NEMTEK
GROUP OF COMPANIES

MERLIN STEALTH MASTER – Electric Fence Energizer

Users Manual

Revision 1.0
05/08/2006

FOREWORD

The Merlin Range of energizers has evolved over the past fifteen years. The energizers are designed to comply with the latest international specifications.

In order to offer some product flexibility the embedded software in the energizers may change. The latest version of documentation and energizer features can be viewed on our website at: www.nemtek.com

Nemtek has introduced the Merlin Stealth in the course of 2005 to replace the older M1x and M2x range. Earth-loop monitoring has been incorporated throughout the range, onboard diagnostics, communications interface (RS232) and energy output and electromagnetic interference levels that comply with the very latest IEC specifications.
In August 2006 the Merlin Stealth Master was added to the range. The Master unit can control and communicate with a maximum of 9 Slave units (M25S or M28S) which will than form together a 20 zone network system.

G U A R A N T E E

The Merlin energizer, manufactured by IO Tech Manufacturing (Pty) Ltd, is guaranteed for a period of one year from date of sale against defects due to faulty workmanship or materials.

IO Tech Manufacturing (Pty) Ltd will, at its discretion, either repair or replace a product that proves to be defective.

IO Tech Manufacturing (Pty) Ltd guarantees that the product, when properly installed and used in line with the specification as determined by IO Tech Manufacturing (Pty) Ltd from time to time, will execute its function of generating a suitable potential. IO Tech Manufacturing (Pty) Ltd does not guarantee that the operation of the product will be uninterrupted and totally error free. Faulty units must be returned to Nemtek, Units 4 & 5, 64 Vervoer Street, Kya Sand, Randburg, Gauteng, South Africa OR Nemtek Security Warehouse, Unit 4, Meadowdale Park, Cnr. Herman & Dick Kemp Roads, Meadowdale, Edenvale, Gauteng, South Africa. The buyer shall pay all shipping and other charges for the return of the product to Nemtek or Nemtek Security Warehouse.

L I M I T A T I O N   O F   G U A R A N T E E

The guarantee does NOT apply to defects resulting from acts of GOD, modifications made by the buyer or any third party, misuse, neglect, abuse, accident and mishandling.

E X C L U S I V E   R E M E D I E S

The remedies provided herein are IO Tech Manufacturing (Pty) Ltd's sole liability and the buyer's sole and exclusive remedies for breach of guarantee. IO Tech Manufacturing (Pty) Ltd shall not be liable for any special, incidental, consequential, direct or indirect damages, whether based on contact, tort, or any other legal theory. The foregoing guarantee is in lieu of any and all other guarantees, whether expressed, implied, or statutory, including but not limited to warranties of merchantability and suitability for a particular purpose.

INTRODUCTION

1.0 Introduction

The Merlin Stealth Energizer M25S Master or M28S Master enables up to ten energizers to be networked.

The system user can send through the Master energizer global or energizer specific commands to turn energizers On/Off and change between High-Voltage and Low-Voltage modes. Fence and Gate alarm indication is given for individual zones on the Master keypad.

Familiarity with the Merlin Stealth Energizer™ Range will facilitate the understanding of the Master controller.

Each of the networked energizers may have their own individual keypads giving access to all the programmable features of the individual energizer. For security reasons, the individual keypads, can be disabled by using a unique personal identification number (PIN) on each energizer.

The lid tamper switches, mains and battery condition, communication and synchronization status of each energizer is monitored and displayed once a second.

For safety reasons the energizers may be pulsed in a synchronized manner.

Communication errors in a network can occur and it is the responsibility of the user to ensure that the system is in the desired state. If operating as a synchronized network, system safety is of paramount importance, and any loss of communication or communication error will result in the affected network components defaulting to a safe operating level. The Master will detect a loss in synchronization and take corrective action. The Master will periodically align the individual energizer clocks to ensure correct operation.

USING YOUR MASTER KEYPAD

Global Commands
Global Commands are commands from the Master keypad which the Master and the Slave Energizer must obey simultaneously.
All energizers in the network to obey the commands. The status quo of the individual energizers is assumed to be that of the master when issuing a global command.

Example: If a four energizer system with one individual slave in the Off state. The master and other two slaves are in the On state. Issuing a global On/Off toggle command will result in all the energizers being in the Off state because the Master had been in the On state.

ON / OFF TOGGLE (All units)

⬡ ⬡ ⬡ ⬡ ⬡#
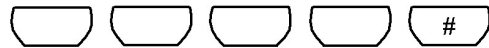
Enter the Master PIN and press #. All the units should either be on or off. Verification of all units being in the ON state is if the GOOD indicator is permanently lit. Verification that all units are in the OFF state is if the ON indicator is not lit or not flashing. Repeat the sequence if the desired state has not been attained.

HIGH/LOW VOLTAGE TOGGLE (All units)

⬡ ⬡ ⬡ ⬡ ⬡* ⬡3 ⬡#

Enter the Master PIN and press *3#. All the units should toggle between High-Voltage and Low-Voltage or vice versa. Verification that all units are in the High-Voltage state is if the ON indicator is permanently lit. Repeat the sequence if the desired state has not been attained. If the ON indicator remains flashing after ten seconds repeat the sequence.

