

# SYG-SIM + 100-3801V

## Sygnof-i Wireless Sounder Interface Module

# SYG-SIM + 100-3800V

## Sygnof-i Wireless Sounder Interface Module

### WARNINGS AND LIMITATIONS

Our devices use high quality electronic components and plastic materials that are highly resistant to environmental deterioration. However, after 10 years of continuous operation, it is advisable to replace the devices in order to minimize the risk of reduced performance caused by external factors. Ensure that this device is only used with compatible control panels. Detection systems must be checked, serviced and maintained on a regular basis to confirm correct operation.

Smoke detectors may respond differently to various kinds of smoke particles, thus application advice should be sought for special risks. Detectors cannot respond correctly if barriers exist between them and the fire location and may be affected by special environmental conditions.

Refer to and follow national codes of practice and other internationally recognized fire engineering standards.

Appropriate risk assessment should be carried out initially to determine correct design criteria and updated periodically.

Use only in Sygnof-i fire detection and alarm systems.

### WARRANTY

All devices are supplied with the benefit of a limited 3 years warranty relating to faulty materials or manufacturing defects, effective from the production date indicated on each product.

This warranty is invalidated by mechanical or electrical damage caused in the field by incorrect handling or usage.

Product must be returned via your authorized supplier for repair or replacement together with full information on any problem identified.

Full details on our warranty and product's returns policy can be obtained upon request.



0051

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\* DoP-SYG-WSR

\*\* DoP-SYG-SBR



8504

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\* DoPUK-SYG-WSR

\*\* DoPUK-SYG-SBR

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\* SYG-SIM + 100-3801V

\*\* SYG-SIM + 100-3800V-AV

EN 54-25:2008

EN 54-3:2001+A1:2002+A2:2006

Type B enclosure: for outdoor use.

**SYG-SIM + 100-3800V-AV (only)**

EN 54-23:2010

Category rating: W - 2.5 - 7

Duration of operation: Pass

Provision for external conductors: Pass

Flammability of materials: Pass

Enclosure protection: Pass

Access: Pass

Manufacturer's adjustments: Pass

On-site adjustment of behaviour: Pass

Requirements for software controlled devices: Pass

Coverage volume: Pass

Variation of light output: Pass

Minimum and maximum light intensity: Pass

Light colour: White

Light temporal pattern / frequency of flashing: N/A / 0.5

Hz

Marking and data: Pass

Synchronization: Pass

Durability:

Temperature resistance: Pass

Humidity resistance: Pass

Shock and vibration resistance: Pass

Corrosion resistance: Pass

Electrical stability: Pass

## GENERAL DESCRIPTION

This device is an assembly of a **SYG-SIM** Sygno-fi system interface module and a **100-3801V** conventional sounder / **100-3800V-AV** conventional sounder + Visual Alarm Device.

Sounder's output is activated following an alarm condition.

**SYG-SIM** is battery powered and doesn't need any system cabling installation.



## DEPLOYMENT PROCEDURE

The general applicable procedure for the deployment of these products is the following:

- 1) Select a location for the sounder. See **LOCATION SELECTION**.
- 2) Unbox the sounder module and the sounder from their packaging.
- 3) Detach the battery covers from the sounder module.
- 4) Power up the sounder module. See **POWERING UP - FIRST TIME USE / POWERING UP - RECOVERY**.
- 5) Link the sounder module to the Sygno-fi system. See **LINKING - WAKE-UP / LINKING - ONE-BY-ONE**.
- 6) Set the output acoustic tone for the sounder. See **OUTPUT TONE SETTING**.
- 7) Set the output acoustic volume for the sounder. See **OUTPUT VOLUME SETTING**.
- 8) Install the sealing pad to the sounder base's back if the sounder is to be installed in a damp environment. See **OUTDOOR AND DAMP ENVIRONMENT INSTALLATION**.
- 9) Fix the sounder's base to the selected location. See **WALL INSTALLATION**.
- 10) Reinstall the battery covers.
- 11) Install the sounder module into the sounder's base. See **INSTALLING THE SYG-SIM**.
- 12) Close the sounder. See **CLOSING THE SOUNDER**.
- 13) Test the sounder. See **TESTING**.



Use the sealing pad if using outdoors and / or in a damp environment.

Environmental temperature must lay between -10 °C and +55 °C.

