

5. TURNSTILE CONTROL PANEL

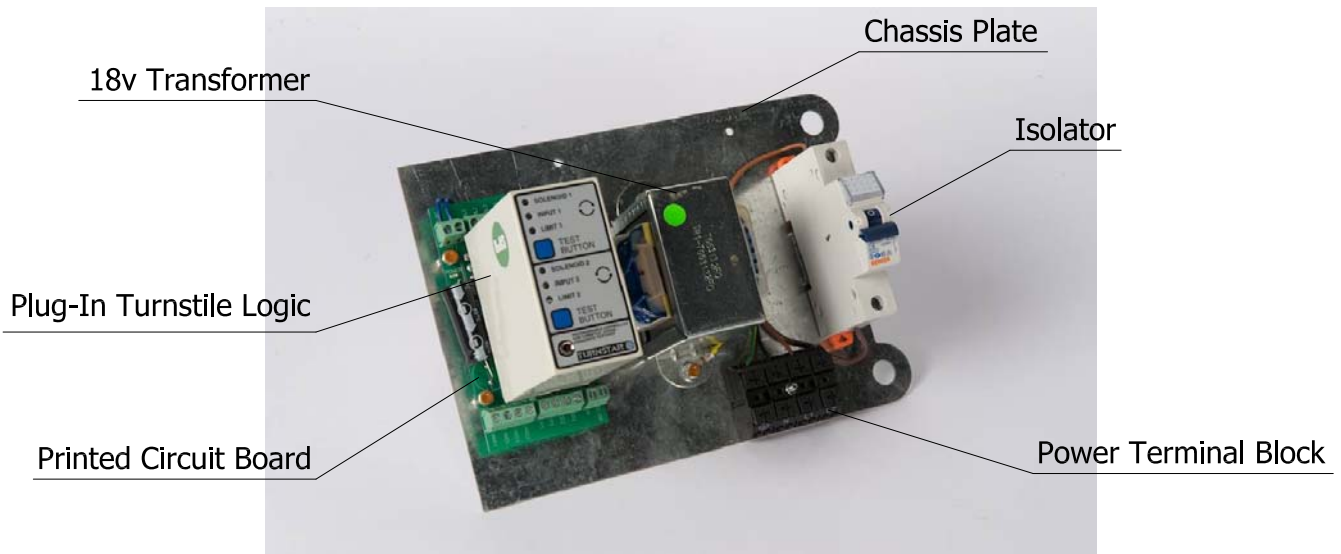


Figure 5.1: Turnstile Control Panel



Figure 5.2: Turnstile Control Panel with Battery Backup Unit
(with leads for batteries - not shown)

The turnstile control panel controls the entire locking and unlocking operation of the turnstile.

The control panel consists of a chassis plate, power terminal block, isolator, 18V transformer, printed circuit board and plug-in turnstile logic. It is also available with a battery backup printed circuit board and two 12V 7aH batteries, in which case the 18V transformer is replaced with a 24V transformer.

As standard, the turnstile control panel is configured for 220VAC power. The turnstile control panel can be configured for 110VAC power upon request.

A programming module which plugs into the turnstile logic is used for modifying the standard program of the logic. Turnstiles supplied from 2012 and onwards are fitted with logics which have 5 dip switches which enable the customer to easily change certain program features without the need of the programming module. Most customers never require the programming module. The programming module and cable is sold seperately.



Figure 5.3: Programming Module with cable



Underside of plug-in logic.

Figure 5.4: DIP Switches on Plug-In Logic

The control panel printed circuit board has two inputs, one for each direction of rotation. The inputs are marked 'card 1' and 'card 2' on the printed circuit board. The customer must use a process of trial and error to establish which terminal controls which direction of rotation.

The required trigger to unlock the turnstile is called a 'dry contact' which is a zero voltage contact closure and the signal should be about ¼ of a second long, not longer. The turnstile logic is supplied with two blue test pushbuttons which simulate a trigger from an access control system in either the 'card1' or 'card2' terminals. This feature enables the access control installer to isolate whether the fault is with the turnstile or the access control system. 99% of the time, the fault lies with the access control system.



