 14:35:23
OPTIONS  ▲±▼▶  BACK
    
```

This screen is presented when the user has selected one of the “View” menu items from the above menu. The user selects other events by using the UP and DOWN cursor keys to display more recent or older events respectively. The LHSK allows the user to mark the record or find the next (oldest) record with the previously specified event code. The RIGHT cursor key steps to the next screen for the current event, the Input State screen.

The screens second line shows Rec, an incremental record number for this event in the list of stored events, followed by Code the event code for this event. The following two lines show the Event description for this event as specified in the Fixcode table. Line 5 (S/W) lists the status flags at the time of the event, a 1 indicating that state was active. Reading from left to right these are :-

- | | |
|---|--|
| <ul style="list-style-type: none"> ○ Equipment not operational. ○ No lift service available. ○ Equipment maintenance due. ○ Lift trapping. • Alarm push supply low. • EMU not commissioned. • Status Not Available • Duplicate CAN id on slave link. ○ Telephone call limit reached. ○ CAN link communications failure. ○ Security Alert. ○ EMU maintenance due. • Engineer on site. • Battery test failed. | <ul style="list-style-type: none"> MSB The equipment has shown a fault. The lift is on a special service and not generally available. The equipment requires a maintenance visit. The alarm was pressed and the lift is not operational. The alarm supply is below 4.5 volts. The EMU has not been fully commissioned. Status Information is not currently valid. Two EMU’s with the same “Group ID” setting. The max number of reportable events has been sent today. The EMU has failed to communicate on the CAN link. A security event, Shaft or Motor room intruder, triggered. An EMU maintenance event occurred. A local engineer is logged on. The last battery test failed to run for 30 minutes. |
|---|--|

6.6.2 Input State Screen

```

VIEW EVENTS
Inputs
  ○●○○○○○ ○●●○○○○
  ○○○○○○○
Previous Inputs
  ○●○○○○○ ○●●○○○○
  ○○○○○○○
      ◀ ± ▶      BACK
    
```

This screen appears when the user has pressed the RIGHT cursor key on the main View Event screen. It displays the current and previous state of the inputs at the time the event occurred. The LEFT cursor key returns to the main View Event screen, and the RIGHT cursor key steps to the next screen for the current event, the Output State screen.

6.6.3 Output State Screen

```

VIEW EVENTS
Outputs
  ○●○○○○○
Previous Outputs
  ○●○○○○○
      ◀ ±      BACK
    
```

This screen is displayed when the user has pressed the RIGHT cursor key on the Input State screen. It displays the current and previous state of the outputs at the time the event occurred. The LEFT cursor key returns to the Input State screen.

6.7 Fixcodes

```

FIXCODES
>123 39 ENA REC REP D
Moving Overrun
Inc:99999 Dec:99999
125 40 DIS REC S
Maintenance Visit
Inc:2600 Dec:100
OPTIONS ▲±▼      BACK
    
```

This screen is displayed when the user selects the “Fixcodes” main menu item. The user selects the required fixcode by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to change, which displays the options screen (see below).

6.7.1 Fixcodes Options

```

FIXCODES
Toggle ena/dis
Toggle recording
>Toggle reporting
Toggle dbl/sngl
Change event inc
Change timer dec
SELECT  ▲±▼  BACK
    
```

This screen is presented when the user selects a fixcode. The user selects the required action by using the UP and DOWN cursor keys to move the selection, and presses the LHSK.

The full set of options are: -

- Toggle ena/dis Enable / Disable this event.
- Toggle recording Enable / Disable recording this event.
- Toggle reporting Enable / Disable reporting this event immediately back to central.
- Toggle dbl/sngl Record both the assert and restore or just the asserting of the event.
- Change event inc See event over reporting. Section 7.1
- Change timer dec See event over reporting. Section 7.1
- Change event text Update the event description.
- Find event code Go to the screen below.

6.7.2 Fixcodes – Find an event code.

```

FIXCODES
Find event code
          90
FIND       ±       BACK
    
```

This screen is displayed when the user has selected the “Find event code” menu item from the Fixcodes option menu. The engineer uses the keypad to enter the required event code, then presses the LHSK when finished. The LEFT cursor key deletes the last character entered.

6.8 Test Phone Call

```

TEST PHONE CALL
Call progress:
Dial 0123456789012345
NO DIALTONE
CALL       ±       BACK
    
```

This screen is displayed when the user selects the “Test Phone Call” main menu item. It displays the details of the current or last call, including number dialled, and the result of the call. Pressing the LHSK displays the “call” screen (see below).

```

TEST PHONE CALL

Are you sure you want
to make a test phone
call to the Central
Server ?

YES      ±      NO
    
```

This screen is displayed when a test phone call is to be initiated. Pressing the LHSK will initiate a new call before returning to the progress screen.

6.9 Configuration

6.9.1 Group Setup

This is the same screen as used for commissioning the group (Section [6.10.8](#)), and allows the reconfiguring of the group after the initial installation.

6.9.2 Identification

This is the same screen as used for commissioning the EMU (Section [6.10.9](#)), and allows the reconfiguring of the EMU after the initial installation.

6.9.3 Startup Comms

```

Startup Comms
Modem Init 1
"E0V1"
>Modem Init 2
"&C1&D2S0=2"
Remote Port

DETAIL  ▲±▼  BACK
    
```

This series of screens provides the modem and port configuration information for the EMU's serial devices.

- Modem Init 1
- Modem Init 2
- Remote Port
- Local Port
- CANBus 1 Speed
- CANBus 2 Speed
- External Modem

First set of modem commands to initialise the modem.

Second set of modem commands to initialise the modem.

Access the modem port configuration screen.

Access the local CPU serial port configuration screen.

Select the speed of the slave linking bus. Must be the same for all EMUS in the group.

Select the speed of CAN bus 2. Not currently used.

NO Selects the socket modem as the remote port.

YES Selects the 9 pin D connector on the serial card.

6.9.3.1 Remote Port Settings

```

Remote Port
Rem Line Speed
B19200
>Rem Data Bits
8
Rem Stop Bits
1
DETAIL  ▲±▼  BACK
    
```

The remote port provides access to the modem used to communicate with the central system. One of two ports can be assigned for this purpose using the [last setting](#) on the Startup Comms screen. COM 1 is the socket on the serial card in which a socket modem is inserted. COM 2 is the 9 pin D connector on the serial card to which an external modem can be plugged.

- Rem Line Speed Select the required baud rate from the list.
- Rem Data Bits Enter the number of data bits, either 7 or 8.
- Rem Stop Bits Enter the number of stop bits, either 1 or 2.
- Rem Parity Select the parity option from the list.
- Rem Flow Cntrl Select the flow control method from the list.

6.9.3.2 Local Port Settings

```

Remote Port
Loc Line Speed
B19200
>Loc Data Bits
8
Loc Stop Bits
1
DETAIL ▲±▼ BACK
```

The local port provides access for a local PC to connect to the EMU for interrogation and software updated. The port settings should match those of the connected PC and to initiate communications the engineer should type SACE SPACE on the PC’s keyboard. This will trigger the login screen.

- Loc Line Speed Select the required baud rate from the list.
- Loc Data Bits Enter the number of data bits, either 7 or 8.
- Loc Stop Bits Enter the number of stop bits, either 1 or 2.
- Loc Parity Select the parity option from the list.
- Loc Flow Cntrl Select the flow control method from the list.

6.9.4 Input Config

This is the same screen as used for commissioning the inputs (Section [6.10.12](#)), and allows the addition of extra inputs or the reconfiguring of exiting ones. Unlike in the commissioning phase the Right and Left cursor keys can be used to scroll through all the available inputs regardless of whether they are enabled or not.

6.9.5 Output Config

This is the same screen as used for commissioning the outputs (Section 6.10.13), and allows the addition of extra inputs or the reconfiguring of exiting ones. Unlike in the commissioning phase the Right and Left cursor keys can be used to scroll through all the available outputs regardless of whether they are enabled or not.

6.9.6 Reporting

```

Reporting
Phone Numbers

Number Order
"AB"
>Max Rprt Calls
12
DETAILS ◀▲±▼▶ BACK
    
```

- Phone Numbers
- Number Order
- Max Reportable calls
- Call Interval

This screen configures how events are reported back to the central system. It allows a number of alternate telephone numbers to be stored within the EMU to provide alternate numbers in case the first number is unavailable. It also allows the number of calls made per day to be limited, and to force an integrity call if no calls have been made for the set time.

Access a sequence of screens, which allow 8 alternate telephone numbers to be defined.

Having defined alternate telephone numbers, the order they are tried is set by listing their ID letter in the order they are to be tried. If one number fails to answer the next in the sequence is tried.

This sets the maximum number of phone calls the EMU can make in a day. When this limit is approached the Call Limit event is sent warning the central system that the EMU will not report faults for the rest of the day.

Sets the max time allowed between calls to the central system. If no faults have occurred for this period the EMU makes a routine call to confirm the integrity of the communications system.

6.9.6.1 Phone Numbers

