VANDERBILT

MAGNA-F Outdoor Siren EN & NFA2P Grade 3

CHARACTERISTICS

- Very efficient operation
- Silent start
- Adjustable ring duration
- Selectable Auto-Trigger Ring Mode (SAD)
- Built-in LED flash
- Front and rear self-protection
- Sound power 107 dBA at 1m
- Battery circuit protection by automatic reset fuse
- Diagnostic LEDs
- Battery test with fault detection
- Remote test input
- Ring-trip line monitoring
- Active in call current limiter on the flash
- Microprocessor control
- Integrated electronic module
- Audible self-protection to facilitate commissioning
- Rear panel to break (self-protection) for easy installation.

Complies with NF EN50131-4:2009, RTC50131-4:2011, RT 48-266:2012.

Note: For safety reasons, the self-protection exit of the siren is activated when the siren detects:
- a disappearance of sound + Power supply (+ charge);
- a disappearance of its 0v of power.

Attention: It is especially important not to connect the + Power supply (+ charge) on + load (14.5V) of the power plants that disappears during a mains fault. It must be connected to a permanent + power supply.

FUNCTIOING

The MAGNA-F siren is used to signal an alert situation, which is triggered by an alarm system in case of intrusion, robbery, etc. In response to the instructions transmitted by the alarm center, the MAGNA-F siren will emit a very puissant sound and /or activate a visual flash.

The MAGNA-F siren will detect any attempt to access the alarm without authorization by removing the cover or any attempt to neutralize it by disassembling it from its mounting bracket. This will trigger an alert signal that is normally transmitted back to the alarm center. The connection integrity of the triggering command (the line) is constantly checked. It will result in the automatic activation of the device (if SAD mode is activated) and will report any problems to the central office in case of connection failure on the line.

The MAGNA-F siren is classified as a self-powered device and incorporates a battery that is recharged by an external power source. This battery is used to make the siren work in case of removal of the external power supply. The MAGNA-F siren can be configured to trigger (SAD mode enabled) in case of detection of a self-protection situation and will always trigger automatically if the external power supply is removed.

The automatic test of the integrity of the MAGNA-F siren battery as well as its charging circuit is carried out every 24 hours. A fault signal is generated in case an error is detected. This is normally transmitted back to the plant. It is possible to trigger this automatic test at any time by sending a Remote Test instruction from the plant. The built-in diagnostic LED gives a visual indication of the battery level or its charger status.

In order to facilitate commissioning, the MAGNA-F siren is equipped with an Engineer mode for silent start and low-volume audible confirmation indicating the correct closure of the tamper contacts.

FUNCTIONAL TRAINING

Self-protective contact circuit for single or multiple cascade installations

The MAGNA-F siren self-protection contact circuit can be configured for single (Figure 1) or multiple (Figure 2) cascade installations. In cascading installations with two or more sirens, the AP(R) terminal of each siren est connected to the AP(S) of the previous one, from the one at the end of the line to the power station. It is also necessary to cut the white "CASC" link of the devices arranged in cascade. Do not cut the CASC link of the siren at the end of the line.

Engineer Mode ("ING")

Selects quiet start and silent maintenance. The ING input can be returned to the plant and connected to a programmable output (or manually connected to ALIM+). Put the ING signal at + ALIM during maintenance will prevent the siren from activating when the cover is removed or BL- signal activated. If the self-protection loop is opened when ING mode is enabled, this prevents the alarm from being triggered.

Automatic test with fault detection

The MAGNA-F siren performs an automatic test every 24 hours. This function tests the state of the battery. In case of failure, the default output is activated. The origin of the failure can be identified using the Diagnostic LED - see "Diagnostics". This is ONLY activated when the cover is

open (self-protection cover enabled)for more than 2 s and that the TEST input is no longer at +ALIM or not connected.

