

Noby 65

Intruder - Fire - Water Combined Alarm

Installation Manual and User Operating Instructions

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For your safety:



This equipment is to be installed, serviced and maintained by a suitably qualified technical person with the requisite knowledge of electrical and fire safety installations.



The Noby-65 is intended to be permanently connected to the 230VAC house wiring via a 2A fused spur and in accordance with local wiring regulations.



Part of the internal circuitry operates at 230VAC and presents an electrical shock hazard. Do not attempt to open, dismantle, repair or tamper with this equipment without first disconnecting the 230VAC supply voltage.



This is Class-1 electrical equipment and must be earthed.



Please read this Installation Manual carefully and retain for future reference.

FIRST POWER-UP

We strongly recommend that the Noby-65 is first powered up with all 10K End Of Line resistors fitted **at the panel**, as supplied by the factory. In this way you can gain confidence that the panel is operating correctly *before* introducing detector and sounder circuits.

Power-Up With Battery

- Turn the Keyswitch to the **OFF** position.
- Connect the black battery lead to the battery –'ve terminal.
- Connect the red battery lead to the battery +'ve terminal. It is normal to see a small spark.
- 60s Start-up Period: i) All LEDs flash for 60s *.
ii) The Buzzer output will make a pulsing sound (if connected).
- After Start-up: i) The green Power LED flashes.
ii) The yellow Fault/Alarm LED is lit.
iii) The red Sabotage LED is lit (because Noby-65 lid is removed).
- * *The 60s Start-up Period can be prematurely terminated by turning the Keyswitch to **FULL** for 4s, and then back to **OFF**.*
- Perform a **System Reset**: Momentarily turn the Keyswitch to **FULL** and then to **OFF** within 2s. Observe a 2s LED test.
- After System Reset: i) The green Power LED is off (because the 230VAC is absent).
ii) The yellow Fault/Alarm LED is lit.
iii) The red Sabotage LED is lit (because Noby-65 lid is removed).
- Connect 230VAC supply to the 230v/50Hz AC screw terminal block.
- Replace the Noby-65 panel lid: observe the yellow Fault/Alarm LED turn off.
- Switch on the 230VAC power and observe the green Power LED flash (indicating 230VAC restored).
- Perform a **System Reset**: momentarily turn the Keyswitch to **FULL** and then to **OFF** within 2s. Observe a 2s LED test.
- The panel should now be in a quiescent standby state with only the green Power LED lit.

Power-Up With 230VAC

- Turn the Keyswitch to the **OFF** position.
- Connect a 230VAC power supply to the 230v/50Hz AC screw terminal block, and switch on.
- 60s Start-up Period: i) All LEDs flash for 60s *.
ii) The Buzzer output will make a pulsing sound (if connected).
- After Start-up: i) The green Power LED will flash.
ii) The yellow Fault/Alarm LED will be lit.
iii) The red Sabotage LED is lit (because Noby-65 lid is removed).
- * *The 60s Start-up Period can be prematurely terminated by turning the Keyswitch to **FULL** for 4s, and then back to **OFF**.*
- Perform a **System Reset**: Momentarily turn the Keyswitch to **FULL** and then to **OFF** within 2s. Observe a 2 second LED test.
- After System Reset: i) The green Power LED is lit (230VAC OK indication).
ii) The yellow Fault/Alarm LED is lit.
iii) The red Sabotage LED is lit (because Noby-65 lid is removed).
- Connect the black battery lead to the battery –'ve terminal.
- Connect the red battery lead to the battery +'ve terminal. It is normal to see a small spark.
- Replace the Noby-65 panel lid: observe the yellow Fault/Alarm LED turn off.
- Perform a **System Reset**: momentarily turn the Keyswitch to **FULL** and then to **OFF** within 2s. Observe a 2s LED test.
- The panel should now be in a quiescent standby state with only the green Power LED lit.

IMPORTANT: TAKE CARE TO CONNECT THE BATTERY CORRECTLY.

Whilst there is a measure of protection against accidental reverse connection of the battery, such action will almost certainly blow fuse F3, and may cause permanent damage to the Noby-65 panel. Such damage is identifiable to Noby UK Ltd. and is not covered by the warranty.

POWER SUPPLY UNIT

The PSU provides a regulated voltage rail of 13.6v (nominal 12v), with a continuous current rating of 1.5A, and a 20-minute rating of 2.0A. The PSU is designed to meet the internal standby power requirements of the Noby-65 and also to charge and maintain the 7Ah SLA battery in optimum condition. The battery standby time is dependant upon the overall system current drawn, including all connected equipment. Also it is strongly recommended that the continuous system standby current does not exceed 1.0A, because some reserve PSU capacity must be available to recharge the battery following an alarm condition or a prolonged period of 230VAC power loss.

The Noby-65 enclosure can accommodate one 12v/7Ah SLA battery.

The PSU is monitored for loss of 230VAC power, low battery voltage, and a Battery-Condition load test is performed every 12hrs. PSU faults are indicated by a flashing Power LED and the Fault LED, together with an audible pulsing fault tone at the Buzzer output.

Always ensure that the maximum current drawn in alarm does not exceed the 3.0A battery fuse limit (F3).