```

Phone Numbers A
>Enabled
YES
Office Name
"CMS Line 1"
Number
"01352793222"
    
```

- Enable
- Office Name
- Number

Accessed from the Reporting screen. This is a sequence of 8 screens, which can be scrolled through using the Left & Right cursor keys. Scrolling to the Right the phone number records A to H are displayed, each permitting the definition of an alternate telephone number.

Enable this record to be used for dialling out.

The Name of the place this number will connect to.

The number to dial. This can also contain non-numeric characters provided they are valid for the modem being used, such as ‘,’ to introduce an inter character delay.

6.9.7 Users

```

        Users A
    Enabled
    YES
>User Identity
    "TVC"
    Capabilities
    TETCALL, TIMSW IO
    
```

The users configuration screen allows the existing or new users to be set to particular client requirements. It is a sequence of 9 screens, which can be scrolled through using the Left & Right cursor keys. Scrolling to the Right the users records A to I are displayed, each permitting the configuration of what that user can access within the EMU, the reasons for a visit that are available for selection and whether a selection is mandatory before logging out.

- Enabled
- User Identity
- Capabilities
- Valid Reasons
- Mandatory
- Disable Record

- Logon Source

Enable this user for logging onto the EMU.

The user name for selection from the Login Screen [5.5](#)

Access a screen for selecting the functionality available to this user.

Select the reasons for visit that this user can select from.

If “YES” this user must select a reason for visits before logging out.

If “YES” recording of lift events will be disabled when the user is logged in.

Allow logon from LOCAL keypad, REMOTE computer or BOTH.

6.9.8 Liftwatch

This is the same screen as used for commissioning the Lift algorithm (Section [6.10.14](#)), and allows the reconfiguring of these settings.

6.9.9 Features

This sub-menu allows EMU 3 Feature options to be configured as follows.

6.9.9.1 Lift Test

```

        Lift Test
    Enabled
    YES
>Start Time
    08:00
    End Time
    18:00
DETAIL    ±    BACK
    
```

To ensure the Lift is in a fully working condition the EMU has the capability of placing routine test calls on the lift. By default the Lift Test feature is enabled allowing these checks to be performed. Having seen the Lift perform a successful run the EMU waits the “Idle Time” before placing its own active test on the Lift. The number of active test and the time of day active testing is allowed are configured here.

- Enabled
- Start Time
- End Time

Enable the EMU to place routine test calls on the lift to check its operation.

Time of day to start active lift tests.

Time of day to stop active lift tests. Used for residential blocks to limit lift movement during the night.

- Max Lift Tests The number of active test that can be placed on the lift after a passive run. (Note: 1 lift test may consist of 2 lift calls if the first call fails)
- Idle Time The time the lift must remain Idle before an active test can be placed on the lift.

6.9.9.2 Manual Gates

Enabling this feature modifies how the Liftwatch algorithm checks the lift and permits the monitoring of a pre-lock input, if available, to determine if an active lift test can be placed on the lift. For manual gates lift the OC and CC inputs are not available, however CC or SUP can be used to pickup the pre-lock signal.

6.9.9.3 Engineer Safety Alert

```

Eng Sfty Alert
Enabled
NO
>Confirm Time
3Hrs
Warning Time
15Min
DETAIL ± BACK
    
```

The Engineer Safety Alert is intended to raise an alert if the engineer is unable to re-login to the EMU whilst working on site. If this feature is enabled and having logged in a timer is started and the engineer must re-login to the EMU before the “Confirm Time” has expired. If not the EMU will alert the central system that the engineer may be injured. To remind the engineer that the confirm time is about to expire the EMU will sound a repeated alert beep for the “Warning Time” period prior to the confirm timer expiring.

6.9.9.4 Motor Room Intruder

```

Motor Rm Intrd
Enabled
NO
>Login Time
3Min
Reset Time
2Min
DETAIL ± BACK
    
```

Triggered by a switch or sensor when the engineer enters the motor room, the EMU allows him the “Login Time” to enter a valid login code, before sending a Motor Room Intruder event to the central system. If the event is triggered inadvertently then logging into the EMU restores the event.

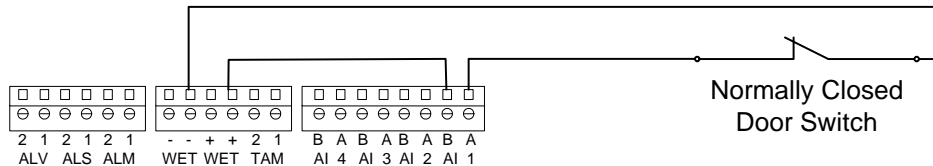
IMPORTANT: To allow this feature to operate an input must be allocated using “Input Config” (Section [6.9.4](#) and the notes below).

- Enabled Enable the EMU to report a Motor Room Intruder.
- Login Time Time allowed for the engineer to login after entering the motor room.
- End Time Time allowed, after logging out, for the engineer to leave the motor room before the alarm becomes enabled again.
- Use Local Alarm Set to YES to make the EMU sound its beep when the intruder switch is triggered and so warns that the engineer needs to login.

In addition to these settings the input used for monitoring the door switch must be mapped to this feature. Use “Input Config” to select the Auxiliary input that the door switch is wired to (any of the 4 AI inputs can be used) and assuming a normally closed door contact as shown below then the input should be configured as follow :-

- Enabled YES Enable the Selected Input
- Logical I/P Sig MRINT This setting maps the physical input to the software that will monitor and report a motor room intruder event.
- Description (Skip) This setting will automatically fill when the logical input is selected.
- Mnemonic (Skip) This setting will automatically fill with “MRINT” when the logical input is selected.
- Invert YES Because the normally closed contact is used the loss of the signal is the assert condition, so the inputs operation needs inverting.
- Invert Depend AUXS The signal is dependent on the Auxiliary Supply (WET) being present. If the Supply is lost this dependency prevents the false reporting of an intruder event.
- On Delay 0 Should not normally be needed.
- Off Delay 0 Should not normally be needed, but could be set to suppress momentary breaks due to a door rattling.
- Protected. NO This input is not part of the Lift configuration and so is not protected.

Typical motor room intruder wiring using a normally closed door contact, supplied from the auxiliary wetting supply.



6.9.9.5 Shaft Intruder

```

Shaft Intruder
Enabled
YES
>Reset Time
5Min

DETAIL ± BACK
    
```

Triggered by a shaft protection device; this feature will immediately report when the signal is asserted and when the signal is reset will restore and rearm itself after the designated Reset Time.

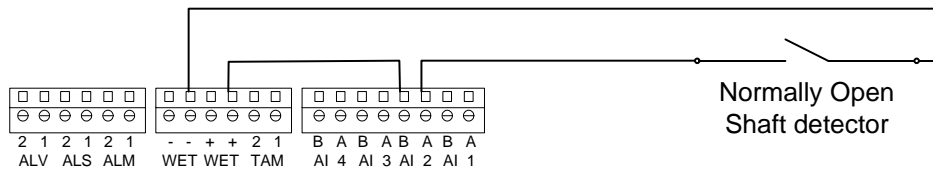
IMPORTANT: To allow this feature to operate an input must be allocated using “Input Config” (Section [6.9.4](#) and the notes below).

In addition to these settings the input used for monitoring the Shaft Intruder signal must be mapped to this feature.

Use “Input Config” to select the Auxiliary input that Shaft Intruder detector is wired to (any of the 4 AI inputs can be used) and assuming a normally open contact as shown below then the input should be configured as follow :-

- Enabled YES Enable the Selected Input
- Logical I/P Sig SHAFT This setting maps the physical input to the software that will monitor and report a shaft intruder event.
- Description (Skip) This setting will automatically fill when the logical input is selected.
- Mnemonic (Skip) This setting will automatically fill with “SHAFT” when the logical input is selected.
- Invert NO Because a normally open contact is used the assert condition is detected normally.
- Invert Depend (Skip) The signal is not inverted and so this setting is ignored.
- On Delay 0 Should not normally be needed.
- Off Delay 0 Should not normally be needed.
- Protected. NO This input is not part of the Lift configuration and so is not protected.

Typical shaft intruder wiring using a normally open contact supplied from the auxiliary wetting supply.



6.9.9.6 Cabinet Tamper