SPECIFIC COMMANDS

Each of the energizers can be instructed to obey specific commands. Without having to go and physically look at an individual energizer it is easier to follow the following procedure. If only one energizer is required to be in the OFF state it is far easier to issue a global command and ensure all energizers are ON by verifying that the GOOD indicator is permanently lit. Issue the specific energizer OFF command. Verification is then obtained if the GOOD indicator is now flashing. If only one energizer is required to be in the ON state, do a global OFF and check that the ON indicator is not flashing or lit. Turn on the individual energizer and confirmation is obtained if the ON indicator is flashing or lit. The same methodology can be used with the High-Voltage and Low-Voltage commands and the ON indicator. (If this process seems cumbersome, full status and control, of individual energizers is possible with the embedded Linux platform).

SPECIFIC ENERGIZER ON/OFF

$$\square\ \square\ \square\ \square\ [*]\ [0]\ [X]\ [\#]$$

Enter your PIN (master only) and press the ***** key, enter the digits 0 and X, then press the **#** key. X is the number for the Master or respective Slave unit and can take on the value as follows: X=1 for the Master unit, X=2 for the first Slave unit, ditto for the other Slave units up to X=9 for the eight Slave and X=0 for the ninth Slave.
The GOOD light should flash if one or more energizers are switched off.

SPECIFIC ENERGIZER HIGH/LOW-VOLTAGE

$$\square\ \square\ \square\ \square\ [*]\ [3]\ [X]\ [\#]$$

Enter your PIN (master only) and press the * key, enter the digits 3 and X, then press the **#** key. X is the number for the Master or respective Slave unit and can take on the value as follows: X=1 for the Master unit, X=2 for the first Slave unit, ditto for the other Slave units up to X=9 for the eight Slave and X=0 for the ninth Slave.
The ON light should flash if one or more energizers are in Low-Voltage mode.

MASTER KEYPAD DISPLAY SUMMARY

Indicator	Lit	Flashing	Off
ON	At least one energizer on. All energizers are in HV mode	Not all energizers in HV mode	All energizers off irrespective of voltage setting.
GOOD	All energizers on. No alarm condition present	Not all energizers on. No alarm condition present	Some alarm condition present
POWER	Mains present on all energizers	Mains present at some energizers	No mains present on any energizer
FENCE	NA	Fence Alarm# NOTE^	No Fence Alarm
GATE	NA	Gate Alarm# NOTE^	No Gate Alarm
SERVICE	NA	Battery Low on energizer # NOTE*	No service condition
COMMS	NA	Communication Failure on energizer # NOTE *	No communication failure condition
TAMPER	NA	Tamper Alarm on energizer # NOTE*	No energizer lid removed

Note ^:
The Master Energizer has Fence Zones 1 and 2 and Gates 1 and 2.
The First Slave has Fence Zones 3 and 4 and Gates 3 and 4.
The Second Slave has Fence Zones 5 and 6 and Gates 5 and 6 etc.

Note*:
The Service/Comms/Tamper indicators refer to the actual energizer address e.g. a lid removed on the second slave would give a TAMPER 3 indication and not a TAMPER 5 and 6 indication.

USING KEYPADS ON INDIVIDUAL ENERGIZERS.

If individual keypads are used on slave energizers, the keypads have full accessibility to the energizer functions. In certain cases parameters are written to non-volatile memory. Because this process takes an undefined amount of time synchronization may be lost if the system is a synchronized network. The energizer will pulse in a safe mode (low-voltage) until the Master can detect and re-synchronize the network. This typically takes four or five seconds.
Please note that the Master Keypad does not work on Slave units.
Refer to the Merlin Stealth User Manual for a description of the keypad operation.

8

WHAT TO DO IN THE EVENT OF AN ALARM.

A properly installed electric fence should not cause false alarms and any alarm condition should be investigated.

An alarm condition must be cleared on the Master Keypad. This can be done by using a specific Energizer On/Off command for the energizer with the alarm condition or a global On/Off command. If the alarm condition is still present on turn On the alarm on the Master will sound again.

- Turn the energizer(s) Off and On again at the Master. The Specific Command is preferable.
- If the alarm does not sound again the alarm condition no longer exists and no further action is required. If the alarm sounds immediately again the alarm condition still persists. Switch the specific slave off and remedy the cause.

Go to the specific energizer and bypass the particular cause of alarm and remedy when possible. Note that the Master keypad does not function when plugged into a slave energizer.

Example: A six zone system comprising of a Master and Two Slaves. A permanent fence fault occurs on Zone 1 of the second slave because a tree was blown over and has damaged the fence. This would be displayed by a flashing both **FENCE** and **5** indicators on the Master keypad with siren and buzzer activated on both the Master and Slave. Using the specific energizer On/Off command:

Master PIN*03#   i.e. turn energizer 3 (slave 2) OFF.
Master PIN*03#   i.e. turn energizer 3 (slave 2) On again.

Because the fence fault persists the alarm will sound again.
Either fix the fence, with the energizer turned off, or go to the energizer and bypass Fence Zone 1 by entering -Slave Master PIN*11# and repair the fence at a later stage. Note the Slave Master PIN may or may not be identical to the Master PIN depending on the installer programming the system. After the repair turn the Slave back on either at the Slave or at the Master.