## LOCATION SELECTION

Select a location for the sounder that conforms to your local applicable safety standards and that is in a good position for sending / receiving wireless signals to / from the father **SYG-W2W**, **SYG-CEM** or **SYG-EM** network device.



**It is advisable to use the SYG-STK survey kit to locate a good wireless installation location.**

Mount the sounder as far as possible from metal objects, metal doors, metal window openings, etc. as well as cable conductors, cables (especially from computers), otherwise the operating distance may greatly drop.

The sounder must NOT be installed near electronic devices and computer equipment that can interfere with its wireless communication quality.

## LED INDICATOR STATUS MESSAGES

The LED indicator's messages are used only during installation and servicing.

LED indicator is inactive when the **SYG-SIM** is installed and enclosed into the sounder; this is for saving up battery charge (and due to the fact that the LED is hidden inside the sounder).

| Device status                | LEDs indication  |
|------------------------------|--|
| Power up (DIP on "ON")       | Blinks red 4 times   |
| Power up (DIP opposite "ON") | Blinks green 4 times   |
| Entering wake-up mode        | Blinks alternatively green / red 4 times   |
| Link success (one-by-one)    | Blinks green 4 times, then the same pattern again  |
| Link failure (one-by-one)    | Enters wake-up mode and signals "Entering wake-up mode" following this failure               |
| Link success (wake-up)       | Blinks green 4 times, then same pattern again  |
| Link failure (wake-up)       | Blinks green 4 times, then blinks red on once, then blinks alternatively green / red 4 times |
| Normal condition             | LED off (can be programmed so as to blink green every wireless communication)                |
| Alarm activation             | Blinks red every 2 seconds   |
| Battery fault                | LED off (can be programmed so as to blink amber every 5 seconds)                             |
| Tamper fault                 | LED off  |
| Replaced                     | Blinks amber 2 times   |



**With the module enclosed into the sounder, the LED indicator remains inactive.**

Table 1

## POWERING UP AND LINKING - PRELIMINARY NOTES

**SYG-SIM** needs to be powered up with the supplied batteries.

Linking is the operation through which this device is "wirelessly connected" to a **SYG-W2W**, **SYG-CEM** or **SYG-EM** Sygno-fi network device.

## POWERING UP - FIRST TIME USE

Use this procedure the first time you power up a **SYG-SIM**.

- 1) Make sure the Link / program switch is set on "ON".
- 2) Insert the two supplied batteries into their device's lodgments.

**Ensure that the batteries are installed properly, with their polarities matching the indications on the device.**

## POWERING UP - DEVICE LINKED TO THE SYSTEM

Use this procedure when a **SYG-SIM** is successfully linked to its Sygno-fi system and you have to extract one or both batteries (e.g. batteries substitution).

- 1) Reinsert the battery or both batteries into their lodgments.

**Do not touch the Link / program switch.**

**If performing a batteries substitution, use two brand new batteries and substitute both of them.**

**Ensure that the batteries are installed properly, with their polarities matching the indications on the device.**

## POWERING UP - RECOVERY

Use this procedure when you fail to link successfully a **SYG-SIM** or you want to link it again.

- 1) Move alternatively the Link / program switch 5 times.
- 2) Set the Link / program switch on "ON".
- 3) Insert the two supplied batteries into their device's lodgments.

**Ensure that the batteries are installed properly, with their polarities matching the indications on the device.**

## LINKING - WAKE-UP

"Wake-up" linking consists in associating one or more child devices to the Sygno-fi system altogether in a single operation.

Wake-up is performed either through the **SygNEX** software or the **SYG-W2W / SYG-CEM** keyboard-screen interface; it CANNOT be done through **SYG-EM** devices.

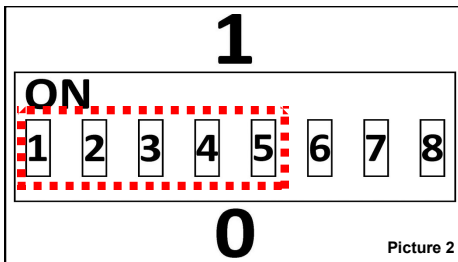
- 1) Create the "virtual model" of the **SYG-SIM** device either on **SygNEX** or on the **SYG-W2W / SYG-CEM**.
- 2) Power-up the sounder module (either "first time use" or "recovery").
- 3) Set the Link / program switch OPPOSITE to "ON".
- 4) Trigger the wake-up procedure either from **SygNEX** or from the **SYG-W2W / SYG-CEM**.
- 5) Wait the end of the "wake-up" linking procedure.
- 6) Check on **SygNEX** or from **SYG-W2W / SYG-CEM** for linking success.  
Consult their user manual.

