

## 2-Way IO Installation / Troubleshooting Manual.

The 2-way IO is an IO card that as its name suggests has 2 programmable inputs / outputs. Generally, the 2-way IO is used for landing calls as part of the CAN-X/CAN-X\* distributed IO system but can be used in any of the 3 distributed networks, CAN 1, (landing) CAN 2, (Car) or CAN 3 (Controller) to provide 2 inputs / outputs.

The 2-way IO has an on-board buzzer for call acceptance. This buzzer is active when the IO is programmed as a landing or car call and is switched on via the call acceptance allocation table in the CAN-X/CAN-X\* processor menu.

**Note:** The on-board buzzer has a protective film to protect it from dust ingress during installation, this needs to be removed before putting the lift into service.

Each 2-way IO on a network needs to have a unique binary address set via DIP switch SW1. Switches 1-6 are for IO address, switches 8 and 9 are used to identify whether the IO is in the controller, car, landing simplex or landing group, switch 7 identifies whether it is a rear call in a selective door system and switch 0 is an on board CAN resistor to identify the end of the network. (See relevant section for more detail of DIP switch settings)

Fig1

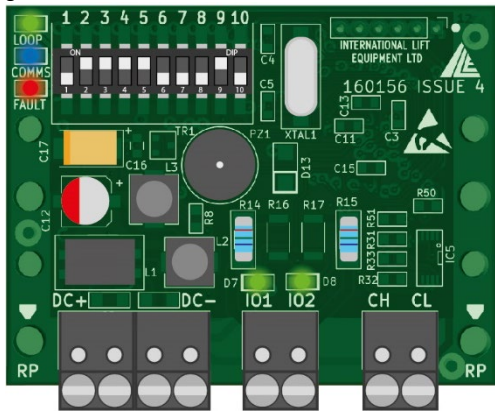


Fig 1 shows the basic board layout, connection locations and LED's.

The 2-way IO has 1 CAN port, its connections are marked as CH and CL. There are also diagnostic LED's associated with the 2-way IO's processor marked LOOP (green), COMMS (blue) and FAULT (red) (See diagnostic paragraph overleaf for more detailed description of the LED'S)

The power connections are marked as DC+ and DC- and have 2 connection points each, 1 for the supply in and 1 to connect to the relevant input device. The 2 inputs are marked as I/O 1 and I/O 2.

If the 2-way IO is attached to a DIN rail, a screwdriver should be inserted to the holes marked RP and upward pressure applied to release the DIN rail clips whilst putting downward pressure on the PCB. If the 2-Way IO is to be mounted via the standoff posts with the self-adhesive pad provided the mating surface should be clean and free of contaminants to promote maximum adhesion.

**Note:** 2-Way IO's should not be left loose in trunking or push boxes where their connections could short out.

Fig 2

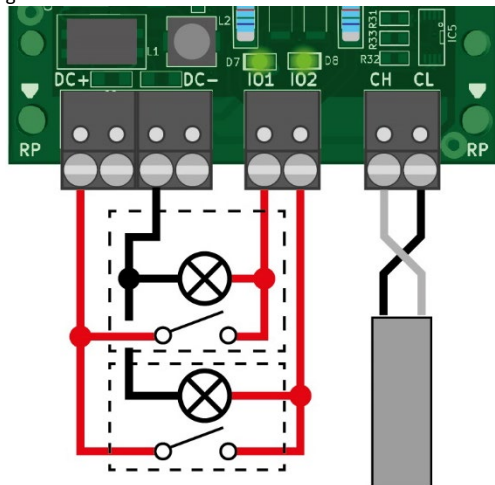


Fig 2 shows the basic power and I/O connections when used as an IO board for landing calls.

The input power connections are not shown connected in this diagram but are connected via the spare DC+ and DC- terminals. If in doubt refer to the site specific drawing.

