DS-03



Manual instruction
Version 1.2

Laser distance sensor
Art-Net / Relay

Code: MOD19023

Thank you for purchasing our device.

We make every effort to ensure the best quality of our products and to meet your expectations. If you have any remarks or comments, please share them with us. We will be grateful for any suggestions that will help us make products that are even better and devices that satisfy your needs.

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1. General description

DS-03 is a laser distance sensor of the LIDAR type that allows you to convert the measured distance to the Art-Net protocol (wireless transmission in the Ethernet network) and wired in the ON/OFF mode via an internal relay.

The measurement takes place in a given "window" of the measured space, which means that the sensor measures the distance from point A to point B and converts this value to the channel level in the Art-Net protocol. Outside this range, the sensor does not generate an output signal. Together with its narrow detection angle of only 2 degrees, these are its key features that distinguish it from other similar solutions.

The sensor can be supplied with a voltage in the range of 7.5-24V.

DS-03 is compatible with other devices of the Art Control System MODUS series, enabling the creation of control systems for most interactive projects, light control, AV, game triggering, etc.

The device uses protection against reverse polarity of the supply voltage and ESD.

2. Basic safety conditions

The DS-03 sensor must be powered with a safe voltage in the range of 7.5-24VDC from dedicated power supplies, however, during its installation and use, the following rules must be strictly observed:

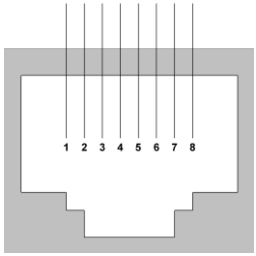
1. The sensor should be installed by a person having relevant qualifications, according to the information in the manual.

2. The device must be connected only to a stabilized voltage with a load capacity in accordance with the technical data.
3. The device is intended for internal use. In the case of outdoor applications, it should be protected against weather conditions.
4. All wires should be protected against mechanical and thermal damage.
5. All maintenance works can be performed only after depowering the device.
6. A device with visible damages should not be connected to a power supply.
7. Screwing in and out of the bulb should only be done when the power supply is disconnected.
8. It is crucial to protect the device against any contact with water and other fluids.
9. Avoid sudden shakes and especially falls.
10. The device is sensitive to electrostatic discharge. Avoid touching internal components unnecessarily.
11. Do not turn the device on in places where humidity exceeds 90%.
12. Do not operate the device in places where the temperature is lower than +2°C or higher than +40°C without an additional cover to ensure the right ambient temperature.

The manufacturer reserves the right to introduce changes in the functioning and operation of the device in order to improve the product.

3. Pinout description

RJ-45 connector

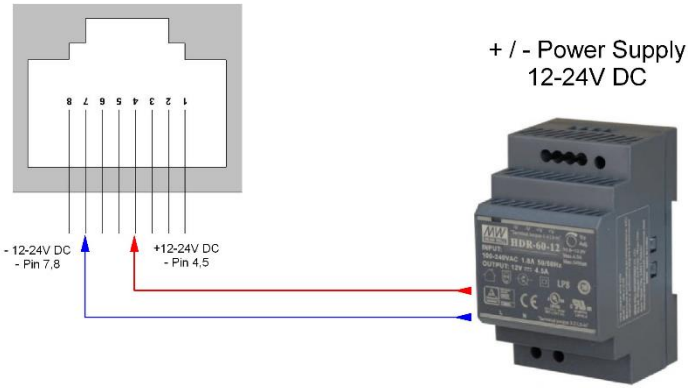


1. NC output
2. NO output
3. NC output
4. Power +
5. Power +
6. NO output
7. Power GND
8. Power GND

Use of pins see chapter 9.1

4. Powering the device

The device is powered via the RJ45 connector in accordance with the pinout description. To power the converter, use the power adapter recommended by the manufacturer. E.g. **Mean Well HDR-30-12**

