Ethos 2 Quick Start Guide

We reserve the right to alter, without giving prior notice, technical data, dimensions and weights described in this manual.
Thames Valley Controls Ltd. Manor Farm Industrial Estate, Flint, Flintshire CH6 5UY
(t): +44 (0) 1352 793222 (f): +44 (0) 1352 793255

tvc Thames Valley Controls

E2 Quick Start
TVL 350 ISSUE 3

Screen Navigation and Info Header

The top edge of the screen will show the following:-
Current screen navigated to.
In or Out of service status.
Login notification.
Current numerical floor level.
(Note:- this is not floor name or legend)
Current lift direction.   Time and Date.

Status Button

This bar will be green when the lift is in service or red for out of service, e.g. if a fault is present.
The button will be orange if in a different operating mode to normal e.g. fire service.
Current / active events will scroll on the button.
Press the button to see / hide the status message.

Car Button

This button will show door status, travel direction and committed direction. The doors also show when the safety edge is activated, once the lock beak symbol appears the doors are closed and locked.
Press the button to go to the car info screen and common door settings.

Indicator & Speech Button

This button will show floor position using the floor legends. (Note:- this is floor name or legend, not numerical floor level)
Press the button to go to position indicator and speech settings.

Speed Profile Button

This button will show current speed profile of the lift car. The curve is derived from the shaft encoder device, so will be a representation of the cars current speed. The curve will be green in the up direction and red in the down direction.
Press the button to go to the velocity recording feature, shaft encoder settings, speed and slowing settings.

Help Button & Instruction / Help Footer

Press the help button for help index and main cpu connector descriptions.
The footer will show useful instructions and help information concerning the current screen shown.

Information Button

This button shows the TVC contract ID, site name and lift name or number.
Press the button for journey counters, door counters and trip counters. Rated speed and software version can be found here.

Ethos 2 – Main Screen

This guide gives an overview of the main MMI features, feel free to press the buttons on the touch screen to explore each feature in more depth.

Key:-
- **Fixed button** that can be pressed for addtioanal features / menus.
- **Programmable button**, tap to access function, touch and hold to assign a different function.
- **Main navigation** Buttons.
- **No touch function**, Information or Inactive button.
- **Active Feature.**

The event logger and settings backups are kept on the SD1 uSD card. Do not remove the SD card whilst the unit is powered up unless it is de-mounted via the toolbox menu. *Ignoring this may corrupt the card.* The unit will function without the card present but certain features in the logger will be limited.
To update the software or to download event logs, plug in a micro USB lead (into J16) and then use the SD1 connect button in the toolbox to put the unit in mass storage mode. This will allow the use of a PC and file explorer to drag and drop files to and from the card.
Follow the programming procedure overleaf to upgrade the firmware.
The SD2 card slot on the MMI card is normally only used for firmware upgrades. If a card is present in the slot in will automatically be placed in mass storage mode if a USB lead is plugged in.
Additional help and hardware connection diagrams are available in the toolbox menu.
Some screens will require you to login – the password is set to [222222] for technician level access.

Main Screen Display

Home	Out of Service Level 1 ↑ Tue 18/08/15 15:48:21

Shaft Encoder Floor Map Problem

Shaft Encoder Floor Map Problem
Thur 14/08/15 15:46:37

Car

Indicators & Speech — G

Profile — Speed 3.50m/s

Parking
Car Dwell
LOSI Select
Fire Floor
Favourites

Terminal
● LAR
● TTR
● PTR
● TUP
● TDN
● DZM
● SI3
● ALM

Signal
● PS
● LAR
● NERR
● CG
● GL
● TFR
● BFR
● DZ

Settings

Autorun

Disable Doors
Prepare to Test
Enter Calls
Top Car Call
Bottom Car Call

Help

E1VEC C123456A
Flint Towers
Passenger Lift No. 1

Recent   Check-List   Solutions   Home

Touch any button. Tap the status, top left, to hide/see the full status message

Event Logger Button

The event logger button will show events as they happen.
Press for the event logger screens, events can be filtered on breakdown / fault / service and information types. Options to search the logger by event or date are found here.
Each event will show data on the lift such as position speed etc. when the event was logged, also state of the main CPU and Car module I/O when the event occurred.

Toolbox Button

The toolbox button gives access to debug screens, comms. status screens, time date setting, screen calibration, volume and brightness control.
The built in SD card can be connected to the USB port for browsing via a PC using the Connect SD1 button.

DDS / PTT and Call Buttons

These button will place the lift in prepare to test mode to limit landing calls. Doors can be disabled and calls for the top and bottom floors can be quickly placed.
Enter Calls will take you to the call entry screen where car or landing calls can be entered on the system.