Figure 5.5: Photo of plug-in Logic with Test Buttons

The turnstile logic is factory set to ignore an extended trigger from an access control reader. A trigger of any amount of time is regarded by the logic as one transaction and will allow only one rotation. The reason for this setting is due to a number of access control installers who do not modify the trigger length setting on the reader and who wonder why it is possible for the turnstile to rotate for two (or more depending on the length of the trigger and the speed at which the turnstile is rotated) transactions if only one trigger has been sent. Should the customer wish to integrate the turnstile with a fire alarm system, the turnstile logic can be reprogrammed (using the dipswitches) to allow the turnstile to unlock indefinitely for numerous rotations if a continuous trigger is sent from the access system. The 'card1' and 'card2' terminals are also used for this input.

Once the turnstile has been unlocked by a trigger, the turnstile will relock when either:

- The turnstile has been rotated a full transaction, or
- The turnstile has timed out and no rotation has occurred. (Standard factory setting is 10 seconds, however, this can be changed by using the programming module)

The 'Opt1' and 'Opt2' terminals are normally open contacts which can be used by the access control system as feedback that the turnstile has been rotated. Often it is assumed that the person walked through the turnstile and the anti-passback feature of the access control system will be activated.

5.1. Dip Switch Details

1. Input 1 (direction 1)

Normally open (N/O) - Extended trigger is ignored and only one rotation is allowed.

Normally closed (N/C) - Used for fire alarm activation. An extended trigger allows the turnstile to free rotate (called 'one shot off' in the factory)

2. Input 2 (direction 2)

Normally open (N/O) - Extended trigger is ignored and only one rotation is allowed.

Normally closed (N/C) - Used for fire alarm activation. An extended trigger allows the turnstile to free rotate (called 'one shot off' in the factory).

3. Solenoid 1 (direction 1)

De-energised - Fail-secure setting

Energised - Fail-safe setting

4. Solenoid 2 (direction 2)

De-energised - Fail-secure setting

Energised - Fail-safe setting

5. Sound (turnstile buzzer activates whilst the turnstile is being triggered to unlock)

Occasionally, a customer would like to use one access control reader to simultaneously unlock the turnstile for both entry and exit, thereby allowing rotation in any direction before relocking. This setting must be done at the factory or with the programming module.

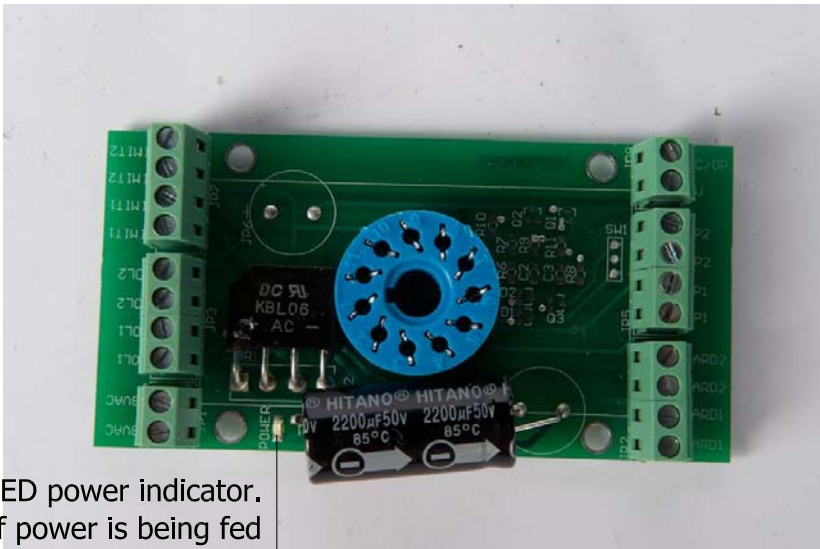
5.2. Additional information regarding the Control Panel

The Turnstar Control Panel will work with most other turnstiles manufactured by other turnstile manufacturers. If the solenoids however, require a 12V power supply, a 12V transformer must be fitted to the turnstile control panel.

