

# **DIGITAL INDICATOR TYPE TC3**

## **INTRODUCTION**

The MP-TI Digital Indicator System comprises of a Controller Interface Module (fitted in the lift controller), and a Digital Indicator fitted on the lift car or landings. The Controller Interface Module will support upto 64 indicator units, and each Digital Indicator Unit can display the floor reference as 2 alpha-numeric characters (which are site programmable).

### ***Indicator Unit Features***

Intelligent vertical and horizontal scrolling of messages.

Operates to give fully dynamic 3 character control in red, green, or yellow for 7x15 led display resolution over a display area of 30mm x70mm.

Uses latest developments of circuit integration together with surface mount manufacturing techniques to give an indicator footprint of 70mm. x 50mm. and 40mm deep.

Utilises CAN communications to reduce site wiring and ease installation (2 wires for power and 2 wires for communications).

Standard message control format is:

- Lift Position displayed using 2 characters in yellow with vertical scrolling
- Lift Direction displayed green for up, red for down with continual vertical scroll
- Hall Lantern displayed green for up, red for down using large full screen arrow
- Messages for Fire Control, Car Overloaded, Out of Service displayed red with horizontal scrolling.
- During message displays, the message and position data alternate.
- Multi-tone Hall Lantern Gong sounds once for up, twice for down.

### ***Controller Interface Unit Features***

Incorporates Liquid Crystal Display to monitor and program indicator operation.

Floor Identities are site programmable into NVRAM with no special equipment required.

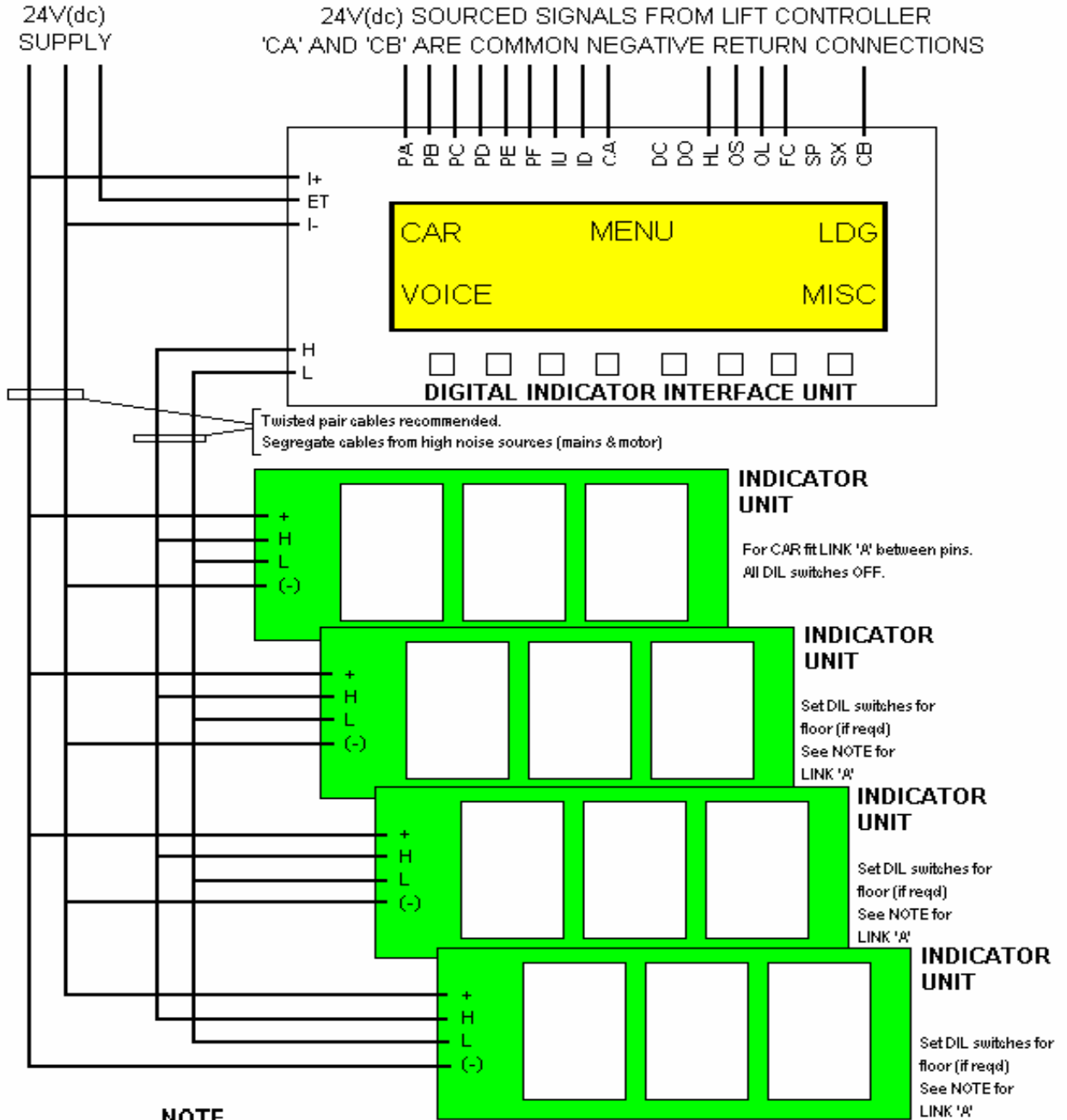
Inputs are opto-isolated for 24Vdc operation and include :-