```

Cabinet Tamper
Enabled
YES
>Reset Time
120secs

DETAIL ± BACK
    
```

Triggered by the pre-wired micro switch in the cabinet this feature will immediately report a cabinet tamper event if the EMU is opened without the TVC login code being entered. The event will remain triggered until a valid TVC login is made even if the cabinet is closed again. The feature is reactivated “Reset Time” seconds after the TVC engineer Logs out.

By default this feature is active and the Auxiliary Input AI-5 is mapped to this feature.

6.9.9.7 Alarm Trapping

```

Alarm Trapping
Enabled
YES
>Alarm Push Time
3secs
Trap Pulse Len
1sec

DETAIL ± BACK
    
```

The Alarm Trapping feature is enabled by default and allows the EMU to verify that a passenger is genuinely trapped if the Alarm Push is pressed. It does this by placing a call on the lift to see if it will move and open its doors. If the doors open then the passenger can't be trapped and the EMU will not trigger the autodialler. If however the lift fails to open its doors then the verified alarm output ALV is pulsed to signal the autodialler to make it's call.

- Enabled
- Alarm Push Time
- Trap Pulse Len
- Reporting Delay.
- CSL Delay.
- Trapping Delay

Enable the EMU to verify and report trapping events.

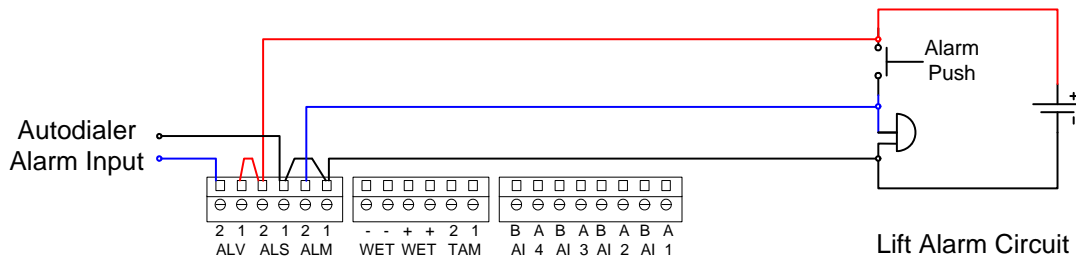
Time the Alarm Push must be pressed before it accepted as a call.

The length of the Pulse given to the autodialler through the ALV output relay.

Before reporting any event, delay it for this length of time to allow the sequence of reporting to be set.

Having confirmed a trapping event delay the CSL reporting it for this length of time to allow the sequence of reporting to be set.

Having confirmed a trapping event delay pulsing the Verified Alarm Output ALV by this length of time to allow the sequence of reporting to be set.



6.9.9.8 Time Switch

```

Time Switch
Use LSA Times
NO
>Start Time
09:00
End Time
20:00
DETAIL ± BACK
    
```

The time switch feature allows a selected relay output to be programmed to switch at a given time of the day. This can follow the LSA time program or can be set to have its own Start and End time as shown.

IMPORTANT: To allow this feature to operate an output must be allocated using “Ouput Config” (Section [6.9.5](#) and the notes below).

- Enabled YES Enable the Selected Output
- Protected. NO This output is not part of the Lift configuration and so is not protected.
- Mnemonic (Skip) This setting will automatically fill with “TIMSW” when the logical input is selected.
- Description (Skip) This setting will automatically fill when the logical input is selected.
- Invert NO This can be changed to YES to invert the output function from Normally Open to Normally Closed.
- Power Up State OFF Set the state the relay should be set to while it is powering up and before the software has full control of the output.
- Logical O/P Sig TIMSW This setting maps the time switch’s logical state to this physical output.

6.9.9.9 Rear Doors

```

Rear Doors
Tamper
>Enabled
NO
DETAIL ± BACK
    
```

Enabling the Rear Doors feature provides independent monitoring and fault reporting of the Rear Doors, however to achieve this the additional inputs provided by an expansion unit are required and need to be allocated during commissioning. (See section [6.10.5](#)).

If independent reporting is not required and rear doors are being monitored by combining front and rear door signals on the interface rail, then this feature can be left disabled.

6.9.9.10 CSL

```

CSL
>Enabled
NO
DETAIL ± BACK
    
```

Enabling the CSL feature provides equipment status information to a CSL expansion unit. This unit must be identified and allocated during the Commissioning phase (See Section [6.10.4](#)).

Its function is to allow 4 status conditions for the Master EMU (The EMU the CSL expansion is connected to) and optionally 4 conditions for a designated slave EMU to be sent to the LiftCall24 monitoring service. The status event transmitted are :-
 Trapping, Lift Not Operational, Engineer On site & EMU OK.

6.9.9.11 Safety Chain

```

    Safety Chain
  >Enabled
    NO
    Num of Inputs
    1

DETAIL    ±    BACK
    
```

This feature enables more detailed information to be reported when a Lost Primary Safety Circuit event is triggered. It enables a block of expansion inputs allocated at commissioning time (See Section [6.10.6](#)) to be connected to the safety chain in order, and so determine the stage at which the break occurs.

6.9.9.12 Floor Level

```

    Floor Level
  >Enabled
    YES

DETAIL    ±    BACK
    
```

This feature enables the lift position to be determined by reading a block of inputs allocated at commissioning time (See Section [6.10.7](#)). The type of signals monitored is chosen at commissioning and can range from a single pulsed input such as DZ which can be counted to determine position. Discrete inputs where each input is wired to an individual floor sensor. BCD where the block of inputs are wired to an indicator output using BCD coding or finally a Binary input where the indicator output is a binary code.

6.9.9.13 Daylight Saving

```

    Daylight Svngs
  >Enabled
    YES
    Start Params

    Stop Params

DETAIL    ±    BACK
    
```

This feature enables the automatic update of the EMU's clock when a daylight saving (BST/GMT) time change is required. The Start and Stop Parameters enable the exact time of the year that daylight saving should come into operation and when it is cancelled. These times are set by default for the current British Summertime rules starting at 1:00am on the last Sunday in March, and stopping at 2:00am on the last Sunday in October. These settings can be changed for different locations in the world using the following :-

- Hour of Day The Time at which the change will be made.
- Day of Week This determines which day the change will take place on.
- Week of the Month The last week of the month is set by entering 5 while for a rule which required the change on the second week in the month then 2 would be entered.
- Month The month that the change is to occur in.

6.10 Commission

```

COMMISSIONING
>Continue
Restart
Restart from default
Load from Master
Test Run the Lift
Start monitoring
    
```

This is the initial commissioning screen that guides the user through a sequence of screens to configure the essential items for a functioning EMU. The engineer may **Continue** with a previous commissioning sequence, in which case it starts from the current point. **Restart** the commissioning, starts from the beginning again with the current values retained. **Restart from default**, starts from the beginning again with values set to their defaults. **Load from Master**, which loads a Slave’s configuration from a previously configured Master EMU. **Test Run the Lift** triggers a

lift call using one of the main output relays. **Start monitoring** or attempt to start monitoring. This is the final step in the commissioning process and it tests the configuration and requires the EMU to monitor a successful LMDO run of the lift before marking the EMU as commissioned. Monitor the progress of the test from the [Main Status Screen](#) A failure to follow the lift’s sequence will be indicated by the “Waiting for” state giving an indication which of the signals configuration needs to be altered.

Before the EMU can start monitoring it must be successfully commissioned.

The first few screens gather information about the overall configuration of the EMU and the monitored equipment. After this information has been gathered, the remaining screens require the engineer to review the configuration items and accept or update them. These screens will follow the form and content of the Configuration screens for the relevant items.

The sequence of screens and items are as follows:

6.10.1 Board Group

```

COMMISSIONING
Board groups:
MI
AI
MO
>
ADD      ▲±▼      BACK
    
```

This is the first screen in the commissioning sequence. The first three groups refer to the motherboard, are always present and cannot be removed. The engineer can add additional groups representing the XI (eXpansion Input) and XO (eXpansion Output) boards, which must be entered in the order in which they are attached. When an expansion group is selected, the LHSK will show REMOVE, and when one of the fixed groups is selected, the LHSK will show FINISH (to allow the engineer to move on to the next stage of commissioning).

6.10.2 Equipment Type

```

COMMISSIONING
Equipment type:
LIFT
H.ROW MRL
ESCALATOR
AIRBRIDGE
>OTHER
    
```

This is the second screen in the commissioning sequence, and requires the engineer to enter the type of equipment being monitored. If Lift or Escalator is selected, then the EMU will set up the committed signals defined for this equipment. If Other is selected, then all I/O must be set up manually.

6.10.3 Manual Gates (Only seen if Equipment type “LIFT” is selected at 6.10.2)

