MACS - S3H
SENSOR

MACS-MAS
MASTER

SENSOR - SPECIFICATIONS

mm (in) **33** (1.29) **60** (2.36)

73 (2.87)
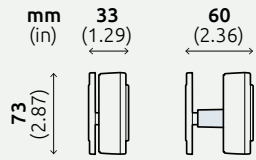
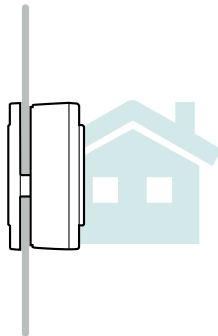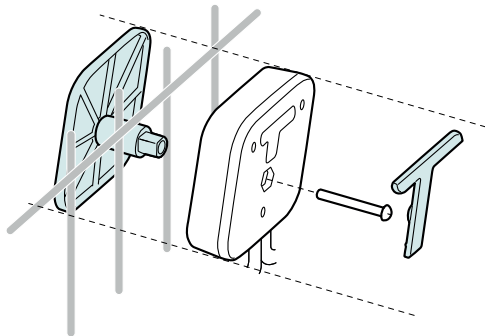|	
OVERALL DIMENSIONS	89x73x25.5mm | 3.5x2.87x1in
IP PROTECTION DEGREE	IP68
RELATIVE HUMIDITY	0-100%
OPERATING TEMPERATURE	-40° C / +70° C | -40° F / +158° F
MATERIAL	Technopolymer with fibre glass Full potting, UV resistant
FIXING SYSTEM	Single central screw, by means of: • with dedicated back-plate on panel • with self-drilling screw on metal surface (post)
COVERAGE	• Up to 120 sensors per communication bus (2 bus per single Master) • Chains of max. 20 sensors, at pitch of 5.5 m | 18 ft

MASTER - SPECIFICATIONS

mm (in) **142** (5.59) **63** (2.48)

167 (6.57)

POWER SUPPLY	From Ethernet Board via powered proprietary bus
OPERATING TEMPERATURE	-40° C / +70° C | -40° F / +158° F
FIXING SYSTEM	DIN rail support in watertight case
CONTAINER TYPE	Watertight case in aluminium alloy
IP PROTECTION DEGREE	IP67
CONTAINER DIMENSIONS	167 x 142 x 63 mm | 6.57 x 5.59 x 2.48 in
CONNECTIONS	2 communication buses to sensors, 1 communication bus to Ethernet Board

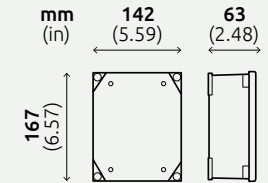## MACS-S3H sensor. Compact, stylish and practical

The sensor is housed in a technopolymer case with fibre glass featuring a compact and stylish design, which blends in perfectly with aesthetics in combination with practical demands. Indeed the special design enables quick installation of the sensors with a single central screw and back-plate on various types of fences. The sensors are pre-wired and completely potted in the factory, guaranteeing IP68 protection and minimal installation times. The special internal design of the sensor casing offers optimal resistance to cable strain, while affording strength and reliability of the system itself. The system is compatible with two sensor buses, each for a maximum of 120 sensors. Each of these can be mounted, depending on the size and features of the fence, typically every two panels or at a maximum distance of 5.5 m | 18 ft from each other. System coverage can reach a maximum of 1200 m | 3937 ft of fencing.

Master MACS-MAS.
NO 230V connection, NO power supply unit, NO backup battery

The control board, known as the Master, can manage up to a maximum of two chains on independent communication buses for a total of 240 sensors. The Master is housed in a compact watertight case. It is installed outside and powered via the cable that connects it to the Ethernet Board (located inside the building at a maximum distance of 1000 m | 3281 ft). This configuration eliminates the need for 230V power supply with relative power supply units and external backup battery.
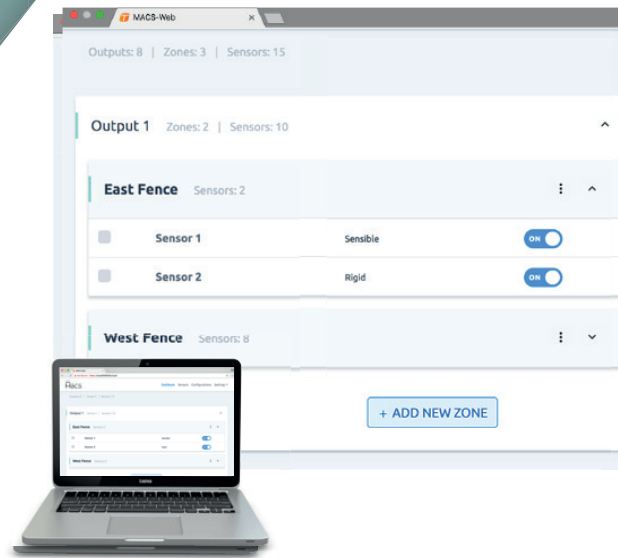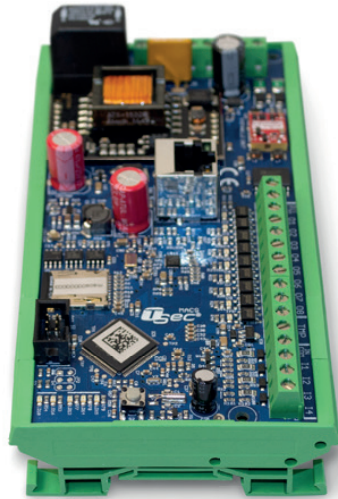
BUS1

