



TALS - 2

Torque Activated Logging System

Operating Instructions

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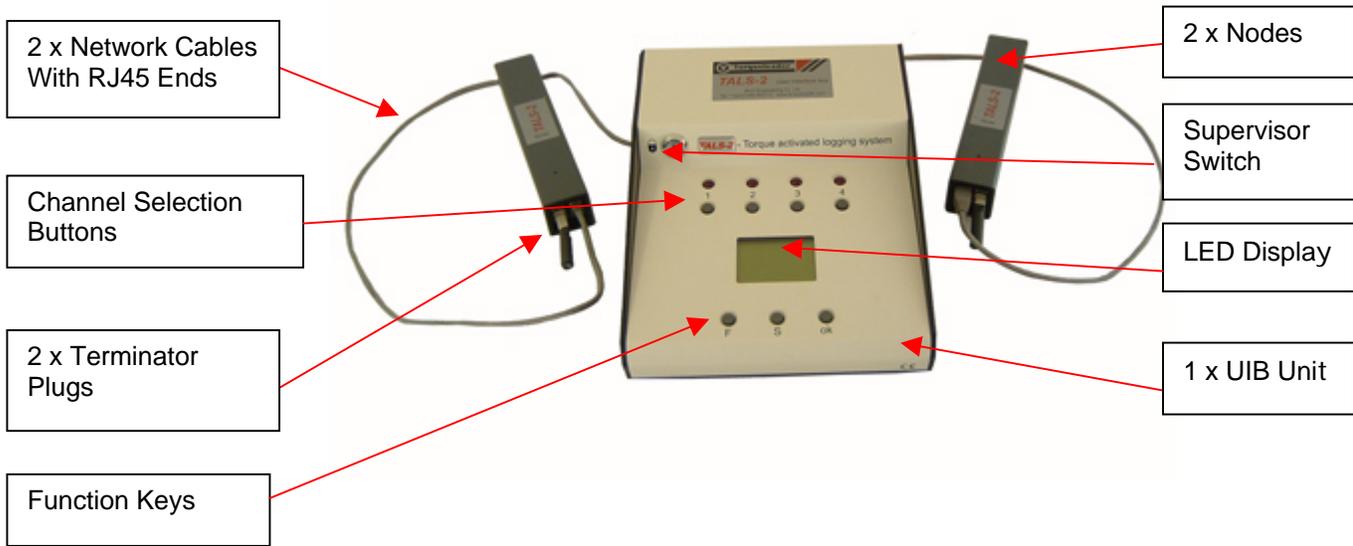
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The TALS-2 Primary System

Each TALS-2 primary system is supplied with the following components as standard:

- 1 x UIB (User Interface Box)
- 2 x Nodes (minimum of 2 required with a maximum of 5)
- 2 x 10 metre Standard Computer Network cables fitted with RJ45 plugs at each end
- 2 x Terminators



2

System Set Up

2.1 Node Installation

When setting up a system for the first time, always **start with two Nodes only**.

Each Node has two RJ45 sockets and can be connected to the UIB in one of two ways:-

2.1.1 Insert one Terminator Plug into one of the sockets in the UIB and a cable into the second, the other end of the cable is then plugged into one of the sockets in the first Node. The second cable connects to the remaining RJ45 socket in the first Node with the other end connecting to the second Node. Insert remaining Termination plug into the empty socket in the second Node (Figure 1). Additional Nodes can be added as indicated by the dotted image.

2.1.2 Both cables can be connected to the UIB and then to each Node, with a Terminator Plug in each node (Figure 2.) Additional Nodes can be added as indicated.

The UIB and Nodes must **not** be connected to form a complete “loop” (Figure 3); this will cause the system to malfunction.

