Aqualeak EMS-5x/10x

AQUALEAK

The Aqualeak Environmental Monitoring System (EMS) Water Leak Detection System series are standalone leak detection systems designed to be capable of integrating into larger Building Management Systems (BMS) and networks.

Designed for continuous operation with minimal human intervention, the EMS series is also compatible with a wide variety of sensing technologies (sold separately) to detect the presence of water and other liquids.

As a standalone system with 5 (EMS-5X) or 10 (EMS-10X) input channels as standard, these models are ideal for applications ranging from small multi-room offices to medium-sized industrial and commercial complexes.

These models also enable a system to be expanded on a modular basis, by connecting to 5-zone outstations. The system can be expanded to monitor a maximum of 625 zones, in a cost effective way, making it suitable for the largest of commercial and industrial aplications.

Benefits

- Remote monitoring for leaks
- Reduced risks of flooding
- Minimum human intervention required
- Built-in fault detection
- Built-in visual and audible alarms
- Multiple operating modes (including Test and Engineering modes)

Features

- Highly versatile with bespoke configuration
- Programmable relay outputs
- Remote Status Monitoring (via email)
- Email, Modbus, and multiple digital outputs
- Monitors for leaks, sensor cable breaks, and internal system faults
- Touch screen display
- Designed and built in the United Kingdom
- CE Compliant
- Supports Modbus TCP/IP and Modbus RTU RS232/RS485
- Connects to Outstations to expand the number of zones monitored (up to 625 on both models)

Operation

In operation, the EMS-5X and 10X models continuously monitor connected sensing equipment for both circuit integrity and the presence of water. If a leak is detected, the EMS-5X and 10X will or can be configured to:

- Activate a visual alarm
- Sound a buzzer
- Report to any network via Modbus, digital output, and/or email
- Activate default and user-defined outputs
- Shut off local water supplies

EMS Series Models

In addition to EMS-5X and 10X, the Aqualeak EMS series also includes the following models:

- EMS-5/10: 5 or 10 input channels (no configuration required)
- EMS-1: Single zone (DIP switch configuration)

Technical Specifications

Master Panel/EMS Unit	Specification
Dimensions	335 x 270 x 110 mm - Width x Height x Depth
Weight	4.5 Kilograms
Supply Voltage	80 – 264 VAC (Volts / Alternating Current). 50/60 Hz frequency
Motherboard Output Relay Voltage	250 VAC
Motherboard Output Relay Current	8 Amps. Maximum into resistive load
Relay Minimum Load	10 Milliamps - at 5 VDC (Volts / Direct Current)
Leader Cable	Belden 9534 - variable length
Detection Response Time	1 second per Outstation
Alarm (Audible) and Alarm (Visible)	85 Decibels within 0.6 m range; Visible via LCD Touch Screen
Ingress Protection (IP) Code	IP51 Ingress Protection to IEC 60529. Holes drilled during installation may affect unit
USB Port	2.0
Operating System	Android Application Package (.apk)
Configuration File	XML Extensible Markup Language (.xml)
Input channels	5 or 10

Outstation	Specification
Dimensions	180 x 130 x 77 mm - Width x Height x Depth
Weight	1.0 Kilograms
Supply Voltage	24 Volts / Direct Current. 50/60 Hz frequency (+/- 10% variance)
Ingress Protection (IP) Code	IP64 Ingress Protection o IEC 60529. Holes drilled during installation may affect unit
Input channels	5

EMS & Outstation	Specification
Operating Temperature	0 to +50°C
Operating Humidity	10 to 95% - Relative humidity (non-condensing) at 45°C
Operating Altitude	0 to 3,000 Metres
Storage Temperature	-20 to +70°C
Sensor Cable Length	100 Metres (with maximum 20 probes). Use recommended yellow Sensor Cable. Also requires End of Line (EOL) terminator.
Electrical Interface Adapter (EIA) Communication Port	User defined

Relay Function and Triggers

Relay	Function	Description and Triggers	
1-10	Individual zone	Software configurable. Used to operate auxiliary devices	
11	Common Alarm / Fault	Relay latched upon alarm until acknowledged by User or Engineer	
		Zone cable break	Ethernet connection failure
		Zone Alarm	Modbus TCP/IP connection failure
		Interface boards /outstations communication failure	Motherboard communication failure
12	Cable break	Relay latched upon alarm until acknowledged by User or Engineer	
		Zone cable break	
13	Alarm	Relay latched upon alarm until acknowledged by User or Engineer	
		Zone alarm	
14	Configurable	User configurable to latch on Alarm (13) and/or Cable Break (12). Relay latched only when alarm or cable break present in real time	
15	Watchdog	Relay normally energised. De-energised on any system fault	
		Motherboard communication failure	Motherboard loss of power
		Interface Board/Outstation loss of power	Complete power failure to EMS
		Interface Board/Outstation communication failure	
16	Spare	Unused	