TS350 LOAD CAPTURE INDICATOR FOR FORKLIFTS

OPERATORS MANUAL

VERSION 4 – October 2026



! WARNING !

THE PURPOSE OF THIS MANUAL IS TO PROVIDE THE USER WITH THE OPERATING PROCEDURES ESSENTIAL FOR THE PROMOTION OF PROPER MACHINE OPERATION FOR ITS INTENDED USE. THE IMPORTANCE OF PROPER USAGE CANNOT BE OVERSTRESSED. ALL INFORMATION IN THIS MANUAL SHOULD BE READ AND UNDERSTOOD BEFORE ANY ATTEMPT IS MADE TO OPERATE THE MACHINE.

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

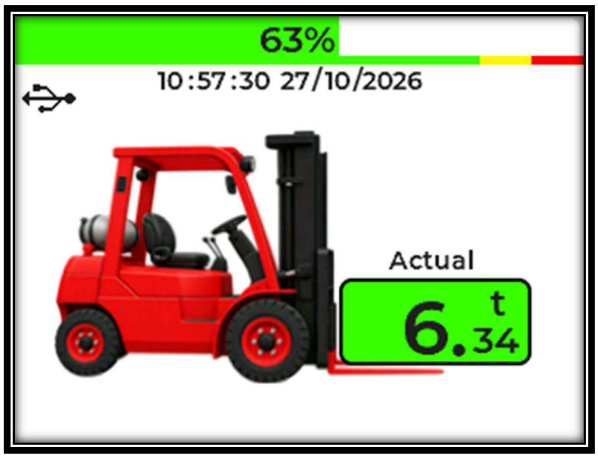
ALL PROCEDURES ARE BASED ON THE USE OF THE SYSTEM UNDER PROPER OPERATING CONDITIONS, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND OR MODIFICATION OF THE EQUIPMENT IS STRICTLY FORBIDDEN WITHOUT PRIOR WRITTEN APPROVAL FROM ELEC-MECH (PTY) LTD.

BEFORE OPERATING A MACHINE EQUIPPED WITH A SAFE-AID TS350 THE OPERATOR MUST READ THE INFORMATION IN THIS MANUAL CAREFULLY. CORRECT FUNCTIONING OF THE SYSTEM DEPENDS UPON ROUTINE DAILY INSPECTION AND ANY SUSPECTED FAULTS OR APPARENT DAMAGE SHOULD BE IMMEDIATELY REPORTED TO THE RESPONSIBLE PERSON BEFORE USING THE MACHINE.

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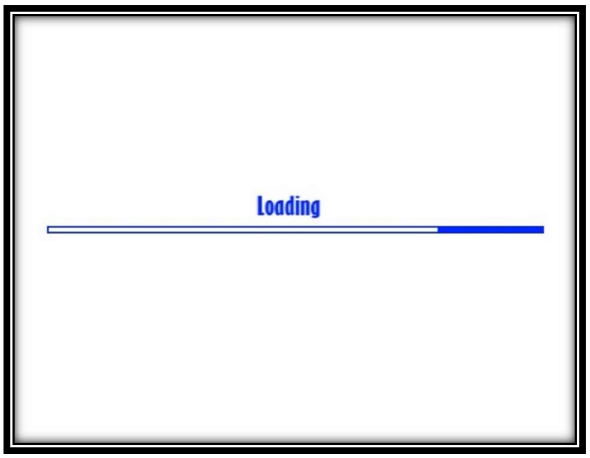
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SYSTEM USE



The Safe-Aid TS350 unit is designed with ease of operation in mind. The system goes directly into its normal operating/monitoring screen requiring no input from the operator unless a tare load is required. All inputs to the system are done by the operator via the touch screen including the buzzer override function, capture of load and momentary bypass (if applicable). The touch screen is sensitive to touch therefore it is **not** necessary to **push hard** on the screen (*if touch screen does not work or selects incorrectly see* **Touch Screen Calibration**).