The default output is reset to zero (closed) as soon as:
- the problem is solved (reconnecting the battery, for example)
- the problem is solved and the siren performs an automatic test (remote test input or automatic test triggered every 24 hours)
- the problem is solved and the siren performs an automatic test (remote test input)
- the problem is solved and ALIM+ AND battery have been unplugged/reconnected or TEST connected to ALIM+ to start the automatic test

Remote testing

With the cover closed, putting a +ALIM on the remote test input (TEST) will trigger an automatic test (connected ING input). The default output is immediately opened to receive the automatic test instruction. The battery is immediately tested. Any failure found will be indicated by the default output remaining open after 10 s. The default output will remain open until the problem is resolved and another automatic test or remote test has been performed. If the automatic test is positive, then the defaulting output will close 10s after the remote test is started.

SELECTION FOoptions

Table 1 summarizes the options for various modes of operation.

Table 1: Selected Options

BL inhibition** (BLI) (requires positive signal of BL- to prevent the triggering of the siren)	+ve* ■	none □	**reference**	
FL inhibition (FLI) (requires positive signal of FL- to prevent the triggering of the flash	+ve* ■	none □	■ Option INSTALLED	
Sad (Ringtone Self-Trigger)	activated ■	Disabled* □	□ NOT installed	
Ring time T2 / T1	5 sec.*** □ / □	90 sec. □ / ■	3 min. ■ / □	3 min.* ■ / ■

* Factory default setting.

** Note: If a BL inhibition link is installed ,the BL- line break detection will not be able to send a self-protection report to the plant, but it will remain triggered.

*** This stop option is reserved for installation purposes. *(5s only for the installation test.)*

Blocking function for siren trigger inputs (BL-) and flash inputs (FL-)

The blocking selection is provided by the BL inhibition (BLI) and FL inhibition (FLI) jumpers to allow the siren and flash to be triggered from the plant configured for positive blocking Table 1. The BL inhibition and FL inhibition jumpers connect the pull-down resistors to the BL-e t FL- inputs. When these jumpers are INSTALLED, an ALIM+ voltage must be applied to BL- and FL- to prevent (Block) the activation of the siren and /or flash functions. Triggers by removing ALIM+.

When the BL Inhibition and FL Inhibition jumpers are NOT INSTALLED, the plant must provide a transition from ALIM+ to 0V on BL- or FL- to trigger the siren &/or beacon.

SAD Mode

SAD selects the siren's response to various tampering conditions, based on the following table:

Table 2: SAD Mode Corruption Condition

Condition of alteration	SAD Mode		Auto-output protection	Exit fault
	Activated	Disabled		
Cover removed	Siren	Siren	open	closed
Disassembled from its fixing				
The connection to BL- is cut off 'bl rider Inhibition PAS installed)				
The ALIM+ or ALIM- power stations are cut off		Siren active		
The connection to BL- is cut off (BL Inhibition jumper installed)			closed	

With SAD mode DISABLED, the auto-protection output can always open and transmit an active alarm condition to the central according to the cases presented in Table 2. If necessary, the siren can be activated using a normal power plant sound actuation control.

Ring time REFERENCE

The MAGNA-F siren will automatically stop ringing at the end of the time period selected by the Ring Duration jumper, Table 1, regardless of the status of the input (BL-) of the ringing trigger. Option 5 s is provided to reduce noise pollution during testing.

AGREEMENTS

BATT+	Positive connection terminal to the battery.
BATT-	Terminal of negative connection battery. Plug in the black terminal of the battery after powering on.
ALIM+	Positive permanent power supply of the suspend function.
ALIM-	Negative permanent power supply of the suspend function .
AP(S)	Connected to ALIM – via WHITE jumper (see Figure 2 for a multiple siren configuration)
AP(R)	Auto-protection return connection to the plant. (see Figures 1 and 2)
FAULT	Output default: Contacts free of potential.
BL-	Negative siren trigger, must be maintained on ALIM+ in standby mode.
FL-	Negative flash trigger.
ING	Engineer mode input sheet (optional) for silent operation during installation or maintenance. Apply +12V to launch engineer mode.
TEST	Remote test activation input (link to ALIM+ to activate)

Note: If it is necessary to reuse a cascading configured siren for stand-alone use (i.e., the white jumper has been cut), install a short-circuit link between the AP(S) and ALIM- terminals to restore the functions.