```

COMMISSIONING
Manual Gates:
>NO
YES

OK          ±▼      BACK
    
```

Select **NO** and the input configuration for automatic doors will be configured or **YES** to select the manual gates input configuration (pre-lock monitoring on MI-7) and to turn off door open and close monitoring. Pre-lock monitoring may still be enabled on auto doors by manually assigning the logical input PRLK to an unused physical input.

6.10.4 CSL Module (Only seen if eXpansion Input card is added at 6.10.1)

```

COMMISSIONING
>CSL module fitted
No
First output point
XO1-1

CHANGE      ±▼      BACK
    
```

This is the fourth screen in the commissioning sequence and requires the engineer to specify whether a CSL module is fitted, and where it is connected. This is only applicable to a Master unit. The first output point will be preset with the first valid point that is compatible with the requirements.

There is a blank item at the end of the list of values. When this is selected, the LHSK will show FINISH to allow the user to move to the next stage of commissioning.

6.10.5 Rear Doors (Only seen if eXpansion Input card is added at 6.10.1)

```

COMMISSIONING
>Monitor rear doors
No
First input point
XI1-1

CHANGE      ±▼      BACK
    
```

This is the fifth screen in the commissioning sequence, and requires the engineer to specify whether separate rear door signals are available on an expansion input module, and where they are connected. The first input point will be preset with the first valid point that is compatible with the requirements. There is a blank item at the end of the list where the FINISH option is displayed.

6.10.6 Safety Chain (Only seen if eXpansion Input card is added at 6.10.1)

```

COMMISSIONING
Monitor safety chain
No
>First input point
XI1-1
Number of points
8
CHANGE ▲±▼ BACK
    
```

This is the sixth screen in the commissioning sequence, and requires the engineer to specify whether full safety chain monitoring using an expansion input module is to be performed, and where the signals are connected. The first input point will be preset with the first valid point that is compatible with the requirements. There is a blank item at the end of the list where the FINISH option is displayed.

6.10.7 Position Indication

```

COMMISSIONING
Floor level type
Count
>First input point
XI1-1
Number of elements
8
CHANGE ▲±▼ BACK
    
```

This is the seventh screen in the commissioning sequence, and requires the engineer to specify whether floor level monitoring is to be performed and if so, what type: -

- NONE No lift position available.
- COUNT Use DZ signal to count floor levels.
- DISCRETE Use input block, 1 input per level.
- BCD Use input block as BCD indicator.
- BINARY Use input

block as binary coded indicator.

Where a block of expansion inputs are then the first input is specified along with the number of elements in the block. There is a blank item at the end of the list where the FINISH option is displayed. (See also [6.9.9.12](#))

This is the end of the screens that make I/O allocation and are therefore only accessible through the commissioning option. The subsequent screens continue the commissioning process but the settings can be updated later through the “Configuration” main menu option.

6.10.8 Group Setup

```

Group Setup
>Num of Slaves
1
Group ID
MASTER
Slave for CSL
None
CHANGE ▲±▼ BACK
    
```

This is the next screen in the commissioning sequence, and requires the engineer to specify how many slave EMU’s will be connected together on the slave link to makeup the group. Then to select the group identity for this EMU from the list i.e. MASTER or SLAVE 1-7. The ID selected must be unique within the group or one of the EMU’s will fail to communicate when commissioning is complete, and a “CAN DUPL” status will show on the [Main Status Screen](#).

Finally if this is a slave then it can be set to report to the CSL module fitted to the Master. Only one slave in the group can report to this module. There is a blank item at the end of the list where the FINISH option is displayed.

6.10.9 Identification

```

    Identification
>EMU Identifier
"0030"
Site Name
"Flint Tower"
Equipment Ref
"CRG-436"
CHANGE  ▲±▼  BACK
    
```

This is the next screen in the commissioning sequence, and requires the engineer to specify an EMU Id. **This is a 4 digit number with the leading 0's present.** It is used to identify the unit back at the central system, and therefore must be unique within this clients system. The Site Name, Equipment Ref & Equipment Description are additional text which can be entered with the multi tap keypad to identify the site and its equipment.

```

    Identification
>Equipment Desc
"Serv.Odd levels"
Equipment Type
LIFT
CHANGE  ▲±▼  BACK
    
```

The final item Equipment Type was setup at Step 2 [Equipment Type](#) and is displayed for information only. It can't be changed here. There is a blank item at the end of the list where the FINISH option is displayed.

6.10.10 Phone Numbers A

```

    Phone Numbers A
>Enabled
  YES
  Office Name
  "CMS Line 1"
  Number
  "01352793222"
  
```

This is the next screen in the commissioning sequence, and requires the engineer to enter a telephone number for the EMU to dial when reporting events back to the central system. This record is the first entry in a table of 8 optional numbers A- H that can only be configured later through the “Configuration” main menu option [6.9.6.1](#). For now this should be Enabled and a description of where it will dial given as the “Office Name”. There is a blank item at the end of the list where the FINISH option is displayed.

6.10.11 Reporting

```

    Reporting
>Number Order
  "A"
  Max Rprt Calls
  12
  Call Interval
  7Days
CHANGE  ▲±▼  BACK
  
```

This is the next screen in the commissioning sequence, and allows the dial order to be configured later [See 6.9.6](#). Max Reportable Calls sets the number of phone calls this EMU can make in a day. When this limit is approached the Call Limit event is sent warning the central system that the EMU will not report faults for the rest of the day.

Call Interval sets max time allowed between calls to the central. If no faults have occurred for this period the EMU makes a routine call to confirm the integrity of the

communications system. There is a blank item at the end of the list where the FINISH option is displayed.

6.10.12 Input Configuration

```

    Input Config MI-1
>Enabled
  YES
  Logical I/P Sig
  MS
  Description
  "Main Supply"
CHANGE  ▲±▼  BACK
  
```

This consists of a sequence of 19 screens displaying the default input configuration applied when the [Equipment Type](#) was selected, See [Lift I/O Mapping](#). The object of this phase is to review the settings and make any changes necessary to adapt it to the actual installation. Typical changes would be to invert an active low input, or to delay the assert or restore edge of a signal that is appearing out of sequence.

- Enabled Signal is wired and in use. Some signals can be disabled if the input can't be found.
- Logical I/P Sig Which logical input, this signal will control. The software is controlled by logical inputs which are linked to a physical input through this setting.
- Description Text description of the signal the input is monitoring.
- Mnemonic The signal name for this input.
- Invert Is the input inverted. If Yes then when voltage is lost the signal is asserted.
- Invert Depend If the input is inverted then it will be dependent on another signal being present before its loss should be registered.

- On Delay Delay when the On edge is seen in increments of 0.1 Sec.
- Off Delay Delay when the Off edge is seen in increments of 0.1 Sec.
- Protected All pre-allocated inputs are protected to prevent reallocation later.

There is a blank item at the end of the list where the FINISH option is displayed.

6.10.13 Output Configuration

```

Output Config MO-1
>Enabled
YES
Logical O/P Sig
TFC
Description
"Btm Floor Call"
    
```

In a similar way to the inputs this sequence of 6 screens shows the configuration of the EMU's [Outputs](#). Only the first two outputs relate to Lift Control though others may be added to meet specific installation requirement using the "Configuration" main menu options.

- Enabled The output is controlled by some internal logic.
- Logical O/P Sig The logical output that controls this relay.
- Description Text description of the signal the output provides.
- Mnemonic The signal name for this output.
- Invert Inverts the operation of the relay, breaking when the assert is seen.
- Power Up State What state the relay should take when power is applied and before the logic has time to take control of the output.
- Protected Protection prevents reallocation of the output later.

There is a blank item at the end of the list where the FINISH option is displayed.

6.10.14 Liftwatch (Only seen if the "LIFT" equipment type was selected at 6.10.2)

```

Liftwatch
>Car Stop Time
6sec
>Move Dly Time
3sec
Max Move Time
120secs
CHANGE ▲±▼ BACK
    