- Binary position inputs PA, PB, PC, PD, PE, PF for upto 63 floors.
- IU, ID inputs for Direction.
- HL input for Hall Lanterns
- OS, OL, FC for messages.

Note: A decimal to binary encoder unit is available as an optional chargeable extra to help controller position data interfacing.

# DIGITAL INDICATOR TYPE TC3

## DIGITAL INDICATOR EXTERNAL WIRING



**NOTE**

LINK 'A' is supplied connected on one pin only for all Indicator units.  
LINK 'A' must be fitted between both pins for last unit in communications run only (car & landing furthest from controller). Other units have LINK 'A' on one pin only.

- PA,PB,PC,PD,PE,PF \_\_\_\_\_ POSITION INPUTS (BINARY)
- IU,ID \_\_\_\_\_ DIRECTION ARROW INPUTS
- HL \_\_\_\_\_ HALL LANTERN CONTROL INPUT
- OL,OS,FC \_\_\_\_\_ MESSAGE INPUTS FOR OVERLOAD,  
OUT OF SERVICE, FIRE CONTROL

# **DIGITAL INDICATOR TYPE TC3**

## **INTERFACE UNIT CONTROLS**

Following power initialisation the system is set to the 'main menu' operation to give a display as follows :-

CAR	MENU	LDG
VOICE		MISC

### **PUSH BUTTON FUNCTIONS**

<i>Left Arrow</i> _____	Shifts cursor one field to left
<i>Right Arrow</i> _____	Shifts cursor one field to right
<i>Up Arrow</i> _____	Shifts cursor up one line
<i>Down Arrow</i> _____	Shifts cursor down one line
<i>Menu</i> _____	Returns display to Main Menu Screen
<i>RTN</i> _____	Selects / terminates function or instruction
<i>SET</i> _____	Selects Position Floor Reference Setup operation
<i>SAVE</i> _____	Selects saving of Floor Reference Data

To show the data displayed by the car position indicator push cursor left once then push return once to give display as follows :-

P=01	^CAR^	D=SB
-----CAR OVERLOADED-----		

This shows the data regarding the Position Indicator in the lift car as having an absolute position of floor '01' (bottom), a displayed position of 'SB', an Up direction and hall lantern operational, and a 'Car Overloaded' message displayed.

To return to the 'Main Menu' press 'Menu' push.

To show the data displayed by the landing position indicator push cursor right once then push return once to give display as follows :-

P=01	^LDG^	D=SB
-----MESSAGE-----		

This shows the data regarding the Position Indicator on the landings as having an absolute position of floor '01' (bottom), a displayed position of 'SB', an Up direction and hall lantern operational, and no message displayed.

