Lester Control Systems Ltd

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TC3 POSITION INDICATOR / VOICE UNIT SYSTEM

IMPORTANT

Please read the information in this document carefully.

Incorrect fitting of components will result in poor communication between Indicator and Interface Unit or could even damage the Indicators beyond repair.

For communication purposes, ‘Link A’ must be fitted between both pins on the lift car Indicator and the landing Indicator furthest away from the Interface Unit.

The indicator wiring should be segregated from sources of high electrical noise such as heavy mains and motor wiring.

Use of twisted pairs for Indicator wiring is recommended or screened cable where noise problems are experienced.

INTRODUCTION

The MP-TI Digital Indicator System comprises of a Controller Interface Module (fitted in the lift controller), a TC3 Digital Indicator fitted on the lift car or landings and aVS1 Voice Unit fitted in the lift car. The Controller Interface Module will support up to 64 indicator or voice units, and each unit can display the floor reference in alpha-numeric characters (which are site programmable).

TC3 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.
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.

VS1 VOICE SYNTHESISER UNIT FEATURES

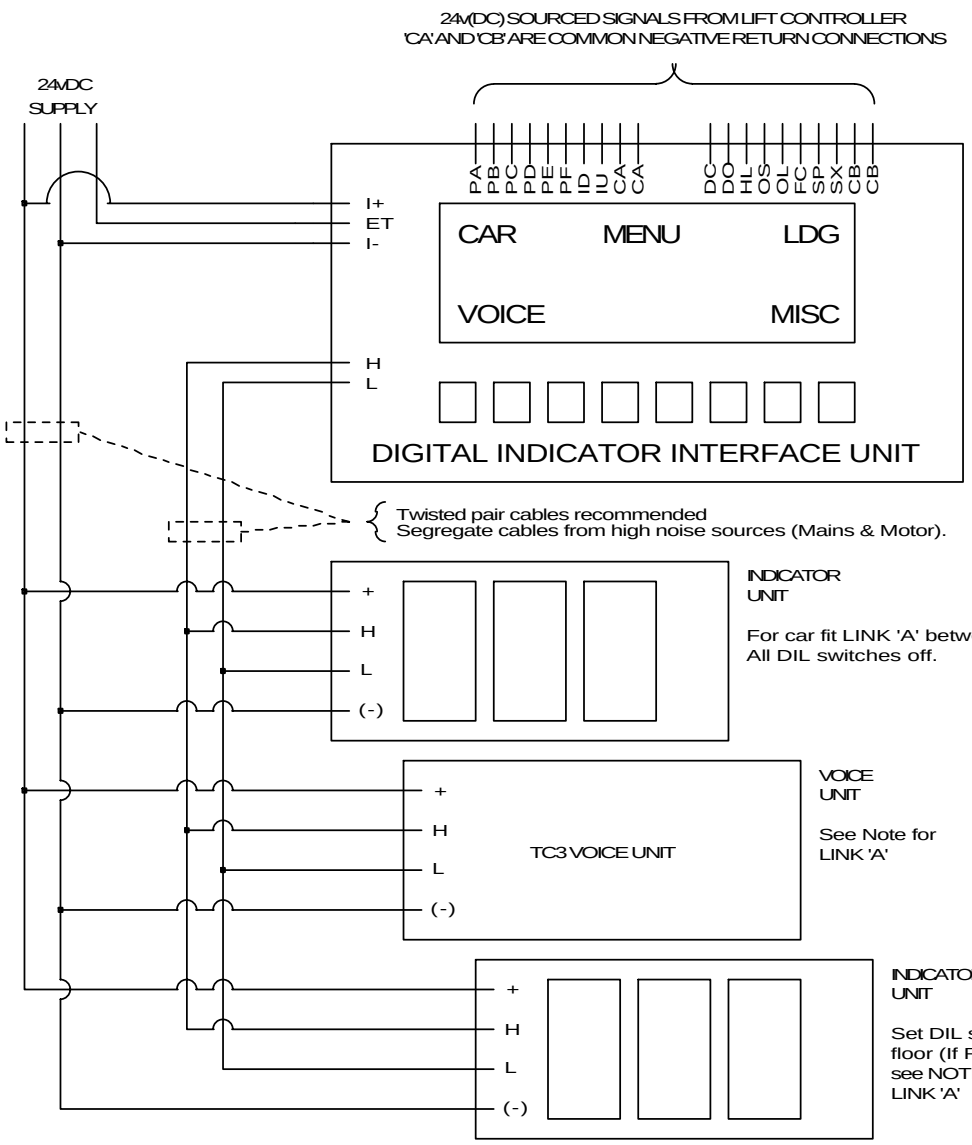
Intelligent selection of 32 floor announcements, direction status, door status and 3 messages.
Utilises CAN communications to reduce site wiring and ease installation (2 wires for power and 2 wires for communications).
The audio output is via an 8 ohm speaker at 1 watt, which is supplied with the voice synthesiser.