BUS2
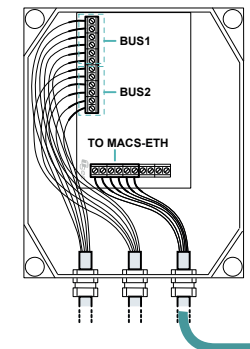
TO MACS-ETH

MACS - ETH
ETHERNET BOARD

MACS WEB INTERFACE
CONTROL WEB INTERFACE

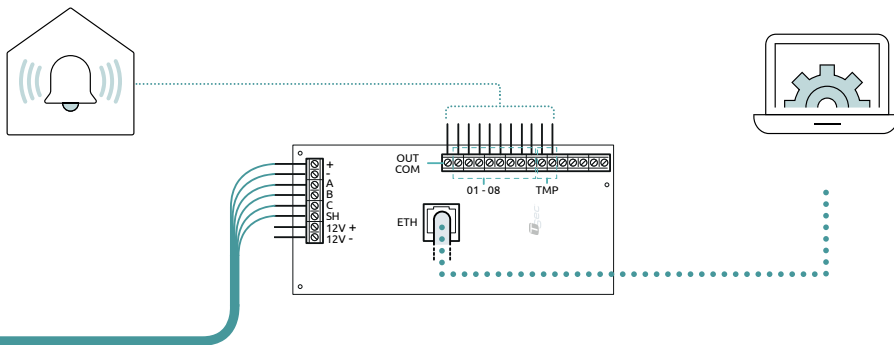## ETHERNET BOARD - SPECIFICATIONS

mm (in) 159 (6.25) 54 (2.12) 83 (3.26)

POWER SUPPLY
12 Vdc - 3 A

OPERATING TEMPERATURE
-20° C / +70° C | -4° F / +158° F

FIXING SYSTEM
DIN rail support

BOARD DIMENSIONS
159 x 83 mm | 6.25 x 3.26 in

DIGITAL INPUTS
4 digital inputs

NC OUTPUTS - NUMBER
8 + 1 tamper

NC OUTPUTS - TYPE
Relay OptoMOS: 60Vmax, 400mA, Contact resistance < 2 ohm

COMMUNICATION
Ethernet port

**DIGITAL MEMORY**
Up to 10000 events

MACS-ETH Ethernet Board. All under control

The Ethernet Board has 8 configurable relay outputs + 1 tamper relay for interfacing the MACS system with an alarm control panel. This is connected to the network via the Ethernet port to enable programming and control of the system via the web interface. All system elements communicate in authenticated and encoded mode thanks to sophisticated security architecture based on cryptochip. The Ethernet Board, supplied with support and DIN rail, powers the entire system.
A 12Vdc 3A power supply unit is required, or alternative option of Ethernet board complete with power supply unit in a metal container with compartment for 12V 17Ah backup battery (MACS-ETH-PS).

WEB INTERFACE - SPECIFICATIONS

CONNECTIONS
Control via Web browser with Ethernet connection to MACS-ETH board

NUMBER OF ZONES
Up to 32 zones with no limitation on number of sensors present and free programming to an output

ALARMS
Pre-alarm / Alarm / Tamper / Fault

PROGRAMMING
• Real-time calibration of parameters with feedback
• Automatic detection of connected sensors
• Smart calibration function for adaptation to fencing
• Free association of sensors and outputs

