

# 8-Channel Isolated Analog Data Acquisition Module

DFR0853

## Product Overview

01-24-2023

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

DFRobot 8-Channel Isolated Analog Data Acquisition Module is a single-end 12-bit analog data acquisition module with an accuracy of up to  $\pm 1\%$ . This module supports 0V to 5V, 1V to 5V, and 0V to 2.5V voltage ranges and 0mA to 20mA and 4mA to 20mA current ranges. This module features an RS485 communication interface with optoelectronic isolation, and the application layer adopts the standard Modbus RTU protocol that conforms to industrial standards. The analog data acquisition module supports standard 2-wire and 3-wire sensor inputs in addition to standard 4-wire sensor inputs.



The 8-channel isolated analog data acquisition module features guaranteed security, and the interface adopts an anti-reverse design. This data acquisition module offers communication and input/output isolation to resist interference and ensure accurate and stable data transmission. The analog data acquisition module operates at the 12V to 30V supply voltage range and  $-40^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  temperature range. This data acquisition module is ideal for rapid networking, building a monitoring system, configuration software, and OPC.

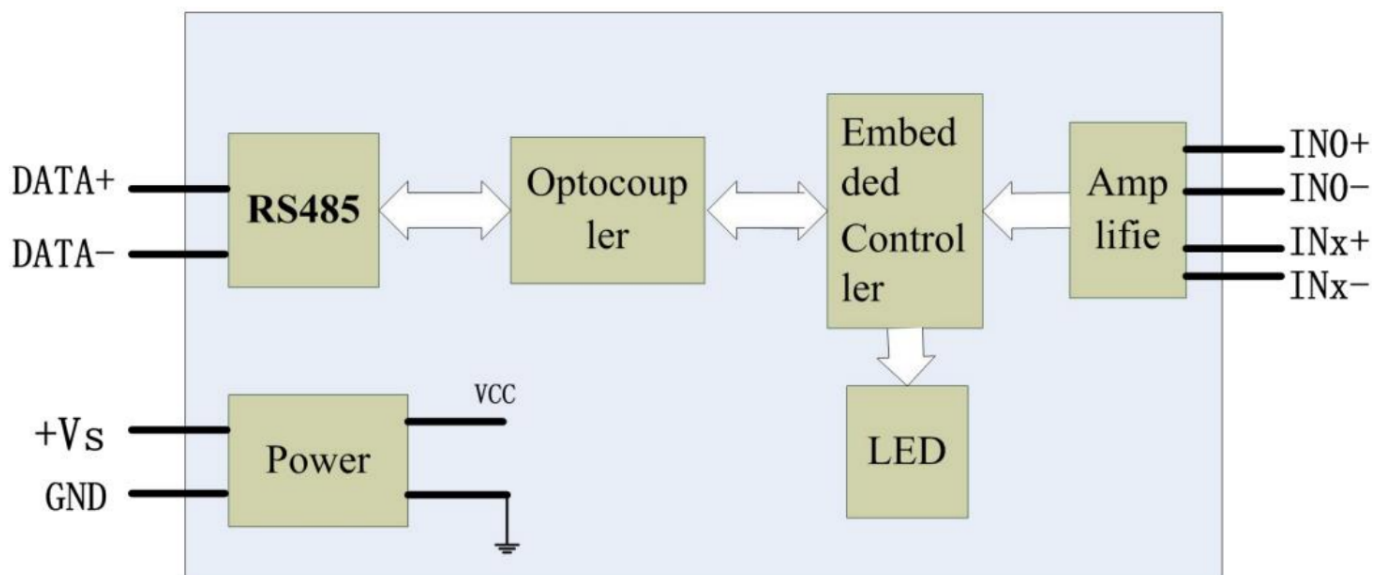
## Features

- RS485 communication interface
- Power protection:
  - Power reverse protection
- Watchdog:
  - Software watchdog
- Input type:
  - Voltage input and current input
- Range setting:
  - Each channel can independently configure the range
- RS485 transmission rate:
  - Maximum 180 times/second (total channel of a single module and in the case of 115200bps)
  - Maximum 24 times/second (total channel of a single module and in the case of 9600bps)
  - Maximum three times/second (total channel of a single module and in the case of 1200bps)