To return to the 'Main Menu' press 'Menu' push.

## **DIGITAL INDICATOR TYPE TC3**

### **SETTING THE DISPLAYED FLOOR REFERENCES**

The Floor References corresponding to the absolute lift position (floor 1 as bottom) may be programmed on site with no special equipment required. To enter the position reference setup operation press 'SET' push to give the following display :-

P=01	D=SB
SET DISPLAY DATA	

Use the UP or DOWN ARROW to increase or decrease the absolute position to the required floor.

Push the RIGHT ARROW to shift to the displayed position (left hand character).

Use the UP or DOWN arrow to set the character to +, -, space, or any numeric or alphabetic character (push may be held down to scroll).

Push the RIGHT ARROW to shift to the displayed position (right hand character).

Use the UP or DOWN arrow to set the character.

Press SAVE push to save the data.

The display will respond by showing 'save ?' on the top line centre.

Press SAVE push again to confirm.

The display will respond by showing 'saving' on the top line centre.

After a few seconds the display will show 'saved !' on the top line centre.

The data for the set entry is now set in NVRAM (held even if the supply is switched off).

After a few further seconds the display will return to the set display data screen shown above.

The procedure may be repeated for further floor entries or the MENU push may be pressed to return to the basic MENU screen.

If in doubt at any time press the MENU button to recover back to the MENU screen.

# **DIGITAL INDICATOR TYPE TC3**

## **DIGITAL INDICATOR OPERATION**

A CAN link is used to transfer data between the Interface Unit and the Digital Indicators. LED indicators are illuminated on the indicator PCB to show :-

- S \_\_\_\_\_ 5Vdc power supply monitor.
- R \_\_\_\_\_ Receive data monitor for CAN link (raw CAN data).
- C \_\_\_\_\_ Communications confirmation monitor for CAN Data.

‘C’ indicator shows the data has been received correct following integrity checks.

During NORMAL operation led status should be :-

- S \_\_\_\_\_ illuminated constantly
- R \_\_\_\_\_ pulsing at approximately 0.25 second intervals
- C \_\_\_\_\_ pulsing at approximately 1 second intervals.

For communications purposes all Digital Indicator units are supplied with LINK ‘A’ connected to one pin only. LINK ‘A’ must be fitted between both pins for the indicator unit fitted on the car, and the landing unit furthest from the *Interface Unit*.

Although the CAN link is reasonably noise immune, the indicator wiring should be segregated from sources of high electrical noise such as heavy mains and motor wiring. Initial recommendations are to use twisted pairs for indicator wiring, or screened cable where noise problems are experienced.

An 8 way dil switch is fitted on the indicator PCB to set the type of indicator usage.

If all dil switches are OFF then the indicator is set to be a car indicator and so will not operate to give a large Hall Lantern Arrow or Gong signal.

If the dil switches are set as the binary equivalent of the absolute landing floor (1 is bottom), then the indicator is set to be a specific landing indicator. If the lift is at a floor position equal to its dil switch setting, then a large Hall Lantern Arrow (and Gong if fitted) is illuminated under control of the HL input at that floor only. All other floors operate with normal position and direction arrow illumination.

Dil switch settings

Floor	Switch Setting	Floor	Switch Setting	Floor	Switch Setting
1	00000001	9	00001001	17	00010001
2	00000010	10	00001010	18	00010010
3	00000011	11	00001011	19	00010011
4	00000100	12	00001100	20	00010100
5	00000101	13	00001101	21	00010101
6	00000110	14	00001110	22	00010110
7	00000111	15	00001111	23	00010111
8	00001000	16	00010000	24	00011000

etc. upto 63 floors

## **POWER SUPPLY REQUIREMENTS**

*Indicator Unit* \_\_\_24Vdc smoothed 0.25A

*Interface Unit* \_\_\_24Vdc smoothed 0.5A