

TFT 90 (LED) Indicator

Basic Connection and Operation

This is by means of a three-wire control input generated from a display controller circuit. The power and signals are combined and fed in together on a three-way connector.

Power Input

The indicator is supplied with a DC voltage either smoothed or full wave rectified via CN4. 0V is connected to B- and +V to B+. The supply should be between 12vrms and 24vdc; the current drawn will be dependant on voltage but will drop as voltage rises so as to supply an almost constant 3.5Watt maximum; that is 300mA @12V and 150mA @24V.

Normal Connection

Floor inputs are connected to the control board on floor inputs 1 to 6 and the direction arrow inputs are connected to the up and down arrow terminals of the control board. If binary input is being used then input 1 is the least significant bit up to input 5, which is the most significant bit. Input 6 is never used as a floor input in binary mode.

Message inputs are connected to the message inputs of the control board, there are four separate inputs which can be used separately to give four different messages or in a binary combination to give up to fifteen different messages.

All input levels are between +7 and +24V dc positive or negative logic.

Three Wire Signal Input

The data output line from the controller is connected to the Dt input on CN3. It is important to link the displays in a line from the controller by joining the power/data lines in a daisy chain type of arrangement from the controller. A separate branch may be used for the car display but both branches must be star connected at the controller.

Hall Lantern Operation

The last five switches on SW4 activate a hall lantern and gong feature. Each switch corresponds to one floor input: -

Floor input	Switch
1	8
2	7
3	6
4	5
5	4

If all switches are off then hall lantern is turned off and the gong will not sound.

When hall lantern is active the large arrow and gong will activate only when the floor number set on the switches matches the floor number at the inputs on CN10. Note that it will not matter if the display is in binary or discrete mode. However, input number 6 changes it's function and becomes a 'lift stopping' signal to cause activation of the gong and lanterns only when the lift stops. This limits the display to only five floors in discrete mode.

The direction of the large arrow and the gong sound played depends on the direction arrow inputs at the time the stopping signal is applied. No inputs for either arrow results in a double direction arrow and double gong sound.

In addition to this it is possible to trigger the gong only on any floor by applying both arrow signals sequentially at one time. The arrow displayed will be that of the first input to become active and the gong will sound as soon as the second input becomes active.

The display has an output to drive an 8ohm speaker for the gong on CN5. The volume of the gong can be adjusted by RV1 (marked VOLUME) and it can drive 8ohms at up to 0.5Watt.

Other Connections and Controls

Binary Mode

This is activated when switch 2 of SW4 is on. The floor input data from either a 2/3 wire system or the main input connector will be interpreted to read in binary. Up to thirty one floors can then be displayed.

Power Save (Green mode)

This is activated when switch 3 of SW4 is on. After the display has been idle for a set time the back light brightness will be reduced to a lower level to save power and also lengthen the service life of the display. Once an input changes then the display will revert back to its former brightness level.

Programming Header

Connects to factory equipment for initial programming of the display CPU.

Back Light Connector

PWM voltage supply output to illuminate LED array in display. This carries about 30Vdc to power the backlight.

Rear LEDs

LED 1

Flashes to indicate faults on start up. Changes state when 3 wire data changes.

1. 1 flash Error reading from display controller (IC4).

LED 2

Flashes when data is being sent or received via 3 wire control interface.

LED 3

Indicates 3.3-volt internal supply is working correctly.

LED 4

Indicates 12-volt internal supply is working correctly.

Technical Specifications

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|-----|-------------------------|-----------------------------------|
| 1. | Display size | 120 x 90mm (5.8" diagonal) |
| 2. | Back light | LED with 32 brightness levels |
| 3. | LCD type | TFT |
| 4. | Colours | 256 colours (8 bits per pixel) |
| 5. | Resolution | 320 X 240 pixels |
| 6. | Refresh rate | 75 Hz |
| 7. | Supply voltage | +12V to +24V dc rectified nominal |
| 8. | Input signals | +7V to +24V |
| 9. | Viewing area size | 90mm X 120mm |
| 10. | Overall size | 34mm X 148mm X 120mm |
| 11. | Maximum floor positions | 31 |
| 12. | Audio output | 0.5W into 8 ohm |
| 13. | Power consumption | 3.5W maximum |
| 14. | Main memory | 128kbyte flash |