ENFORCER V11

INSTALLATION GUIDE

ENFORCER V11
Time   10:09 c

DOCUMENT CONVENTIONS

TERMINOLOGY

INTERCHANGEABLE WORDS	DESCRIPTION
Armed, set	When an area or level is armed, if a zone is triggered, the system will follow the appropriate (programmable) actions.
Disarmed, unset	When an area or level is disarmed, the panel will not react unless specifically programmed to do so.
Siren, sounder, bell	A warning device (usually external) that is generally configured to give audible and visual notification that the system has been activated.
Area, partition	A group of zones assigned to be active when that particular area is armed. This is usually named 'Area A' or renamed to a personal choice such as 'Full Set' or 'Shop'.
Zone, input	This refers to a detector or sensor connected to the system, whether this be wired or wireless.
Output, PGM, PG	An output is a signal from the panel to instruct another device to operate. This is usually a voltage that triggers a wired siren, a garage door, a wireless siren etc.
Bypass, omit	The act of stopping a zone from becoming armed. A wired zone will still detect an intruder or object but the system will not react to it - a wireless zone will become dormant.

ICONS

Important information
This information should be read and taken into consideration when installing. Failure to do so may result in faults and unexpected errors with the system and/or peripherals.

Notes
Highlights parts of the process where extra care is needed or where sections of the programming may be impacted by other options in the menus.

Hints
Helpful information for a smoother installation of the system.

CONTENTS

INTRODUCTION

The Enforcer is a wireless alarm system that has been designed to enable easy installation and minimal maintenance. The Enforcer protects the property (domestic or commercial) with a multitude of unique features:

- Two Way Wireless Protection
- Signal Strength Indicator (SSI)
- Instant Two Way Device Control
- Pyronix High Security Wireless Protocol Encryption
- Programmable Wireless Supervision Time
- Intelligent Wireless Jamming Detection

Default codes

Master Manager Code: 2222

Engineer Code: 1111

SYSTEM OVERVIEW

Areas	4
Wireless zones (max)	64 32x zones on board (zones 1-32) 1x wireless expander (zones 35-66)
Wired zones (max)	34 2x zones on I/O board (zones 33-34) 4x wired expanders (zones 35-66)
Total zones	66
Outputs (max):	38 3x outputs on I/O board 1x output module 4 on each wired expander 1 on each wired keypad
User/Manager codes:	80 (Max 32 x wireless keyfobs)
Duress/Guard codes:	2
Code combinations:	4294967295 (fully encrypted rolling code)
Communications:	Additional to the on-board Wi-Fi module DIGI-GPRS | DIGI-LAN | DIGI-PSTN | DIGI-PSTN/VOICE
Arming devices (max):	8 1x onboard keypad 3x wired keypads or internal/external proximity readers. 4x wireless keypads 4x tablets using HomeControlHUB application
Sirens:	2 wireless sirens or 2 wired sirens (in SCB mode)
Logs:	750
Remote arm and soak test	✓
Event signalling to UDL	✓
Memory type	EEPROM
EN grade	2
Environmental class	II

SPECIFICATION AND WARRANTY

ELECTRICAL	
European rated voltage	230V AC -15/+10%
European rated current	83mA
Capable operating voltage	90 - 264V AC
Current	222mA - 75mA
Rated frequency	50/60Hz
Zone fuse rating	T 2A (cannot replace)
PSU	Type A
Radio frequency	868MHz, FM Transceiver Narrow Band
ENFORCER BATTERY	
Output instant voltage	11V (with no mains and battery fully charged)
Peak to peak ripple voltage	10mVpk
Battery low voltage cut off value	8.5V
Type	NiMH 8 cell 2200mAh rechargeable battery
CIE current when operating on battery backup	90mA
ENVIRONMENT	
Physical dimensions (W x H x D)	220 x 160 x 50mm
Weight	1025g
Operating temperature	-10℃ to +40℃
Nominal temperature	-10℃ to +50℃
Storage temperature	-20℃ to +60℃
I/O BOARD (IF CONNECTED)	
Zones	2 Wired (DEOL, SEOL)
Output voltage	13.2 VDC (nominal)
Max current for PGM output	70mA
SAB outputs	250mA Continuous Load
Bus fuse	F500mA 250V Bus Fuse
Aux fuse	F500mA 250V Aux Fuse
SYSTEMS ANALYSIS: ZONES (MAX 66)	
Wireless	32
Wired	2
Zone expansion modules	4 wired (8 wired zones each) EURO-ZEM8, EURO-ZEM8+ or EURO-ZEM8+PSU 1 wireless (32 wireless zones) EURO-ZEM32-WE