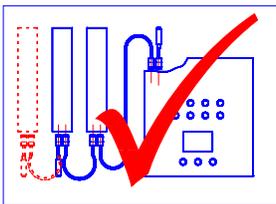


Figure 1

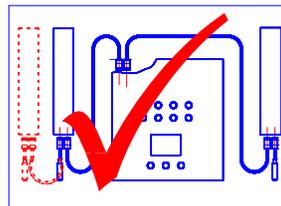


Figure 2

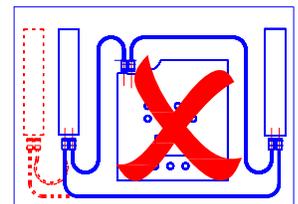


Figure 3

Node LED Functions

- When power is first switched On, the Node LEDs will flash **ORANGE** to indicate that the Nodes have not been recognised, the UIB will poll the system asking for the Nodes to identify themselves, once a Node is recognized, its LED will pulse **RED** continuously. The UIB display will record this action.
- During use, the Node LED will pulse **RED** continuously, thus registering that the UIB is automatically polling the circuit to confirm the presence of the Nodes.
- The Node light flashes **ORANGE** when a new wrench is being learned.
- A **GREEN** flash indicates that a successful transmission is being acknowledged.

3

Connect the Power

3.1 Connect power supply.
Choice of 12V DC 900mA
Regulated or 12V-24V AC/DC 900mA

3.2.1 Switching power On, will illuminate the screen, and will display the Company logo and contact details. After approximately 10 seconds the screen will show:-

Note: If any Node is not found, disconnect the power, check all connections and re-connect the power supply.

3.2.2 After a further 3 seconds, when all the Nodes have been found, the Shift Count screen will be displayed:-

Note: If the UIB has been used previously and is being powered up again, the shift counts will display the last recorded counts for any wrench still in its memory.

3.4 If extra Nodes are required, disconnect the power supply, connect the additional Nodes (see Page 3) and re-connect the power.

Press "F", screen will show:-

3.5 Set date, time and number of Nodes; using "F" to highlight the number to be changed, use keys 1 and 4 to change the values. Press 'Ok' to confirm.

'Diagnostics' refers to the RS232 output and should be confirmed as 'off' with the 'Ok' button for normal use.

3.6 When all highlights are cleared, by pressing 'F' Key, Press "S" key to return to Shift Count screen:-

3.7 Operate Channel button 1-4 to access individual Channel/Wrench information.

```
System Monitor
- - - - -
Learning node 2 of 2
Node AB1234 - OK
Node AB1235 - OK
Node AB1236 - OK
Node AB1237 - OK
Node AB1238 - OK
```

```
1 Shift Count: - - - - -
2 Shift Count: - - - - -
3 Shift Count: - - - - -
4 Shift Count: - - - - -
```

```
System Configuration
- - - - -
Date : 00/00/00
Time : 00:00:00
Nodes : 2
Diagnostics : Off
RF Channel : 14
Interference monitor
```

```
System Monitor
- - - - -
Learning node 2 of 2
Node AB1234 - OK
Node AB1235 - OK
```

4

To learn a new tool:

4.1 Select a vacant Channel by pressing buttons 1, 2, 3 or 4. Screen will show:-

4.2 Press "F" to highlight "Wrench Information A

```
Wrench Information A
Channel 1 : S/N Vacant
Battery:
Since last cal:
- - - - -
Shift      - - - - -
Count:
Relay: - Disabled -
```

4.3 Press "S", screen will show:-

```
Learning wrench
Channel 1 : S/N
Battery:
Since last cal:
- - - - -
Shift      - - - - -
Count:
Relay: - Disabled -
```

4.4 Send a signal from the wrench. Screen will show:-

Note: There may be a delay of up to 3 seconds before the wrench is recognised

```
Accept wrench? BC9876
Channel 1 : S/N
Battery:
Since last cal:
- - - - -
Shift      - - - - -
Count:
Relay: - Disabled -
```

4.5 Press "OK" to accept, screen will show:-

```
Wrench Information A
Channel 1 : S/N BC9876
Battery: ██████████
Since last cal: 00543
-----
Shift      00000
Count:
Relay: 0.25 seconds
```

4.6 Pressing the Channel button a second time will display this screen:-

NB: The information displayed cannot be altered.

Pressing the Channel button again will return to the initial Wrench Information screen, to allow alterations to be made.

The UIB is now ready to record signals from that wrench.

```
Wrench Information B
Channel 1 : S/N BC9876
Battery: ██████████
Since last cal: 00543
Life count: 09276
Shift count: 00000
Signal reading: 100%
Code version : V...
```

4.7 However, if the screen shows:-

Then the UIB has already "recognised" this wrench on another Channel and cannot, therefore, receive data on this Channel from this wrench.

