

## DATA SHEET

### LCD DISPLAY FOR TKT65/66/67xx- CENTRAL BATTERY UNITS



#### FEATURES:

- LCD DISPLAY MODULE IS USED FOR VISUAL REPRESENTATION OF CENTRAL POWER SUPPLY UNIT PARAMETERS AND TO RECORD TEST RESULTS TO THE INTERNAL MEMORY.
- IT SHOWS – LOAD CURRENT, CHARGE CURRENT (IF CURRENT MEASUREMENT DEVICE TST3610 IS INSTALLED), VOLTAGE LEVEL, CURRENT DATE, CURRENT TIME, LUMINAIRE TEST INFORMATION, BATTERY TEST CONTROL.
- INTERNAL MEMORY ALLOWS RECORDING HISTORY UP TO TWO (2) YEARS.
- LCD MODULE HAS INTUITIVE ACCEPTABLE USER INTERFACE AND CAN BE USED WITHOUT ADDITIONAL TRAINING.
- CONTINUOUS DISPLAY OF THE SYSTEM STATUS.
- CONTINUOUS DISPLAY OF THE BATTERY VOLTAGE AND CHARGE/DISCHARGE CURRENT.
- SYSTEM TESTS CAN BE PERFORMED AND MONITORED FROM THE DISPLAY UNIT.
- TEST RESULTS ARE STORED TO THE NON-VOLATILE MEMORY AND THE RESULTS CAN BE FREELY BROWSED.
- FOR IDENTIFICATION OF THE LUMINAIRES, THERE IS A POSSIBILITY TO FEED A FREE TEXT DESCRIPTION FOR EACH LUMINAIRE.
- LCD IS AN IN BUILT COMPONENT IN THE PANEL AND TESTED ALONG WITH THE PANEL TO EN50171 STANDARD.

<b>TYPE:</b>	<b>TST3667</b>
<b>ELECTRICAL CHARACTERISTICS:</b>	
INPUT DC VOLTAGE	20 VDC
NO. OF LINES IN THE DISPLAY	4
NO. OF CHARACTERS IN ONE LINE	20
<b>MECHANICAL CHARACTERISTICS:</b>	
DIMENSIONS (WxHxL):	160 x 61 x 22 mm
WEIGHT:	85 g
MATERIAL OF THE PC-BOARD:	FR-4
CONNECTORS:	RJ11 AND USB B
<b>ENVIRONMENTAL CONDITIONS:</b>	
AMBIENT TEMPERATURE RANGE (CONTINUOUS OPERATION):	+10°C ... +40°C
AMBIENT TEMPERATURE RANGE (STORAGE):	-40°C ... +70°C

#### 1 LCD display functions

The LCD display, under the name of TST6632, is an option for central battery systems. The LCD displays the status of the central battery system, as well as stores test results in its memory. The following information is available on the LCD: battery set charge, battery voltage, date, time, results of battery tests and results of luminaire tests. The built-in memory of the LCD stores a two-year test history.

### 1.1 Button functions

The LCD has three buttons, the uppermost of which has two separate functions: if the button is pressed only briefly, it selects the current option; it is pressed and kept pressed for 1.5 s, the previous menu is displayed. The middle and lowermost buttons are used for browsing for options and changing the value of the selected parameter.

### 1.2 LCD content

If the LCD has not been configured, it will display the status screen shown below. In a few minutes, it will receive configuration data from the central battery system, with the exception of luminaire circuits.

```

???.???.???? ??:??
System status
Voltage level xV
Charge current xA
  
```

Figure 1. LCD not yet configured

The first row shows the date and time in format: dd.mm.yy.hh.min. The date and time are provided by the central battery system; alternatively, they can be manually set on the LCD.

The second row shows the status of the central battery system.

NOTE: For error code explanations, please refer to the error log. See chapter 1.6 Error log.

The third row shows the voltage level of the battery set. The fourth row shows the battery set charge and discharge currents.

```

23.03.2011 10:30
System status OK
Voltage level 243V
Discharge current 1.0A
  
```

Figure 2. LCD after having received configuration data from the central battery system

### 1.3 LCD menu tree

When you press the SETUP button, the LCD menu tree is displayed. You can browse the menu by pressing the +/- buttons. You can select four separate submenus from the menu. The submenus are shown in Figure 3.

The luminaire test log contains a two-year test memory, or, alternatively, the test memory of the latest 730 tests.

The battery test log contains a two-year test memory, or, alternatively, the log of the latest 256 tests. The error log contains entries for the latest 42 errors.

You can use the SETUP button to change the date and the time of the day, as well as start a luminaire/battery test.

```

Browse luminaire tests
Browse battery tests
Browse error log
Setup
  
```

Figure 3. Main menu

### 1.4 Test history

When you select Browse luminaire tests, the display below is shown.

```

Luminaire test log
23.03.11 23:59 OK
22.03.11 23:59 ERROR
  
```

Figure 4. Luminaire test log

The example shows a test date and time, as well as the test result, OK or ERROR. You can browse the log by pressing the +/- buttons. If you want to view the test results for a particular date, use the +/- buttons to select the desired date, and then accept your selection by briefly pressing the SETUP button. To move back to the higher-level menu from the test log, press the SETUP button.

A central battery system may house 1 to 3 changeover boards, each with 8 outputs. Each output circuit may have 32 luminaires, shown in displays 16 LO and 16 HI. If only 16 luminaires are available, HI and LO are not shown in the display. If the central battery system makes use of more than one change over boards, you can select the data for a desired board by first pressing the +/- buttons and then confirming your selection by pressing the SETUP button. The symbols used in the display indicate the following.