The PSU is monitored for:

PSU Fault	LED Status
i) 230VAC Absent or Fuse F2 blown:	Power LED is off. (<i>after a 10s delay</i>).
ii) 230VAC Restored:	Power LED flashes. (<i>memory</i>).
iii) Low Battery Voltage:	Power LED flashes. Fault LED is lit when the voltage <10.0v
iv) Battery-Condition or Fuse F3 blown:	Power LED flashes Fault LED is lit.

INPUT & DETECTION CIRCUITS

Figure 2 shows the detector wiring diagram for a typical residential alarm system.

Detection Circuit	Terminal No.	Description
Intruder Zone-1	A13 & A14	Intruder alarm circuit. PIRs and contacts.
Intruder Zone-2	A15 & A16	Intruder alarm circuit. PIRs and contacts. Zone-2 Isolated when Part-Set.
Intruder Exit / Entry	A11 & A12	Delayed intruder alarm circuit for the Entry/Exit route. Entry timer adjustable 0 – 120s. Exit timer adjustable 0 – 120s. PIRs and contacts.
Duress / Panic Circuit	A09 & A10	24hr circuit.
Fire Detectors	A03 & A04	24hr circuit. 24v optical & ionisation smoke, or rate-of-rise heat detectors.
Water Detectors	A05 & A06	24hr circuit. Water float switches.
Sabotage Circuit (Anti-Tamper)	A07 & A08	24hr circuit. This circuit Includes the Noby-65 lid microswitch.

End Of Line Resistors

The Noby-65 requires that all detection circuits be terminated with a 10K End Of Line resistor, to facilitate open-circuit fault monitoring. For maximum security the EOL resistors should be connected at the last detection device at the end of each cable run, and for this reason it is advised to 'daisy-chain' the cable, with no 'T' junctions. Only one EOL resistor is permitted on each circuit, such that in steady-state condition the Noby-65 sees a circuit resistance of 10kohm. Any detection circuit not being used must have its EOL resistor connected at the Noby-65 terminals.

Auxillary 12v Detector Supply [A01,A02]

A 12V supply fused at F500mA (F2) is provided at terminals A01 & A02 to supply power for PIRs and other low power electronic detection devices.

Intruder Detection Circuits [A11,A16]

There are three intruder circuits: Zone-1, Zone-2 and Exit/Entry. Each detection circuit may comprise any combination of:

- i) door or window magnetic contacts.
- ii) electronic detectors - PIR, ultrasonic or doppler-microwave.
- iii) window foil.
- iv) vibration or glass-break detectors.
- v) pressure mats.

Zone-1 is the main intruder detection circuit, and is armed when the keyswitch is turned to **FULL** or **PART**.

Zone-2 is the secondary intruder detection circuit, and is armed only when the keyswitch is turned to **FULL**. Zone-2 is normally used to protect the night-time living area in a house, such that the occupants can freely move around without causing an alarm, whilst the rest of the house is protected in Zone-1.

Exit/Entry is the area covering the direct path between the Noby-65 and the final exit door. This circuit allows the keyholder to safely leave the property within a preset Exit-Time. On re-entering the premises the Entry-Tone will start, and the keyholder must proceed directly to the Noby-65 panel and turn the keyswitch to **OFF**. Straying off the Exit/Entry route into an area protected by Zone-1 or Zone-2 will trigger an immediate alarm condition.

Electronic detection devices (e.g. PIRs) are powered from the Auxillary 12v supply terminals (A01 & A02), fused at 500mA (F2). Warning: do not to overload this 12v supply. As a rough guide each PIR draws 25mA. The latching LED function of PIRs can be controlled by connecting the appropriate PIR terminal (often called SW+, Set, C or Control) to the SW+ signal appearing at terminal B13. This signal is normally 0v and switches to 12v when the Noby-65 is fully armed i.e. after the Exit-Time period. This SW+ signal can also be used to signal a System-Set (Open/Closed) signal for Remote Signalling Equipment.

Pressure Mats must be connected between the two cores of the detection circuit, such that the EOL resistor becomes short-circuit in alarm.

The cable for each circuit may require up to 7 cores: 2 cores for the alarm detection circuit, 2 cores for the detector supply, 1 core for the SW+ signal, and 2 cores for the Sabotage circuit (Anti-Tamper). Any spare cores should be used to 'stiffen' the detector 0v power connection.

Duress / Panic (Personal Attack) [A09,A10]

Activating the **Duress / Panic Circuit** will trigger a silent Duress response at signal output B12. A silent Duress alarm is sometimes the preferred option for systems employing Remote Signalling Equipment. For personal safety reasons Duress is the default mode of operation, as supplied from the factory. Alternatively, the Noby-65 can be configured to give a full local audibles Panic alarm:

To configure the Panic Option:

- i) remove all power from the Noby-65 – both battery and 230VAC power supply.
- ii) press the Panic Button such that the Panic Circuit is open-circuit.
- iii) reconnect the power supply to the Noby-65.
- iv) reset the Panic Button.
- v) reset the Noby-65 by performing a System Reset.

Important: the Panic option will revert back to Duress in the event of total power loss to the Noby-65.