Press "OK" to delete this duplicated wrench.

To return to the Shift Count screen press 'S'

```
Found wrench BC9876
Wrench already known!
Battery:
Since last cal:
-----
Shift      - - - - -
Count:
Relay: - Disabled -
```

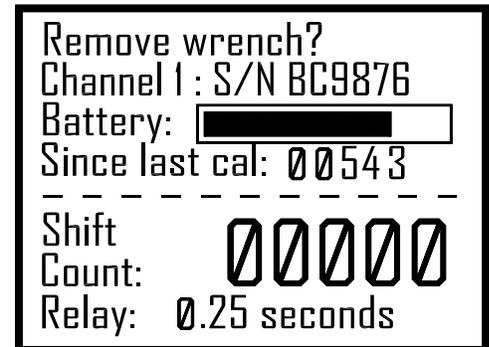
5

User Interface Box – additional functions

5.1 Select appropriate wrench using the channel buttons **1-4**.

5.2 **To remove an existing wrench: -**

- a) Select the appropriate channel.
- b) Highlight **“Wrench Information”** by pressing ‘F’ key once.
- c) Press **“S”**, screen will show:-
- d) Press **‘Ok’**



5.3 **To return the “Shift Count” to zero :-**

- a) Return to Shift count screen
- b) Select appropriate channel using buttons **1-4**
- c) Highlight **“Shift Count”** by pressing ‘F’ key twice
- d) Press **“ok”**

5.4 **To change the relay delay time:-**

- a) Highlight **“Relay”** field by pressing ‘F’ key three times
- b) Scroll through the pre-set time intervals (0.25 to 1.0 seconds) using the **“S”** button until the required time or **“Relay Disabled”** is displayed.
- c) Press **“Ok”**, the retained setting will be displayed

5.5 **To return to the Shift Count screen**

- a) Make sure nothing is highlighted, either by scrolling through with the **“F”** button or by changing to another channel.
- b) Press **“S”** or turn the **Security Key** to the locked position

5.6 Push Button Security

Operation of the security lock renders the push buttons in-operable, preventing unauthorised changes. When the key is turned to the locked position, the screen will display the Shift Count for each of the four channels. If a channel does not have an associated wrench then a series of dashes will be displayed.

1	Shift Count:	00000
2	Shift Count:	00000
3	Shift Count:	00000
4	Shift Count:	- - - - -

5.7 Event Reporting

There is an RS232 serial port on the back of the unit, this sends out a packet of data for each wrench transmission which includes the following information:

Wrench transceiver serial number
Year, month, day
Hours, minutes, seconds
Shift Count
Calibration Count
Life Count

This data is in CSV format and can be displayed on a PC via Hyper Terminal or it can also be used in conjunction with a Profibus type system by using a device similar to the "Field Marshal" from Tellima or the Field programmable controller from Wago.

*Note:- If more data than that indicated above is displayed, refer to paragraph 3.5 to switch off the **diagnostics** mode.*

Use a standard male-to-female nine pin serial lead to connect to the port. The receiver should be configured to 115200 baud, 8 data bits, one start bit, one stop bit, with no parity.

When UIB is powered up, an advert is outputted, Via the RS232 port.

6

UIB Self Diagnostic - Error Messages

6.1 This screen is displayed if the check of the program memory, shows that the program has become corrupted. The number in brackets is for manufacturer use only. To exit this screen you must remove the power from the UIB, wait a short while and reconnect the power. If this Procedure does not rectify the problem please contact Torqueleader Technical Support.

UIB Check Failed:
Program Memory [1234]
Turn power off, wait
10 seconds then re-
power to try again

6.2 This screen is shown if the test of the internal RAM shows a failure. The only way out of this screen is to remove power from the UIB, wait a short while and then reconnect the power. If the problem persists contact Torqueleader Technical Support.

UIB Check Failed:
Working Memory
Turn power off, wait
10 seconds then re-
power to try again

6.3 This screen is displayed if there is a UIB processor communication error. This problem may be resolved by rebooting the UIB unit. If this problem continues contact Torqueleader Technical Support.