## LINKING - ONE-BY-ONE

"One-by-one" linking consists in associating one child device at a time to the Sygno-fi system.

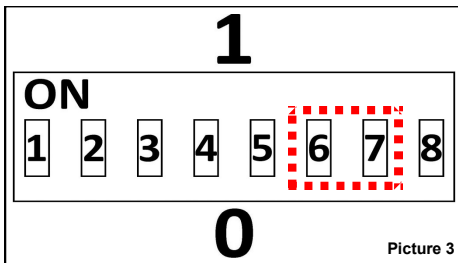
This operation is performed either through the **SygNEX** software or the **SYG-W2W / SYG-CEM** keyboard-screen interface; it CANNOT be done through **SYG-EM** devices.

- 1) Create the "virtual model" of the child device either on **SygNEX** or on the **SYG-W2W / SYG-CEM**.
- 2) Trigger the linking procedure either from **SygNEX** or from the **SYG-W2W / SYG-CEM**.
- 3) Power-up the child device (either "first time use" or "recovery").
- 4) Set the child device's Link / program switch OPPOSITE to "ON".
- 5) Wait the end of the "one-by-one" linking procedure.
- 6) Check on **SygNEX** or from **SYG-W2W / SYG-CEM** for linking success.  
Consult their user manual.



## OUTPUT TONE SETTING

- 1) Select the tone you require to be activated during an alarm from the standard tone table (see STANDARD TONE TABLE). The alternative tone counterpart is found on the alternative tone table (see ALTERNATIVE TONE TABLE).
- 2) Refer to the "DIP switch configuration" column of the table: you will see a sequence of five "1" and "0" digits.
- 3) The five "DIP switch configuration" digits have to be set on the DIP switch on the back of the sounder device; use the first five switches; a switch positioned upwards acquires the value "1", while if positioned downwards acquires the value "0".



## OUTPUT VOLUME SETTING

- 1) From table 1, select the volume level you require when the output tone is emitted during an alarm.
- 2) Refer to the "DIP switch configuration" column of the table: you will see a sequence of two "1" and "0" digits.
- 3) The two "DIP switch configuration" digits have to be set on the DIP switch on the back of the sounder device; use switches 6 and 7; a switch positioned upwards acquires the value "1", while if positioned downwards acquires the value "0".

| Volume level | DIP switch configuration: 6 and 7 | dB(A) evaluation | Notes     |
|--------------|-----------------------------------|------------------|-----------|
| HIGH         | 11                                | 100 dB(A) +/- 3  | All tones |
| MEDIUM HIGH  | 01                                |                  |           |
| MEDIUM LOW   | 10                                |                  |           |
| LOW          | 00                                |                  |           |

Table 1



Use the tip of a little screwdriver to move the switches.