Sabotage Circuit (Anti-Tamper) [A07,A08]

The Sabotage circuit protects the Noby-65 from criminal interference or accidental damage. This is a single circuit and should be routed around all the intruder detection circuits, and through all lid switches. The Noby-65 is supplied with an internal lid microswitch pre-wired and fitted with a series 10Kohm EOL resistor at terminal A08.

To insert new sabotage loops: First unscrew the wire at terminal A07, and then connect any newly created loops between A07 and the free end of the microswitch wire. For typical installations it is recommended to leave the EOL resistor in its original position at terminal A08.

Fire Detection Circuit [A03,A04]

The Noby-65 incorporates a low power 12v/24v inverter which permits the use of industry standard 24v conventional smoke detectors. Any combination of conventional optical or ionisation smoke detectors, or rate-of-rise heat detectors can be connected. The total steady-state current taken from the Fire Detector terminals A03 & A04 must not exceed 1mA. Typically this equates to a maximum of 10 detectors, assuming a rated current of 100uA per detector. The Fire Detector Circuit is monitored for open-circuit faults.

Water Alarm Detection Circuit [A05,A06]

This circuit is intended to accommodate water level float switches for use in flood detection. Once triggered the Water Alarm Output can be used to shut off a water solenoid operated valve as shown in Figure 3.

Although this circuit is labelled 'Water', it can be used for other purposes e.g. a 24hr freezer alarm to give a warning of rising freezer temperature.

OUTPUT & ALARM CIRCUITS

Figure 3 shows the alarm outputs wiring diagram for a typical residential alarm system.

Intruder Alarm Relay Output [B01,B02,B03,B04]

The Noby-65 alarm siren output is provided at terminals B01 to B04. Terminal B01 is 0v, and terminals B02, B03 and B04 are a set of make/break relay contacts. For most installations a Siren will be driven from this relay, and for convenience the centre contact is connected to 12v via fuse F5 on the PCB. This 12v feed can be disconnected by removing fuse F5 – leaving a clean set of voltage-free contacts rated at 30V/2.5A.

This alarm output relay is activated for a preset Siren-Time, adjustable from 10s to 360s (P3).

It is recommended to use polarised sirens or bells fitted with a suppressor.

Fire Alarm Output [B05,B06,B07]

The following two fire sounder outputs are fused at F1A (Fuse F4):

- i) the **24hr** terminal (B05) gives a fire alarm at all times, even when the keyswitch is **OFF**.
- ii) the **12hr** (or **SET**) terminal (B07) activates only when the keyswitch is turned to **FULL** or **PART**.

Both terminals are open-collector npn transistor outputs and switch to +12v during a fire alarm condition.

It is recommended to use polarised sirens or bells fitted with a suppressor.

Water Alarm Output [B08,B09]

Terminal B08 is a 12v supply fused at F1A, sharing a common fuse (F6) together with the Buzzer Output. Terminal B09 is an open-collector npn transistor output, switching from 12v to 0v on detection of a Water Alarm condition. This output is suitable for driving a siren, bell or sounders.

Alternatively, it is possible to activate a Solenoid Water Valve to disconnect the water supply. Note that in most cases a 230VAC isolating relay is required to operate the Solenoid Valve. It is recommended to fit a suppressor diode across the relay coil to prevent damage due to high voltage transients, as shown in Figure 3. Some relays are supplied with a suppressor fitted internally.

IMPORTANT: DO NOT CONNECT 230VAC DIRECTLY TO THE NOBY-65 TERMINALS.

Internal Warning Buzzer Output [B10, B11]

This output is provided at terminals B10 & B11 for audible indication of warning and fault conditions. Terminal B10 is a 12v supply fused at F1A, sharing a common fuse (F6) together with the Water Alarm Output. Terminal B11 is an open-collector npn transistor output, switching from 12v to 0v.

The Noby-65 emits the following Buzzer tones:

- | | |
|----------------------|-------------------------|
| i) Exit Time: | Continous steady tone. |
| ii) Entry Time: | Slow pulsing tone (1Hz) |
| iii) Alarm & Faults: | Fast pulsing tone (2Hz) |

It is recommended that the Internal Warning Buzzer (or piezo sounder) can be heard outside the Final Exit Door, so that the keyholder can hear the Exit-Time finish and be confident that the Noby-65 is fully armed.

Following an alarm condition the Buzzer will continue to sound until the keyswitch is turned to **OFF**.

Duress / Panic Signal [B12]

A positive going 12V/10mA signal output (B12), which latches on receipt of a Duress or Panic alarm condition. This output is cleared by performing a System Reset. This signal is provided to trigger Remote Signalling Equipment.

PIR Memory SW+ Signal [B13]

A positive going 12V/10mA signal output B13, switching to 12V when the Noby-65 is either Full-Set or Part-Set. This signal can be used to control the latching LED function of PIR detectors connected to Zone-1 or Zone-2.

To reset a latched PIR detector:

- i) turn the Keyswitch to **FULL**.
- ii) allow the Exit-Time to finish.
- iii) turn the Keyswitch to **OFF**.

The SW+ signal can also trigger Remote Signalling Equipment to transmit an Open/Close signal to a central monitoring station.

Note: Some PIR detectors require a 10K pull-down resistor to be connected from terminal B13 to 0V.