UIB Check Failed:
Communications Link
Turn power off, wait
10 seconds then re-
power to try again

6.4 This screen is shown if a status check of the real-time clock indicates that the time and date displayed is incorrect. This will be caused by the back-up battery requiring replacement (coin cell CR2032). Replacement of this battery should be carried out by a Torqueleader Engineer.

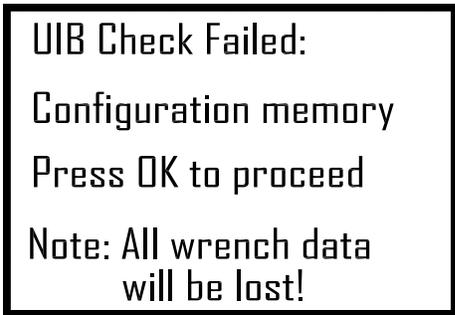
UIB Check Failed:
Real-time Clock
Press OK to proceed
Note: Time & date
must be set!

Note: The system will still operate normally after pressing 'OK', but the timestamp on the RS232 datalog output will be wrong.

6.5 This screen is displayed if the memory configuration has been corrupted and therefore, the previous configuration cannot be recovered. Operation may proceed if the 'OK' key is pressed however, all information relating to wrenches and Nodes will be lost.

Note: All wrenches must be re-learned. Because information is frequently written into the configuration memory (e.g. every time a wrench activation is recorded).

6.6 The 'Node off' message means that some of the Nodes have not been found by the system, and instead of displaying the serial number of the selected Node, it displays 'Node off' message.



Solution:-

1. Confirm that the Nodes are correctly connected to the User Interface Box in accordance with the installation instructions, as shown on Page 3, making sure that all the connections are securely made.
2. If the 'Node off' message is still active, check all cables by swapping them around. If the fault moves to a new Node it is the cable that is causing the problem and should be replaced.
3. If the fault does not move to a new Node then check the power supply by re-starting the system. On start-up the Node LED should flash **Orange** on each Node, if the LED is not flashing on a Node, it means that there is no power to that Node. This indicates that there is a fault within the Node and you should contact your supplier for assistance

(Note: Once the Node has been recognised, the Orange LED stops flashing) and a Red LED Displays.

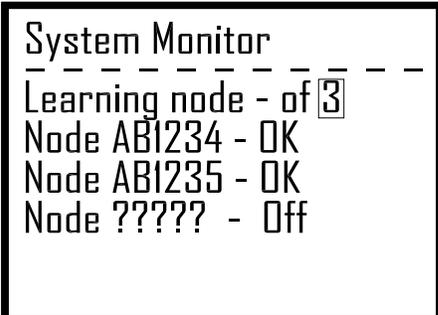
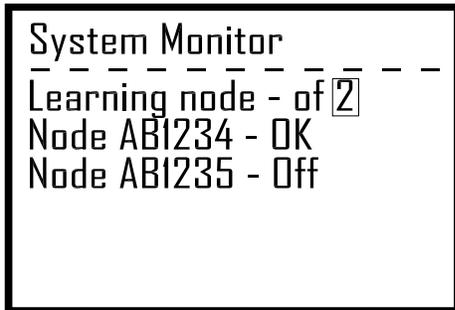
6.8 If more than two Nodes are connected and one fails, the "number of nodes" digit will be highlighted.

Solution:-

Reduce the number to a lower value (using the '4' button) and confirm by pressing the 'ok' button.

The system will now search for the available Nodes and the failed one will be identified by having a permanently illuminated green LED. The system will continue to operate with the reduced number of Nodes.

If a Node is to be replaced, the system *must be switched off*.



