CRATUS

SOHO-H

Camera-Based
AI - Enabled EHS (Safety)
System Datasheet

Product Overview

The SOHO-H is a camera-based AI industrial safety system designed to detect obstacles such as humans, vehicles, and animals within a predefined area, to enhance the avoidance of pinch point or blind spot accidents. Equipped with a high-resolution PoE turret camera and powered by a reliable processor, the system can issue dry contact triggers or send safety messages in real-time. The monitored area is configured by the installer through the SOHO-H UI, accessed via a URL on any browser-enabled computer, tablet or mobile phone. The system operates independently without requiring any network connectivity, making it highly reliable in mission-critical environments, and making it an ideal solution for fenced or airgapped deployments where security and access is of essence.

Key Features

- **Customizable AI Detection:** By default the system detects humans and vehicles within a customizable safety zone. The model can be further developed to include additional classes as needed.
- **Configurable Safety Areas:** Admins can set up monitoring zones via the SOHO-H UI by marking landmark corners.
- **Network-Optional Operation:** Does not require a network connection but can be accessed via local network if needed.
- **Machinery Control Capabilities:** Can stop and restart machinery by using the dry contact relay connections.
- **High-Resolution PoE Camera:** 4MP (2560x1440 @30fps) turret camera with a 110° wide-angle lens, IP66-rated weatherproof enclosure.
- **Secure and Reliable:** System enclosure can be mounted on a wall and requires no infrastructure modifications. The system is also available in a 2U rack mountable format.
- **Standard Power Supply:** Operates on 120V AC (by default), no additional power conversion needed.

