MX Error Codes

E0 Not Used
E1 Not Used
E2 Not Used
E3 Not Used
E4 A/D Reference
E5 Fence Input
E6 Earth Input
E7 Return Input
E8 Pulse Detection
E9 Mains Detection
E10 Charging Capacitor
E11 Not Used
E12 Not Used
E13 Not Used
E14 Cap voltage Sense
E15 Not Used
E16 Incorrect Install

UNDERSTANDING THE ERROR MESSAGE AND FAULT FINDING

E4 A/D Reference

Microcontroller A/D reference pin is reading low. Normal operation can not continue as all A/D readings will be incorrect.

Possible causes:	Possible solutions:
Voltage on microcontroller A/D reference pin I slow	Check voltage reference circuitry. Replace voltage reference U108 Check 15 V supply.

E5 Fence Input

A fence input fault is indicated if the fence input voltage measurement circuitry is continuously reading a full scale measurement.

Possible causes:	Possible solutions:
Some fault in the fence input voltage circuitry is a low reading on the fence A/D pin.	Check for solder bridges and other faults with measurement circuitry. (Micro pin 18 especially)

E6 Earth Input

A earth input fault is indicated if the earth input voltage measurement is continuously reading a full scale measurement.

Possible causes:	Possible solutions:
Some fault in the fence input voltage circuitry is a low reading on the fence A/D pin.	Check for solder bridges and other faults with measurement circuitry. (Micro pin 16 especially)

E7 Return Input

A return input fault is indicated if the return input voltage measurement is continuously reading a full scale measurement.

Possible causes:	Possible solutions:
Some fault in the fence input voltage circuitry is a low reading on the fence A/D pin.	Check for solder bridges and other faults with measurement circuitry. (Micro pin 17 especially)

E8 Pulse Detection

The microcontroller checks the fence pulse detection circuitry is operating by checking that each time the SCRs are triggered a corresponding fence pulse is detected. This ensures the pulse detection circuitry is operating correctly so the energizer can respond to the remote control.

Possible causes:	Possible solutions:
Pulse detection signal staying high or low.	Check pulse detection circuitry Check for loose connection of capacitor board wireset to J105
Pulse detect signal not received when SCRs triggered.	Check the storage Capacitors are charging. If the Energizer pulsed then displayed E8 then the problem is with the pulse detection circuitry. If the Energizer charges the storage capacitors up and then goes E8 then check the SCRs and triggering circuitry (both primary and turbo) Solder fault on C3 or C4.

E9 Mains Detection

This Energizer triggers both the storage capacitor SCRs and the charging circuit triac on the mains zero crossing to minimise RFI and to reduce components being over stressed. If the mains signal is absent for greater than 125 ms the mains detection fault is indicated.

Possible causes:	Possible solutions:
Fault on mains detection circuitry	Check for solder bridges and other faults on the main s detection circuitry. (Micro pin 2 especially) Energizer Board – R14, D14,D16 Control Board – Micro pin 2. LN100

E10 Capacitor Charging

The E10 error message indicates the two following fault conditions:

1) To test if the triac is operating correctly the desired capacitor voltage is compared with the actual measured capacitor voltage before the storage capacitors are discharged. If the measurement voltage is 100 volts greater than the desired voltage the fault condition is set. In this event the Energizer will display the E10 message and disable the Energizer for a 3 second retest period.

Possible causes:	Possible solutions:
Triac is faulty and has gone short circuit. A short circuit between triac cathode and anode.	Replace triac Q2. Remove short circuit C9-C12 Energizer Board Q2, R15 Control Board 6, R101, R106, Micro pin 23 Check 15V rail. Solder fault on C3 or C4.

2) If the Energizer is then switched off and then on again, it is possible that the capacitor voltage could be above the normal maximum operating level of 900 V. In this event the Energizer will display the E10 message and disable the Energizer until the capacitor voltage is internally discharged to the standard capacitor voltage (version 1 is 650 V and versions 2 & 3 is 500V), then the Energizer will start operating as per normal.

Possible causes:	Possible solutions:
Normal operation – Capacitor	Allow capacitors to discharge

Voltage is higher than it should be	
Triac charging storage capacitors in an uncontrolled manner.	Replace faulty triac and allow storage capacitors to discharge

E14 Capacitor Voltage Sense

A capacitor voltage sense fault is indicated if the voltage measurement continuously reads a full scale measurement.

Possible causes:	Possible solutions:
A high signal is present on the capacitor voltage (CV) pin.	Check for solder bridges in CV circuit Energizer Board R3, R9 Control Board Micro pin 19

E16 Incorrect Installation

An installation fault is indicated if the output terminals are connected incorrectly. The fault condition checked every 3 seconds with a pulse.

Possible causes:	Possible solutions:
Normal Operation – Fence output terminal connected to earth connection.	Remove output terminal from earth connection, and connect earth output terminal to earth connection.
Faulty Readings	Check fence pulse measurement circuitry