7

Wrench Transceivers

Transceiver LED Functions

LED	FUNCTION
Short Green flash	Successful Transmission and Receipt of signal
Short Amber flash	Transmission Retry
Short Red flash after Amber flashes	Failed Transmission
Short Red flash	Radio link fault
Rapid Green, Red and Amber cycle	Low Battery warning
Long Amber flash	Carrying out "self test"
3 second long Green flash	Self test complete with no problems
Permanent Red LED	Self test complete with faults

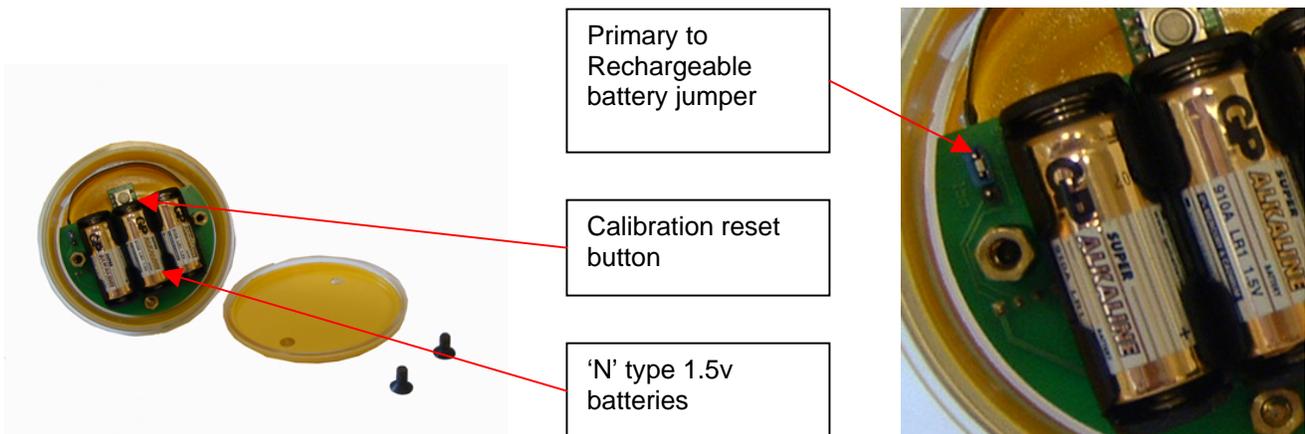
These LED's are visible through the clear band in the wrench transceiver body.

Calibration Count Reset

- In addition to the main operating switch, each wrench module has a "calibration reset" switch and three multi-function LED's
- Access to the "calibration reset" switch is by removing the battery access cover (Fig 31). Depress the switch once and the "since last cal" count will be set to zero on the UIB.

Battery compartment

- Inside the battery compartment there is a changeover connector for Primary or Re-chargeable batteries, this will improve the accuracy of the battery monitor bar on the UIB display. The initial setting is correct for **Primary** batteries. To change from **Primary** to **Rechargeable**, the jumper connector inside the housing should be moved down, inline with the markers on the PCB board.
- The battery compartment holds three 'N' type 1.5v batteries, cover screws should be tightened to a maximum of 20cNm.

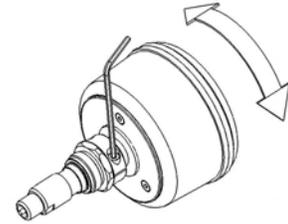


7.1 Adjusting the position of the main operating switch:-

The position of the main operating switch is pre-set at the factory and should not require adjustment. However, if the light on the transceiver does **not** flash when the Torque wrench operates, the position of the main operating switch may need to be adjusted.

This adjustment can be carried out as follows:-

1. Loosen two lock screws with 2.5mm Hex Key.
2. Grasp yellow plastic body and insert 2.5mm hex key into one of the adjusting screws.
3. Whilst holding the hex key still turn the yellow plastic body of the transceiver no more than half a turn clockwise.
4. Tighten lock screws using hex key.
5. Retry the transceiver in the torque wrench. If it still does not work, repeat the above procedure.



If the light on the transceiver flashes **before** the red lock nut is fully tightened into the torque wrench, adjustment in the anti-clockwise direction may be necessary.

7.2 Universal TALS wrench transceiver

The Universal Wrench Transceiver has a removable green extension piece fitted at the front end to allow its use with any of the Torqueleader range of push rod (PR) tools. The use of this extension piece is dependent on the type of wrench the transceiver is to be used with. This can be determined by screwing the transceiver into the end of the wrench with the universal sleeve fitted, if the transceivers red lock nut does not meet the threads in the wrench, the green universal sleeve requires removal. The transceiver switch can then be screwed in.