```

This is the next screen in the commissioning sequence, and requires the engineer to confirm or adjust the Liftwatch Settings to suit the Lift it is connected to. Settings can be adjusted after the commissioning phase is complete through the configuration menu. (See Section [6.9.8](#))

There is a blank item at the end of the list where the FINISH option is displayed.

- Car stop time At the end of a run, wait this time to see if it tries to open its doors. If no attempt to open, then assume it parked door closed.
- Move delay time Movement signal (UP or DN) must be present for this time before the lift is registered as moving.
- Max move time If the movement signal (UP or DN) is still present after this time record a Moving Overrun Event.
- Door open time OC signal must be present for this time before the door is seen as opening. If no DOL signal is available (Enable=NO) then this setting should be adjusted to the time the door takes to open.

- Opening protection timer If OC signal is present for this length of time, then DOPT fault. The doors have been driving open for too long.
- Closing protection timer If CC signal is present for this length of time, then DCPT fault. The doors have been driving closed for too long.
- Door Not closed overtime If CG & GL not made by this time, and the lift is not parked with its doors open.
- Park Open Timer If the doors remain open for this length of time without CC then they are determined to be parked open.
- Pre-Lock Time The maximum time allowed for the GL input to go active after the door closed signal (PRLK) has gone active.
- LMDO Completion timer The maximum time an active lift test should take.
- Alarm LCT The maximum time an active lift test should take in response to an alarm push.
- Test call hold Time to wait before placing a test call after an Engineer logs off.
- Max fault calls The maximum number of lift tests per day as a result of losing a signal (MS or PSC). To enable signal faults to be reported as opposed to out of service.
- Journey reporting level. The journey counter threshold at which the Journey Counter Event is sent. Event Code 31
- Door reporting level. The door operations counter threshold at which the Door Counter Event is sent. Event Code 32

There is a blank item at the end of the list where the FINISH option is displayed.

6.11 Trace Log

The Trace log provides a historic record of all the I/O changes seen by the EMU for the duration of the log. This can be used as a diagnostic tool for monitoring the actual signals produced by the lift and to help reproduce unusual fault conditions. The trace can be uploaded to LiftStore and used as part of a diagnostic procedure.

```

          TRACE LOG  TRIG
Set trigger
Continuous trace
Stop trace
>View trace log
Clear trace log

SELECT  ▲±▼      BACK
    
```

This screen is entered from the “Trace Log” main menu item. The user selects an option by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to select. The current state of tracing is shown at the right hand end of the title line, this is one of: -

- STOP – No tracing in progress
- CONT – Continuous tracing in progress
- WAIT – Tracing while waiting for trigger
- TRIG – Trigger detected (stopped tracing)

```

          SET TRIGGER
>123 39
Moving Overrun
125 40
Maintenance Visit
126 41
Clean Gate Tracks
SELECT  ▲±▼      BACK
    
```

This screen is entered from the “Set trigger” menu item. The user selects an event code by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to select.

```

          TRACE LOG
Time: 596240ms
MI  ○●○○○○○● ○●●○○○○○
AI  ○○○○○○○○
XI1 ○●○○○○○ ○○○○○○○○
MO  ○●○○○○○
XO1 ○○○●○○○●
          ◀▲±▼▶      BACK
    
```

This screen is entered from the “View trace log” menu item. The user scrolls within the entry using the UP and DOWN cursor keys to display further input/output groups, and moves between events using the LEFT and RIGHT cursor keys

```

          TRACE LOG

Do you really want to
delete all entries
from the trace log ?

YES      ±      NO
    
```

This screen is entered from the “Clear trace log” menu item. The user presses the LHSK to confirm the operation .

6.12 Setup

```

SETUP
Recording control
>Out Calls control
LSA test control
Clear events
Clear Retained State
Restart event nos
SELECT ▲±▼ BACK
    
```

This screen appears when the user has selected the “Setup” main menu item. The user selects an option by using the UP and DOWN cursor keys to move the selection to the required entry, and pressing the LHSK to select.

The full list of options is as follows: -

- Recording control.
- Out Calls control.
- LSA test control.
- Clear events.
- Clear Retained State.
- Restart event nos.
- Battery Status.
- Test Alarm Supply

- Manually override the state of event recording.
- Turn event-reporting On/Off.
- Turn active lift testing On/Off.
- Clear all stored events after confirming the operation.
- Reset all status information immediately. (No confirmation)
- Reset the event record numbers after confirming the operation.
- View & Test battery status. See [Battery Status](#)
- Test the alarm circuit supply voltage immediately.

6.12.1 Battery Status

```

BATTERY TEST
Test In Progress
NO
Latest Supply Reading
13.7V
Last Test Reading:
12.5V
TEST ±▼ BACK
    
```

This screen is entered from the “Battery Status” setup menu . It displays the current state of the battery test, charging supply voltage and the results of the last battery test. Use the LHSK to initiate a new battery test. This will run the EMU on its battery for 30 minutes or until the battery voltage drops below 11.2V.

- Test In Progress (YES/NO)
- Latest Supply Reading (V)
- Last Test Reading (V)
- Last Test Duration (mins)

- Whether a manual or timed battery test is in progress
- The current supply voltage. (13.6-13.8V mains on)
- The supply (battery) voltage at the end of the last test
- Length of the last test. If less than 30mins, then it was aborted either because the battery voltage fell below the failing threshold (11.2V), or because the EMU supply failed.

6.13 Set Time and Date

```

SET TIME & DATE

HR MIN DD MM YY
10:43 05/06/06 Mon
^^
GMT

SET ◀▲±▼▶ BACK
    
```

This screen is entered from the “Set Time/Date” main menu item and sets the time reference for all the EMU’s event recording. The user moves between sections using the LEFT and RIGHT cursor keys. The values may be adjusted using the UP and DOWN cursor keys, or entered using the keypad.

6.14 Switch Application

```

SWITCH APPLICATIONS
  Current:
V1.030 24/05/06 New
config item DST
  Alternate:
V1.021 01/02/06 Bug
fix 1142
SWITCH      ±      BACK
    
```

This screen is entered from the “Switch Applications” main menu item. It displays the version information for the software currently running in the EMU, and for the alternate application. Use the LHSK to switch to the alternate application code.

6.15 Modem Status

```

MODEM STATUS
Init 1 Response:
OK
Init 2 Response:
OK
Init 3 Response:
OK
                ±      BACK
    
```

This screen is entered from the “Modem Status” main menu item. The user presses the RHSK to exit from the screen, and the UP and DOWN keys to display the remainder of the items.

The full set of items displayed are: -

- Init 1 Response
- Init 2 Response
- Init 3 Response
- Inquiry Response
- Signal Strength

- Last Modem Response
- Last Call Response
- Call Fail Response

- Response to the 1st modem init string.
- Response to the 2nd modem init string.
- Response to the 3rd (fixed) modem init string “ATE0V1”.
- Response to the “ATI” command.
- Value returned from a poll to a GSM modem (value is modem-dependent).
- Response to the last modem command.
- Response to the last attempt to connect.
- Response to the last failed attempt to connect.

6.15.1 Toolbox (Miniscope Screen)

