



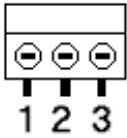
TAILOR MADE METAL FABRICATIONS LTD.

VEHICLE ACCESS CONTROL BARRIER (VAC'B)

TECHNICAL MANUAL v1.3

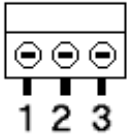
JANUARY 2014

3 Keypad Input



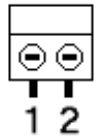
Connecting the input (2) terminal to 0V will cause the barrier to operate.

4 Proximity Switch Input



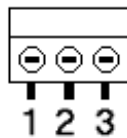
Terminal 1 = +12V, Terminal 2 = input, Terminal 3 = 0V.
Connection for the proximity switch.

5 IR TX



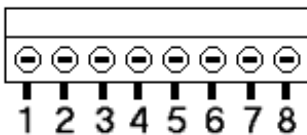
Terminal 1 = +12V, Terminal 2 = 0V.
These connectors power the two infra red transmitters (2-wire) and are only powered up when needed.

6 IR RX 1 & 2



Terminal 1 = +12V, Terminal 2 = input, Terminal 3 = 0V.
These connectors are used for the two infra red receivers (3-wire) and are only powered up when needed.

7 Output & Power Connector



Terminal 1 = PUMP Output (+ve) (Core 2)
Terminal 2 = UP Output (Not used)
Terminal 3 = DOWN Output (+ve) (Core 5)
Terminal 4 = TRAFFIC LIGHT RED Output (+ve)
Terminal 5 = TRAFFIC LIGHT GREEN Output (+ve)
Terminal 6 = 0V side of Down solenoid (Core 4)
Terminal 7 = 0V & 0V side of Traffic Light outputs (Core 7 / Green & Yellow)
Terminal 8 = +12V Supply (Core 1)
(Core numbers refer to the grey 7-core cable)

Timer Switches

There are three pairs of timer switches defined as follows:-

No Vehicle Timer (Top pair of switches, 0 – 99 seconds) – This timer sets the time the barrier will remain in the lowered position if neither of the infra-red beams is interrupted while the barrier is in the lowered position.

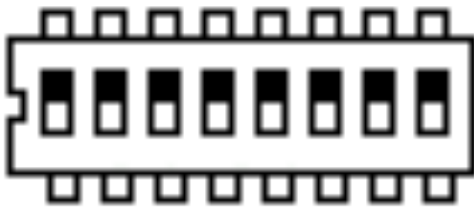
Vehicle Delay Timer (Middle pair of switches, 0 – 99 seconds) – This timer sets the time for which the barrier will remain in the lowered position after either or both of the infra-red beams has been interrupted and both beams have then been restored for a minimum of one second.

Overrun Timer (Bottom pair of switches, 0 – 99 seconds) – This timer sets the arbitrary time for which the hydraulics are allowed to run before it is deemed that a problem has occurred. Should this timer expire during a motion, the system will return to its previous position.

LED Indicators

The three LED indicators at the top centre of the pcb, designated LED1 – LED3 can be used to determine the condition of the two infra-red beams. When lit, LED1 and LED2 show interruption / failure of beams 1 & 2 respectively. LED3 blinks once per second when the barrier is in its lowered position when in toggle mode. All LEDs illuminate for one second on power up to show processor activity.

DIL Switch Options



1 2 3 4 5 6 7 8

- DIL1 Timer disable – Up position disables timer input
- DIL2 No beams on lower - Up position disables beams while lowering barrier
- DIL3 No beams on raise - Up position disables beams while raising barrier
- DIL4 Beam test – Up position enables beam testing
- DIL5 Courtesy delay disable – Up position disables the three second delay after red traffic light comes on.
- DIL6 Toggle enable – Up position enables toggle mode. Barrier raises and lowers on receipt of a trigger command. Timers etc. are disabled. LED3 flashes when in lowered state.
- DIL7 Additional proximity switch detect delay. Up position increases the detect delay on the proximity switch to 5 seconds. Used on twin ram barriers only.
- DIL8 Not used.