KEYSWITCH OPTIONS

Internal Keyswitch

The Noby-65 has an internal keyswitch fitted as standard, supplied with 4 keys. The switch has the following positions:

- i) OFF: All Intruder circuits are disarmed. Other 24-hour circuits remain active.
- ii) FULL-SET: All Intruder circuits are armed. Noby-65 is Full-Set after the Exit Time.
- iii) PART-SET: Noby-65 is Part-Set after the Exit Time, with Zone-2 isolated.

External Keyswitch Connections [B14,B15,B16,B17]

The Noby-65 can be operated remotely by connecting an external keyswitch to terminals B15-B17 as shown in Figure 3. Note that switching terminal B15 to 0v causes the Noby-65 to Full-Set, whilst switching terminal B17 to 0v causes the Noby-65 to Part-Set. Terminal B16 is the 0v connection. Terminals B14 and B15 must be linked together for correct operation of the internal keyswitch.

An attractive alternative to a mechanical keyswitch is the Nobycode NC-02 Remote Keypad (Figure 4). The NC-02 is specifically designed to control the Full-Set, Part-Set and System Reset functions of the Noby-65. The NC-02 keypad also has 2 LEDs to remotely indicate the ON/OFF status and the Alarm/Fault status of the Noby-65.

For additional security it is recommended to remove the two EOL resistors from the Noby-65 terminals and re-connect them in the remote keyswitch housing, such that any break in the cable will force the Noby-65 to either Full-Set or Part-Set the intruder system.

For high security installations it is also recommended to route the Sabotage circuit through the cable and connect through any lid microswitches.

REMOTE SIGNALLING EQUIPMENT (AUTO-DIALLER)

The Noby-65 cabinet can accommodate an Auto-Dialler underneath the main circuit board assembly. Figure 1 shows a typical Auto-Dialler connection diagram. The channel numbers may differ according to the signal priorities demanded by the remote central station. Also take care to ensure that the Water Alarm channel is programmed to be a negative going input signal.

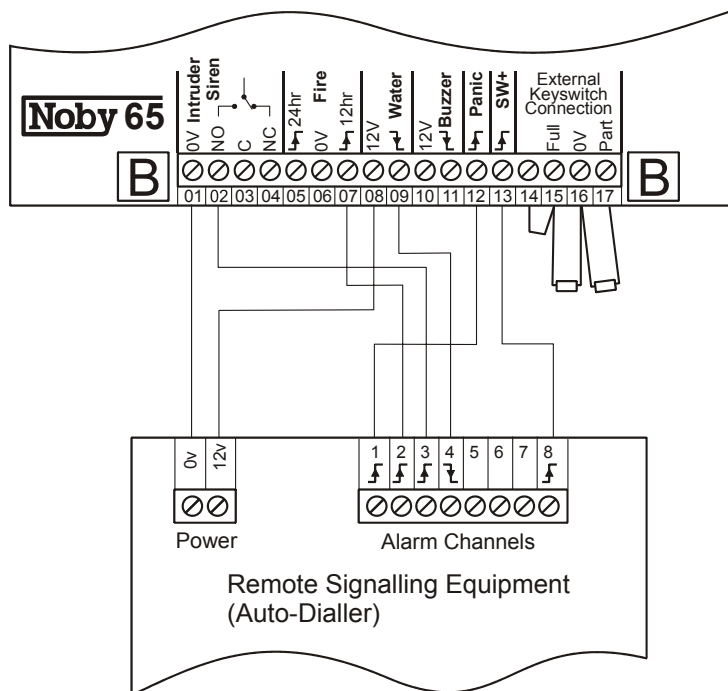


Figure 1: Auto Dialler Connections

Noby 65 TECHNICAL SPECIFICATION

Power Supply Unit	Value	Unit	Comments
Mains Supply Voltage	230 +10% -6%	volts AC	
Mains Supply Frequency	50 / 60	Hz	
Mains Power Rating	30	VA	
Nominal Battery Voltage	12	volts	
Regulated PSU charger voltage	13.6	volts	
Regulated PSU charger current:			
• 20 minute rating	2.0	A	
• continuous rating	1.5	A	
Fused Outputs:			
F1 30VAC Transformer Secondary	2.0	A	T2A 20mm Quick Blow
F2 Auxillary 12v Supply	500	mA	F500mA 20mm Quick Blow
F3 Battery +'ve	3.0	A	T3A 20mm Quick Blow
F4 Fire Alarm Outputs	1.0	A	F1A 20mm Quick Blow
F5 Intruder Alarm Output	1.0	A	F1A 20mm Quick Blow
F6 Water Alarm & Internal Buzzer	1.0	A	F1A 20mm Quick Blow
Standby Battery Current	70	mA	9 EOL resistors fitted
Low Voltage Monitor	10.0	volts	
Battery Condition Test	Yes		10s load test every 12hrs

Detection Circuits	Value	Unit	Comments
No. Detection Circuits:	7		Zone-1, Zone-2, Exit/Entry, Duress/Panic, Fire, Water, Sabotage (Anti-Tamper).
End Of Line (EOL) Resistor	10,000	ohms	
Open Circuit Monitoring	R > 17,000	ohms	
No. Detectors Per Fire Zone	10		based on 100uA per detector
Fire Circuit Detection Threshold	R < 3000	ohms	