Technical Specifications

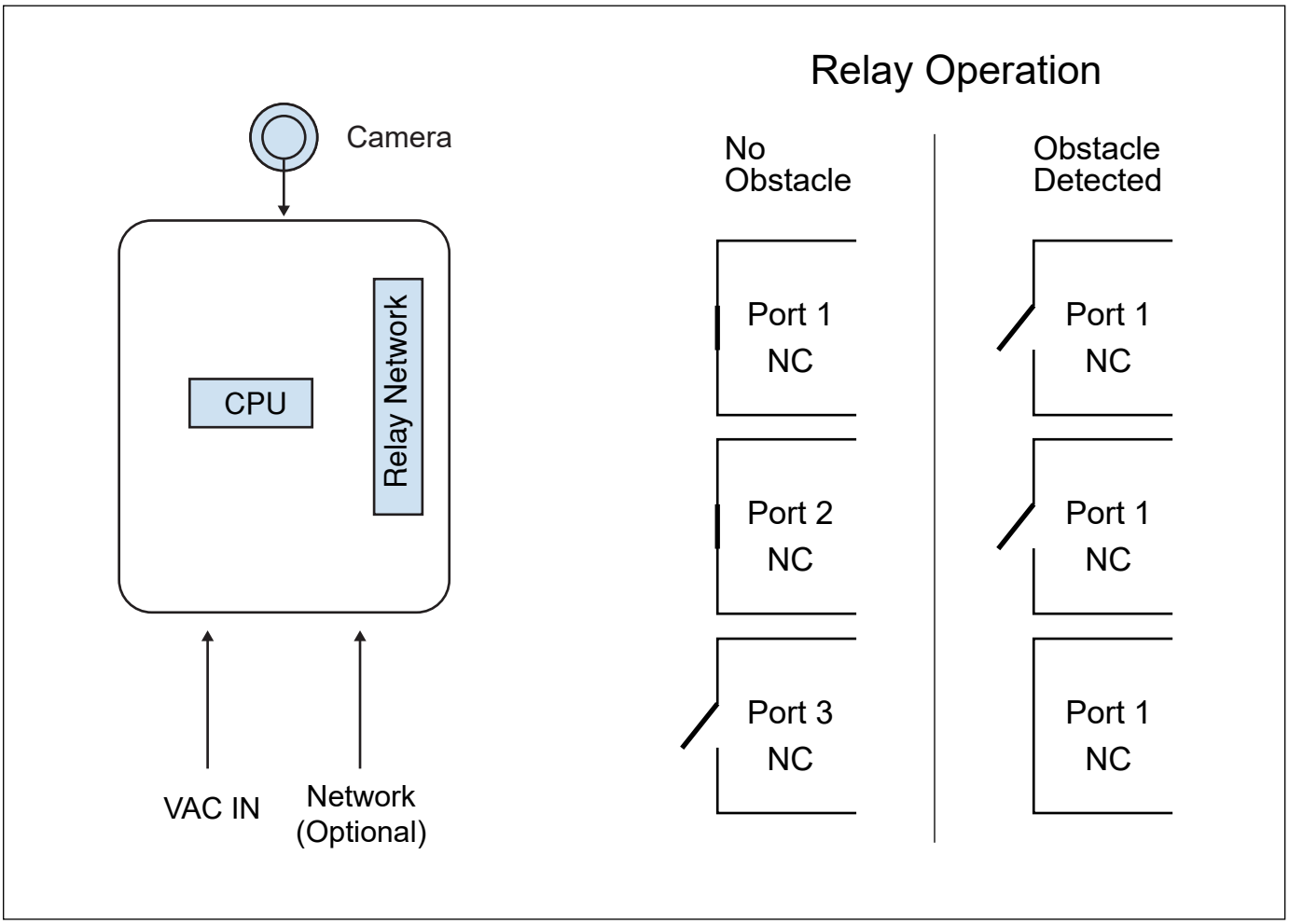
Camera Unit

- **Resolution:** 4MP (2560x1440 @30fps)
- **Compression:** Dual H.265/H.264
- **Field of View:** 110° wide-angle lens
- **Weatherproof Rating:** IP66-rated metal enclosure
- **Connectivity:** PoE (Power over Ethernet)
- **Integration:** Plug-and-play with most 5MP NVRs, compatible with third-party software (iSpy, Milestone, etc.)

Processing Unit

- **Processor:** NVIDIA Jetson Orin Nano (SOHO-H Pro | Linux CPU (SOHO-H Lite)
- **AI Capabilities:** AI-Model based algorithm for object recognition (humans, vehicles, etc.)
- **Networking:** Optional (Network connectivity is not necessary for the operation of this device, except for initial setup and installation requirements. However, networking can be enabled to allow for remote access.)

Deployment Diagram

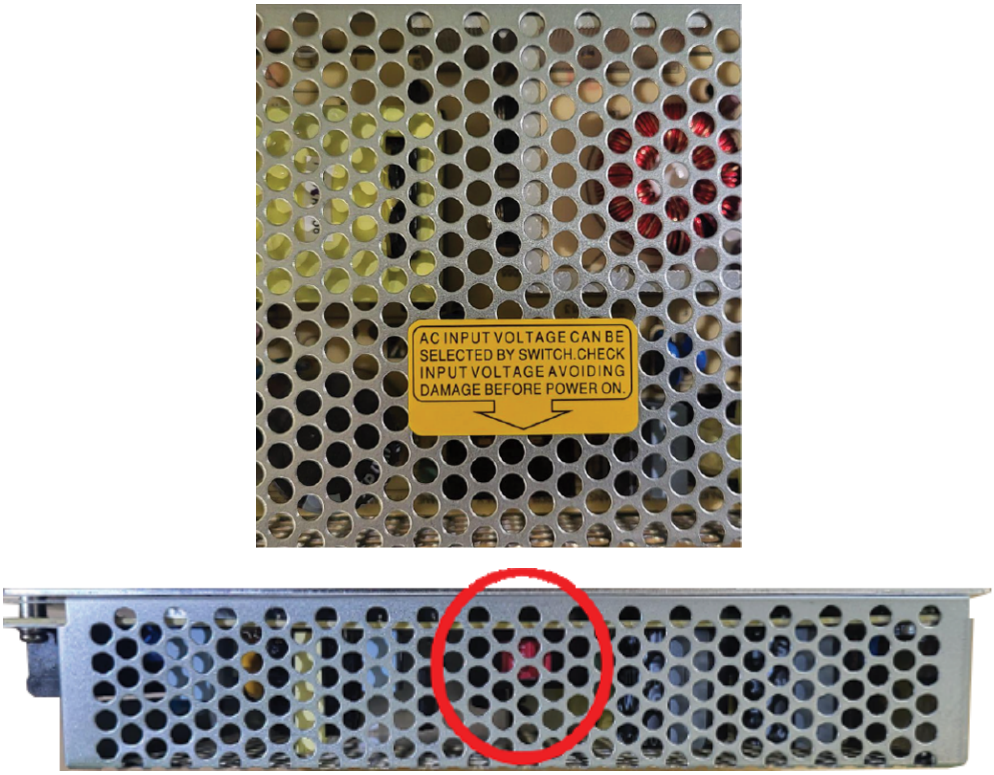


Control System

- **Control Outputs for Industrial Equipment:** Issue dry contact triggers
- **Control Outputs Rating:** 5A/30V DC, 5A/250V AC
- **Control Outputs Monitoring Area Settings:** Accessible through a unique URL, allows admins to mark and save monitoring areas
- **Dependencies:** Functions without network connectivity