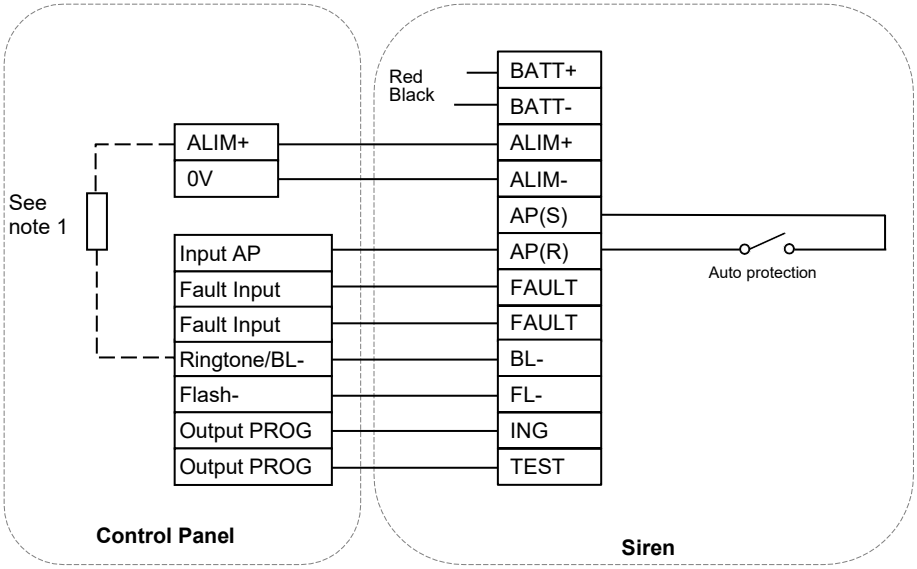


Fig. 1: MAGNA-F connections (simple configuration)