IO 1 and IO 2 have green diagnostic LED's. These LED's indicate the current state of the IO as defined below:

| IO LED | IO Setting | IO Setting   |
|--------|------------|--|
| OFF    | Output     | The IO is set to output Low  |
| ON     | Output     | The IO is set to output High   |
| OFF    | Input      | The IO is set to input and the input is Low  |
| ON     | Input      | The IO is set to input and the input is High   |
| Dimmed | Linked     | The IO is set to a call input and is producing button output illumination and detecting a button press input |
| OFF    | Linked     | The IO is set to a call input and ether dimming has been disabled or a call cannot be accepted.              |
| ON     | Linked     | The IO is set to a call input and a call has been accepted.  |

Fig 3. The DIP switch settings of SW1 shown below are for the 2-Way IO's address.

| 2-Way IO Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|-----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| DIP number 1    | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  | 1  | 0  |
| DIP number 2    | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 1  | 1  | 0  | 0  | 1  | 1  | 0  |
| DIP number 3    | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0  | 0  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 0  |
| DIP number 4    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0  |
| DIP number 5    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0  |
| DIP number 6    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  |

Fig 4. The DIP switch settings of SW1 below are for the 2-Way IO's location (control panel, car, landing simplex and landing group)

| 2-Way IO Location | Panel | Car | Landing(simplex) | Landing (Group) |
|-------------------|-------|-----|------------------|-----------------|
| DIP number 8      | 0     | 1   | 0                | 1               |
| DIP number 9      | 0     | 0   | 1                | 1               |

Fig 5. The DIP switch settings of SW1 below are for front or rear door location (in group mode only)

| 2-Way IO Location | Front | Rear |
|-------------------|-------|------|
| DIP number 7      | 0     | 1    |

Fig 6. The DIP switch settings of SW1 for CAN termination. (If the 2-Way IO is on a pre-wired shaft loom from ILE the resistor is located on the loom so there is no need to switch on the termination resistor)

| 2-Way IO Location | Mid | End |
|-------------------|-----|-----|
| DIP number 10     | 0   | 1   |

**Problem reporting / diagnostics**

The basic status of the 2-Way IO is reported by the Loop, Comms & Fault LED's (Shown in the table below). The expanded status of the 2-Way IO is reported in the CAN-X/CAN-X + event history.

| LED      | Loop     | Comms    | Fault    |   |
|----------|----------|----------|----------|---|
| OFF      | OFF      | OFF      | OFF      | The 2-Way IO is not operational. (Check Power Supply)   |
| FLASHING | OFF      | OFF      | OFF      | 2-Way IO is powered and operational. 2-Way IO is not receiving CAN bus messages. 2-Way IO is not in fault condition. (Check CAN bus connections & terminating resistor)   |
| FLASHING | FLASHING | OFF      | OFF      | 2-Way IO is powered and operational. 2-Way IO is receiving CAN bus messages but, is not connected to the network. 2-Way IO is not in fault condition. (Check switch settings are valid)   |
| FLASHING | FLASHING | FLASHING | FLASHING | 2-Way IO is powered and operational. 2-Way IO is receiving CAN bus messages but, is not connected to the network. 2-Way IO is in address conflict with another IO board. (Check switch settings)  |
| FLASHING | ON       | OFF      | OFF      | 2-Way IO is powered and operational. 2-Way IO is receiving CAN bus messages and is connected to the network. 2-Way IO is not in fault condition. (Desired Condition)  |
| FLASHING | ON       | FLASHING | FLASHING | 2-Way IO is powered and operational. 2-Way IO is receiving CAN bus messages and is connected to the network. 2-Way IO has an I/O fault condition. (Check I/O High/Low short circuit)  |
| FLASHING | OFF      | FLASHING | FLASHING | 2-Way IO is powered and operational. CAN bus communication between the 2-Way IO and controller have been corrupted, resulting in the 2-Way IO to temporarily remove itself from the network. The 2-Way IO will attempt to reconnect with the network after 10 Seconds. (Check network wiring, Cable Screening & Terminating Resistor) |

**Specification**

|                      |                     |
|----------------------|---------------------|
| Operating Voltage    | 10-30VDC            |
| Operating Current    | 18mA                |
| Input Voltage        | 10-30VDC            |
| Input Current        | 12mA                |
| Output drive current | 600mA (per channel) |

**EMC**

Care should be taken when running the group interconnect cable. All CAN interconnects should be segregated from mains / motor wiring and the screens connected to the screen clamps provided. If the interconnect cables need to pass across high voltage cables, they should do so at right angles. For further information on EMC refer to the ILE EMC manual.