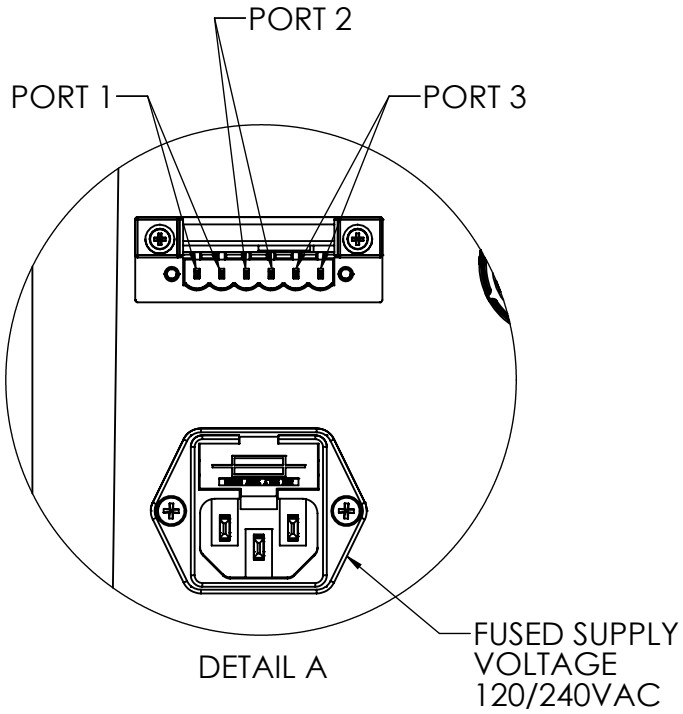
Installation & Power Requirements

- **Mounting:** Wall-mounted enclosure
- **Power Supply: 1**20V AC (standard power outlet) The AC input selection switch on the internal power supply must be set to the 240V AC input position if only 240V is available.

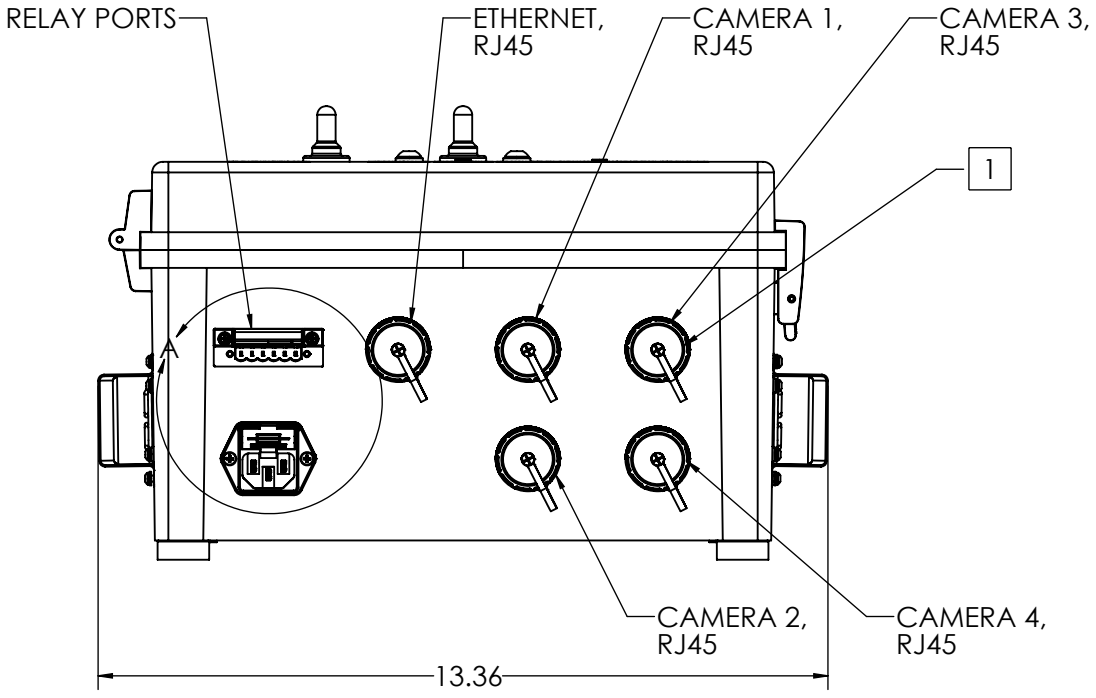


- **Wiring Requirements:** Requires an Ethernet cable (sourced by the customer) to connect the camera to the system enclosure.