**STANDARD TONE TABLE**

| Tone number | Tone designation                     | Tone description                                      | DIP switch configuration: 1,2,3,4 and 5 |
|-------------|--------------------------------------|---|---|
| 1 *         | Warble Tone                          | 800Hz for 500ms, then 1000Hz for 500ms                | 11101                                   |
| 2 *         | Continuous tone                      | 970Hz continuous tone                                 | 01011                                   |
| 3 *         | Slow Whoop (Dutch)                   | 500-1200Hz for 3500ms, then off for 500ms             | 10101                                   |
| 4 *         | German DIN tone                      | 1200-500Hz swept every 1000ms (1Hz)                   | 00111                                   |
| 5           | Alternate HF slow sweep              | 2350-2900Hz swept every 333ms (3Hz)                   | 10010                                   |
| 6           | Alternative warble                   | 800Hz for 250ms, then 960Hz for 250ms                 | 11110                                   |
| 7           | Alternative warble                   | 500Hz for 250ms, then 600Hz for 250ms                 | 11100                                   |
| 8           | Analogue sweep tone                  | 500-600Hz swept every 500ms (2Hz)                     | 10100                                   |
| 9           | Australian Alert (intermittent tone) | 970Hz for 625ms, then OFF for 625ms                   | 10001                                   |
| 10          | Australian Evac (slow whoop)         | 500-1200Hz sweep for 3750ms, then OFF for 250ms       | 10110                                   |
| 11          | Alternative Warble                   | 990Hz for 250ms, then 665Hz for 250ms                 | 00001                                   |
| 12          | French tone AFNOR                    | 554Hz for 100ms, then 440Hz for 400ms                 | 00101                                   |
| 13          | HF Back up interrupted tone          | 2800Hz for 1s, then OFF for 1s                        | 11011                                   |
| 14          | HF Back up interrupted tone – fast   | 2800Hz for 150ms, then OFF for 150ms                  | 11001                                   |
| 15          | HF Continuous                        | 2800Hz continuous                                     | 01001                                   |
| 16          | Interrupted tone                     | 800Hz for 500ms, then OFF for 500ms                   | 01111                                   |
| 17          | Interrupted tone medium              | 1000Hz for 250ms, then OFF for 250ms                  | 01101                                   |
| 18          | ISO 8201 LF BS5839 Pt 1 1988         | 970Hz for 500ms, then OFF for 500ms                   | 01110                                   |
| 19          | ISO 8201 HF                          | 2850Hz for 500ms, then OFF for 500ms                  | 01100                                   |
| 20          | LF Back up Alarm                     | 800Hz for 150ms, then OFF for 150ms                   | 11010                                   |
| 21          | LF Buzz                              | 800-950Hz swept every 9ms                             | 01010                                   |
| 22          | LF Continuous tone BS5839            | 800Hz continuous                                      | 11000                                   |
| 23          | Silent                               | No sound  | 11111                                   |
| 24          | Siren 2 way ramp (long)              | 500-1200Hz rising for 3000ms, then falling for 3000ms | 00000                                   |
| 25          | Siren 2 way ramp (short)             | 500-1200Hz rising for 250ms, then falling for 250ms   | 00010                                   |
| 26          | Swedish all clear signal             | 660Hz continuous                                      | 00100                                   |
| 27          | Swedish Fire signal                  | 660Hz for 150ms, then OFF for 150ms                   | 00110                                   |
| 28          | Sweep tone (1 Hz)                    | 800-900Hz swept every 1000ms                          | 10111                                   |
| 29          | Sweep tone (3 Hz)                    | 800-970Hz swept every 333ms (3Hz)                     | 10011                                   |
| 30          | Sweep tone (9 Hz)                    | 800-970Hz swept every 111ms (9Hz)                     | 01000                                   |
| 31          | US Temporal Pattern HF               | (2900Hz for 500ms ON, 500ms OFF) x3, then 1500ms OFF  | 00011                                   |
| 32          | LF Sweep (Cranford tone)             | 800-1000Hz swept every 500ms (2Hz)                    | 10000                                   |

**Table 2**

\* EN 54-3 certified tones.

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**ALTERNATIVE TONE TABLE**

| <b>Tone number</b> | <b>Tone description</b>                         | <b>DIP switch configuration: 1, 2, 3, 4 and 5</b> |
|--------------------|---|---|
| 1                  | 800Hz continuous                                | 11101   |
| 2                  | 1000Hz continuous tone                          | 01011   |
| 3                  | 500-1200Hz for 3500ms, then off for 500ms       | 10101   |
| 4                  | 800Hz continuous                                | 00111   |
| 5                  | 2400Hz continuous                               | 10010   |
| 6                  | 800Hz continuous                                | 11110   |
| 7                  | 500Hz continuous                                | 11100   |
| 8                  | 500Hz continuous                                | 10100   |
| 9                  | 2400Hz continuous                               | 10001   |
| 10                 | 500-1200Hz sweep for 3750ms, then OFF for 250ms | 10110   |
| 11                 | 990Hz continuous                                | 00001   |
| 12                 | 800Hz continuous                                | 00101   |
| 13                 | 2800Hz continuous                               | 11011   |
| 14                 | 800Hz continuous                                | 11001   |
| 15                 | 2800Hz continuous                               | 01001   |
| 16                 | 800Hz continuous                                | 01111   |
| 17                 | 800Hz continuous                                | 01101   |
| 18                 | 970Hz for 500ms, then OFF for 500ms             | 01110   |
| 19                 | 2850Hz for 500ms, then OFF for 500ms            | 01100   |
| 20                 | 800Hz continuous                                | 11010   |
| 21                 | 800Hz continuous                                | 01010   |
| 22                 | 800Hz continuous                                | 11000   |
| 23                 | 970Hz continuous                                | 11111   |
| 24                 | 800Hz continuous                                | 00000   |
| 25                 | 800Hz continuous                                | 00010   |
| 26                 | 660Hz continuous                                | 00100   |
| 27                 | 660Hz for 150ms, then OFF for 150ms             | 00110   |
| 28                 | 800Hz continuous                                | 10111   |
| 29                 | 800Hz continuous                                | 10011   |
| 30                 | 800Hz continuous                                | 01000   |
| 31                 | 2900Hz continuous                               | 00011   |
| 32                 | 800Hz continuous                                | 10000   |