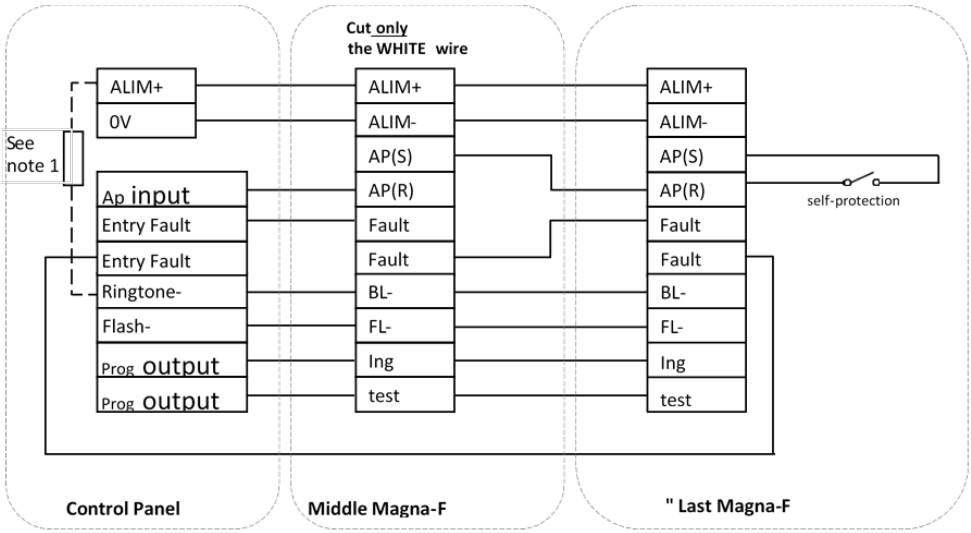


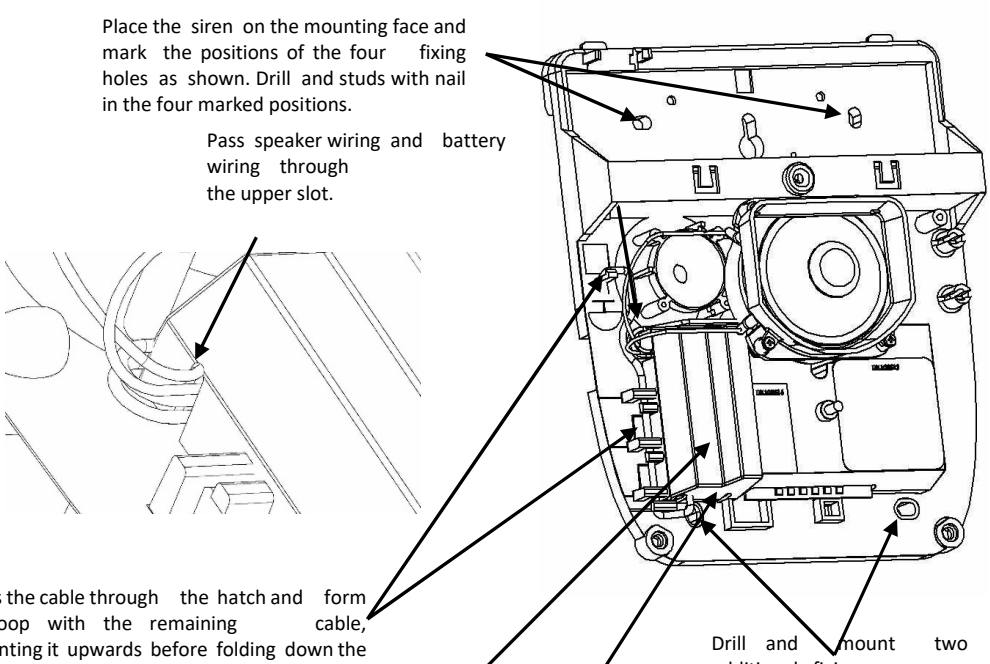
Fig. 2 : Connection of MAGNA-F (multiple in waterfall)

Note 1: When the loop trigger is not activated at more than +8.5V by the plant in standby mode, an external resistor 4k7 must be installed between ALIM+ and the ringing trigger at the power plant.

INSTALLATION AND CONFIGURATION

1) Select a suitable mounting position for the MAGNA-F siren.
2) Drill the holes needed to fix the back plate on the wall and pass the cable behind the device.
3) To simplify the task, the rear auto-protection solution is automatically activated when the device is attached to the wall. This is done by the inclusion of a panel that is broken when the siren forcibly removed. Take care not to tear off this part when walling the siren.
4) Pass the cable of the power plant by introducing it into the passage provided for this purpose.
5) Attach the back plate to the wall using 3 M5 fixing screws (minimum) adapted to the material of the surface of the support.

Fig. 3: Assembly diagram



Mise In service

1) Install jumpers:
   I. Sound duration: T1 & T2
   II. Select /off SAD mode as required.
   III. Configure the suspend flash trigger function as required: Flash Inhibition (FLI)
   IV. Configure the suspend siren trigger function as needed: Blocking Inhibition (BLI)
   (NOTE: Selection links will *only be interpreted at* the initial time of *power-on.)*

2) Connect AP(S) / AP(R) as needed, depending on whether it is a single or multiple installation (see Fig. 1, 2)
3) Connect FAULT, BL-, FL-
4) Connecter TEST if the remote test feature is required.
5) Connect ING to ALIM+ or a high-level plant switching output to disable the siren)
6) Connect ALIM+ and ALIM-.
7) Power on the siren via ALIM+ and ALIM - from the power plant.
8) Connect the red and black battery contacts to the appropriate terminals of the battery. *(NOTE 1: The battery* ***must be*** *installed to allow* the *activation* of *the siren. It is possible* to *wait* up *to 10s to confirm the presence* of the *battery so* that *the siren can be activated. The relay fault* output contacts will *be opened during this period* and the *diagnostic LED* will *emit 2 flashes - repetitive cycle.*
   NOTE 2: The siren is specified to work with a Powersonic PS-1221 battery and it *is recommended that this battery is used.)*

9) If the ING input has been connected according to step 5, then the MAGNA-F siren will perform an automatic test as soon as the hood has been mounted and the screw firmly tightened. It takes about 10 seconds. In case of battery failure, the device will signal it with a series of quick and continuous clicks .