Keypad Programming

The keypad supplied is of a stand – alone nature in that it does not send or receive data from the system. It is self – contained in its operation and the programming instructions are included in section 7 of the operator manual.

The administrator password has been left set to the original **1234** and a test code of 1066 has been programmed into the keypad to use while on test. These should be changed on installation for security reasons. The output relay period (unlock time) has been set to one second. This should not be changed.

To operate, the code, followed by a '#' is entered, e.g. 1066#. Passwords of 2 to 8 digits are allowed.

Timer Input

When the timer unit is active, the barrier will lower and turn off the beam units. If the timer becomes inactive, the barrier will raise. Should the GSM2 input be activated by a user texting the word 'close' to the unit whilst the barrier is being held low by the timer input, the barrier will raise and remain raised until an input is received from a radio fob, keypad or GSM1 input, then will lower and revert to timer operation. See section 8 of the operator manual for further information.

Radio Fob Programming

Briefly press the 'Learn' button once.

The Learn LED will flash once to indicate the system is ready to receive the transmission.

Operate the Transmitter button.

The Learn LED will then illuminate, operate the same transmitter button again.

The Learn LED will then flash to indicate learning is complete.

Once the transmitter has been learned, operate the transmitter to check operation of the barrier.

Erase Mode: Erase Mode is achieved by pressing and holding the 'Learn' button for more than 8 seconds. This causes the internal EEPROM to be erased of all pre-learnt Transmitter pairings.

Operation

On applying power, the timer LEDs on the left side of the pcb and the three diagnostic LEDs will light for one second, after which the system will attempt to raise the barrier to determine its original position. If the barrier was in its lowered position or in an intermediate position, the system will drive the barrier up until the proximity switch detects its raise limit. If the barrier was already at its raise limit, the system will drive the barrier up for three seconds before removing the drive.

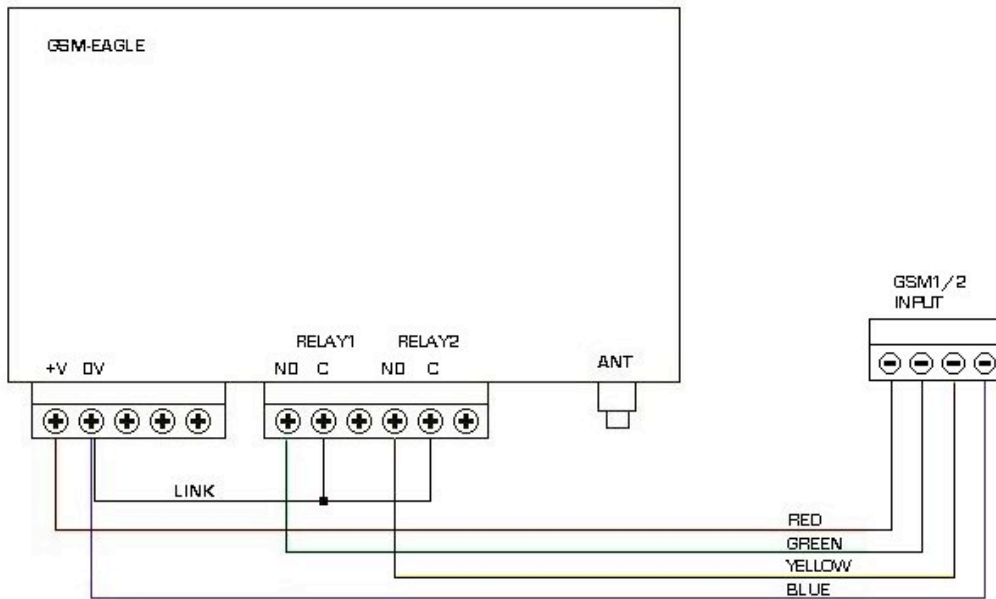
Once at the raised position, the system will wait for a trigger signal.