SYSTEMS ANALYSIS: OUTPUTS (MAX 38)	
I/O Board	3 wired
Keypads/readers	3 wired EURO-LCDPZ, EUR-107
Zone expansion modules	4 wired EURO-ZEM8+
Output module	1 wired EURO-OEM8R8T, EURO-OEM16R+PSU
Fuses	2x F500mA 250V
SYSTEM ANALYSIS: ADDITIONAL DEVICES	
Keypads	Up to 3
Readers	Up to 3
External sirens	2
Wireless arming stations	4

Please note:
Compliance labelling should be removed or adjusted if non-compliant configurations are used.
Technical functions for example fire, gas and flooding are not security graded as they are outside the scope of EN50131-1 and EN50131-3.
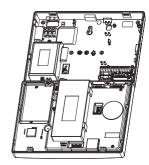
Please note:
It is recommended that the Engineer Menu is accessed prior to opening a powered Enforcer.
If any new peripherals are installed such as communications modules, expanders or arming devices, the whole system should be powered down mains and battery prior to installing.
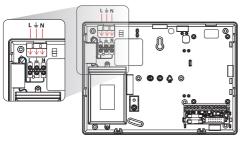

1. Slightly unscrew the two screws located at the bottom.

Please note: Do not fully unscrew as these can be used as a 'hanger' to the rear casing as shown in Step 3.

2. Unhinge the front from the top and pull down to disconnect.

Please note: Take care when removing as modems, I/O boards etc. may be connected to the front.

3. Hang the front on the opening screws at the bottom if required. Shown above.

MAINS AND EARTH WIRING

It is important that the electrical earth connection is connected when connecting the 230VAC mains supply to the Enforcer.

Please note:
[1] Do not locate the mains cables next to internal cabling.
[2] Ensure that the control panel is not mounted on any metal surfaces.
[3] That the mains cables should not be internally 'looped'. This may interfere with the wireless antenna's. Where possible it is recommended that all mains cables should be installed through the area nearest the mains terminals as shown above.
[4] The panel should be mounted at least 1 metre away from any source of electrical or radio interference including but not limited to, mains consumer units, solar PV control equipment etc.
[5] If cable management is an issue, a spacer is available: ENF/SPACER-WE
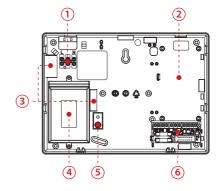
INSIDE OF THE ENFORCER

Back plate

1. Terminals for incoming mains power.

2. If a second communications path is required this space is used to install the communications module.

DIGI-PSTN, DIGI-PSTN/VOICE, DIGI-GPRS, DIGI-LAN

3. Ferrite beads.

4. The transformer, which is situated in an insulated housing.

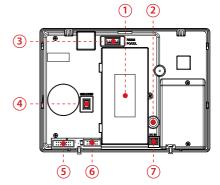5. The rear tamper adjustment screw.

This should be used if the tamper from the front of the Enforcer isn't sitting flush to the back plate. E.g. if the Enforcer is installed on an uneven surface.
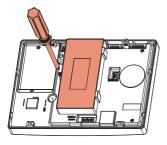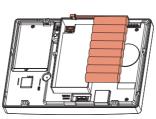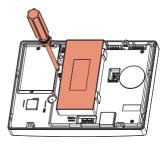
6. The I/O board.

Front

1. Back up battery compartment.

2. Tamper spring.

3. RS232 connection for upload/download to InSite software.

4. Communications module power connection.

5. I/O board connection.

6. The connection for a communication module to be installed.

7. Transformer connection. (15VDC)

1. Unscrew the battery compartment.

2. Connect the battery pack.

3. Close the battery compartment making sure no battery cables are trapped underneath.

IMPORTANT NOTE: The control panel back up battery must be replaced by the manufacturer's recommendation. The part code for this battery is BATT9V6/2Ah1-WE and is a NiMH 8 cell 2200mAh rechargeable battery.

Install the batteries in the space provided and connect the battery connector to the three pins as shown above.

Reinstall the battery holder cover and dispose of the batteries in accordance with the local regulations.

IMPORTANT INSTALLATION NOTES

Ensure wiring is done to the national wiring regulations in the country where the installation is taking place. In the UK, this is BS 7671 Requirements for electrical installations; IET Wiring Regulations (17th edition). If in doubt, consult a local qualified electrician.

Ensure that a readily accessible disconnect device (such as an un-switched fused spur or plug and socket (with approved cover to prevent accidental disconnection from mains supply)) is incorporated in the premises' installation wiring. It must be provided external to the equipment at a distance of 30mm minimum and is connected as closely as possible to the supply.

Ensure that the Input Output Board (I/O Board) used to connect wired keypads, readers, inputs and outputs to the Enforcer is only connected to circuits operating at SELV voltage.

When securing external wires, ensure that means are provided in the installation to prevent the SELV or signal circuits from coming into contact with live parts of the power supply circuit. Wires should be fixed near their terminal blocks.