Alarm Output Circuits	Value	Unit	Comments
Intruder Alarm Output	SPDT Relay		12v centre contact, fuse F5
24Hr Fire Alarm Output	0 → 12	volts	open-collector pnp transistor, fuse F4
12Hr Fire Alarm Output	0 → 12	volts	open-collector pnp transistor, fuse F4
Water Alarm Output	12 → 0	volts	open-collector npn transistor, fuse F6
Internal Buzzer Output	12 → 0	volts	open-collector npn transistor, fuse F6

Signal Outputs	Value	Unit	Comments
Duress / Panic Signal	10	mA	0v --> 12volt, +'ve going signal
SW+ Signal (panel SET signal)	10	mA	0v --> 12volt, +'ve going signal

Cabinet	Value	Unit	Comments
Dimensions (width x height x depth)	368 x 275 x 75	mm	1.2mm powder coated steel
Shipping Weight:	4.5	Kg	

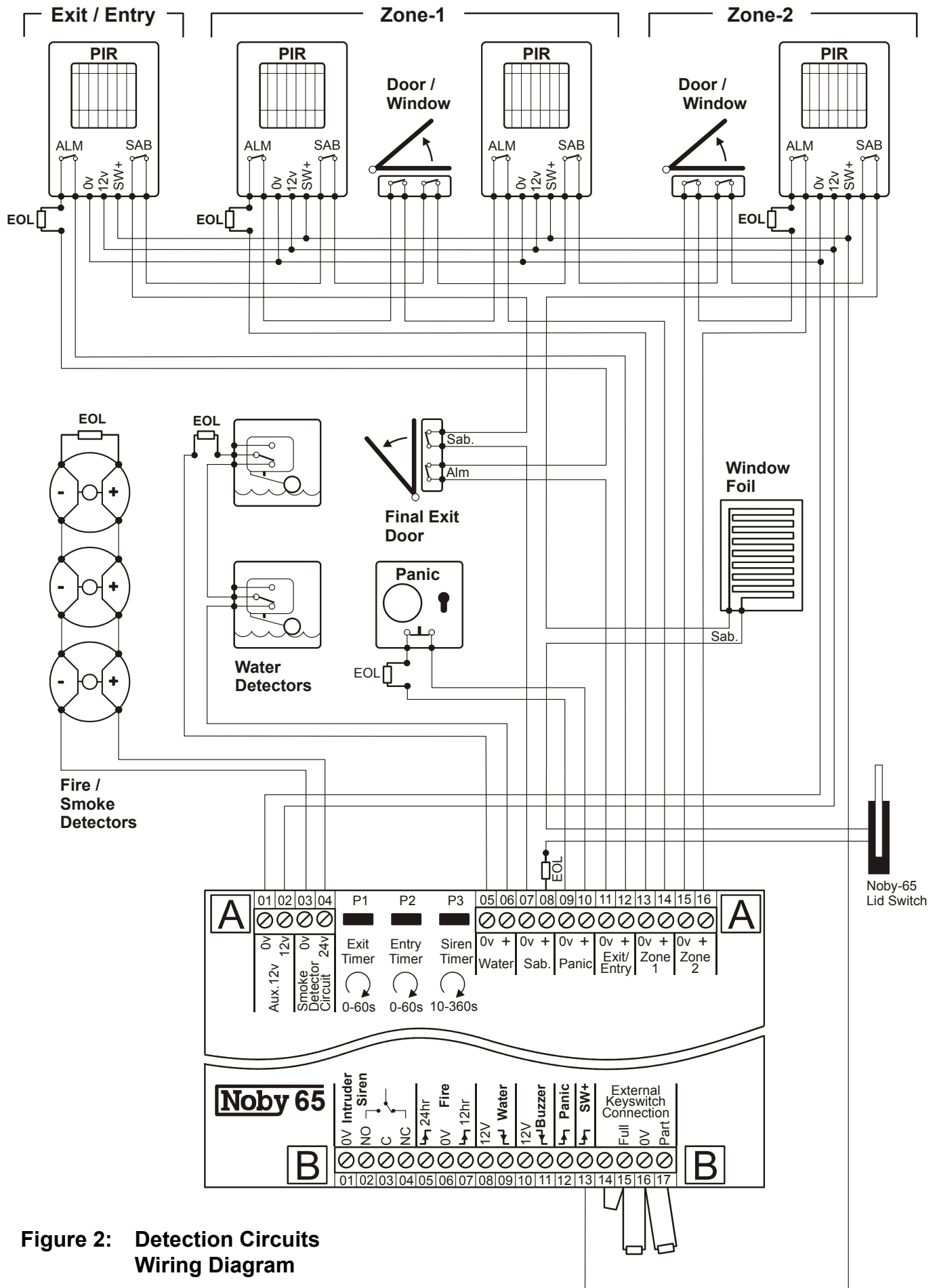


Figure 2: Detection Circuits Wiring Diagram

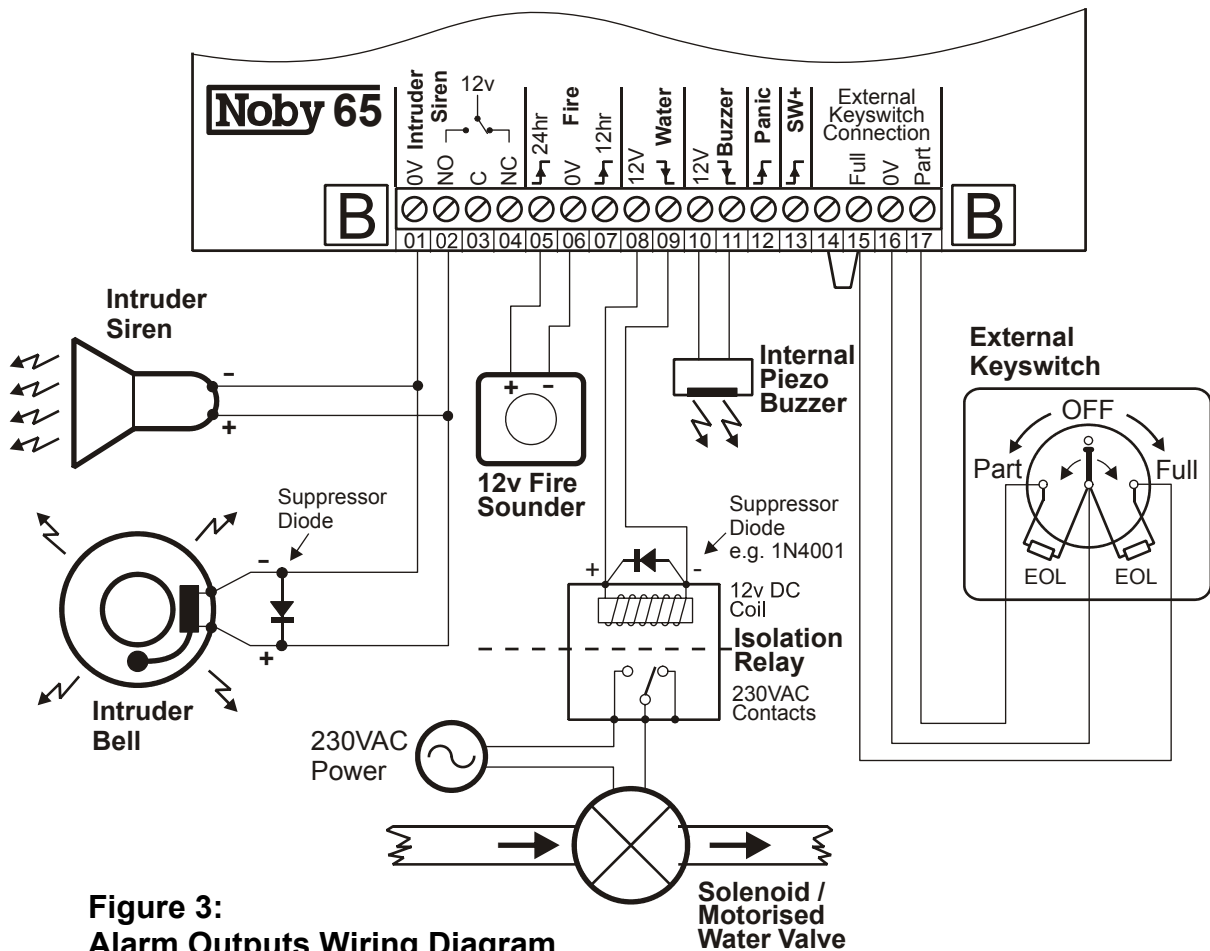
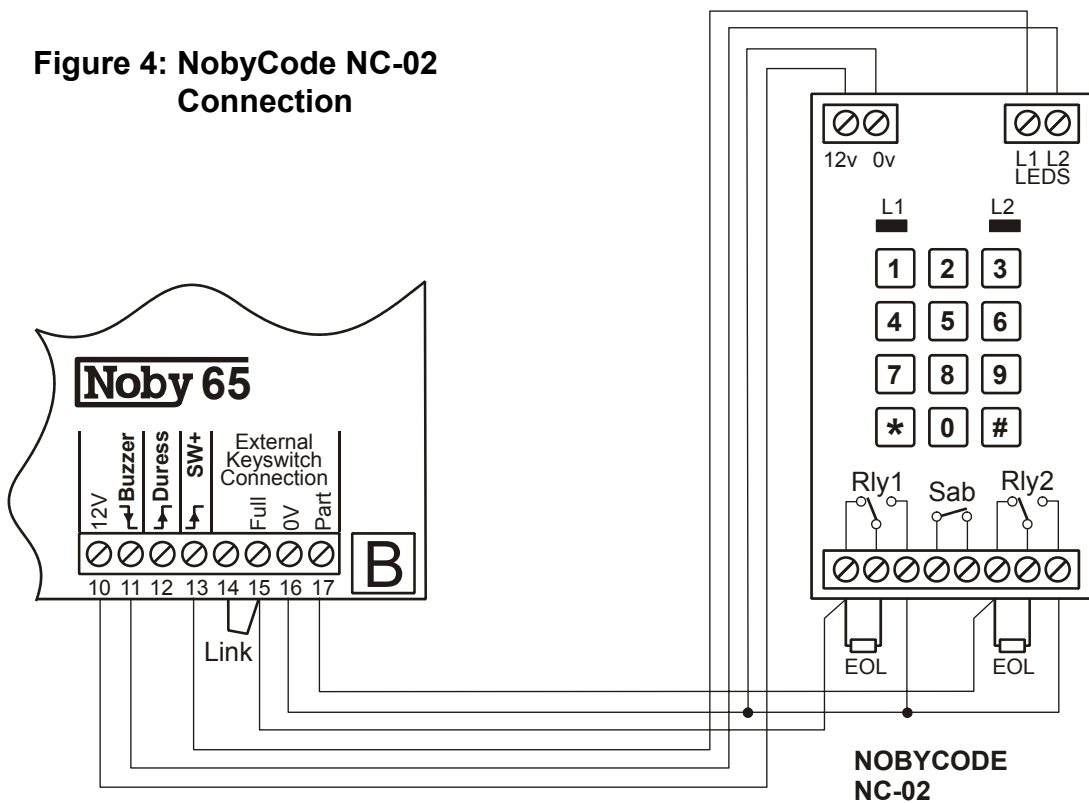