Signal Button – Trace Menu

User defined I/O for the home screen and I/O trace. Press to activate I/O trace or alter the items in the list. Logical Inputs or Outputs can be selected to be displayed on this list. Logical I/O can be mapped to any terminal on any expansion module or the main motherboard via the View I/O – configure option.

Terminal Button – View I/O

This displays a physical bank of I/O, this can be changed to any of the motherboard or expansion module physical banks.
Pressing this button will take you to the View I/O screens where you can select any expansion module or the motherboard and look at the I/O mapping and I/O status in real time. The screens also give you the status of a particular expansion module. I/O can be reassigned from here also.

Recent and Favorites Buttons

The recent button will list recent settings that have been changed. The favourites button will take you to a list of buttons that can be assigned to commonly used settings.
The additional "Autorun" button to the right will place the controller in Autorun test instantly.

Check List

The Check List gives a series of procedures to check whilst commissioning the controller / lift. Select for motor direction checks, shaft learn, floor security, auto-run testing and service activation. The panel can be put into "Hoist Mode" from here, if the car / expansion network has not been installed.

Settings Button

Select this button to take you to the settings options. Search settings list / tree contains all settings available. When changing some settings the lift has to be safe e.g. machine room stop push, pressed.
Backing up and restoring saved settings is accessed via this button. A comparison of factory and current settings can be viewed here also.

Solutions Status

Select this button to take you to a list of current events / problems that are keeping the lift out of service. The face icon will be sad if there are items to be resolved.
If the face icon is smiling the lift will be ready for service.

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Installation – Direction Checks & Shaft Learn

A "shaft learn" procedure must be carried out before the lift can run in normal and enter service. During the learn, positions of all door zones and TFR / BFR resets are noted and stored in non-volatile memory on the Ethos2 unit.

Press:- Checklist → Direction Checks
Confirm the drive is moving the motor in the correct direction. Once motor phases and motor encoder feedback have been checked, use the forward is up setting to change motor rotation *[Applicable to Traction Lifts Only]* depending on Up or Down command from the Ethos 2.
Confirm encoder feedback devices for the shaft encoder are counting up as the lift moves up. If not the count direction can be changed here.

Press:- Checklist → Shaft Learn
This will start a shaft learn when prompted. Follow the on screen prompts for sequence and error information.

Press:- Checklist → DZ Stop Distance
This will start a door zone stop distance learn sequence. This automatically calculates and saves the distance for ramp down from levelling/creep speed to floor level (LU/LD overlap on a hydraulic + shaft encoder system).

Press:- Checklist → Floor Trims
Once the shaft has been learnt and DZ stop distance has been set. The floor trims can be adjusted. Each individual floor level can be adjusted using the floor trim screen.
The lift should be ridden to every floor in both directions of travel, noting down errors in floor level. Using the screen, input level error for each floor. If there is a difference in the up and down run, calculate the average before entering.
Examples:- Note + car stopped high / - car stopped below floor level.

Up Error (+/- mm)	Down Error (+/- mm)	Average Error (mm)	Error Entered (+/- mm)
+5	+5	+5	= +5
+8	+4	(8 + 4) / 2 = 6	= +6
-10	-12	(-10 -12) / 2 = -10	= -11

If a floor level is wildly out, check position of the DZ reflector / magnet at that floor.
Floor trim values should be limited to +/- 20mm, for optimum performance.
NOTE: If a reflector / magnet is moved, the shaft learn processes will need to be repeated.
Speeds / deceleration rates and jerk rates can now be adjusted to suit ride comfort.

Press:- Profile → Adjust

Depending whether the built in shaft encoder is in pattern / direct floor approach mode or in multi speed stepper mode, various shaft encoder settings can be adjusted via this button.

[Traction Lifts Only]
In pattern or direct floor approach mode, there is no need to adjust speeds or acceleration values in the drive. All the speed related settings are adjusted in Ethos 2. Speed limit, acceleration rate and jerk can be adjusted. Preset recommended settings can be set for maximum performance or ride comfort. There is no slowing distance to setup as the system automatically adjusts the drive profile to suit travel distance within limits selected.
The shaft encoder has 2 speed checking features for approach to terminal floors. The threshold at which the lift will go into an emergency deceleration rate can be set visually on the screen. Also the threshold at which the lift crash stops can be set.

 [Hydraulic or Traction Lifts]
In multi speed stepper mode:- The slowing points for the system are set up in a similar manner as a traditional tape-head system. The slowing distance is adjusted to suit ride and drive deceleration profile. If speed or deceleration is adjusted on the drive the slowing distance in Ethos will have to be adjusted accordingly. Ethos has several selectable speeds for differing floor heights.

Event Logger and Solutions

Ethos 2 can record over 250 different events that will give detail on problems encountered with the lift. The logger will display up to 500 events, older events are archived on the built in SD card that can accessed via the USB connection.
Events are categorised into 4 types:-

Red – Breakdown / major fault that is stopping the lift from working.