USER MANAGEMENT
Up to 10 users with different credentials and authorizations

SECURITY
Encoded information transit and communication

MACS Web interface. Easy and intuitive

The smart programming interface provides the installer with exceptional flexibility in programming, with the option of setting system, output, zone and individual sensor parameters.
Programming is facilitated by real-time feedback on sensor detections. the user can also consult a log of the last 10000 system events with relative data on the sensor that triggered the alarm.
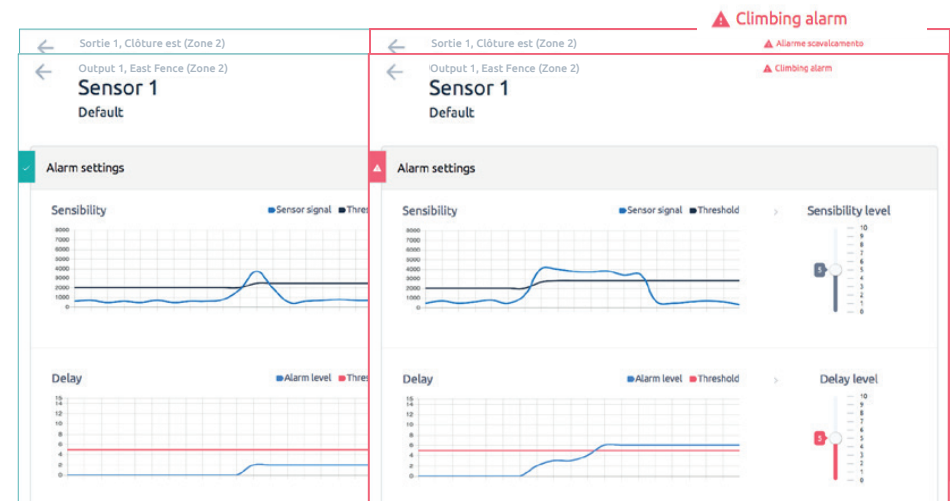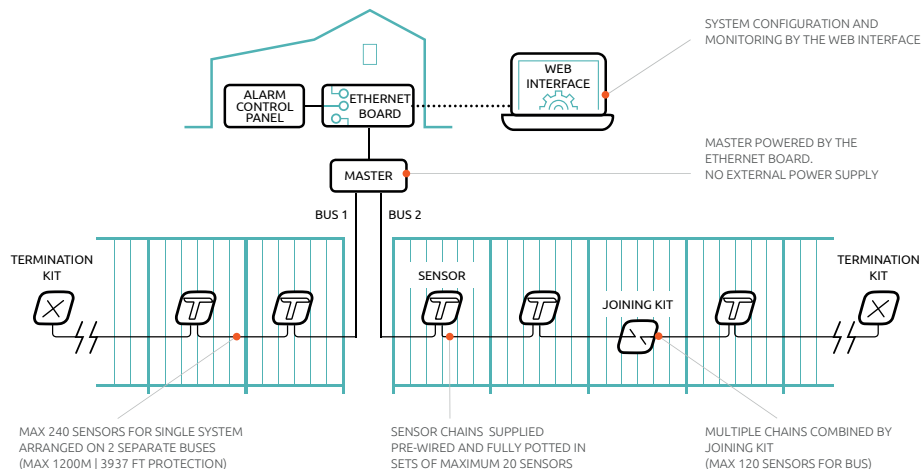
MACS COMPONENTS
SYSTEM SCHEMATIC AND ORDERING CODES

The system is made up of:
- Ethernet board, installed inside the building
- Master, installed in the vicinity of the fencing,
  up to a max. distance of 1000m | 3281 ft from the Ethernet board
- Pre-wired and fully potted sensor chains

SYSTEM CONFIGURATION AND MONITORING BY THE WEB INTERFACE

MASTER POWERED BY THE ETHERNET BOARD. NO EXTERNAL POWER SUPPLY

ALARM CONTROL PANEL

ETHERNET BOARD

WEB INTERFACE

MASTER

BUS 1   BUS 2

TERMINATION KIT

SENSOR

JOINING KIT

TERMINATION KIT

MAX 240 SENSORS FOR SINGLE SYSTEM ARRANGED ON 2 SEPARATE BUSES (MAX 1200M | 3937 FT PROTECTION)

SENSOR CHAINS SUPPLIED PRE-WIRED AND FULLY POTTED IN SETS OF MAXIMUM 20 SENSORS

MULTIPLE CHAINS COMBINED BY JOINING KIT (MAX 120 SENSORS FOR BUS)

Order codes

ARTICLE	DESCRIPTION	NOTES
MACS-S3H	IP68 sensor in reinforced technopolymer, with quick connector	Supplied in pre-wired chains of max. 20 sensors. Customization possible on request
MACS-MAS	Control board with 2 independent buses for management of MACS-S3H sensors	Can be ordered in combination with MACS-ETH or MACS-ETH-PS
MACS-ETH	Ethernet board with 8 programmable relay outputs + tamper output, Ethernet port, 12 Vdc max 3A power supply	Can be ordered in combination with MACS-MAS
MACS-ETH-PS	MACS-ETH + power supply unit in metal BOX	12V 17Ah battery not included. Can be ordered in combination with MACS-MAS
MACS-KIT-CON	Sensor chain connection cable KIT. Case identical to MACS-S3H	Pack of 4 pcs
MACS-BOX	IP67 metal box for connection, with cable clamps	
MACS-KIT-TERM	Bus chain termination kit. Case identical to MACS-S3H	Pack of 2 pcs
MACS-CAB	Connection cable between MACS-MAS and MACS-ETH or for chain extension. External sheath in PVC resistant to adverse weather and UV rays.	Available in reels of 100m	328 ft or 300m	984 ft
MACS-CT	UV resistant ties	Pack of 100 pcs