```

REMOTE DIAGNOSTIC
ASCII
DTR  RTS
DSR  CTS  DCD  RI
      AT      AT
OK      OK      OK
STOP      ±      BACK
    
```

This screen is entered by pressing the TOOLBOX key when displaying the Modem Status screen.

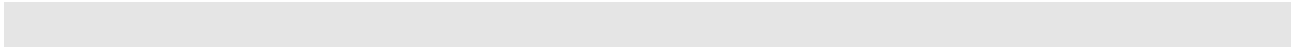
It shows the status of the port used for remote communications, which could be the internal socket modem, or an external modem, depending on how “Startup Comms” on Configuration Menu has been set.

The capture of data is enabled by default, but must be stopped for reviewing. Press the LHSK while running, and the capture is stopped. The LHSK label changes to “RUN”.

While running, the modem control signals are the current state of the signals, but when reviewing the data, they represent the state of the signals at the review (cursor) point.

The following controls are available in review mode: -

- | | |
|-------|---|
| UP | Toggle the display between hex and ascii – the current mode is shown on the second line |
| LEFT | Move the review point back one character |
| RIGHT | Move the review point forward by one character |
| DOWN | Move the review point one screen's worth forward or back depending on which of the LEFT or RIGHT keys was pressed last. |



7 APPENDIX

7.1 Event Codes

E-Line	Event Code	Enable, Record, Report, Double Sided	Description	Reason
74	1	YYNS	"EMU Reset Sequence"	
5	2	YYND	"Lost/Regained Primary Safety Circuit"	
1000	3			
30	4	YYND	"Monitored Input 1 Active/Inactive"	
8	5	YYNS	"Door Open Protection Timer"	
11	5	YYNS	"Rear Door Open Protection Timer"	
25	6	YYYY	"Alarm Supply Low/Ok"	
24	7	YYYY	"EMU Battery Bad/Ok"	
21	8	YYND	"Start/End Daylight Savings Time"	
7	9	YYNS	"Door Close Protection Timer"	
10	9	YYNS	"Rear Door Close Protection Timer"	
26	10	YYND	"Cabinet Tamper Active/Inactive"	
13	11	YYND	"Lift Not/Now In Service"	
15	12	YYND	"On/Off Fire Service Control"	
31	13	YYND	"Monitored Input 2 Active/Inactive"	
105	14	YYND	"Door Lock Fault Occurred/Clear"	
4	15	YYYY	"Main Supply Signal Is/Not Faulty"	
2	16	YYYY	"Event Over Reporting Occurred/Clear"	Detected too many repeating events, and suppressed reporting.
95	17	YYNS	MOVEMENT Fault	
96	18	YYNS	GATELOCK2 Fault	
1014	19	YYND	"Pre-Lock Fault Occurred/Clear"	
97	20	YYNS	Dest. Floor Fault Occurred/Clear (Pre V1.0 this was DOOR_ZONE Fault)	Failed to see both locks break while in DZ
98	21	YYNS	DOOR_OPEN Fault	Failed to see OC in for DOT time.
99	22	YYNS	FINAL_CHECKS Fault	
100	23	YYNS	LMDO Cycle Fault	
32	24	YYND	"Monitored Input 3 Active/Inactive"	
33	25	YYND	"Monitored Input 4 Active/Inactive"	
12	26	YYYY	"Lift Not/Now Operational"	
34	27	YYND	"Monitored Input 5 Active/Inactive"	
46	28	YYYY	"Lost/Regained Landing Push Feed"	
18	29	YYNS	"Alarm Push Pressed"	
35	30	YYND	"Monitored Input 6 Active/Inactive"	
71	31	YYNS	"10,000 Journeys Done"	
72	32	YYNS	"10,000 Door Operations"	
36	33	YYND	"Monitored Input 7 Active/Inactive"	
37	34	YYND	"Monitored Input 8 Active/Inactive"	
14	35	YYND	"On/Off Car Preference Control"	
16	36	YYND	"On/Off Independent Service Control"	
3	37	YYND	"Lost/Regained Main Supply"	
102	38	YYYY	Monitoring Suspended / Restored	
0	39	YYNS	"Moving Overrun"	
61	40	YYNS	"Miscellaneous"	

62	41	YYNS	"Clean Gate Tracks"	
63	42	YYNS	"Gatelock Adjust"	
64	43	YYNS	"Door Operator Adjust"	
65	44	YYNS	"Floor Level Adjust"	
66	45	YYNS	"Controller Adjust"	
67	46	YYNS	"Shaft Equip. Adjust"	
68	47	YYNS	"Hydraulic Valve Adjustment"	
69	48	YYNS	"No Fault Found"	
70	49	YYNS	"Maintenance Visit"	
79	50	YYNS	"Call Failed"	
19	51	YYND	"Alarm Trapping On/Off"	
38	52	YYND	"Monitored Input 9 Active/Inactive"	
54	52	YYNS	"Safety Chain Input 8 Active/Inactive"	
39	53	YYND	"Monitored Input 10 Active/Inactive"	
53	53	YYNS	"Safety Chain Input 7 Active/Inactive"	
40	54	YYND	"Monitored Input 11 Active/Inactive"	
52	54	YYNS	"Safety Chain Input 6 Active/Inactive"	
41	55	YYND	"Monitored Input 12 Active/Inactive"	
51	55	YYNS	"Safety Chain Input 5 Active/Inactive"	
42	56	YYND	"Monitored Input 13 Active/Inactive"	
50	56	YYNS	"Safety Chain Input 4 Active/Inactive"	
43	57	YYND	"Monitored Input 14 Active/Inactive"	
49	57	YYNS	"Safety Chain Input 3 Active/Inactive"	
44	58	YYND	"Monitored Input 15 Active/Inactive"	
48	58	YYNS	"Safety Chain Input 2 Active/Inactive"	
45	59	YYND	"Monitored Input 16 Active/Inactive"	
47	59	YYNS	"Safety Chain Input 1 Active/Inactive"	
29	60	YYND	"Engineer Safety Alert Active/Inactive"	
9	61	YYNS	"Doors Not Closed Overtime"	
76	62	YYNS	"Data base Reset"	
77	63	YYND	"Recording Off/On"	
91	64	YYND	"Outcalls Off"	
60	65	YYNS	"Encoded configuration too big"	
28	66	YYND	"Motor Room Intruder Active/Inactive"	
59	67	YYNS	"EEPROM Fail"	
75	68	YYNS	"Data base Error"	
27	69	YYND	"Shaft Intruder Active/Inactive"	
20	70	YYNS	"Time Clock Changed"	
73	71	YYND	"Modem Fail/OK"	
23	72	YYND	"EMU Supply Lost/Restored"	
103	73	YYND	Stuck Alarm Button	
92	74	YYNS	"Logon Abandonment"	
55	75	YYNS	"Callback Test"	
22	76	YYND	"Power Cut/Restored"	
1009	77			
101	78	YYNS	Lock Tip	
56	79	YYNS	"Test 'Phone Call"	
93	80	YYND	"LSA Test Disabled"	
80	81	YYNS	"Update Central Database"	
78	82	YYNS	"EMU Dbase Nearly Full"	
1	83	YYNS	"Data Base Overrun"	
81	84	YYND	"Site Access Commencing/Completed"	

17	85	YYND	"On/Off Night Service"	
82	86	YYNS	"User Ident 'A'"	
83	87	YYNS	"User Ident 'B'"	
84	88	YYNS	"User Ident 'C'"	
85	89	YYNS	"User Ident 'D'"	
86	90	YYNS	"User Ident 'E'"	
87	91	YYNS	"User Ident 'F'"	
88	92	YYNS	"Callout Engineer Arrival"	
89	93	YYNS	"Maintenance Engineer Arrival"	
90	94	YYNS	"Inspectorate Engineer Arrival"	
57	95	YYYY	"AUTO CALL"	
104	96	YYD	Shaft Logon	
6	97	YYND	"Primary Safety Circuit Is/Not Faulty"	
94	98	YYNS	GATELOCK1 Fault	
58	99	YYYY	"Call Limit Reached/Reset"	

Table - Event Codes

7.2 Menu Map

Configuration Menu

Level 1	Level 2	Level 3	Level 4	Default Value	
Group Setup	Num of Slaves			0	
	Group ID			MASTER	
	Slave for CSL			NONE	
Identification	EMU Identifier			""	
	Site Name			""	
	Equipment Ref			""	
	Equipment Desc			As selected in commissioning	
	Equipment Type			As selected in commissioning	
Startup Comms	Modem Init 1			"EOVO"	
	Modem Init 2			"&C1&D2S0=2"	
	Remote Port	Rem Line Speed			B5760
		Rem Data Bits			8
		Rem Stop Bits			1
		Rem Parity			NONE
		Rem Flow Cntrl			RTSCTS
	Local Port (LOCAL)	Loc Line Speed			B5760
		Loc Data Bits			8
		Loc Stop Bits			1
		Loc Parity			NONE
		Loc Flow Cntrl			RTSCTS
	CanBus 1 Speed			CAN500	
	CanBus 2 Speed			CAN500	
EXTERNAL MODEM			NO		

Input Config *	Enabled			<i>Dependent on the equipment type selected</i>		
	Logical I/P Sig					
	Description					
	Mnemonic					
	Invert					
	Invert Depend					
	On Delay					
	Off Delay					
Output Config *	Protected			<i>Dependent on the equipment type selected</i>		
	Enabled					
	Logical O/P Sig					
	Description					
	Mnemonic					
	Invert					
	Power Up State					
Reporting	Protected					
	Phone Numbers *				Enabled	YES
					Office Name	""
					Number	""
					Number Order	A
					Max Rprt Calls	12
					Call Interval	7 days
Users *	Enabled			<i>See Default Users Table</i>		
	User Identity					
	Capabilities					
	Valid Reasons					
	Mandatory					
	Disable Record					
Liftwatch	Car Stop Time			6 sec		
	Move Dly Time			3 sec		
	Max Move Time			120 sec		
	Door Open Time			1.5 sec (15x100 msec)		
	Open Prot Time			30 sec		
	ClS Prot Time			45 sec		
	Not Cl. O'time			11 min		
	LMDO Cmpl Time			120 sec		
	Pre Lock			3 sec (30x100msec)		
	Alarm LCT			60 sec		