Control (Relay) and Power Ports



Camera Ports



Use Cases

- **Manufacturing & Industrial Safety** – Prevents workplace injuries by stopping hazardous machinery upon human detection.
- **Warehouse Monitoring** – Ensures no unauthorized personnel enter restricted zones.
- **Construction Sites** – Provides real-time safety monitoring for accident prevention.
- **Automated Vehicle Yards** – Detects moving vehicles and alerts operators to potential collisions.

Compliance & Safety Certifications

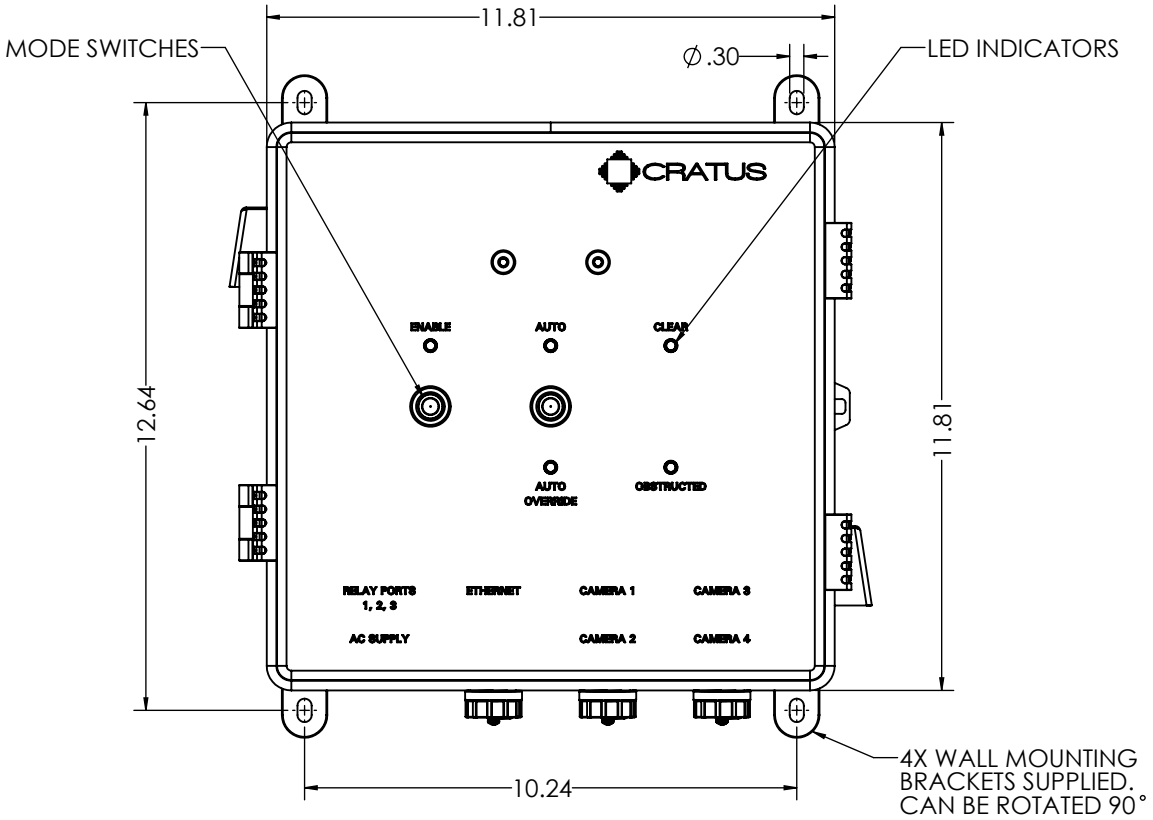
- Designed for compliance with OSHA & ISO 13849 safety regulations.
- Designed for at least IP-44 ingress rating for the control system enclosure
- IP66-rated camera ensures durability in outdoor and industrial settings.