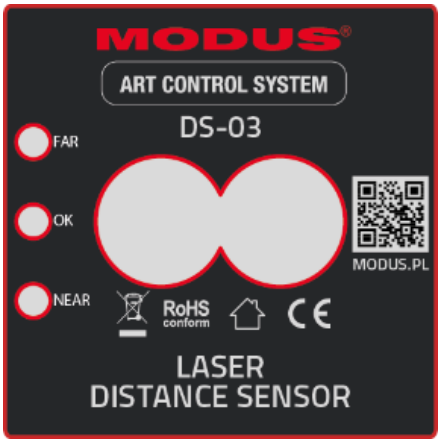


5. LED indicators

FAR – the object is too far from the detection field

OK – the object is in the detection field – the relay is switched on

NEAR – the object is too close to the detection field



MODUS – glowing logo / network connection status indicator

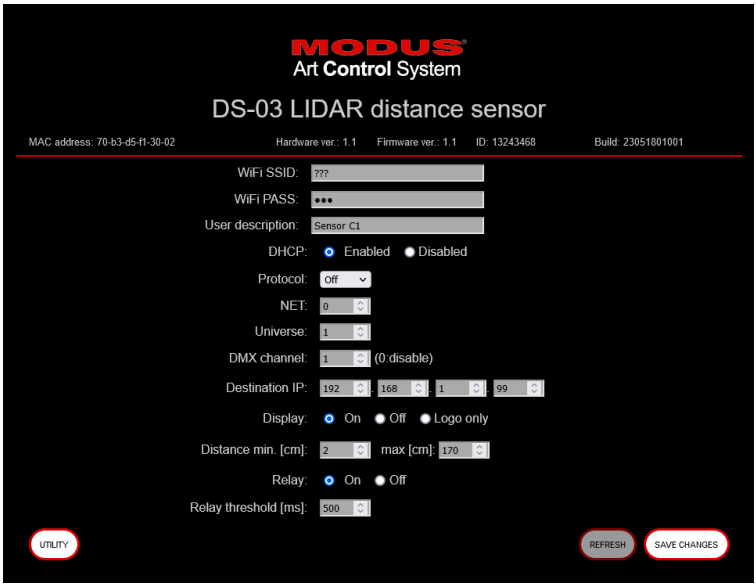
If it is necessary to operate the device, e.g. in a darkened room, you can turn off the controls on the configuration page.

6. Network setup

After switching on the power supply of the sensor, the MODUS logo will start blinking rapidly after several seconds. This will mean that the sensor has switched to AP (Access Point) mode and created its own WiFi network. The network name will be in the format MODUS_xxxxxxx where "x" is the serial number of the device. You must log on to this network. The access password is **ModusToFSensor** (note case). After logging into the network, the configuration page will be available at 192.168.3.1.

7. Configuration menu

Individual fields allow you to change the parameters of the device.



WiFi SSID: network name

WiFi PASS: network password

User description: any user description

DHCP enabled: automatic download of parameters from the router

DHCP disabled: 

Enabled manual determination of the IP address and network mask

Protocol: Transmission protocol selection (only ArtNet available in the current firmware version)

NET, Universe: Selection of ArtNet network parameters

DMX channel: selection of the DMX channel on which the information from the sensor will appear

Destination IP: IP address to which the ArtNet message from the sensor is to be sent

Display: On: range display active

Off: range display inactive

Logo only: range display inactive, logo illumination reduced to approx. 20%

Distance min.: distance below which the sensor will not react

Distance max.: the distance above which the sensor will not react

Threshold: time to keep the sensor on (each subsequent triggering of the sensor starts the countdown from the beginning)