	Test Call Hold			30 sec		
	Max Flt Calls			4		
	Features			Lift Test		
		Start Time	8:00			
		End Time	18:00			
		Max Test Calls	2			
		Idle Time	10 min			
Manual Gates		Enabled	NO			

	Eng Sfty Alert	Enabled		NO
		Confirm Time		3 hrs
		Warning Time		15 min
	Motor Rm Intrd	Enabled		NO
		Login Time		3 min
		Reset Time		2 min
		Use Local Alarm		YES
	Shaft Intrude	Enabled		NO
		Reset Time		5 min
	Cabinet Tamper	Enabled		YES
		Reset Time		120 sec
	Alarm Trapping	Enabled		YES
		Alarm Psh Time		3 sec
		Trap Pulse Len		4 sec
		Reporting Delay		2 sec
		CSL Delay		80 sec
		Trapping Delay		45 sec
	Time Switch	Enabled		NO
		Use LSA Times		NO
		Start Time		9:00
		End Time		20:00
	Rear Doors	Enabled		NO
	CSL	Enabled		NO
Safety Chain	Enabled		NO	
	Num of Inputs		0	
Floor Level	Enabled		YES	
Daylight Svngs	Enabled		YES	
	Start Params	Hour of Day	1:00	
		Day of Week	SUN	
		Week in Month	5	
		Month	MAR	
	Stop Params	Hour of Day	2:00	
		Day of Week	SUN	
		Week in Month	5	
Month		OCT		

Screen	Item
Commission IO Modules	
Commission Equipment Type	
Commission CSL	CSL module fitted
	First output point
Commission Rear Doors	Monitor Rear Doors
	First input point
Commission Safety Chain	Monitor Safety Chain
	First input point
	Number of points
Commission Level Sensing	Floor level type

Screen	Item
	First input point
	Number of points
Group Setup	Num of Slaves
	Group ID
	Slave for CSL
Identification	EMU Identifier
	Site Name
	Equipment Ref
	Equipment Desc
	Equipment Type
Startup Comms	Modem Init 1
	Modem Init 2
	Rem Line Speed
	Rem Data Bits
	Rem Stop Bits
	Rem Parity
	Rem Flow Cntrl
	Loc Line Speed
	Loc Data Bits
	Loc Stop Bits
	Loc Parity
	Loc Flow Cntrl
	CanBus 1 Speed
	CanBus 2 Speed
Input Config *	Enabled
	Protected
	Mnemonic
	Description
	Invert
	Invert Depend
	Logical I/P Sig
	On Delay
	Off Delay
Output Config *	Enabled
	Protected
	Mnemonic
	Description
	Invert
	Power Up State
	Logical O/P Sig
Users *	Enabled
	User Identity
	Capabilities
	Valid Reasons
	Mandatory
	Disable Record
Phone Numbers *	Enabled

Screen	Item
	Office Name
	Number
Reporting	Number Order
	Max Rprt Calls
	Call Interval
Liftwatch	Car Stop Time
	Move Dly Time
	Max Move Time
	Door Open Time
	Open Prot Time
	Cls Prot Time
	Not Cl. O'time
	LMDO Cmpl Time
	Alarm LCT
	Test Call Hold
	Max Flt Calls

* Marks a section that is repeated ie. it represents one of a number of instances, each of which have the same set of items. These sections all have an “Enabled” item which, when set to YES, indicates that the instance is valid.

User	TVC	Repair	Callout	Maint	Inspect
Default Password		5555	6666	9999	1234
Actual Password					
Enabled	YES	YES	YES	YES	YES
Capabilities	TESTCALL TIMSW IOUPDATE OWNPWD OTHPWD CNFUPDATE SETUP	TESTCALL IOUPDATE	TESTCALL IOUPDATE	TESTCALL IOUPDATE	TESTCALL IOUPDATE
Disable Recording	NO	YES	YES	YES	YES
Mandatory Reason	NO	YES	YES	NO	NO
Valid Reason	MISCELLANEOUS MAINTENANCE GATETRACKCLEAN GATELOCKADJUST DOORADJUST FLOORADJUST CTRLRADJUST SHAFTADJUST VALVEADJUST NOFAULT	MISCELLANEOUS MAINTENANCE GATETRACKCLEAN GATELOCKADJUST DOORADJUST FLOORADJUST CTRLRADJUST SHAFTADJUST VALVEADJUST NOFAULT	MISCELLANEOUS MAINTENANCE GATETRACKCLEAN GATELOCKADJUST DOORADJUST FLOORADJUST CTRLRADJUST SHAFTADJUST VALVEADJUST NOFAULT	MISCELLANEOUS MAINTENANCE GATETRACKCLEAN GATELOCKADJUST DOORADJUST FLOORADJUST CTRLRADJUST SHAFTADJUST VALVEADJUST NOFAULT	MISCELLANEOUS MAINTENANCE GATETRACKCLEAN GATELOCKADJUST DOORADJUST FLOORADJUST CTRLRADJUST SHAFTADJUST VALVEADJUST NOFAULT

7.3 Logical I/O

Logical Inputs

	Mnemonic		Name	Description
0	NONE		No Input	Not allocated to a logical input
1	ALS	AI 8	Alarm Supply	Monitor the Alarm Circuit Supply voltage and report if it drops below 2.5V
2	AUXS	AI 6	Aux. Supply	Signal which monitors the state of the Auxiliary wetting supply and can provide an event if the supply fails or is shorted out.
3	ENG		Eng. Keyswitch	Signal to indicate when an engineer's key switch has been operated.
4	SHAFT		Shaft Intruder	Signal to indicate when a shaft intruder has been detected.
5	MRINT		Mtr Rm Intrudr	Signal to indicate when the motor room door has been opened.
6	LPI		Land Psh Inhib	Inhibit the Landing Push feed lost event if this signal is triggered.
7	UDF	MI 10	Demand Was DMD	Signal, which indicates to the Liftwatch algorithm that a request for the lift to move has been made. Possibly taken from the Ramp or the break lifting.
8	GL	MI 5	Gate Lock	Signal, which indicates to the Liftwatch algorithm that the landing gates are locked.
9	DZ	MI 6	Door Zone	Signal, which indicates to the Liftwatch algorithm that the lift is in a door zone.
10	OC	MI 7	Open Contactor	Signal, which indicates to the Liftwatch algorithm that the door open contactor is active.
11	CC	MI 8	Cls Contactor	Signal, which indicates to the Liftwatch algorithm that the door closing contactor is active.
12	UP	MI 11	Up Contactor	Signal, which indicates to the Liftwatch algorithm that the Up contactor is active.
13	DN	MI 12	Down Contactor	Signal, which indicates to the Liftwatch algorithm that the Down contactor is active.
14	DOL	MI 9	Dr Open Limit	Signal, which indicates to the Liftwatch algorithm that the door is fully open.
15	CG	MI 4	Car Gate	Signal, which indicates to the Liftwatch algorithm that the car gate is locked.
16	MS	MI 1	Main Supply	Signal, which indicates to the Liftwatch algorithm that the main supply is present.
17	LPF	MI 13	Lndg Push Feed	Signal, which indicates to the Liftwatch algorithm that the landing push feed is present.
18	GF	MI 3	Gate Feed Was PSC	Signal, which indicates to the Liftwatch algorithm that the Primary Safety Circuit is made and feeding the gate locks.
19	LIN	MI 14	Indep. Service	Signal, which indicates to the Liftwatch algorithm that the lift is operating on an independent service.
20	TTR	MI 2	Car Preference	Signal, which indicates to the Liftwatch algorithm that the lift is operating on car preference control.
21	FS	MI 15	Fire Service	Signal, which indicates to the Liftwatch algorithm that the lift is operating on fire service control.
22	ALM	AI 7	Alarm Push	Signal, which indicates to the alarm verification algorithm that the lift car alarm has been pressed.
23	RDMD	EXP	Rear Demand	Signal, which indicates to the Liftwatch algorithm

				that a request for the lift to move has been made. Possibly taken from a rear door Ramp.
24	RPSC	EXP	Rear Sfty Circ	Signal, which indicates to the Liftwatch algorithm that the rear Primary Safety Circuit is made
25	RCG	EXP	Rear Car Gate	Signal, which indicates to the Liftwatch algorithm that the rear car gate is locked.
26	RDZ	EXP	Rear Door Zone	Signal, which indicates to the Liftwatch algorithm that the lift is in a rear door zone.
27	ROC	EXP	Rear Open Cntc	Signal, which indicates to the Liftwatch algorithm that the rear door open contactor is active.
28	RCC	EXP	Rear Cls Cntc	Signal, which indicates to the Liftwatch algorithm that the rear door closing contactor is active.
29	RDOL	EXP	Rear Dr Op Lm	Signal, which indicates to the Liftwatch algorithm that the rear door is fully open.
30	FLR1	EXP	Flr Level 1	Signal, which indicates to the lift positioning software what the lift position is. The signal meaning depends on the type of lift position measurement selected.
31	FLR2	EXP	Flr Level 2	- As Above -
32	FLR3	EXP	Flr Level 3	- As Above -
33	FLR4	EXP	Flr Level 4	- As Above -
34	FLR5	EXP	Flr Level 5	- As Above -
35	FLR6	EXP	Flr Level 6	- As Above -
36	FLR7	EXP	Flr Level 7	- As Above -