**Table 3**

### **OPENING THE SOUNDER**

- 1) Remove both safety screws.
- 2) With the supplied key, unlock the two side locking mechanisms by turning the key 90° counter-clockwise, **whilst applying a light pressure**.
- 3) Separate the sounder device from its base.

### **CLOSING THE SOUNDER**

- 1) Assemble correctly the sounder body to the base using gentle pressure.
- 2) With the supplied key, lock the two side locking mechanisms by turning the key 90° clockwise, **whilst applying a light pressure**.
- 3) Install both safety screws.



When operating the supplied key, a gentle pressure towards the device is needed in order to unblock the locking mechanism.



When assembling or removing the front operating section of the sounder to/from the back box be careful to ensure the interconnection block is not twisted which may cause damage. Perform such operations without using excessive force.

### **EXTRACTING THE SYG-SIM**

- 1) Gently release the locking catch (picture 1).
- 2) Remove the module.

### **INSTALLING THE SYG-SIM**

- 1) Insert the module in the sounder's base as illustrated in picture 1; the module must be secured by the stops of the base.
- 2) Gently push down the module body so that the locking catch engages fully to hold the **SYG-SIM** in place. Check the module is stable and blocked.

### **OUTDOOR AND DAMP ENVIRONMENT INSTALLATION**

When installing the sounder outdoors and / or in a damp environment, carefully apply the self-adhesive sealing pad to the back of the sounder base (picture 1).

#### **WALL INSTALLATION**

Fix the sounder base to the wall; knockout wall fixing screw openings are indicated in picture 1.



Use the sealing pad if using outdoors and / or in a damp environment.

Environmental temperature must lay between -10 °C and +55 °C.

#### **TAMPER DETECTION**

Tampering attempts are detected by two switches, one on the front and the other on the back of the **SYG-SIM**; once detected, a tampering event message is sent to the control panel.

#### **TESTING**

- 1) Activate the alarm condition.
- 2) Check the acoustic (and visual) output activation.
- 3) Reset the system from the control panel.



Local safety standards may require you to test these devices on a regular basis.

### **BATTERY FAULTS AND BATTERY SUBSTITUTION PROCEDURE**

When one or both batteries are low in charge, a specific fault message is routed to the control panel. If such event occurs:

- 1) Open the sounder. See **OPENING THE SOUNDER**.
- 2) Extract the **SYG-SIM**. See **EXTRACTING THE SYG-SIM**.
- 3) Remove the battery covers.
- 4) Replace the two batteries with two new ones.
- 5) Reinstall the battery covers.
- 6) Reinstall the **SYG-SIM**. See **INSTALLING THE SYG-SIM**.
- 7) Close the sounder. See **CLOSING THE SOUNDER**.
- 8) Test the sounder. See **TESTING**.



When a low battery condition is indicated, both batteries must be changed altogether.

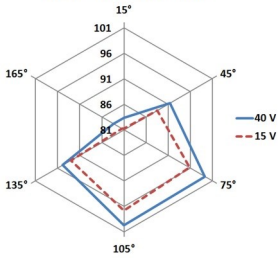
Batteries must be brand new.

Do not touch the Link / program switch.

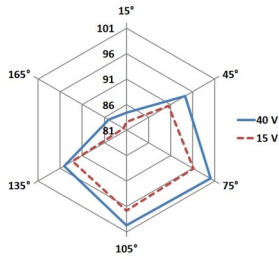
Ensure that the batteries are installed properly, with their polarities matching the indications on the device.