SYSTEM STARTUP



The TS350 display unit will automatically power up when the machine is switched on and the buzzer will sound once.

The system will run a CRC (cyclic redundancy check) to make sure that all raw data is correct.

Once the system has completed a set of internal diagnostics (watchdogs) will be utilised to verify that all inputs and outputs are working correctly.

At this point screen calibration can be done if required (see Screen Calibration for process).



S/N This screen displays the display serial number as well as the firmware version:

- HHLS – serial number
- Version – Firmware Version

OPERATING SCREEN

All the system information can be viewed from here including all the set parameters. **In operating mode, you can see all the current parameters.**

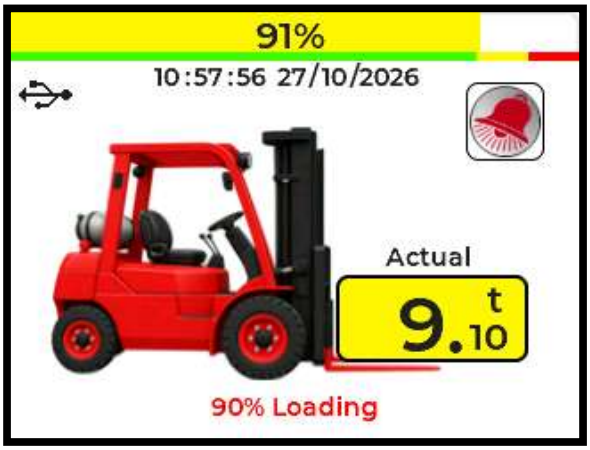
Actual: This is the current load on the machine. If the Actual Weight inside the box is flashing it is a tare load. The Actual load background colour will change to the same colours as the bar graph.

Tare is activated by pressing directly on the Actual. The Actual will then be zeroed allowing for a reading excluding the original weight. The original weight (gross) is still considered when calculating the percentage of utilisation therefore the TS350 will still give the correct 90% and 100% warnings. Once pressed the Actual will flash showing no value, only 0,0t. If a load is now lifted, only the new load lifted will be displayed excluding the original tare load. To return to the gross load, press the Actual again, it will stop flashing and the gross load will be displayed.

% Utilisation Bar*:* The percentage utilisation is the percentage of the Max weight used by the actual load and is displayed graphically by a bar graph, going from green (0% - 89%), then amber (90% - 99%) and finally red (100% and above) increasing incrementally with the percentage utilisation.

The buzzer  **or buzzer override**  which is located at the **top right** of the screen next to the maximum load – the buzzer symbol will appear instantly after the error occurs; will not be able to be overridden for 5 seconds, then if pressed after the 5 seconds, a red cross will be placed through the picture of the buzzer and the buzzer will shut off. The buzzer override is needed for each alarm condition i.e., if one error has been overridden and another error occurs the buzzer will sound again.





