MIKRODEV®

Innovation in Automation

MP211

HARDWARE MANUAL

- MP211

  PLC Series

12 / 2019

MIKRODEV_HM_MP211_EN

v1.4

CONTENTS

FIGURES LIST

Preface

Mikrodev MP211 PLC series are programmable control devices that are used in a wide range of applications from process automation to building automation, from machine automation to telemetry applications.

In this document, you can find information about the hardware specifications of Mikrodev MP211 series PLCs.

Please follow our website www.mikrodev.com for the up to date version of the document.

About Mikrodev

Since 2006, MIKRODEV has been developing and manufacturing industrial control and communication products. MIKRODEV serves the system integrators in the public and private sector, OEM and end users.

Our products are manufactured complying with the quality standards required by the industrial automation industry and the quality of our products are proved on the field for many years

MIKRODEV is one of the few companies in the world that has its own designed IEC 61131-3 compliant library for its programmable logic control devices. In addition, the open, flexible, programmable SCADA solution developed by MIKRODEV is also available to customers.

MIKRODEV products' performance and wide range of applications make them possible for customers to achieve faster, simplified and cost-effective results.

WARNING!

- ✓ Please take care of the following issues when using Mikrodev devices.
- ✓ Since the unit operates with 24 VDC (12-36 VDC) voltage, you should take care of the voltage level that the unit is connected to. If a voltage above this voltage level is applied, the device may be damaged and may be out of warranty.
- ✓ Make sure that the energy connection of your device is connected to the ground or to a properly grounded terminal.
- ✓ Make sure that the environment in which your device is being used is free of moisture, electric shock, vibration and dust.
- ✓ Pay attention to the supply voltage and the connections of the product. Mikrodev is not responsible for any issues due to power failure since there is no auxiliary supply (UPS) on the device.
- ✓ The fuse to be used must be a FF super fast type and current limit value 1A.
- ✓ Do not use the device under conditions other than the environmental conditions specified in the "Electrical Specifications" section (humidity, dust, liquid and temperature, etc.)
- ✓ Removing the warranty label on the product or removing the protective case will void the warranty.
- ✓ Products that are damaged, boxes have been changed and other brand labels are affixed are not covered by the warranty.
- ✓ The appliance must not be cleaned with solvents (thinner, benzine, acid etc.) or with abrasive cleaning agents.
- ✓ Only dry cloth should be used when cleaning the appliance.
- ✓ Do not open the device by removing the case of the appliance, do not interfere with the electronic components and circuits. There is no user-replaceable part inside the device.
- ✓ If there is a problem or malfunction on your device, it should only be repaired by an authorized service. Installation and electrical connections must be made by technical personnel in accordance with the instructions in the operating manual.

Failure to comply with these rules may result in death, serious injury or property damage