The end of stranded conductor shall not be consolidated by soft soldering at places where the conductor is subjected to contact pressure.
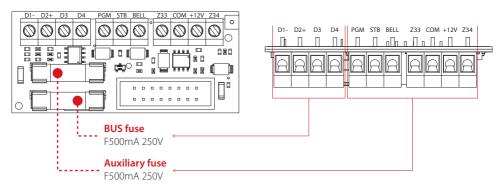
On completion of wiring use tie-wraps to prevent any loose wires causing a safety hazard (material of cables tie shall be rated at least HB or better).

Cables ties and hoses shall be separate for power supply cable and SELV wirings.

Size of protective bonding conductors: minimum section 1.5mm².

INPUT/OUTPUT BOARD

The input/output (I/O) board contains the RS485 terminals that are used to connect additional wired keypads, readers, zone expanders and output expanders along with terminals for wired zones and outputs.

BUS fuse
F500mA 250V

Auxiliary fuse
F500mA 250V

D1-
RS485 0V

D2+
RS485 +12V

D3
RS485 'A' Bus

D4
RS485 'B' Bus

PGM
Programmable output

BELL
Bell output for a wired external siren

STB
Strobe output for a wired external siren

Z33
Wired zone 33

COM
Common terminal for Z33 and Z34 and -12VDC auxiliary supply
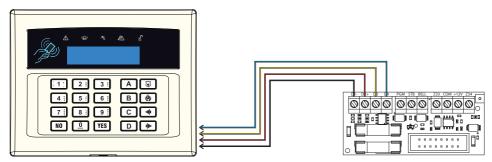
+12V
+12VDC auxiliary supply

Z34
Wired zone 34

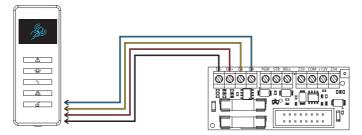## CONNECTING ARMING DEVICES

Connecting keypads

Up to 3 additional keypads can be connected to the Enforcer. These will be addressed individually and also configured in the engineer function 'Assign Keypads/Readers?'.

Addressing at the keypad

Each keypad is addressed individually in the keypad menu, press and hold the D key on the keypad until 'SECURITY CODE' is displayed. Enter '2000' and enter the assigned address (the first keypad that is connected should be addressed as '01'). Press the A key to save the data and exit.

Up to 3 readers can be connected to the Enforcer. Each reader must be addressed as described below. These will also need configuring in the engineer function 'Assign Keypads / Readers'.

Addressing at the reader

Address 01
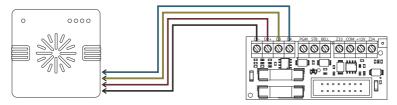SWITCH 1 ON.

Address 02
SWITCH 2 ON.

Address 03
SWITCH 1: ON, SWITCH 2: ON.

Please note: If using the internal reader as access control or entry control please refer to the peripheral instructions for connection details

If an additional external reader is connected, this will need to be assigned in the programming, 'Assign Keypads/Readers'. Each reader will also need to be addressed individually via connecting certain wires to ground.

Addressing at the external reader

Address 01
Brown and orange to 0V/GND

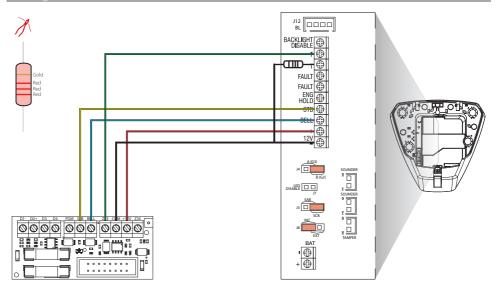**Address 02**
Brown and green to 0V/GND

Address 03
Brown to 0V/GND

Please note: If using the external reader as access control or entry control please refer to the peripheral instructions for connection details

CONNECTING PERIPHERALS

Wiring an external siren

To create the siren tamper circuit, a 2k2 resistor is required across 0V supply and one of the tamper terminals in the external siren. The other tamper terminal should be connected to the tamper return (either zone 33 or 34 on the I/O board). Note, the zone must be programmed as 'tamper'.

The resistor value will correspond to the value selected in 'Wiring Choice'.

IMPORTANT NOTE: The external siren connected needs to be set in SCB mode unless it is a Pyronix external siren.
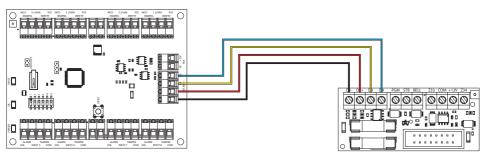
Wiring zones

The End of Line (EOL) value for all wired zones is programmed in 'Choose Mode'. At default the resistor values are 4k7 for alarm and 2k2 for tamper.