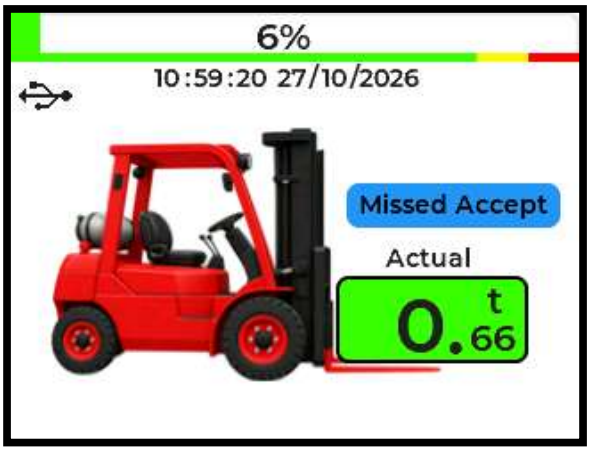




MANUAL WEIGHING

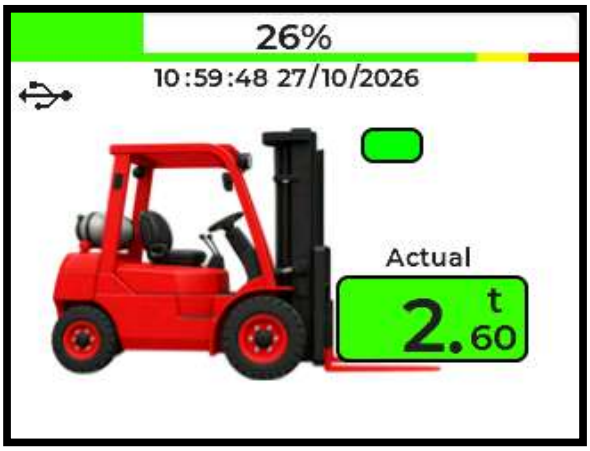


The weight will be displayed above the forklift's forks (Actual). Once the load has been lifted above / off the ground entirely and the load has settled and is above the threshold / trigger value (set by the installer), then the **Accept Load** button will be displayed for capturing – via switch, foot pedal, manual switch or by pressing the **Accept Load** button on the screen. The load is recorded if the **Accept Load** button is cleared and the system beeps once to confirm the load has been logged. Each individual load will be saved to the data logger if the switch has been pressed and the load captured successfully.



If a load is lifted that is higher than the threshold / trigger value and then the lifted load moves below the threshold without pressing the **Accept Load** (Button or Switch), the system will trigger a **Missed Accept** error. The system will then prompt the operator to retake the load that was missed. A **Missed Accept** button will appear, the system will beep intermittently. If the load is lifted again, the beeping will stop, and the **Accept Load** button will be displayed.

AUTO WEIGHING



The TS350 will automatically monitor the load above the minimum threshold & capture the peak load after a preset time once going back below the minimum threshold. These two values are set by the installer at the time of installation.

If the installer has set the mode to auto capture loads, the load will automatically be captured when lifting a load and then moving under the threshold. No **Accept Load** button will appear.


If the load is below the threshold / trigger value set, a white block above the mast of the forklift image indicates that the lifted load is under the threshold value. No logging of the load occurs if the block is white


Once the load exceeds the threshold / trigger value, there is a delay of 3 seconds. This is to prevent false logs of lifts caused by spikes in the hydraulic pressure due to uneven conditions (bumps). Once the threshold value is exceeded and for 3 seconds thereafter, the block will be coloured yellow to indicate that the 3 second delay is active, and the load is not being logged / recorded.

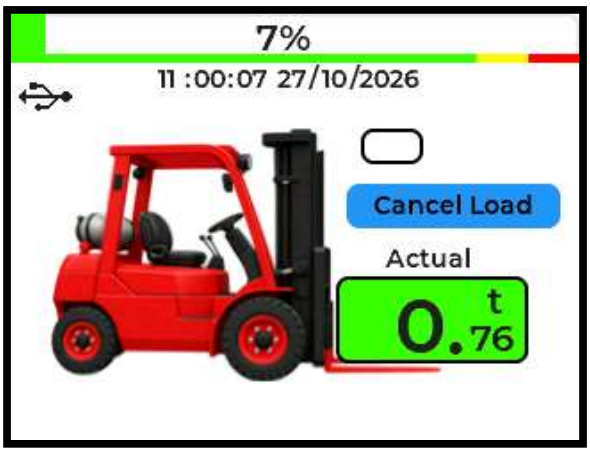
Once the 3 second delay has elapsed, the block turns green, and the system now monitors the highest peak for data logging and will print this record to the USB flash drive. The green block will be reset only when the load moves back under the threshold / trigger value.

CANCEL LOAD (LAST LOAD)

AUTO MODE ONLY

If and incorrect auto capture was done the **Cancel Load** option can be used.

- Press the **Cancel Last Load** button.
- Press **Yes** to confirm or **No** to cancel and return
- Only the last lifted load can be cancelled





ERROR CONDITIONS & ALARMS

The TS350 system will alert the operator to the following conditions:

90% Loading

Actual load is between 90% and 99% of the **Max** Weight.