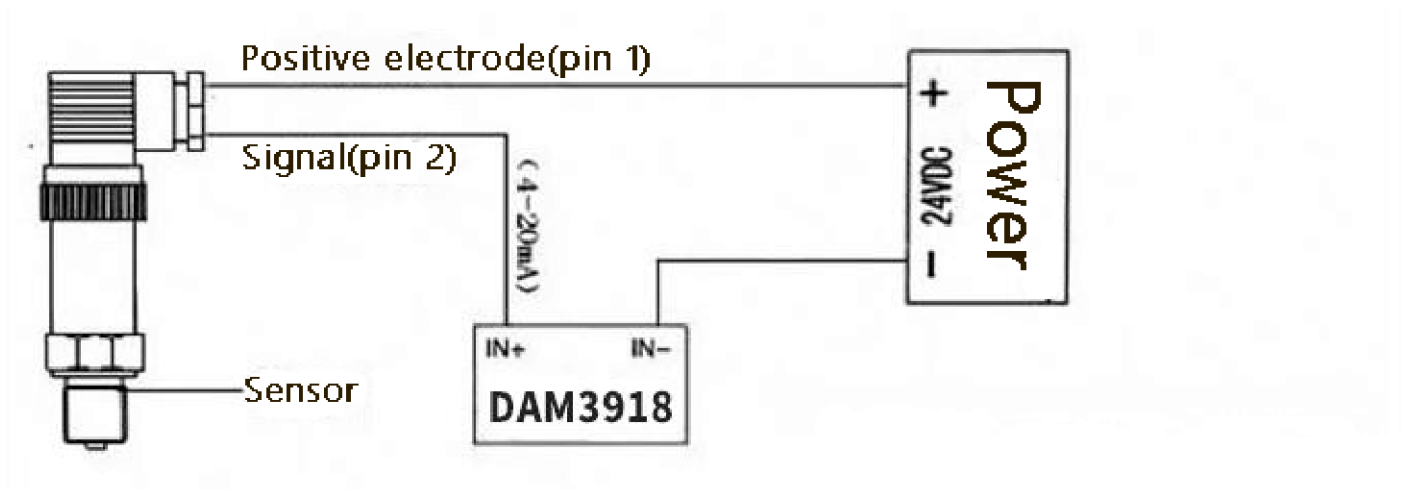
## Specifications

- 12V<sub>DC</sub> to 30V<sub>DC</sub> power supply voltage range
- Power consumption:
  - Rated value 0.5W @24V<sub>DC</sub>
- -40°C to 80°C operating temperature range
- -40°C to 85°C storage temperature range
- Acquisition range:
  - 0V to 5V, 1V to 5V, 0V to 2.5V, 0mA to 20mA, 4mA to 20mA, and the default factory value is 4mA to 20mA
- 1400sps (total channel) and 50sps (single channel) sampling rate
- 12 bits resolution
- 1% collection accuracy
- Input impedance:
  - 10MΩ voltage range
  - 249Ω current range
- 1500V<sub>DC</sub> isolation voltage
- 1200bps to 115200bps baud rate