- O = OK
- # = Error
- ? = Luminaire not recognised (a luminaire has been added; automatic configuration is not in operation)
- = Luminaire is not connected

```

Test 23.03.2011 10:30
Change over board 1-#OO.....
Change over board 2-OO.....
  
```

Figure 5. Luminaire tests with change over boards

The "1- #OO" symbol for changeover board 1 indicates an error in output circuit 1.  
 The "2- OO" symbols for changeover board 2 indicate that output circuit 2 has no errors.

If you want to view the data for a particular changeover board, first select the board using the +/- buttons, then confirm your selection by pressing the SETUP button. To move back to the higher-level menu from the test log, press the SETUP button for 1.5 s.

You can use the data display for change over boards to view data for any output circuit. You can browse the output circuits by pressing the +/- buttons. To view the data for luminaires, press the SETUP button. If the luminaires have been given names using a PC programme, the names are shown on the last line. To move back to the higher-level menu from the test log, press the SETUP button for 1.5 s.

```

CHANGE OVER BOARD 1, OUTPUT CIRCUIT>1
HI: OOOOOOOOOOOOOOOO
LO: O#OO.....
  
```

Figure 6. Luminaire tests, output circuit data

The dots indicate a vacant address, O = OK and # = ERROR. Twenty luminaires have been interconnected to provide service in a output circuit, with luminaire 2 malfunctioning (LO 2).

**1.5 Battery test history**

You can browse the battery test log for detailed information on battery tests. You can view battery test results, if the central battery systems has performed an automatic battery test, or if a manual test has been carried out. The battery test log contains test dates, test times and test results. If you want to view the data for a particular battery test, first select the desired date using the +/- buttons, then confirm your selection by pressing the SETUP button. To move back to the higher-level menu from the test log, press the SETUP button for 1.5 s.

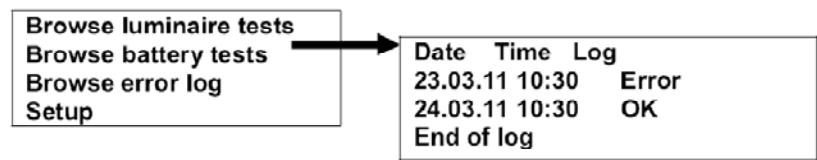


Figure 7. Main menu Browse battery tests

The log shows the date, time and duration of the test, as well as the voltage of the battery set at the end of the test. To move back to the higher-level menu from the test log, press the SETUP button for 1.5 s.

<b>Date</b>	<b>Time</b>	<b>Log</b>
23.03.11	10:30	Error
Battery test duration 01:25		
Battery set voltage 221V		

Figure 8. Luminaire test log

### 1.6 Error log

In addition to the log of the luminaires and battery tests, the display shows an error log of all errors detected in the central battery system. The log shows the date and time of each error, as well as a corresponding error code. If you want to view the data for a particular log, first select the desired log using the +/- buttons, then confirm your selection by pressing the SETUP button. To move back to the higher-level menu from the test log, press the SETUP button for 1.5 s.

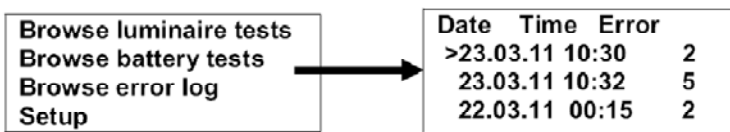


Figure 9. Error log

Error code:	Error description:
1	Internal error
2	External error
3	Central battery system has not been configured
4	Internal and external error
5	Fuse fault or other malfunction in output circuit
6	Deep discharge
7	Error with changeover board
8	Overload

To move back to the higher-level menu from the test log, press the SETUP button.

### 1.7 Setup

You can change the settings and start tests by first selecting the desired function using the +/- buttons and then confirming your selection by pressing the SETUP button. Using the Setup display, you can start a battery or luminaire test, as well as set the date and time. Once you have started a battery test, you can cancel it by pressing the SETUP button and then selecting Stop battery test.

You can start a luminaire test by selecting Start luminaire test. The first luminaire test will configure the central battery system.

You can set the date and time by selecting Set date and time. In the clock settings, a blinking cursor identifies a value that you can change with the +/- button. You can change the parameter whose value you want to change by using the SETUP button. Once you have set the date and time, you can leave the menu by pressing the SETUP button, after which the new settings will be stored in the central battery system in a matter of few seconds.

To move back to the higher-level menu from the test log, press the SETUP button for 1.5 s.

NOTE: A battery test cannot be started unless the battery set is sufficiently charged.

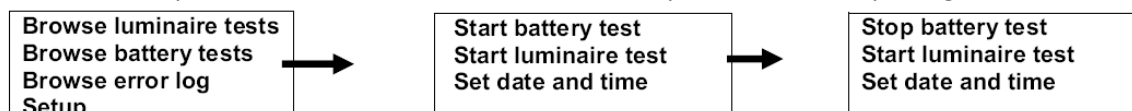


Figure 10. Settings and starting a test

### 1.8 External USB connection

A USB port on the LCD allows data entered in a separate PC programme to be transferred to the LCD. Using the PC programme, luminaires can be given names, along with descriptive information. Connect the LCD to the PC using a USB cable. Once you have connected the cable to the LCD, the following display is shown:

PC connected  
Data transfer speed 1200

Figure 11. USB cable connected

The LCD software will scan the USB ports, opening a connection. A new row will appear on the display, informing you that a connection has been opened. The connection is now open.

PC connected  
Data transfer speed 1200  
Connection opened

Figure 12. Connection opened

The buttons on the LCD cannot be used if there is an active USB connection between the LCD and the PC. For more information, please refer to the PC program user's guide.