100% Loading

Actual load is greater than or equal to the **Max** weight.

Transducer Error

Pressure Sensor reading faulty.

Capture Input Error

Capture Input is activated with no load – Check Capture Switch

REAL TIME CLOCK

The TS350 system has an internal real time clock which displays date and time on the main running screen in the centre at the top of the screen. It is imperative that the date and time are correct as the data logging utilises this when errors are logged.

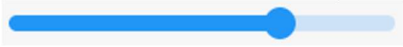
See **Set Date & Time** to change.



SCREEN BRIGHTNESS

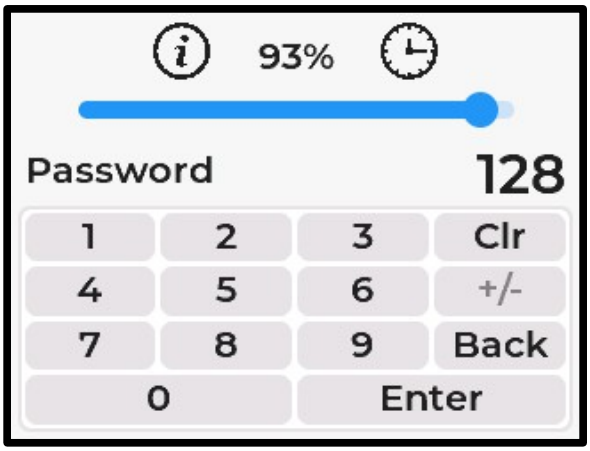
The screen backlight can be set as required.

Use the following steps to adjust the screen brightness:

1. Press the top left-hand corner and the **Password** screen will be displayed
2. Slide the slider bar to the required brightness. 
   The 

represents the brightness set where 0% is the lowest and 100% is the highest brightness.
3. Once adjusted press the 

button to return to the operating screen.



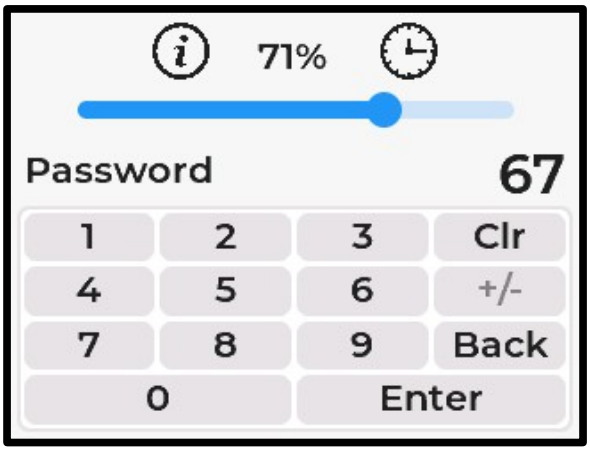
SET DATE & TIME

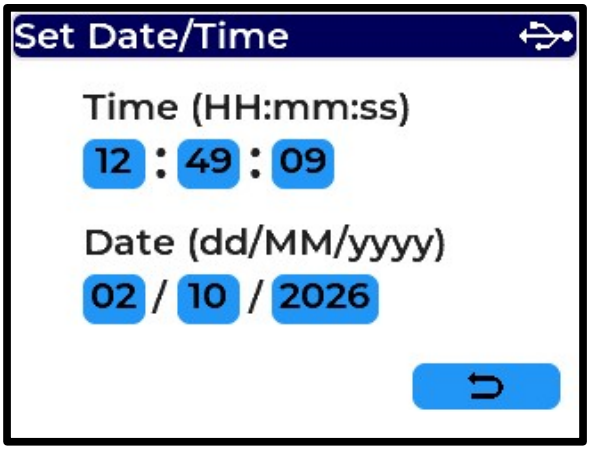
The date and time can be adjusted as required. If the date and time does not save or shows incorrect after setting or powering down the battery for the real time clock may be faulty. Battery replacement must be done in the factory or by a trained technician.

