

# Turnstile Controller

## TS –V2.0 Control Product Manual





**ATTENTION** To prevent electrical shock, disconnect from power source before installing or service



**ATTENTION** Electricity and power motors associated accessories could be fatal or at least cause seriously injury. *All main voltage wiring must be installed by a licensed electrician.*

## 1. General

The turnstiles can be controlled by card readers mounted on the framework or by pushbuttons mounted at the guardhouse. Wiring to the card readers runs through the framework, as this is a feature of the unit. The wiring is not visible. Acceptance of a card energises the relevant solenoid which releases the mechanism for a rotation of 120 degrees after which the mechanism automatically relocks due to the action of the rotation sensing limit switches in the mechanism. The card reader should close a voltage free relay for a period not exceeding 1/2 second in order for the control panel in the turnstile to respond correctly.

A timer is provided in the control panel, which cuts off power to the solenoids after a period of approximately 5-30 seconds adjustable, should no rotation of arms occur. This ensures relocking of the arms should they be opened but not rotated.

Once a card is accepted and unlocks the mechanism, the person should proceed through the turnstile promptly otherwise it is possible that the timer will complete the cycle prior to the arms completing their rotation of 90/120 degrees. Under optimum conditions, there should be no difficulty in allowing 15 persons per minute to pass through the turnstile.

The spring loaded index device in the mechanism always brings the arms to rest in the 0 degree position provided the angle through which they are pushed by a person going through the turnstile exceeds 45 degrees. Should it be desired to have free rotation, for example during a busy period or under power failure conditions, the locking mechanism can be mechanically unlatched by means of the locks in the top channel. If the mechanism is mechanically unlatched by means of the locks to allow free rotation, more than 15 persons per minute will be able to pass through the turnstile. The arms must not be pushed prior to the release of the solenoid, as pressure on the paw on the mechanism will prevent the solenoid from retracting and unlocking the mechanism.

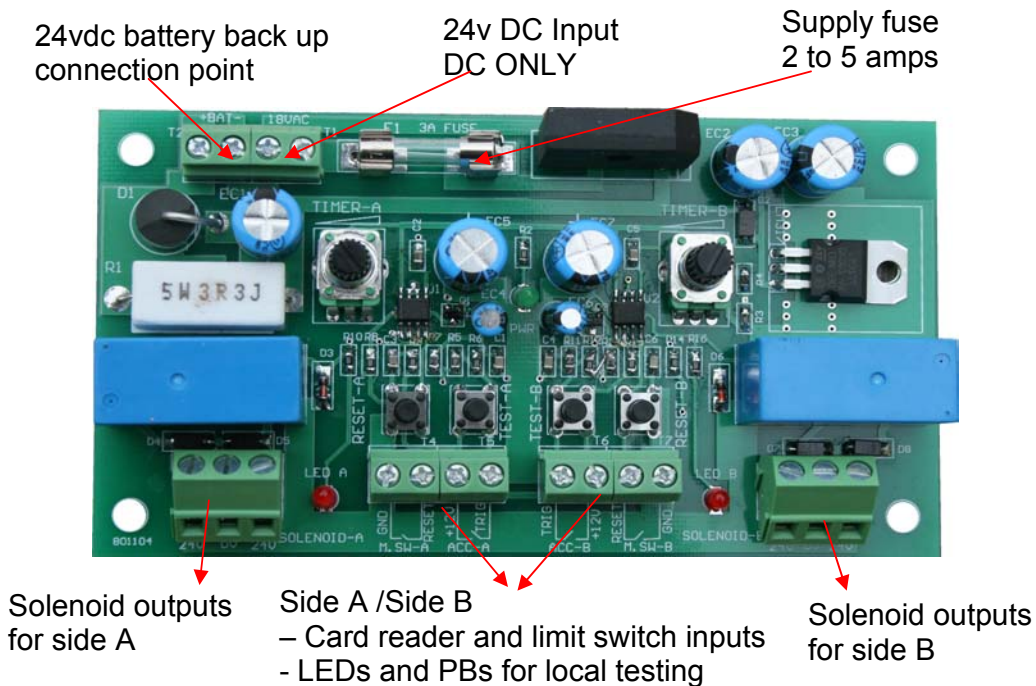
The ratchet and pawls of the mechanism are machined out of a solid steel block, which is hardened by means of heat treatment. A rubber coupling is provided between the mechanism, and the rotating column to act as a shock absorber to absorb some of the impact shock on the ratchet and pawls when they engage after a 90 or 120 degree rotation. The turnstile column should not be pushed at an excessive speed (only walking speed is required) by the person passing through the turnstile as the following conditions may occur:

- 1) The turnstile mechanism will fail to latch after a rotation of 90/120 degrees.



- 2) Excessively high stresses are imposed onto the engaging faces of the ratchet and paws as contact does not occur on the full face area, but only on a portion of the area which can cause damage to the contact faces. This is because the paw is still in the process of retracting when engagement occurs. Note the slop in this area should be monitored and adjusted if there is more than 100mm slop at end of rotor arms.

## 2. Controller



The TS pcb has been developed to overcome some simple but hard to achieve tasks commonly required. This board doesn't require an expert and special equipment to program or a manual in most cases. The most common changes are now only a matter of a wire swap at the terminals. We've also tried to design this board more tech friendly by adding extra terminals for resistor networks and options of n/c and n/o for easy integration to most access control systems.

- LED indication and Press buttons on important things to speed up technician fault finding.
- Fuse protection, 2-5A fuse required
- Auto close times, this is the relock time if some on badges their card but doesn't go through. This auto close time is about 5-30 seconds adjustable
- Battery back, on board charger, only need connect 24V battery.