Notes on battery backup:

- The two 7aH batteries supplied with a battery backup should be replaced annually.
- The battery backup will provide up to 1000 transactions of power failure operation in fail-secure mode and up to 60 minutes of power failure operation in fail-safe mode. In fail-secure mode, the turnstile draws very little power when idle and only drains the battery when unlocking and during rotation.

5.3. Full Height Turnstile Wiring Diagram



Red LED power indicator.
On if power is being fed
to circuit board

Figure 5.6: Top View of Printed Circuit Board

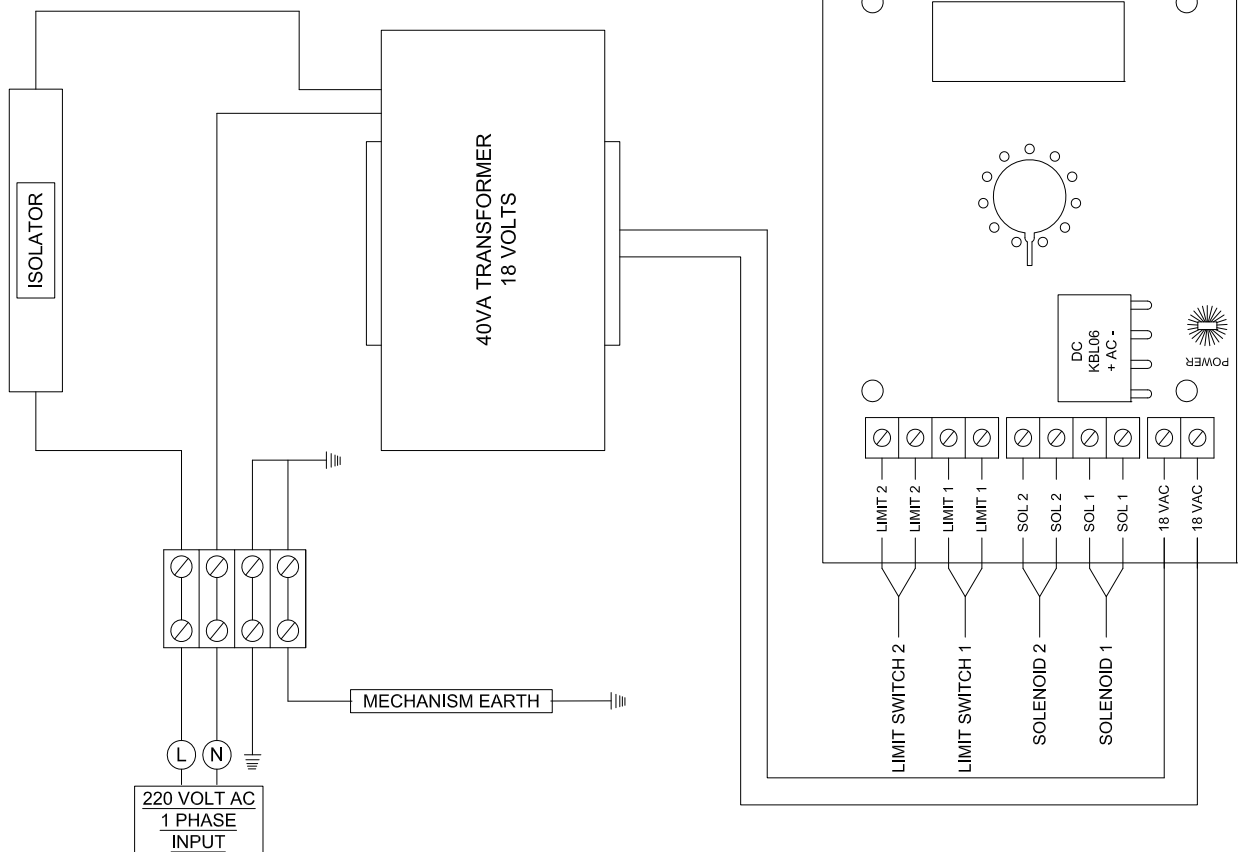


Figure 5.7: Turnstile Control Panel Wiring Diagram

5.4. Full Height Turnstile Wiring Diagram with Battery Backup



Figure 5.8: Battery Charger

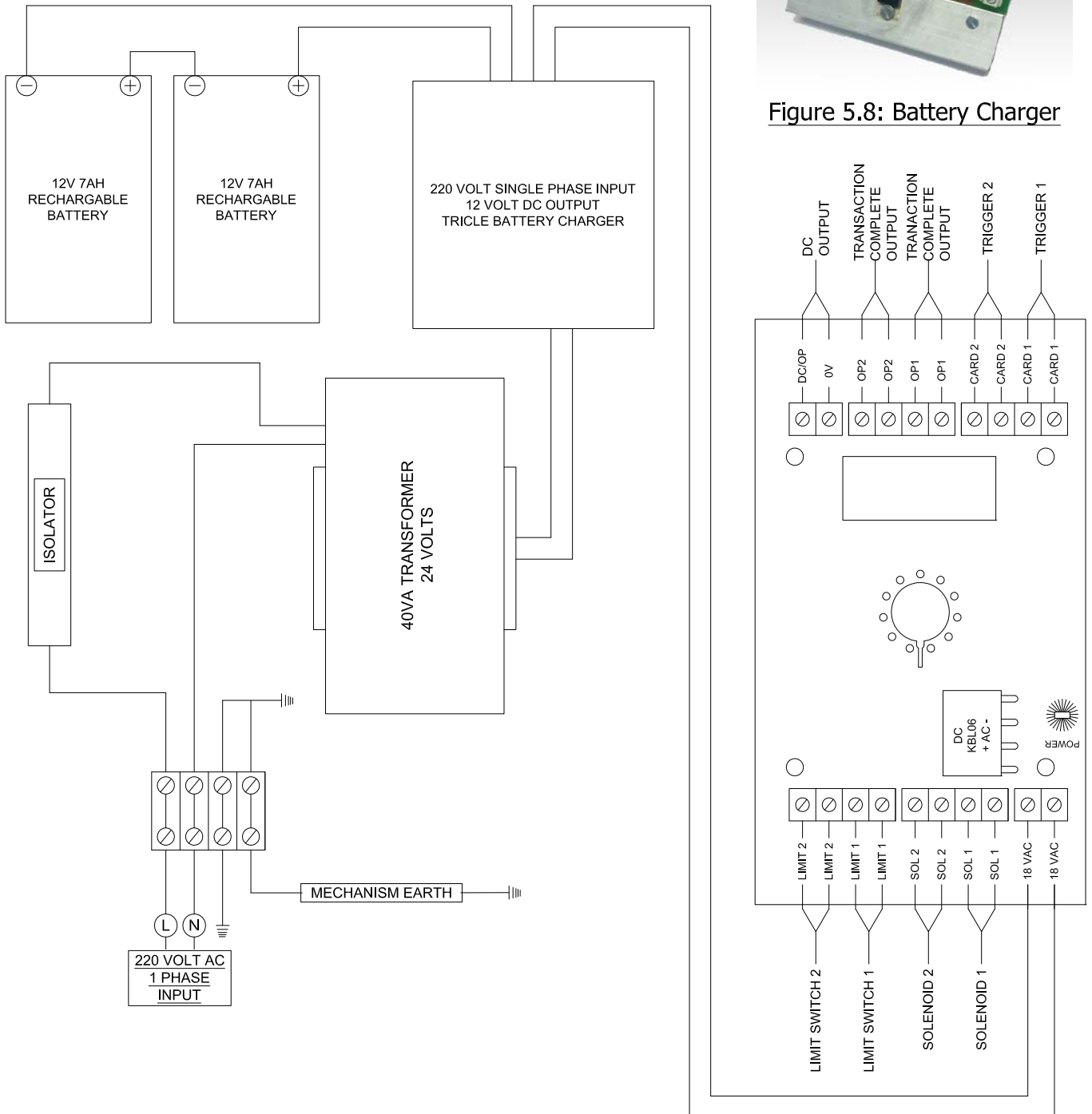


Figure 5.9: Turnstile Control Panel Wiring Diagram with Battery Backup