Use the following steps to adjust the date & time:

1. Press the top left-hand corner and the **Password** screen will be displayed.
2. Press the  and the Set Date & Time screen will be displayed. Select the data to be adjusted and set the correct time and date.
3. Time format is 24 Hour Clock HH : mm : ss
4. Date format is dd/MM/yyyy
5. Once the time & date have been adjusted press the 

button to return to the operating screen.





TOUCH SCREEN CALIBRATION

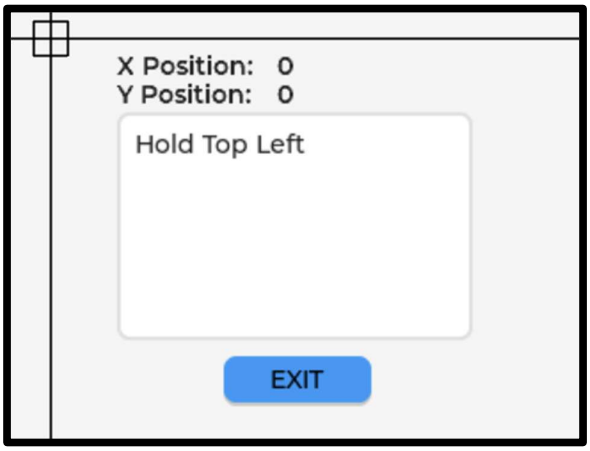
If the screen is not responding correctly to touch, the touch screen may need to be calibrated. Make sure that the Front Facia (Sticker) is in good condition (no dents or damage) as this can affect the touch screen.
Replace Front Facia if damaged.

Power up the TS350 display.



As soon as the splash screen appears, press in the centre of the screen for a full five seconds until the touch calibration is activated and loaded. Immediately lift your finger and follow the on-screen instructions.

If the calibration screen has been entered by accident and touch calibration is not necessary, press the **Exit** button without pushing anywhere else on the screen to continue with normal start up procedures.



If the touch screen calibration is required follow the below procedure:

Press and hold finger where the two lines meet inside the small box at the top left-hand corner. Calibration works fine when using a finger but for better results use a pen taking care not to press too hard or the screen will be damaged.

Hold finger/pen in this area until prompted to lift. Prompts will then be given for three more touch zones resulting in co-ordinates for all four corners of the screen.

Once calibration is complete the software automatically goes to the working screen.

TS350 Front Facia's are available from the manufacturer at a nominal charge and should be changed as part of a maintenance schedule.