10) If the ING entry was connected according to step 5, then remove this link.
    Note: the siren will start if SAD mode is selected, and the cover is *removed.*

11) Full test of the functionality of the mermaid.
12) With the siren cover open, place the terminal cover, as shown in the diagram.
13) Close the siren cover.

14) Commissioning complete.
    Note: if the commissioning phase is omitted (the siren is connected to ALIM *+/* ALIM *- and the battery with an ING input at 0V), then immediately* after *the* ALIM *+/* ALIM *connection - carried out the* conditions *of active* alteration will *not be treated before:*
    a) 6 seconds after powering on (ALIM+/ ALIM-*) and*
    b) the alteration condition *is previously cleared* and *a new corruption event is then generated*

MAINTENANCE

To ensure its proper functioning, the MAGNA-F siren must be checked regularly. At least one check every 12 months is recommended. The following functions shall be verified during each maintenance visit:

1) Correct operation of the siren and flash from the signals of the power plant.
2) Correct operation of the rear self-protection and cover.
3) Remove the ALIM+ power supply from the plant and check that the internal voltage of the battery, measured between BATT+ and BATT-, is greater than 12V/DC. If the battery voltage is less than this value, replace the battery and reconnect respecting the CORRECT polarity.
4) Check for any significant signs of water infiltration or insects. Clean if necessary.

BATTERY Lift

The battery can be removed for disposal when the product reaches the end of its life or in case of detection of a failure revealed by the automatic siren test. To remove it, remove the red and black contacts from the terminals of the battery, clip the rubber holding strip and take it out of its support. To install a new battery, introduce it into the support and reconnect the positive (RED) and negative (BLACK) contacts to the correct positive and negative terminals of the battery. Put the rubber holding band back in place.

IMPORTANT: Check the correct polarity of the connections. If either of **the battery** contacts **has separated from the corresponding terminal, ensure** that **the** exposed contacts of the **battery DO NOT accidentally cause short-circuiting, then firmly fix** the **positive contact (RED) to BATT+ and** the **negative contact (BLACK) to BATT-.**

Dispose of used batteries ***in accordance*** with ***all national and local regulations***

DIAGNOSTICS

Table 3: List of acoustic diagnostic indicators

NOTE: Commissioning Mode / Installation Mode**) is only enabled when ING is connected to 9-15V/DC**

Commissioning **tones**	**Status indicated**	**action**
One click	Auto-protection closure	Use to ensure that the cover self-protection has closed properly when the cover is attached and that the auto protection rear is not failing.
Two clicks	Auto-protection opening	Use to check the correct operation of the auto-protection circuit.
Slow & continuous clicks	Open rear self-protection	Use to ensure that the self-protection is closed when the MAGNA-F siren is mounted in the installed position.
Quick & continuous clicks	The battery is not plugged in or fails when the cover self-protection is closed.	Open the cover and verify that the battery is properly plugged in.

Table 4: List of Visual Diagnostic Indicators

NOTE: Diagnostic LED only activated when the cover is opened

Diagnostic LEDs	**Status indicated**	**action**
A single flash	Battery is low	Change the battery (unless it is new and still charging)
2 flashes	Battery test failed	Check the connection and change the battery
3 flashes	Reserved for future use	--
4 flashes	Battery charger failure	Change the device