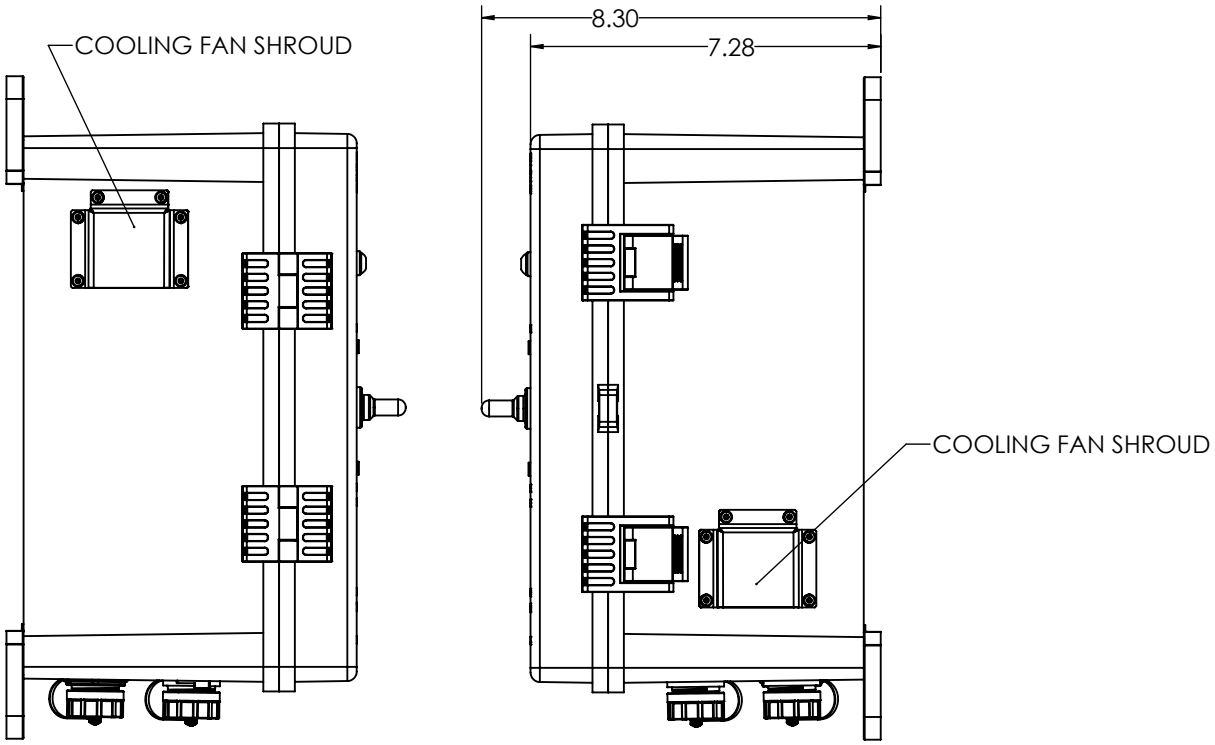
Ordering Information

- **SOHO-H Lite:** Single-camera version with Raspberry Pi processing unit.
- **SOHO-H PRO:** Multi-camera support version (contact for availability).
- **Accessories:** Ethernet cables, mounting brackets (sold separately).

For more information, visit our website or contact our support team.

Outline Drawings





Warnings and Instructions for Use and Installation

1. **Indoor Use Only** – This equipment is designed for dry locations only. Do not install or operate in areas exposed to rain, moisture, or high humidity.
2. **Risk of Electric Shock** – Disconnect power before installation, maintenance, or servicing. Do not open the unit while it is powered.
3. **Proper Grounding Required** – Ensure the equipment is properly grounded according to local electrical codes to prevent electrical hazards.
4. **Do Not Use Near Water** – Avoid installation near sinks, bathtubs, or any source of water. If the unit gets wet, immediately unplug it and allow it to dry before use.
5. **Avoid Overloading Circuits** – Connect only to a power source with the correct voltage and current rating as specified in the user manual or in this datasheet.
6. **Use in Well-Ventilated Areas** – Do not cover or obstruct ventilation openings. Overheating may cause malfunction or fire.
7. **Do Not Modify or Tamper** – Unauthorized modifications or repairs may result in malfunction, fire, or electric shock.
8. **Keep Away from Heat Sources** – Install away from direct sunlight, heating vents, or other heat-producing equipment.
9. **Secure Power Cord** – Avoid pinching, bending, or placing heavy objects on the power cord to prevent damage.
10. **Children and Pets Safety** – Keep the equipment out of reach of children and pets to prevent accidental damage or injury.

Installation Instructions:

1. **Verify Power Requirements** – Ensure the power supply matches the equipment's voltage and current specifications.
2. **Choose a Safe Location** – Install in a dry, stable, and well-ventilated area, away from water sources and excessive dust.
3. **Mounting Considerations** – If wall-mounting or securing the unit, use appropriate anchors and fasteners rated for the unit's weight and size.
4. **Connect to a Proper Outlet** – Use only a grounded, properly rated AC outlet with surge protection if required.
5. **Power Cord Management** – Arrange cables neatly to prevent tripping hazards and accidental disconnections.
6. **Perform Initial Testing** – After installation, power on the equipment and verify proper operation before full deployment.
7. **Regular Inspections** – Periodically check for loose connections, frayed cables, or signs of overheating, and take corrective action if needed.

Failure to follow these warnings and instructions may result in electric shock, fire, or equipment damage.