FUSE PROTECTION

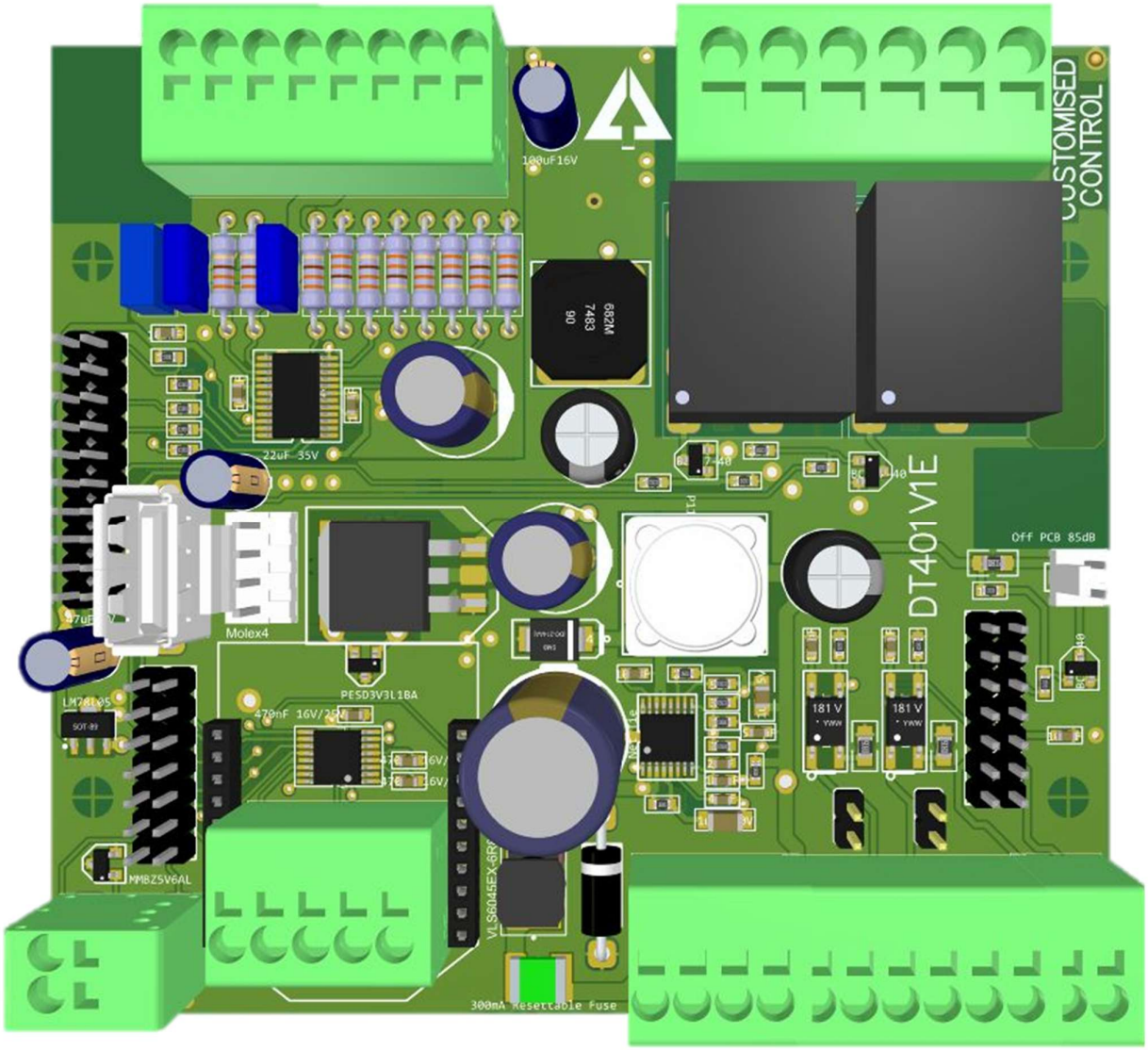
Operating Voltage Range: 10–48 VDC

To protect against overcurrent and short-circuit conditions, the TS350 is equipped with a resettable fuse.

The fuse characteristics are:

TRIP TIME	4 Seconds
HOLD CURRENT	500mA

This resettable fuse automatically restores functionality once the fault condition is cleared, ensuring minimal downtime and enhanced safety.



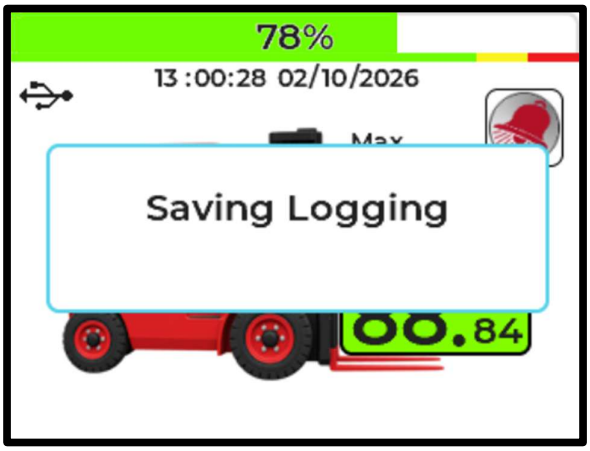
Note: For earlier versions of the PC board, a fixed 2A blade fuse is used instead. Please refer to the appropriate version-specific manual to confirm fuse type and replacement procedures.