1 MP211 GENERAL INFORMATION

1.1 Physical Interfaces

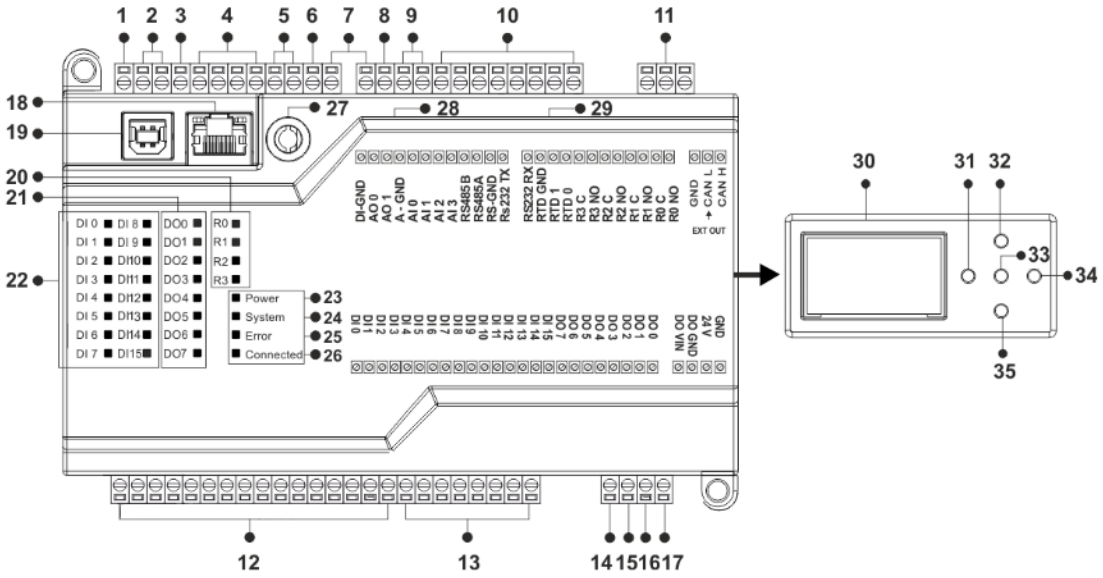

Figure 1 Connector and Physical Interfaces

1	Digital Input GND Connection	**19**	USB Port
2	Analog Output Connections	**20**	Relay Status Information LED
3	Analog GND Connection	**21**	Digital Output Status Information LED
4	Analog Input Connection	**22**	Digital Input Status Information LED
5	RS485 Connections	**23**	System Power LED
6	RS-232 GND Connections	**24**	System Running LED
7	Rs232 TX-RX Connections	**25**	Error LED
8	RTD GND Connections	**26**	Protocol Data Transfer LED
9	RTD Connections	**27**	Antenna Connection
10	Relay Connections	**28**	SIM Card Slot
11	CANBUS Connection	**29**	SD Card Slot
12	Digital Input Connections	**30**	LCD Screen
13	Digital Output Connections	**31**	LCD Screen Back Button
14	Digital Output Supply(Vin) Connection	**32**	LCD Screen Up Button
15	Digital Output GND Connection	**33**	LCD Screen Input Button
16	Device Power (V+) Connection	**34**	LCD Screen Forward Button
17	Device Power (V-) Connection	**35**	LCD Screen Down Button
18	Ethernet Port		

1.2 General Device Specifications

SPECIFICATION	ITEM	DESCRIPTION
Processor	Processor Architecture	ARM Cortex M4
	Adressing Architecture	Little Endian Addressing
Electrical	Supply	24 VDC (12-36VDC)
	Power	<13W @ 24V DC
	Real Time Clock	Integrated
Input / Output	Digital Input	16 Channel
	Digital Output	8 Channel, 2A@30V DC, PNP
	Analog Input	4 Channel, 0-20 mA, 4-20 mA
	Analog Output	2 Channel, 0-20 mA, 4-20 mA
	Relay Output	4 Channel, 3A@30VDC - 5A@250VAC
	RTD	2 Channel, PT1000
Display	LCD Display*	2x16 Character
Enviromental Conditions	Operating Temperature	-20…+60 C
	Storage Temperature	-25…+70 C
	Humidity	5…95 RH
Memory	Retentive Memory	4 KB, 128 Block/Register
	Program Memory	4 MBit
Communication Ports	Ethernet Port	10/100 Mbps
	RS485	1 Port, 3 kV ESD Protection
	RS232	1 Port
Wireless Communication	GSM / GPRS*	Quad-Band 850/900/1800/1900 MHz
	Wi-Fi*	IEEE 802.11 b/g/n
	RF*	868 MHz, TX Power Up to 0,5 W
Expansion Capacity	DIN Rail Type-CANBUS Expansion	Up to 1024 I/O Points

**May differ on some models*

2 INSTALLATION INFORMATION

2.1 Rail Installation

DIN Rail Mountage

First, the upper part of the device is mounted on the DIN rail. Then, with the help of the springs behind the device, when a lightly force is applied to the lower part, the device locates into the DIN rail easily and the montage is completed. (See Figure 2)

DIN Rail Demountage

To demount the device, firstly it is pulled from the bottom using flexibility of the spring, the device is removed from the DIN Rail and the demounting is completed.

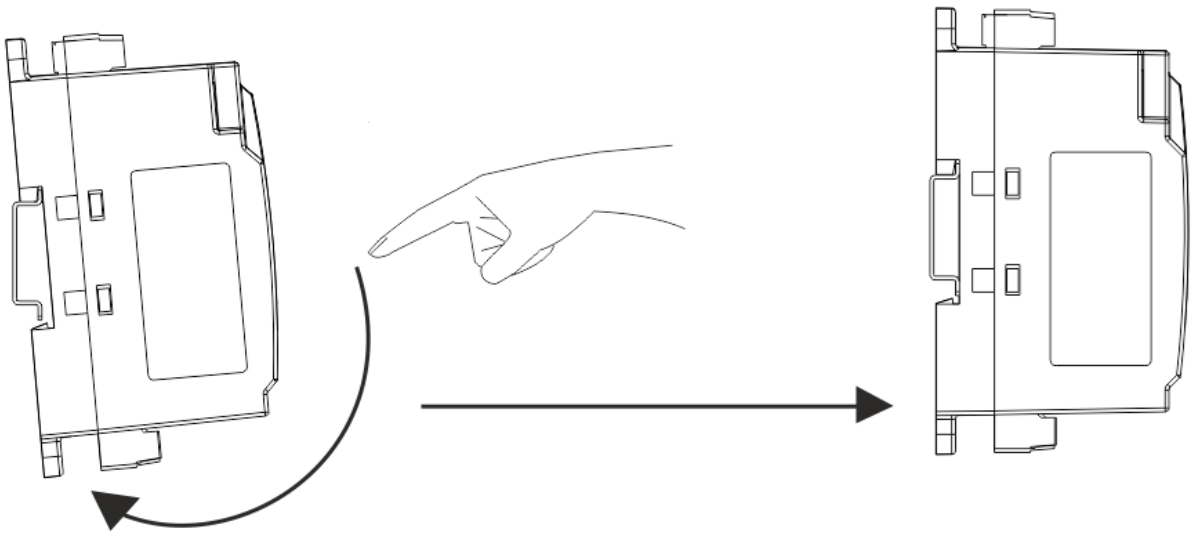

Figure 2 Mounting

2.2 Expansion Installation

The MP211 product and its extensions are mounted by sliding over the rail in such a way that the connectors correponds.

