HALO HVAC

Remote Wireless Monitoring

Halo Wireless Control

General Description

The Halo Wireless control units contain two separate relay switches allowing for individual control through the Halo online sensors portal. The Halo control unit relays can be switched on/off manually through the software or automatically by any wireless sensor notification assigned to a single sensor or group of sensors when a specified condition is detected.

Principles of Operation

The Halo control unit has two separate relays that can be toggled on/off at will by either: (a) the Halo web portal; (b) any device that triggers a notification on the same network.

Four LED indicators let the user know if the device is powered on, communicating with the online system and the status of each relay.

The user can manually turn a relay on or off through the Halo software. Manual changes are either: (a) temporary based on a set duration (ex. activate the relay for 10 minutes then return to the default state); (b) perpetuated indefinitely until overridden.

Each of the units two relays can also be controlled automatically by any wireless sensor or group of sensors. Automatic relay switching can be triggered by setting the control parameters in a sensor notification from the system. The user can set the default state of each relay to on or off and user defined messages from sensors will cause the relay unit to switch to the non-default state. The relay switches back to its default state when the condition is no longer met.

Example Use: If a water sensor detects water at a certain level in a sump pit, the relay will switch ON, activating the pump. When water is no longer detected, the relay will switch OFF, deactivating the pump motor.

Features of Halo Sensors

- Wireless range of 1,000+ feet through 12-14 walls*
- 900 MHz Frequency Hopping Spread Spectrum (FHSS) 868 and 433 MHz Frequency Agile
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- 16,000 sensor message memory
- Over the air updates (future proof)
- Allows for automated control
- 10-amp or 30-amp units available.
- Two separate relays per unit
- Can be triggered by any Halo wireless sensor manually through the Halo software.
- AC powered, always on for immediate response from paired sensors.

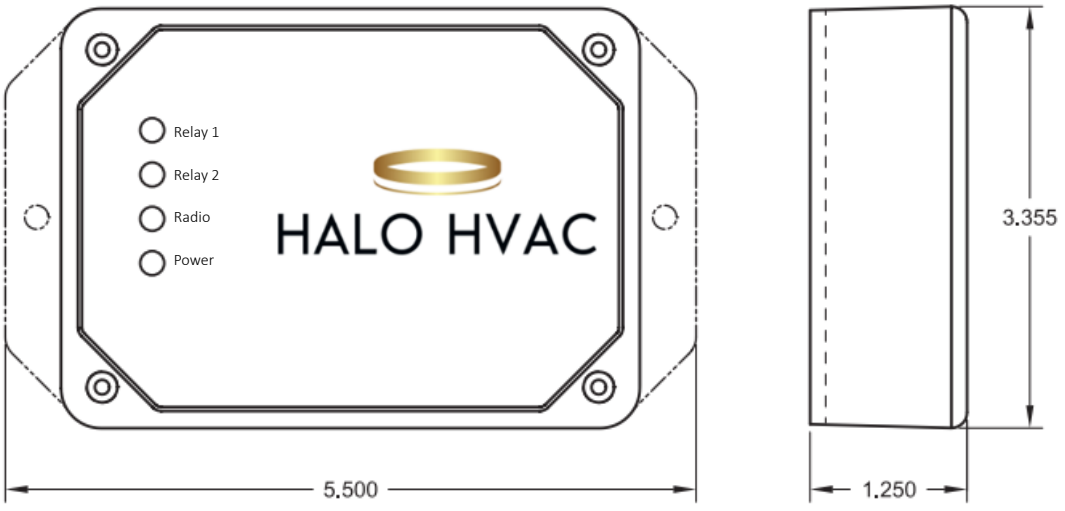
**Actual range may vary depending on the environment.*

Example Applications

- Facilities / building operations
- Automated systems
- Smart buildings
- Manufacturing processes
- Machine control
- Lighting control
- Sump and water evacuation
- Agriculture and greenhouses

Technical Specification – Halo Wireless Control Unit		
Control Unit Relays	**10-Amp Units**	**30-Amp Units**
Initial Contact Resistance	Max. 100 mΩ	Max. 50 mΩ
Max Switching Power (resistive load)	2500VA 150W (NO) 1662VA 150W (NC)	8310VA (30A 277VAC)
Max Switching Voltage	250 VAC, 100 VDC (0.5A)	277 VAC
Max Switching Current	10A (AC), 5A (DC)	30A
Nominal Operating Power	360 mW	Approx 800 mW
Operate Time (at nominal voltage / 20°C)	Max 10 ms	Max 20 ms
Release Time (at nominal voltage / 20°C)	Max 10 ms	Max 10 ms
Max Operating Speed	20 times/min (at nominal switching capacity)	20 times/min (at nominal switching capacity)
Number of Relays	2 (individually controlled)	
Control Activation	- Automatic based on sensor notification settings - Manual through iMonnit online software	
Input Power	5.5 VDC @ 900 mA	
Antenna	Connector: SMA Gain (dBi): 3.0	
Indicator Lights	Four LED indicators - Power - Radio (RF) communication - Relay 1 status (On/Off) - Relay 2 status (On/Off)	
Enclosure	ABS Plastic UL94V-0 flame rating	
Dimensions	5.5 x 3.355 x 1.25 in. (139.7 x 85.217 x 31.75 mm)	
Weight	8 ounces	
Wireless Range	1,000+ ft. non-line-of-sight	
Security	Encrypt-RF™ (256-bit key exchange and AES-128 CTR)	
Operating Temperature	-40° to +85° C (-40° to +185° F)	
Certifications	900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RFSC1. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010-Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).	

Note: *Halo Control Units require a Halo wireless gateway for operation.*



Commercial-Grade Products

Halo commercial-grade products are designed for applications in ordinary environments (normal room temperature, humidity, and atmospheric pressure). Do not use these sensors under the following conditions as these factors can deteriorate the product characteristics and cause failures and burnout.

- Corrosive gas or deoxidizing gas: chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxide gas, etc.
- Volatile or flammable gas
- Dusty conditions
- Low-pressure or high-pressure environments
- Wet or excessively humid locations
- Places with salt water, oils, chemical liquids, or organic solvents
- Where there are excessively strong vibrations
- Other places where similar hazardous conditions exist

Use these products within the specified temperature range. Higher temperatures may cause deterioration of the characteristics or the material quality.

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