Figure 3:
Alarm Outputs Wiring Diagram
& External Keyswitch

**Figure 4: NobyCode NC-02
Connection**



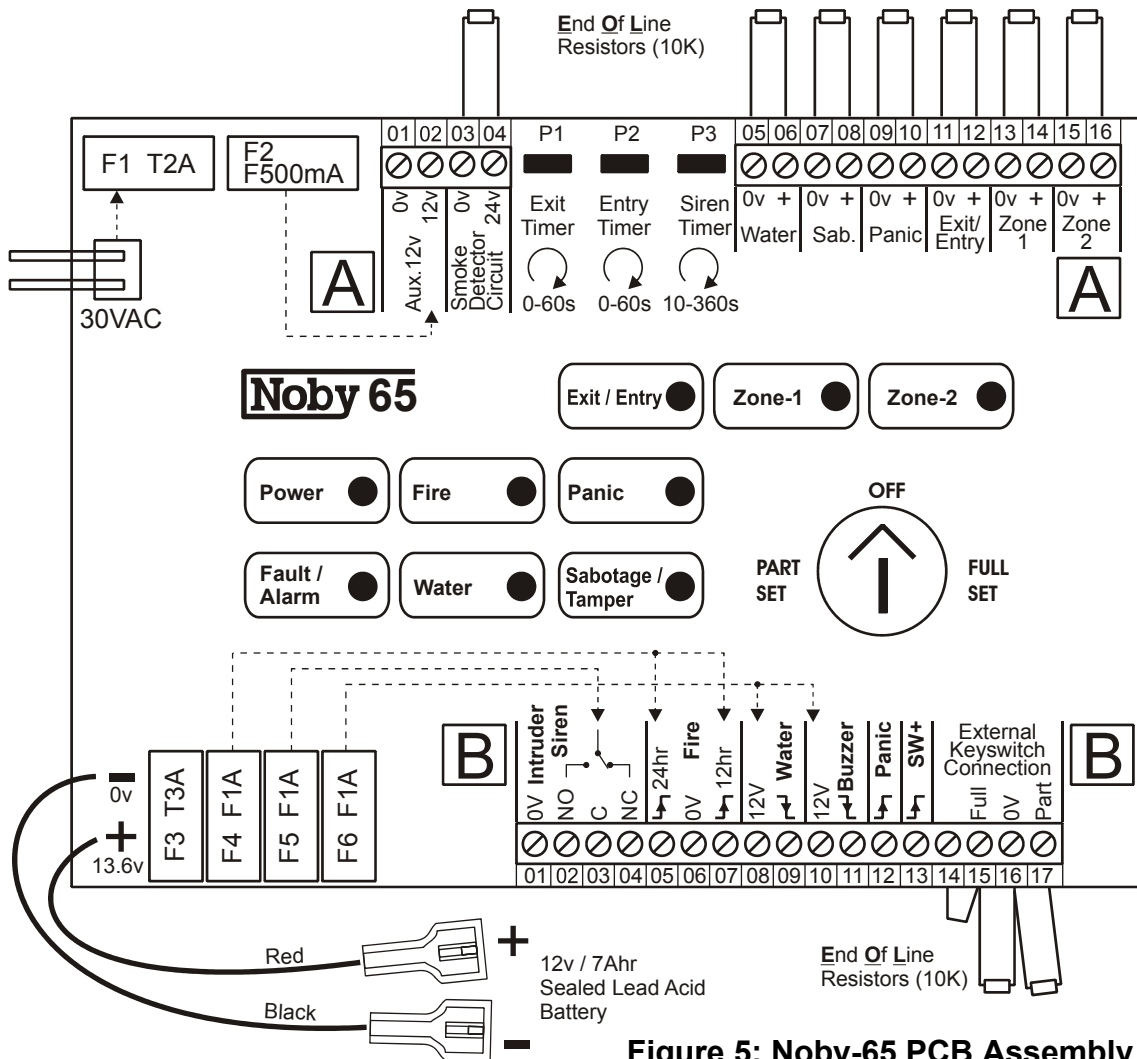


Figure 5: Noby-65 PCB Assembly

INSTALLATION NOTES



Noby 65

USER OPERATING INSTRUCTIONS

Exit Procedure:

Full-Set:

- Check that only the green Power LED is lit.
- Turn the Keyswitch to **FULL-SET**.
- All LEDs illuminate for 2 seconds, followed by a continuous Exit Tone.
- Proceed directly to the Final Exit Door. Do not stray off the Exit Route.
- Leave the premises and listen for the Exit Tone to stop.