Relay: On: relay active

Off: relay inactive

Relay threshold: Time of no response between value changes



: page refresh



: save parameters



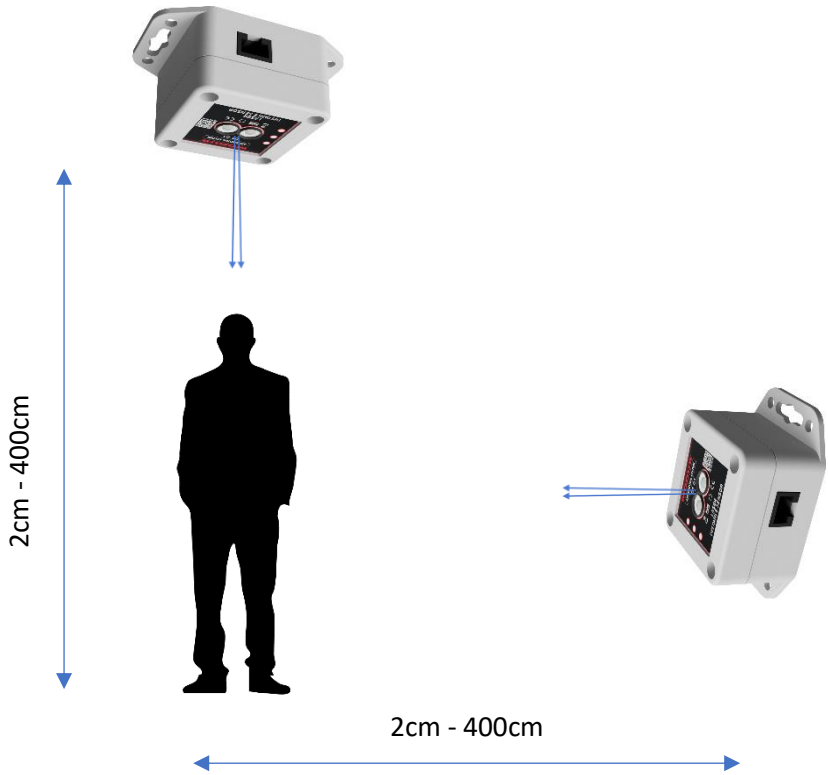
: go to the page with additional features

8. Emergency login to the configuration page

The sensor should be placed outside the range of the WiFi network. After a dozen or so seconds, the system will behave as at the first start-up and go to AP mode

9. Installation

The sensor should be mounted so that the sensor lenses are directed towards the monitored space. The detection range is within the angle of 2 degrees and set in the "window" menu from 2 cm to 400 cm.

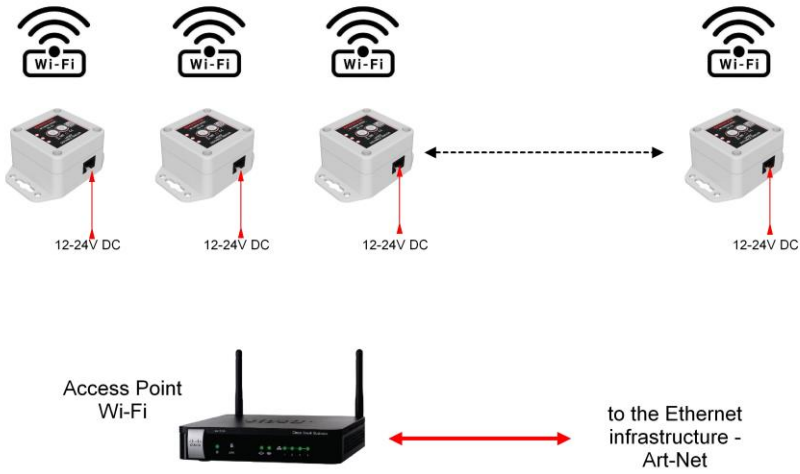


10. Connections

The sensor status can be used/connected in two ways:

1. Wirelessly, via Wi-Fi / Art-Net
2. wired, using the internal sensor relay

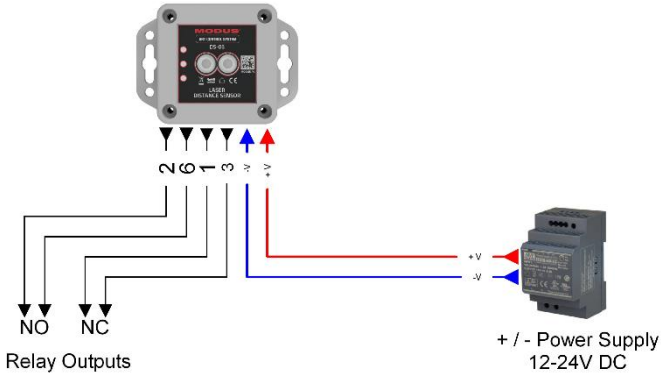
10.1. Wireless connection



The sensor works in a wireless network (Wi-Fi 2.4GHz). Configuration of the sensor's operating parameters is done via its internal website (see chapter 6 and 7).