Connecting a wired zone expander

Up to 4 wired zone expanders can be connected to the Enforcer.

✎ **Please note: The above shows the I/O board connected to a EURO-ZEM8, a EURO-ZEM8+ is connected in the same way. If using a EURO-ZEM8+PSU, the D2+ MUST NOT be connected.**

ZEM address 0
Zones 35-42

ZEM address 1
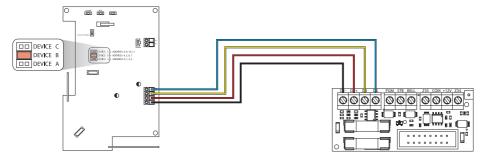Zones 43-50

ZEM address 2
Zones 51-58

ZEM Address 3
Zones 59-66

Connecting a wireless zone expander

1 wireless zone expander can be connected to the Enforcer however, this expander can take the place of 4 addresses potentially expanding the system by 32 wireless peripherals.

❗ **IMPORTANT NOTE: The wireless ZEM must be addressed as 'Device B' via the jumper headers.**

The wireless ZEM allows a maximum 32 wireless zones to be learnt. These 32 zones are programmed as 4 different ZEMs (addresses), and each having 8 wireless zones assigned.

Example
Wired and wireless zone expanders can be installed together on a system and, as long as they are addressed uniquely, they will work alongside each other. For instance, if you wish to use 24 wireless zones and 8 wired zones, you can program the wireless ZEM as ZEM addresses 00, 01 and 02 in the menu item 'INSTALL ZEM' and learn 24 zones to the system using the 'WIRELESS DEVICE CONTROL' menu. Then address a wired ZEM as ZEM 03.

Wireless ZEM header addressing

WIRELESS ZEM	ADDRESS	DEVICE A (0-3)	DEVICE B (4-7)	DEVICE C (8-11)
	ZEM address 00	OFF	**ON**	OFF
ZEM32-WE	ZEM address 01	OFF	**ON**	OFF
	ZEM address 02	OFF	**ON**	OFF
	ZEM address 03	OFF	**ON**	OFF

Wireless ZEM zone mapping

WIRELESS ZEM	ADDRESS	ZONES
	ZEM address 00	35-42
ZEM32-WE	ZEM address 01	43-50
	ZEM address 02	51-58
	ZEM address 03	59-66

Please note: Wireless zones 35-66 can take upto 5 minutes to become active when armed.

Connecting an output expander

1 remote output expander can be connected to the Enforcer. The output expander allows 16 additional outputs.

Please note: The above shows the I/O board connected to a EURO-OEM8R8T. If the expander is a EURO-OEM16R+PSU, the D2+ terminal must not be connected to the I/O board.

CERTIFICATION

All wireless devices comply with the following EU and UK requirements:

DIRECTIVE	EU	UK
EMC	2014/30/EU	Electromagnetic Compatibility Regulations 2016 No. 1091
Low Voltage	2014/35/EU	Electrical Equipment (Safety) Regulations 2016 No. 1101
RE Directive	2014/53/EU	Radio Equipment Regulations 2017 No. 1206
RoHS	2011/65/EU and COMMISSION DELEGATED DIRECTIVE (EU) 2015/863	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 No 2032

And meet the following standards where relevant:

EMC	
EN 61000-6-3:2007 +A1:2011	EMC. Generic emission standard. Residential, commercial and light industry
EN 50130-4:2011 +A1:2014	EMC. Immunity requirements for components of fire, intruder and social Wireless Alarm Systems
ETSI EN 301 489-3: V2.1.1 (2019-03)	EMC. Radio equipment. Part 3: Short range devices (SRD) 9kHz to 40GHz
LOW VOLTAGE (SAFETY)	
EN 62368-1:2014+A11:2017	Audio/video, information and communication technology equipment. Safety requirements
RE DIRECTIVE	
ETSI EN 300 220-1	EMC. Receiver Class 1, Environmental Category 1
CERT/ERC	Recommendation 70-03 Annex 1
SECURITY STANDARDS	
EN 50131-1: 2006 + A1: 2009 +A2:2017	Alarm systems — Intrusion and hold-up systems - Part 1: System requirements
EN 50131-3: 2009	Alarm systems – Intrusion and hold-up systems - Part 3: Control and indicating equipment
EN 50131-6: 2017	Alarm systems – Intrusion and hold-up systems - Part 6: Power supplies
EN 50130-5: 2011	Alarm systems - Part 5: Environmental test methods
EN 50131-5-3:2017	Grade 2. Interconnections for equipment using radio frequency techniques
PD 6662: 2017 (UK only)	PUBLISHED DOCUMENT Scheme for the application of European Standards for intrusion and hold-up alarm systems
ROHS	
BS EN IEC 63000: 2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Compliant operation is only guaranteed when installed and operated according to the relevant installation and user manuals.