Orange – Faults, these are problems that are logged but may not take the lift out of service.

Magenta – Typically service event e.g the lift is on fire service.

Blue – General information events, e.g when the lift is parking etc.

For each event the logger will record, position, speed, direction, state of IO etc.
More detail on a particular event can be found via the Help button.

Solutions Happy – In service. If no current breakdown events are active the solutions button will show the happy face icon.

Solutions Sad – Out of service. The controller has an active breakdown event or is in test / inspection mode.

Press:- Solutions
Within the solutions screen you will find a list of events that are stopping the lift running. Some events may require a manual reset this can be done from within this screen.
A snapshot event can be logged to capture the current lift status for further examination.

Ethos 2 - Hardware

Ethos 2 is a modular lift control system, various expansion cards can be fitted to the system to allow for more calls and features. The system can be configured to function as a 8 car dispatcher-less group or a Hall Call Destination system in conjunction with the TVC Navigator system. The system uses several CAN bus connections to facilitate this. Consult the contract drawings and module install sheets for further information:-
TVL344 E2 Car Module Install Sheet
TVL348 E2 System HV Feature Modules Install Sheet
TVL349 E2 System 24 Output Feature Module Install Sheet.
TVL352 E2 Main CPU Hardware Sheet
TVL353 E2 System Call Modules Install Sheet

Screen Calibration

If the touch screen is behaving inaccurately, please carry out a screen calibration.

Press:- Toolbox → Calibrate Screen.
Follow the on screen prompts to re-calibrate the screen.

If the touch screen isn't working at all, turn on DIP 2 on SW4 on the MMI and reboot the MMI by pressing the reset button directly under SW4. The uP will now reboot into screen calibration mode. Follow the on screen prompts to re-calibrate the screen.

Precautions

Be aware that the lift panel will contain equipment that is supplied with potentially lethal voltages. Please make sure the panel is isolated before carrying out any installation work or modifications.
The Ethos module must be mounted in suitable protective control panel. Observe normal precautions for handling electronic devices, avoid static electricity, dampness and extreme temperatures. Please read this instruction sheet fully before use. The Ethos 2 CPU is designed to be mounted within the main lift controller panel. Please consult main drawings for contract specific wiring and setup.

Parameter Adjustment and Storage

Most commonly used parameters can be found within their relevant screens e.g. call dwell settings can be found via the Car button.
All other settings including commonly used ones can be found by touching the Settings button from the home screen.

Parameter Adjustment:-

Press:- Settings → Search Settings
Within this tree menu you will find a list of the settings in function order. Some settings will require you to log in at technician level. [Password = 222222]
Other settings may require the lift to be in a safe condition. Press the machine room stop switch for these.

Saving / Restoring Parameter Sets:-

Press:- Settings → View Changes
This will display a list of parameters that have been changed from the factory defaults.

Press:- Settings → Backup
This will backup current user setting to the onboard non-volatile memory.

Press:- Settings → Restore
This will overwrite the user settings with the backup settings.

Press:- Settings → Default
This will overwrite the user settings with the factory default settings from the SD card.

Firmware Upgrade

Both the Lift CPU and Display CPU can have their firmware programmed or upgraded via respective SD cards. Once the relevant "xx.bin" files have been placed on the SD card follow the procedure below to write the new program to flash. If no "xx.bin" file is present, this can be copied to the card via the USB links.

Copying files to the SD card:-
Plug in a micro USB lead to the main CPU's USB socket.

Press:- Toolbox → SD1 Connect.
The PC the lead is connected to should automatically launch file explorer. Copy both E2_Main_Brd****.bin files and E2_Display_Brd*****.bin files to the root directory. Move and existing *.bin files to a directory named Old on the card. Safely Remove the mass storage drive from PC by ejecting / disconnect via windows.

Remove the SD card from the Lift CPU SD1 slot, place the card in the MMI SD2 slot.

Display Card - Place the Display Card in boot loader mode by switching on DIP 1 (SW4) and reset using SW5 switch located under the bottom left hand edge of the display card. The boot-loader will search the SD2 card for a "xx.bin" file and burn it to flash memory. Once complete the program will launch.

Remove the SD card and place in the Lift CPU SD1 slot.

Lift CPU Board - First place the display card in boot-loader display mode, the card just acts as a dumb display for the Lift CPU. Do this by turning on DIP's 1 and 2 (SW4) and reset the display card. This will activate the boot-loader screen mode.

Place the Lift CPU board in boot loader mode by switching on DIP 1 (SW9) and reset using SW8 reset switch located on the top edge of the main CPU board. The boot-loader will search the SD1 card for a "xx.bin" file and burn it to flash memory. Once complete the program will launch, return all DIP switches to off position on both cards.

Reset the Display card to allow the normal program to boot.