INTERFACE CONTROL 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, and 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.



PA, PB, PC, PD, PE, PF — POSITION INPUTS (Binary)

ID, IU, HL — HALL LANTERN CONTROL INPUTS

DC, DO — DOOR OPEN / CLOSE CONTROL INPUTS

OS, OL, FC — MESSAGE INPUTS SS (Lift Out Of Service, Lift Car Overloaded, Fire Control)

SX — SPEECH CONTROL (Silence Position Statement)

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 communication run only (Car & Landing furthest from controller). Other Units have LINK 'A' on one pin only.

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PAGE TITLE

TC3 DIGITAL INDICATOR AND VOICE UNIT CONNECTION DIAGRAM.

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NOTES

INTERFACE UNIT CONTROLS

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

PUSH BUTTON FUNCTIONS

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

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** to give the following display:

1. Use the **UP** or **DOWN** to increase or decrease the absolute position to the required floor (push may be held down to scroll).
2. Push the **RIGHT** to shift to the displayed position (left hand character).
3. Use the **UP** or **DOWN** to set the character to +, -, space, or any numeric or alphabetic character.
   Note: Push **UP** once to make it blank if no character is needed in the left block
4. Push **RIGHT** to shift to the displayed position (right hand character).
5. Use the **UP** or **DOWN** arrow to set the character.
6. Press **SAVE** to save the data.
7. The display will respond by showing 'save ?' on the top line centre.
8. Press **SAVE** push again to confirm.
9. The display will respond by showing 'saving' on the top line centre.
10. After a few seconds the display will show 'saved !' on the top line centre.
11. The data for the set entry is now set in NVRAM (held even if the supply is switched off).
12. After a few further seconds the display will return to the set display data screen shown above.
13. The procedure may be repeated for further floor entries or the **MENU** push may be pressed to return to the basic **MENU** screen.
14. If in doubt at any time press the **MENU** button to recover back to the **MENU** screen.

Car Position Data

To show the data displayed by the car position indicator push **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’ (sub-basement), an Up direction and hall lantern operational, and a ‘Car Overloaded’ message displayed.

To return to the Main Menu press the **MENU** push.

Landing Position Data

To show the data displayed by the landing position indicator push **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 the **MENU** push.

Voice Unit Data

To show the data displayed by the Voice Synthesiser push **LEFT** once, then **DOWN** once, then push **RETURN** once to give a display as follows:

```
P=01          ^VOICE^          D=SB
--------------MESSAGE----------------
```

This shows the data regarding the Voice Synthesiser 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 the **MENU** push.

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 0.1 second intervals
- C Pulsing at approximately 0.25 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.

SETTING DIL SWITCHES FOR ARRIVAL GONGS

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 is illuminated and Gong will sound (if fitted), under control of the HL input at that floor only. All other floors operate with normal position and direction arrow illumination.

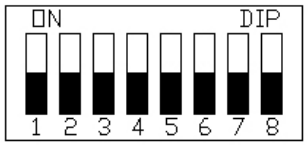
The correct DIL switch settings are shown in the table on the following page.