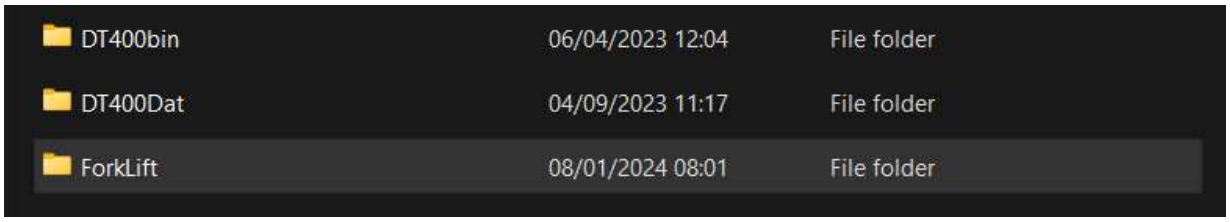
DOWNLOADING LOGGED FILES

The logged data from the TS350 display unit is transferred from the TS350 internal memory to the USB flash drive and then inserted into a PC manually to allow the data to be managed. The TS350 may hold a maximum of 4000 records so ensure downloads are done on a regular basis. Logged data is saved as downloaded date files. The following process will run through the download of the files from the USB flash drive:

1. Insert a USB flash drive into the USB port at the rear of the TS350 display.
2. Ensure that the USB flash drive uses a FAT32 file system (usually default / standard unless changed) and not NTFS or EXFAT. If not, reformat the USB drive to a FAT32 file system as data may not be downloaded correctly.
3. The system will prompt the user to **Download Logs.**
4. Select **Yes** to download.
5. The system will then transfer the data to the USB flash drive. A screen with **Saving Logging** will appear if successful.
6. Do not remove the USB flash drive while the system is saving to the device. Only once the loading bar is finished and the user has waited for 3 to 4 seconds is it safe to remove the USB flash drive. If removed while saving, data may be lost.
7. Remove the USB flash drive and insert into a PC.
8. Select the applicable Drive (Removable Device) on the PC.
9. Select the **Forklift** folder.



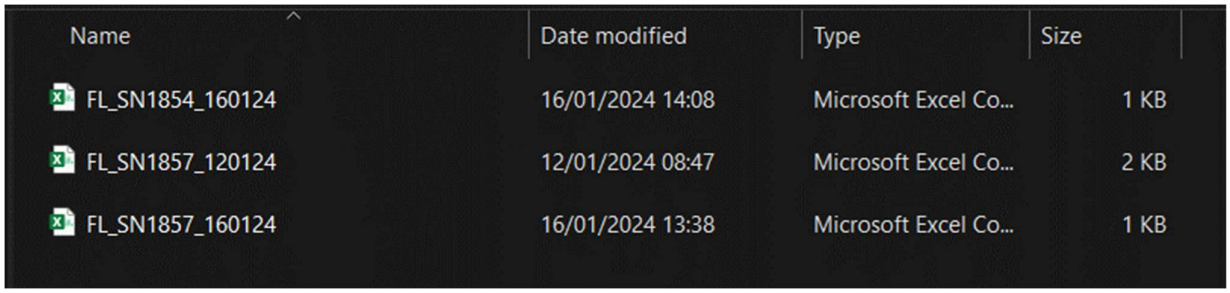




The log file is structured as follows:

- FL – first 2 letters are for Forklift.
- _SN1854 – TS350 display unit serial number.
- _160926 – Day, Month & Year the file was requested (USB inserted and logs downloaded) on the TS350 display unit.

10. Select the required log file.



- Data is stored in .CSV file (comma-separated values) which is a text file that has a specific format allowing data to be saved in a table structured format. This file can be opened with the any compatible program e.g., Excel, Google Sheets or Notepad.
- The most recent records / batches are printed at the top of the spreadsheet.
- If a file/s are removed / deleted from the USB flash drive, the **data will be deleted permanently**.
- Should the data need to be recovered, the installer should be contacted.

SYSTEM LAYOUT