Part-Set:

- Check that only the green Power LED is lit.
- Turn the Keyswitch to **PART-SET**. Zone-2 is isolated and the Zone-2 LED will flash slowly.
- All LEDs illuminate for 2 seconds, followed by a continuous Exit Tone.
- Proceed directly through the Exit Route to the night-time living area (Zone-2).
- Listen for the Exit Tone to stop.

Note: All existing alarm conditions must be clear before attempting to arm the intruder system. The Noby-65 will abort the Exit procedure in the event of a system fault or alarm, and the buzzer will emit a rapid pulsing tone. Perform a System Reset to clear the LEDs and try again.

Entry Procedure:

- Open the Final Exit Door. A slow pulsing Entry Tone will commence.
- Proceed immediately to the Noby-65 control panel. Do not stray from the Entry Route
- Turn the Keyswitch to **OFF**. The Entry Tone will stop.

Following an Intruder Alarm:

- Turn the Keyswitch to **OFF**. The Siren and Internal Buzzer will silence.
- Observe and note the red LEDs.
- Perform a System Reset.

To clear latched PIR LED indications:

- Turn the Keyswitch to **FULL**.
- Allow the Exit Time to finish.
- Turn the Keyswitch to **OFF**.

System Reset:

- Momentarily turn the Keyswitch to **FULL** and then to **OFF** within 2s.
- Observe a 2s LED test.

Note: If the cause of an alarm still persists then the alarm will re-trigger immediately following a System Reset.

To Silence the Alarm:

- Turn the Keyswitch to **FULL** for 4 seconds.
- Turn the Keyswitch to **OFF**.

Following a Fire Alarm or Water Alarm:

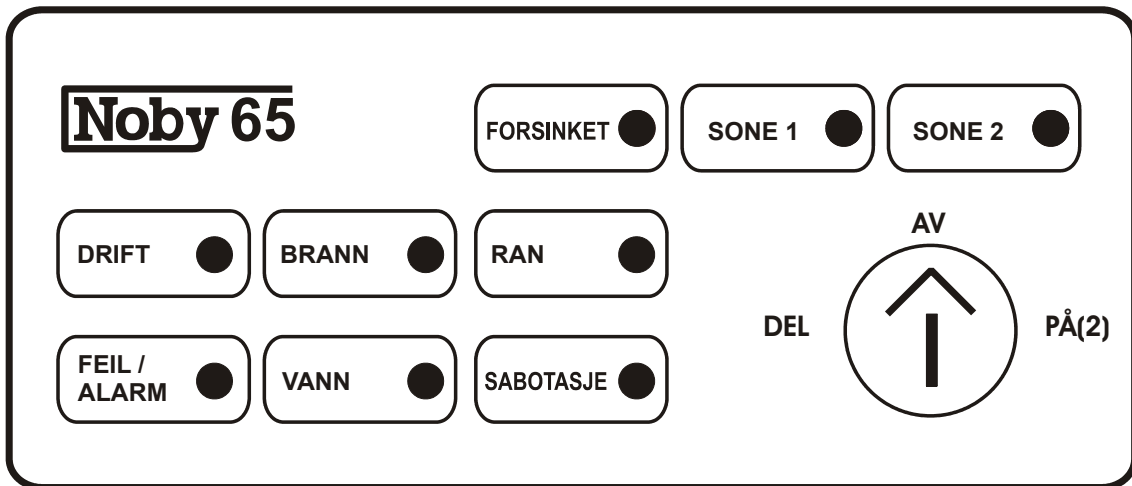
- **CARRY OUT THE PRESCRIBED EMERGENCY PROCEDURE**
Only when it is safe to continue:
- Silence the alarm.
- Observe and note the red LEDs, which will identify the cause of the alarm.
- Perform a **System Reset**.

Cleaning:

Clean external surfaces with a damp cloth and mild detergent. Do not use abrasives, solvents or polish.

LED Indications	Continuous	2 Flashes / sec	1 Flash / sec
Power	230VAC OK.	PSU or Battery Fault	230VAC restored.
Fault / Alarm	Alarm or System Fault	N/A	N/A
Fire	Alarm	First To Alarm or Fault	N/A
Water	Alarm	First To Alarm or Fault	N/A
Panic	Alarm	First To Alarm	N/A
Sabotage / Tamper	Alarm	First To Alarm	N/A
Exit / Entry	Alarm	First To Alarm	N/A
Zone-1	Alarm	First To Alarm	N/A
Zone-2	Alarm	First To Alarm	Zone-2 Isolated (Part-Set)

Norwegian



English