37	FLR8	EXP	Flr Level 8	- As Above -
38	FLR9	EXP	Flr Level 9	- As Above -
39	FLR10	EXP	Flr Level 10	- As Above -
40	FLR11	EXP	Flr Level 11	- As Above -
41	FLR12	EXP	Flr Level 12	- As Above -
42	FLR13	EXP	Flr Level 13	- As Above -
43	FLR14	EXP	Flr Level 14	- As Above -
44	FLR15	EXP	Flr Level 15	- As Above -
45	FLR16	EXP	Flr Level 16	- As Above -
46	SFT1	EXP	Sfty Circ 1	Signal, which indicates to the Safety chain monitoring algorithm where the safety chain is broken.
47	SFT2	EXP	Sfty Circ 2	- As Above -
48	SFT3	EXP	Sfty Circ 3	- As Above -
49	SFT4	EXP	Sfty Circ 4	- As Above -
50	SFT5	EXP	Sfty Circ 5	- As Above -
51	SFT6	EXP	Sfty Circ 6	- As Above -
52	SFT7	EXP	Sfty Circ 7	- As Above -
53	SFT8	EXP	Sfty Circ 8	- As Above -
54	FLT1	EXP	FLT Input 1	Signal, which can be used for general purpose event monitoring.
55	FLT2	EXP	FLT Input 2	- As Above -
56	FLT3	EXP	FLT Input 3	- As Above -
57	FLT4	EXP	FLT Input 4	- As Above -
58	FLT5	EXP	FLT Input 5	- As Above -
59	FLT6	EXP	FLT Input 6	- As Above -
60	FLT7	EXP	FLT Input 7	- As Above -
61	FLT8	EXP	FLT Input 8	- As Above -
62	FLT9	EXP	FLT Input 9	- As Above -
63	FLT10	EXP	FLT Input 10	- As Above -
64	FLT11	EXP	FLT Input 11	- As Above -
65	FLT12	EXP	FLT Input 12	- As Above -

66	FLT13	EXP	FLT Input 13	- As Above -
67	FLT14	EXP	FLT Input 14	- As Above -
68	FLT15	EXP	FLT Input 15	- As Above -
69	FLT16	EXP	FLT Input 16	- As Above -
70	LFTST		Lift Test Push	Trigger an EMU Lift Test sequence.
71	LADS		LADS Request	Allocated for auto-dialler handshaking but not implemented yet.
72	PRLK		Pre-Lock	Signal, which indicates to the EMU that the landing door is closed (but not locked). Most commonly found on manual gate retiring ramp type installations.
73	TAMP	AI 5	Cabinet Tamper	Signal to the EMU's security software
74	NOP1	All		Non LIFT equipment is Not Operational.
75	NOP2	All		- As Above -
76	NOP3	All		- As Above -
77	NOP4	All		- As Above -
78	NOP5	All		- As Above -
79	NOP6	All		- As Above -
80	NOP7	All		- As Above -
81	NOP8	All		- As Above -
82	NIS1	All		Non LIFT equipment is Not In Service.
83	NIS2	All		- As Above -
84	NIS3	All		- As Above -
85	NIS4	All		- As Above -
86	NIS5	All		- As Above -
87	NIS6	All		- As Above -
88	NIS7	All		- As Above -
89	NIS8	All		- As Above -
90	ALMPR	All		Alarm Push for non LIFT applications (Does not trigger a lift test)
91	LSIND			Lift Service Indication. If the controller indicates it is out of service and not on TTR, FS or LIN Test the lift.
92				
93				
94				
95				
96				
97				
98				
99				

Table - Logical Inputs

Logical Outputs

No	Nemonic		Name	Description
0	NONE		No Input	Not allocated to a logical output
1	ALSC	MO 5	Alm Supp Cnct	Signal used to connect the alarm supply monitoring circuit for periodic tests of the alarm supply.
2	DISC	MO 8	Disconnect Chg	Signal used to disconnect the battery charging circuit as part of routine battery testing.
3	ALV	MO 6	Verified Alarm	Signal used to trigger the auto-dialler when a verified trapping is determined.
4	ALE	MO 7	Alarm Enable	Signal used to enable the alarm verification circuit and to reconnect the battery after a power down or a CPU reset. The default delay from a reset to the signal being enabled is 15 seconds.
5	TFC	MO 1	Top Floor Call	Signal controlled by the LiftWatch algorithm to place a top floor call on the lift.
6	BFC	MO 2	Btm Floor Call	Signal controlled by the LiftWatch algorithm to place a bottom floor call on the lift.
7	MTRP	CSL	Mast Trapping	Signal allocated to the CSL Expansion unit to indicate the Master EMU has a verified trapping.
8	MOOS	CSL	Mast Not Op	Signal allocated to the CSL Expansion unit to indicate the Master EMU's Lift is Not Operational.
9	MEOS	CSL	Mast Eng Site	Signal allocated to the CSL Expansion unit to indicate the Master EMU has an Engineer On Site.
10	MOK	CSL	Mast EMU Ok	Signal allocated to the CSL Expansion unit to indicate the Master EMU is working normally. This is a fail safe output such that if the EMU resets it will drop out signalling a problem.
11	STRP	CSL	Slave Trapping	Signal allocated to the CSL Expansion unit to indicate the Slave EMU has a verified trapping.
12	SOOS	CSL	Slave Not Op	Signal allocated to the CSL Expansion unit to indicate the Slave EMU's Lift is Not Operational.
13	SEOS	CSL	Slave Eng Site	Signal allocated to the CSL Expansion unit to indicate the Slave EMU has an Engineer On Site.
14	SOK	CSL	Slave EMU Ok	Signal allocated to the CSL Expansion unit to indicate the Slave EMU is working normally. This is a fail safe output such that if the EMU resets it will drop out signalling a problem.
15	TIMSW	MO or EXP	Time switch	Signal controlled by the Time Switch feature, which can be used to switch an output at set times of the day.
16	LALM		Local Alarm	Signal to trigger the Intruder Alarm Output
17	MDMPO	MO or EXP	Modem Pwr On	Signal controlled by the communications software if it detects a problem with the modem. Used for external modem whose supply can be routed through and output controlled by this signal. Allows the modem to be reset by powering it off and on again.
18	LADS	MO or EXP	LADS Inhibit	Allocated for auto-dialler handshaking but not implemented yet.

Table - Logical Outputs

7.4 FAQ

Problem	Things to check
Front display is either clear or black	If power is present at the CPU; the Green +5V LED is lit. Then the problem could be with the contrast adjustment. Press reset to ensure the you are at the Main Status Screen and use the Left hand cursor key to lighten the screen and the Right hand cursor key to darken the screen.
Door Open Fault	On a lift with a rapid door opening the Liftwatch Door Open Time (DOT) may need to be set lower. This is the time the OC contactor must be in, After the gate locks have broken for the Door Opening to be registered. The setting may be reduced to 0 in which case a minimum value of 0.3 sec will be applied.
Door Open Fault	On a lift with advanced door opening the GL signal may be artificially delayed by the bridging circuit. Either ensure the Advanced door opening setting is selected if available, or delay the off side of OC so the signal can be seen for (DOT) seconds after GL is finally lost.
EMU will not run on battery when the mains are lost.	This can be due to a low charge in the battery or the EMU not having been commissioned. Use the SETUP – Battery Status Menu option to view the current charging status.
Alarm Supply Input (ALS) does not light the input LED.	Even with a healthy alarm supply, when connecting it to the ALS input the LED does not light and the signal is not seen. This is normal, the connection to the EMU’s input is made via the ALSC relay on MO5 and needs an Alarm Supply Test to be triggered from the SETUP menu before the supply can be monitored. This is done periodically by the EMU to test the supply and is then removed, thus preventing a constant current drain on the alarm circuit.
When commissioning a non-lift application I get prompted for Liftwatch Settings.	This is a problem with the menu structure and will be resolved in future versions. It is safe to ignore the settings and Finish this step.
DUP ID showing on the group status screen.	When commissioning a group of EMU’s linked through the can bus, each slave must have a different group ID as configured in Group Setup. This is NOT the same as the EMU Identifier which is only used when communicating to the CMS

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