FaultRESEARCH

Table 5: List of Symptoms and Defects

symptom	defect	action
Siren activated in non-alarm condition and auto-protection is displayed on the power plant	The cover is not properly closed	Check the cover closure and screw firmly.
	BL- not pushed to ALIM+ in standby mode	Set the pull-up resistor to BL- at the power plant. See figure IV. 1, Note 1
The siren stops after 5 s.	Incorrect setting of ring duration	Correctly configure the ring duration jumpers.
Unable to CONFIGURE the plant (because of the self- siren protection)	The auto-protection output is open because the ING input is always connected to ALIM+	Disconnect ING from ALIM+ at the siren or set the programmable output of the power plant to low
	The self-protection source (AP(S) is not connected to ALIM- for a simple configuration or to Return Self-Protection (TR) for multiple cascading sirens	Consult the connection diagrams for sirens in single or multiple configuration (Figures 1 and 2)
	The auto-protection switch is not closed	Check the cover and that the rear self-protection is intact
	Disconnected (BL-) loop trigger signal(floating)	Ensure bl- is connected to ALIM+ in standby mode
Open fault output	Battery not plugged in	Check the connection of battery contacts
	Defective or low battery	Replace battery
	Faulty battery charger	Return the device to the manufacturer
The audible alarm stops prematurely.	The battery is too low	Recharge the battery
The flash stops unexpectedly	Low battery level	None. The MAGNA-F siren reserves the remaining battery capacity for the audible alarm.)
The siren makes a slamming noise during commissioning	See the Commissioning Mode table	

END-OF-LIFE Product Disposal

This product falls within the scope of the European Directives 2012/19/EU WEEE(Waste electrical and electronic equipment) and 2006/66/EC (Batteries). At the end of life, the product must be separated from the household waste and disposed of appropriately following an approved disposal circuit for WEEE, in accordance with all national and local regulations.

Before discarding the product, the battery must be removed and discarded separately following a suitable and approved battery disposal circuit, in accordance with all national and local regulations. Pack used batteries securely for return to your supplier or for deposit at the disposal site.

Warning: Risk of fire or explosion if exposed, battery wires can come into contact.

See technical specifications for battery type information. The battery bears the pictogram of the crossed-out bin, which may include lettering to indicate the presence of cadmium (Cd), lead (Pb) or mercury (Hg).

The packaging supplied with this product can be recycled. Please dispose of the packaging appropriately.

For more information, see: *www.recyclethis.info*

TECHNICAL ARACTS

Sound power	>107 dBA at 1m
Frequency band	1400 - 1600 Hz
Supply voltage	9.0 – 15.0 V/DC, 13.8 V/DC nominal, 14.3V/DC optimal
load Consumption on +ALIM	10mA to 13.8 V/DC (standby)
Charging battery	100mA in the case of fully discharged batteries
Ringtone / Flash	1.6A max (from the battery) / 40mA max
Selectable	Sound Duration 90 seconds, 3 minutes *(5 seconds only for installation test - not a certified duration)* 12V 2.1Ah SLA battery - Recharging battery in less than 24 hours (after 10 3-minute ringtones) NOTE: The siren is specified to operate with a Powersonic PS-1221 battery and it is recommended that this battery is used.
Nominal 10.9V low	battery detection
Battery life (battery)	60h
Flash	Color: white (orange lens). LED, 1Hz flash speed reducing up to 0.5Hz after 15 minutes
Tamper detection	- Hood and rear contact with triggering
(Self-protection)	- Cut line detection (loop trigger signal)
Auto output-protection	Contact free of potential (when the white jumper is cut), maximum resistance 16Ω. Max rated current 100mA
Output fault	Contact free of potential, maximum resistance 16Ω Nominal current max 100mA
Input trigger ringtone / flash	BL- < 2.9V/DC, FL- < 5.7V/DC.
Dimensions / Weight	203mm L, 247mm H, 73mm D / 1.1kg without battery
Fixing	Self-tapping screws M5 (4)
Hood material & lens	Polycarbonate
Backplate	Polycarbonate
Material other mouldings	ABS
Protection level	IP44 & IK08
Operating temperature	-25°C to +70°C
Storage temperature	-25°C to +70°C

CONFORMIT

This product meets the essential requirements of the following European directives: CEM: 2004/108/EC

RoHS :	2011/65/EU
WEEE :	2012/19/EU
Batteries :	2006/66/EC
EBT :	2006/95/EC

Standard EN50131-4:2009 Safety grade 3, Environmental class IV
RTC50131-4:2011 Safety grade 3, Environmental class IV RT
48-266:2012

CERTIFYING BODIES

AFNOR Certification
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No. Certificate: 3231000002