On receiving a trigger signal from the radio link, keypad or GSM module, the system will light the red traffic light and drive the barrier down to its lowered position as detected by the proximity switch. Once in its lowered position, the red traffic light will extinguish, the green traffic light will light, the infra-red beams will be powered up and the system will wait for a maximum period set by the **No Vehicle Timer**. If neither beam is interrupted, following the period set by the No Vehicle Timer, the barrier will be raised. Should a vehicle interrupt one of the beams, the No Vehicle Timer is discarded and the **Vehicle Delay Timer** is initiated. This timer gives a period of time during which the vehicle can cross the barrier. The timer only runs when the beams have been restored and will be reset to its set value every time either of the beams is interrupted.

Once both beams have been restored, the Vehicle Delay Timer will run for its set time and then initiate the raising of the barrier. During the raise motion, should either of the beams be interrupted, the system will return the barrier to its lowered position and go through its cycle of No Vehicle Timer and Vehicle Delay Timer for a second time. Once the barrier returns to its raised position, detected again by the proximity switch, the system will power down the infra-red beams and switch off the red traffic light. The system is now ready to receive another trigger signal.

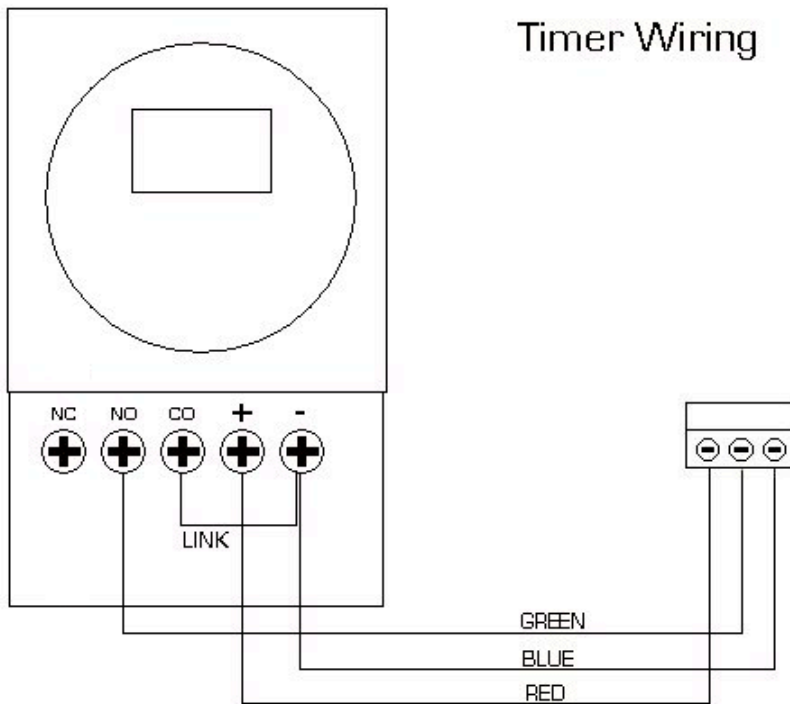
GSM-EAGLE unit wiring (if fitted)

The GSM-Eagle unit should be connected as per the drawing below using the cable provided