**ACOUSTIC PERFORMANCES**

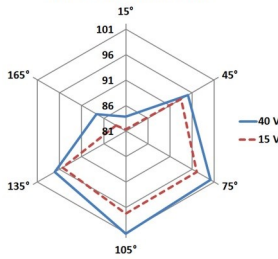
**TONE 1 - HORIZONTAL PLANE**



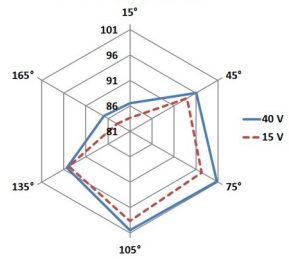
**TONE 1 - VERTICAL PLANE**



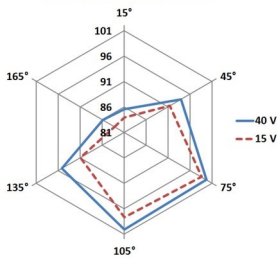
**TONE 2 - HORIZONTAL PLANE**



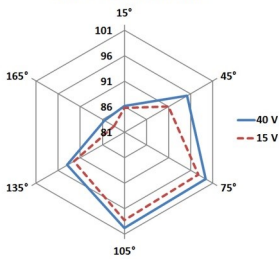
**TONE 2 - VERTICAL PLANE**



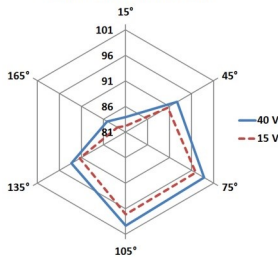
**TONE 3 - HORIZONTAL PLANE**



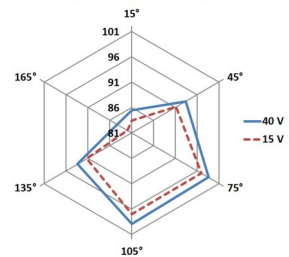
**TONE 3 - VERTICAL PLANE**



**TONE 4 - HORIZONTAL PLANE**



**TONE 4 - VERTICAL PLANE**





**TECHNICAL SPECIFICATIONS - SYG-SIM + 100-3801V / 100-3800V-AV \***

| Specification  | Value   |
|--|---|
| Communication range with SYG-W2W, SYG-CEM or SYG-EM network devices    | 200 m (in open space)                                 |
| Wireless frequency band  | 868 MHz   |
| Number of wireless channels  | 66  |
| Radiated power   | 14 dBm (25 mW)  |
| Acoustic emission frequency range.<br>Valid for all tones              | 440 - 2900 Hz   |
| Maximum acoustic intensity, volume set to HIGH.<br>Valid for all tones | 100 dB(A) ± 3   |
| IP rating (EN 54-3 certified)  | 33C (Type B enclosure for outdoor use as per EN 54-3) |
| Design IP rating (not certified) **                                    | 65  |
| Operating temperature range  | -10 °C to +55 °C                                      |
| Maximum humidity (non condensing)                                      | 95% RH  |

\* See TDS-TWMWS technical specification document for further technical data.

\*\* Independently assessed and certified to IPX5 (not part of the EN 54-3 certification).

**Table 4**

**BATTERIES SPECIFICATIONS**

| Specification                                 | Value                    |
|---|--------------------------|
| Batteries type                                | 2x CR123A (3 V, 1.25 Ah) |
| Batteries lifespan (SYG-SIM + 100-3801V) *    | > 5 years                |
| Batteries lifespan (SYG-SIM + 100-3800V-AV) * | > 4 years & 1/2          |
| Low battery threshold value (nominal)         | 2.850 V                  |

\* Batteries lifespan depends by environmental conditions, default monitor settings and link quality.

**Table 5**

**TECHNICAL SPECIFICATIONS - SYG-SIM + 100-3801V**

| Specification                 | Value  |
|-------------------------------|--------|
| Maximum current draw (at 3 V) | 50 mA  |
| Height                        | 185 mm |
| Diameter                      | 130 mm |
| Weight                        | 350 g  |

**Table 6**

**TECHNICAL SPECIFICATIONS - SYG-SIM + 100-3800V-AV**

| Specification                       | Value  | Notes              |
|-------------------------------------|--|--------------------|
| Maximum current draw (at 3 V)       | 260 mA   |                    |
| Visual Alarm Device (VAD) colour    | White  |                    |
| Visual Alarm Device (VAD) frequency | 0.5 Hz   |                    |
| VAD flash coverage                  | Wall mounted, 2.5 m height, 7 m coverage width, 2.5 m x 7 m x 7 m (122.5 m <sup>3</sup> ) cubic coverage | W-2.5-7 (EN 54-23) |
| Height                              | 192 mm   |                    |
| Diameter                            | 130 mm   |                    |
| Weight                              | 380 g  |                    |

**Table 7**

