

Voltage to MODBUS Converter

FEATURES

- Low power consumption
- Small size
- MODBUS output
- High resolution

APPLICATIONS

- Sensor integration
- Environment monitoring
- Automotive instrumentation
- Industrial sensing
- Robotics
- Automation



DESCRIPTION

ARN-ATD family of converters can convert 0-5 VDC analog voltage signal to digital data. These devices can be interfaced using RS232, RS485 or MODBUS RTU protocols. These can be used for analog output conversion of variety of sensors to digital data for integration with PLC.

The small size and light weight of devices makes them easier to install in existing equipments. The unit has a size of 56mm x 40mm and has flanges for mounting flexibility.

TECHNICAL SPECIFICATIONS

Parameter	Value/Description	Units
Input range	0-5	V DC
A/D resolution	12	Bit
Full scale accuracy	±0.1%	
Update rate	10	Hz
Output interface	MODBUS RTU	
Data output	Voltage value (same as input voltage)	milli volts
Operating voltage	8-12	VDC
Current consumption	50	mA
Operating temperature	-10 to +70	°C
Humidity	5 to 95% RH	
Weight	< 80	gm
Size	56 (L) x 40 (B) x 20 (H)	mm
Mounting option	Mounting flanges for wall mounting	-

DATA FORMAT

For RS232, RS485 ASCII interface:

The data output is available in following format

ARN-ATD>XXXX\r\n

Where, ARN-ATD> is header and XXXX is voltage value in milli volts from 0 to 5000 corresponding to full scale output.

For MODBUS RTU interface:

The data output is available in MODBUS RTU format. Required MODBUS query details are as follows;

[Slave ID] [Function code] [Base address] [Number of registers] [CRC]

Slave ID: It is device ID, could vary from 1 to 255. This ID is mentioned at the bottom of the sensor or last number in serial number of device

Function code: Read input register, value is 04

Base address: This is fixed number, value is 00 00

Number of registers: This is fixed number, value is 00 01

CRC: It is to be calculated based on the preceding data, CRC 16 standard.

For example: 01 04 00 00 00 01 31 CA

Response details:

[Slave ID] [Function code] [Number of bytes] [Data input] [CRC]

Slave Id: Returns the device ID.

Function code: Read input register, value is 04

Number of bytes: It is fixed, value is 2

Distance: 2 Bytes data

CRC: 2 Bytes data, It is to be calculated based on the proceeding data, CRC 16 standard

Example: 01 04 02 xx xx CRC

CONNECTION DETAILS

Input connections

PIN 1: +VCC

PIN 2: GND

PIN 3: Voltage input

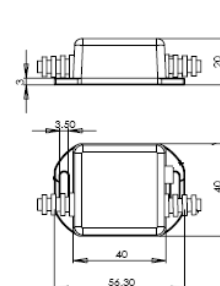
Output connections

PIN 1: Tx+ /Tx

PIN 2: Tx- /Rx

PIN 3: GND

MECHANICAL DRAWING



All dimensions are in mm

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