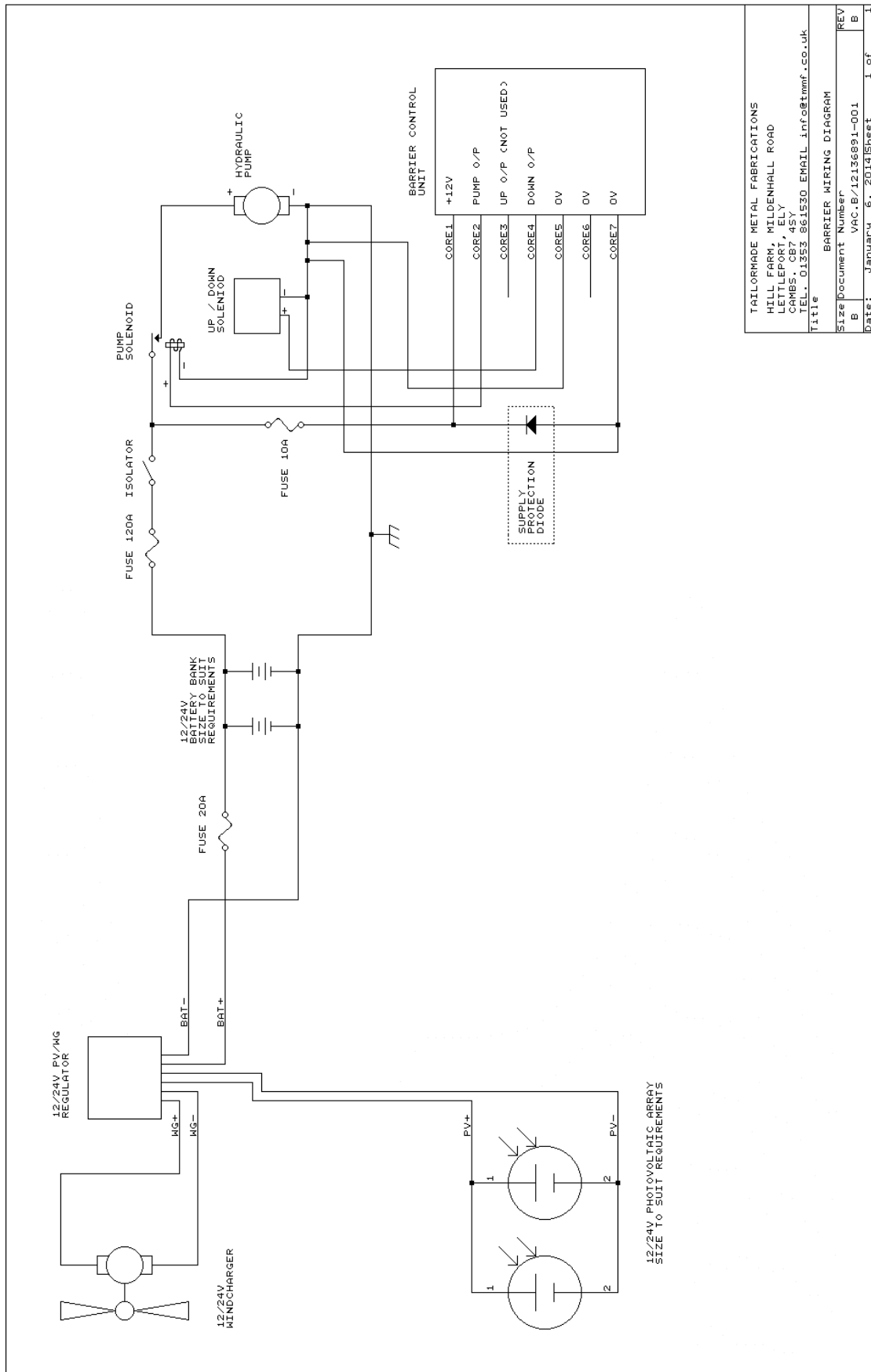


Timer unit wiring (if fitted)

The timer unit should be connected as per the drawing below using the cable provided.



Barrier Wiring Diagram



TAILORMADE METAL FABRICATIONS HILL FARM, MILDENHALL ROAD LITTLEPORT, ELY CAMBS. CB7 4SY TEL. 01353 861530 EMAIL info@tmf.co.uk	
Title	BARRIER WIRING DIAGRAM
Size	Document Number
B	VAC.B/12136891-001
B	REV
Date: January 6, 2014	Sheet 1 of 1