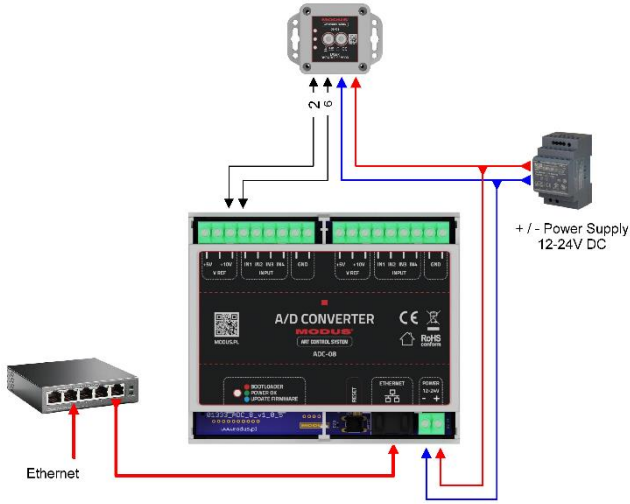
Wireless connection is made by sending an Art-Net frame containing the object detection status

10.2. Wired connection using a relay



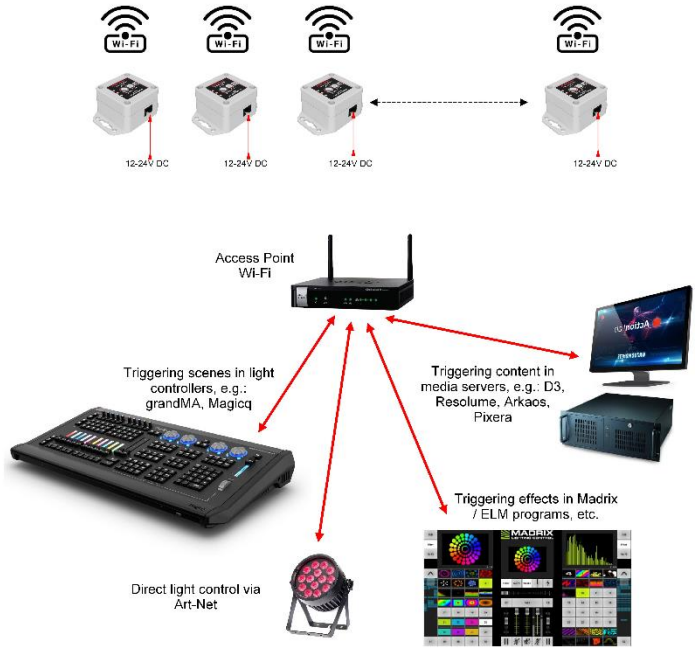
After detecting an object, the sensor turns on the internal relay. There are 2 pairs of connectors available: NC and NO (pins description see chapter 2).

10.3. Example of wired connection with ADC-8 Modus



The use of the sensor for wired control via the ADC-8 module and the Art-Net protocol in the Ethernet network.

10.4. Wireless connection example



Application of the sensor for wireless control of devices compatible with Art-Net protocols.

11. Maintenance and repairs

The device doesn't contain any user serviceable parts. In case of malfunction, you should contact the dealer or manufacturer.

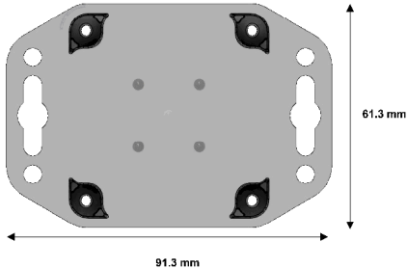
Note!!

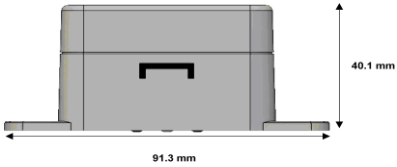
Any attempt to repair the device yourself can cause irreversible damage to the device or pose other threats.

12. Technical specification

- **Power supply:** 12-24v DC, 500mA
- **Range:** from 2 cm. to 4m.
- **Resolution:** 1 cm.
- **Number of measurements:** 10/sec.
- **Measurement angle:** 2 st.
- **Wi-Fi:** 2.4GHz ~ 2.5GHz (2400M ~ 2483.5M) 802.11 b/g/n
- **Encryption:** WPA/WPA2, WEP/TKIP/AES
- **Output signal:** **Art-net , Relay NO or NC**
- **Configuration:** www, Modus DevManager

13.Dimensions:





14. Contact, additional information:

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