POWER SUPPLY REQUIREMENTS

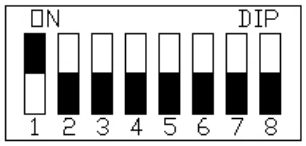
Interface Unit 24Vdc smoothed 0.5A

Indicator Unit 24Vdc smoothed 0.25A

SETTING DIL SWITCHES FOR GONGS

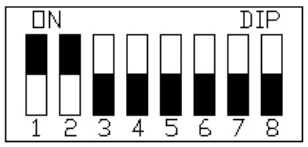


CAR



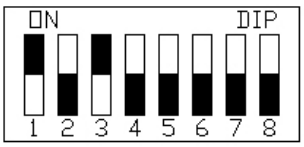
FLOOR 0

FLOOR 1



FLOOR 2

FLOOR 3



FLOOR 4

FLOOR 5

FLOOR 6

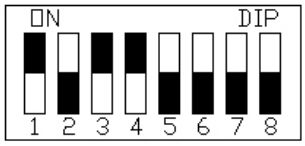
FLOOR 7

FLOOR 8

FLOOR 9

FLOOR 10

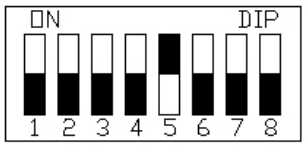
FLOOR 11



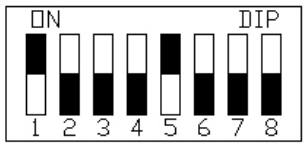
FLOOR 12

FLOOR 13

FLOOR 14



FLOOR 15



FLOOR 16

VOICE SYNTHESISER 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.
- B Busy signal illuminated when the speech controller is engaged in sending a voice statement.

'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 0.1 second intervals
- C Pulsing at approximately 0.25 second intervals.
- B Pulses while an announcement is spoken.

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.

DIL SWITCH SETTINGS

A 4 way DIL switch is fitted on the Voice Synthesiser to set the type of usage.

DIL Switch 1	OFF – Inhibit gong up and down chime statements
	ON - Enable gong chime operation
DIL Switch 2	OFF – Inhibit 'going up' and 'going down' statements
	ON - Enable 'going up' and 'going down' statements
DIL Switch 3	OFF – Enable 'doors opening' and 'doors closing' statements
	ON - Enable 'please mind the doors' statement
DIL Switch 3	OFF – Enable silence control
	ON - Disable silence control

POWER SUPPLY REQUIREMENTS

Voice Unit	24Vdc smoothed 0.25A
Interface Unit	24Vdc smoothed 0.5A

VOICE SYNTHESISER CONTROLS

Position Control

Position statements are announced once only each time the floor position changes.
The 'SX' input on the Interface Control Unit may be energised to inhibit position statements (usually used when travelling through floors via a normally open HSR contact).
Position statements will only be announced providing the Position Indicator display character has a match within the Voice Synthesiser Statement Library.

Door Control

The unit will either announce 'doors opening/closing' or 'please mind the doors' on closing, depending upon DIL Switch settings.
Since continual repetition may be considered a nuisance when used in residential environment, door statements will be automatically silenced if more than 25 door statements are made at a constant floor position. The voice function will return to normal if a new position statement is invoked or no door statement request is made for 2 minutes. This automatic silence function can be inhibited via DIL Switch settings. Only door statements are affected by this feature.

Direction Control

The unit will announce either 'going up/down' or one gong for up/two for down, which is selectable by DIL Switch settings.
Direction statements will commence under control of the 'HL' input on the Interface Control Unit and the 'doors opening' statement. Primarily, direction statements are enabled only after the 'doors opening' statement is given at a floor.
Once enabled, all direction statements are given until they are inhibited via the change of the lift position. In order to register a direction statement the Interface Control Unit must receive a 'HL' input, together with an 'IU' or 'ID' input.

Message Control

3 messages are available as standard; Fire Control, Lift Out of Service and Car Overloaded. These announcements will commence under control of the 'FC', 'OS' and 'OL' inputs on the Interface Control Unit.
When a new message is invoked, it is announced only once.
As well as the standard messages above, a 'main exit' statement is available. This announcement will be made after the floor announcement of your choosing, i.e. 'Ground floor, main exit'.
In order to register a 'main exit' statement the Interface Control Unit must receive the corresponding floor level input, together with the 'SP' input.

VOICE SYNTHESISER LIBRARY

The VS1 has 50 different floor references in its standard voice library which are site programmable.

The following will be announced when the corresponding floor references are programmed into the Interface Control Unit.

SB	Sub Basement Floor	**0 to 32**	Numeric Floor
LB	Lower Basement Floor	**-5 to -1**	Minus Numeric Floor
UB	Upper Basement Floor	**CP**	Car Park Floor
B	Basement Floor	**L**	Lobby Floor
LG	Lower Ground Floor	**M**	Mezzanine Floor
UG	Upper Ground Floor	**P**	Penthouse Floor
G	Ground Floor	**R**	Reception Floor

Special Voice Unit announcements are available upon request at extra cost.