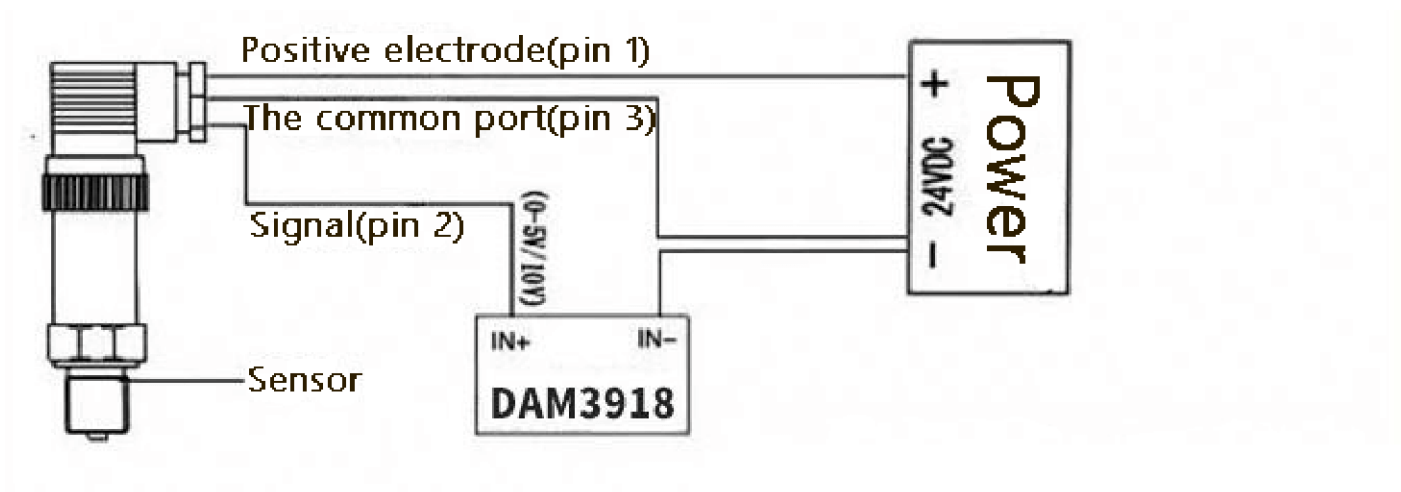
## Internal Block Diagram



## Wiring Diagram

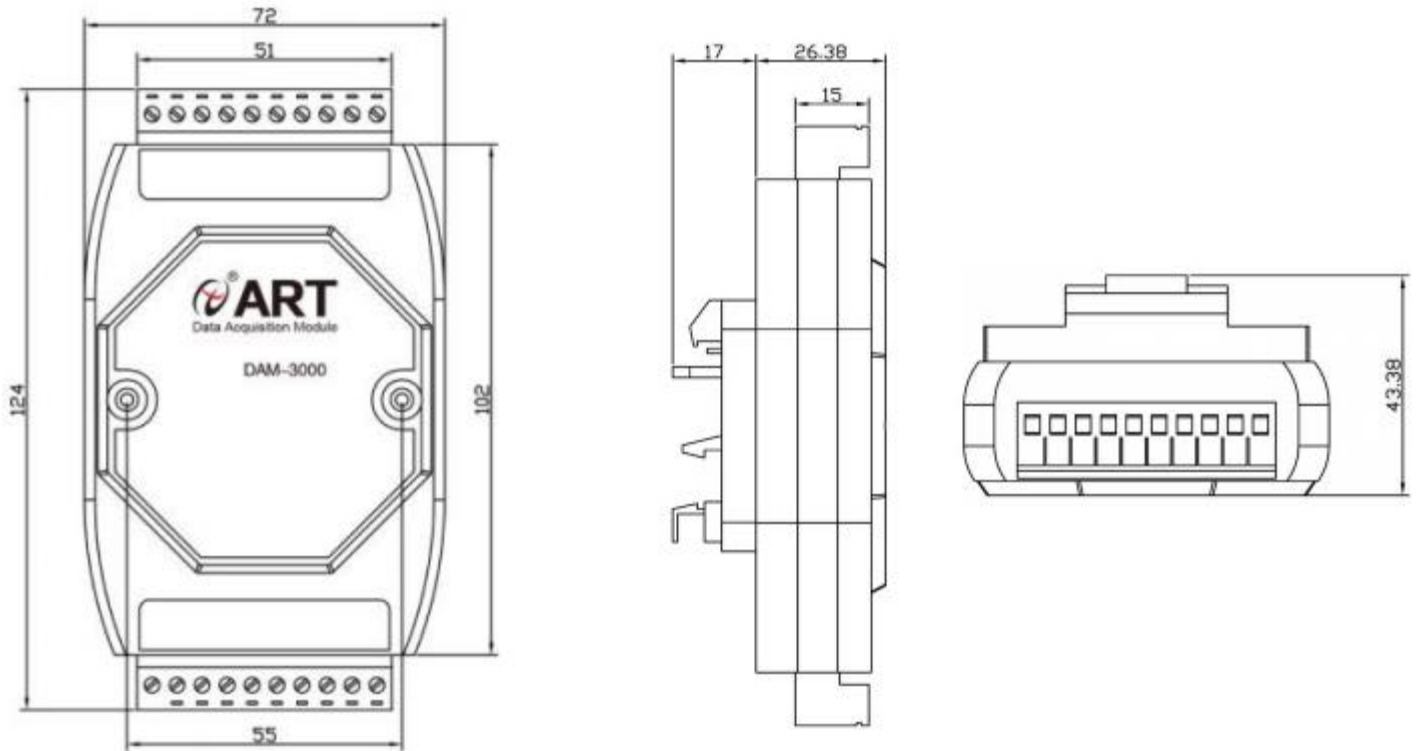


*Two-wire current signal wiring diagram*



*Three-wire voltage signal wiring diagram*

## Dimensions



## Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/dfrobot/dfrobot-8-channel-data-acquisition-module/>