

## ALARM SYSTEMS S140 AND S140-1 MODEL



**The SINTESY.eagle.S140 module is a medical device used to control alarms in medical gas distribution systems. It complies with Directive 93/42/EEC and 2007/47/EC, identified in Class IIb according to the requirements of Annex IX, rule 9 and it meets also the requirements in the standard EN7396-1.**

The main feature is the ability to send, using the GSM network, alarm messages in case of alarm condition: messages can be dispatched as voice messages, SMS and/or e-mails. The module can be "called" by remote to verify the status of the plant or to drive the relay outputs. These operations are executed via password, for security reasons.

S140 has 8 inputs that can be individually set as analog or digital. The installer can set all the parameters through a convenient and intuitive front keypad. For each input it is possible to set the indication that appears during the alarm condition.

If the input is set as analog, it can be programmed with two alarm thresholds that, when exceeded, trigger the phone call, in addition to local signaling. Events related to the two thresholds can be remoted on 8 digital outputs (to connect other audible and/or visual indicators, or to remote the signals for a control room).

The front panel has the acoustic and visual signals complying with EN60601-1-8: a yellow light to indicate a medium priority alarm, a red light to indicate a high priority alarm and a buzzer. The acoustic signal can be silenced by the operator for a programmable time (max. 15 minutes) or permanently. Up to 69 customizable voice messages are available.

Another message, shared by all alarms, indicates the location and is used during the call.

There are 69 events, 32 hardware-managed, 32 managed by the serial communication port and 5 "special" events. It is possible to program up to 69 SMS that can be sent during alarm conditions (threshold A1, threshold A2, under-range, over-range). For each alarm event, the module can send a combination of: voice messages, SMS messages or email selecting the addressee from a list of 8 preset phone numbers.

The S140 can operate as stand-alone device or it can be part of a network of other modules connected on a RS485 bus. Through this communications port, the module can be controlled by the supervisory system SINTESY.eagle® that, through a synoptic chart, displays the status of all sensors of the system. It can also be connected to the S200.smart and S300.smartPLC or be part of a complex telemetry system based on TCP/IP protocol using physical servers provided by the SINTESY.eagle.telemetry web architecture. Thanks to the software SINTESY.eagle.wizard, it is possible to program all the available functions, using a standard PC. Moreover, it is possible to archive the configuration of a single module S140, or of the whole plant, increasing the efficiency in case of reprogramming and helping the traceability of installed modules.

It is also available the special version S140-1. It is not equipped with the GSM module and it uses the flexibility and performances of its 8 analog inputs and outputs.

## KEY FEATURES

- Power supply 24V~; 30VA (max)
- Possibility to use an external battery pack
- Internal protection with fuse
- 16 bit microcontroller with Flash Eeprom memory
- 8 inputs type 0-20mA, 4-20mA, 0-10V, 2-10V, 0-5V, 1-5V, digital with internal or external power supply
- ADC converter with 16 bit resolution
- 8 programmable digital output 24V= @ 50mA
- Configuration parameter stored in internal memory
- LCD with backlight, 16 characters x 2 rows
- Alphanumeric keyboard with 16 button (like a mobile phone)
- Power on green led
- Communication green led
- High priority alarm high efficiency red led
- Medium priority alarm high efficiency yellow led
- Audio emitter with three different modality: EN60601-1-8 type, double tone, single tone, siren
- Temporary muting (max 15 minutes)
- Permanent muting by using a password
- Configuration by SINTESY.eagle.wizard software
- RTU (Remote Telemetry Unit) for SINTESY.eagle®
- Compliance with EN60601-1 3rd Ed., EN60601-1-6, EN60601-1-8, EN62304, EN7396-1, EN62366
- RS485 termination on board
- Option for MODBUS protocol
- DIN rail (EN 60715) according to DIN 43880. Modules: 9M
- Certification CE0051.
- Alarm acoustic pressure >70dB @ 1 m
- Working temperature -10/60°C; storage temperature -20/70°C
- GSM Quad-Band, certified R&TTE 99/05/CE Annex III, MD 2007/47/CE, Δ Type Approval.