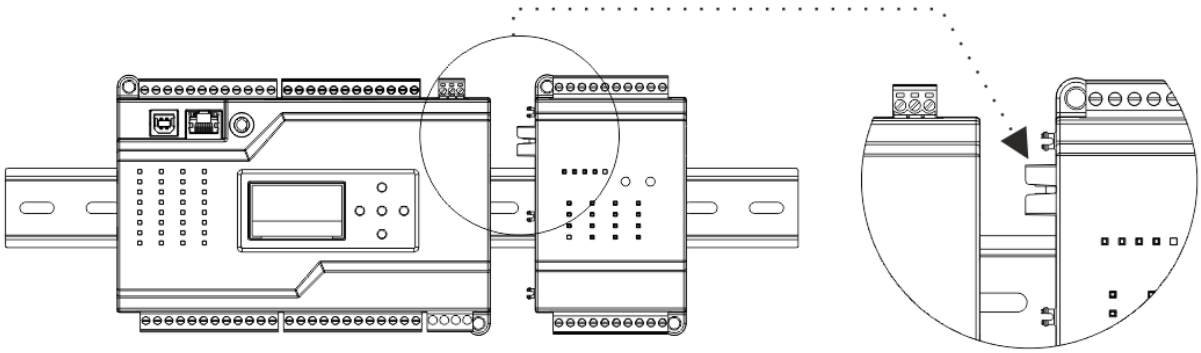

Figure 3 Expansion Installation

3 CONNECTION DIAGRAMS

3.1 Supply Connection

Supply:	12-36 VDC, Protected
Power:	<13 W

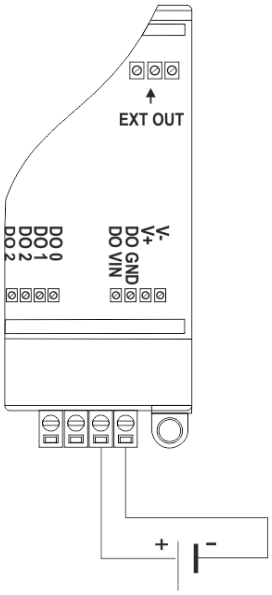

Figure 4 Power Connection Diagram

3.2 Digital Inputs

Module Input:	16 Channel
Voltage Range:	0-36V DC
ON Voltage Level:	12-36V DC
OFF Voltage Level:	0-10V DC
Input Impedance:	>2M
Isolation:	Optical
OFF to ON Response:	20 us
ON to OFF Response:	90 us
Fast Counter Inputs:	DI12, DI13, DI14, DI15
Fast Counter Inputs Max. Frekans	200 kHz

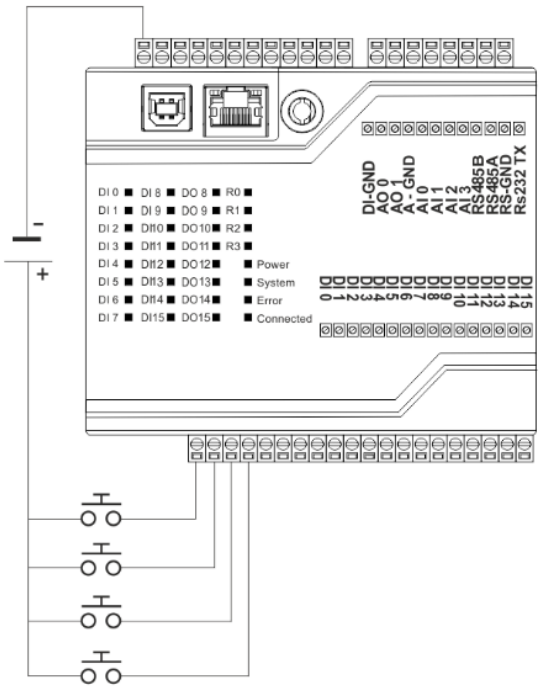

Figure 5 Digital Input Connection Diagram

3.3 Digital Outputs

Module Output:	8 Channel, Mosfet Output
Voltage Range:	12-36V DC
Max. Output Current:	2A @ 30V DC
Isolation:	Optical
Pulse Width Modulation Output and Pulse Train Output:	DO1, DO2, DO3, DO4
Pulse Train Output Max. Frequency(PTO):	50 kHz
Pulse Width Modulation Output Max. Frequency(PWM):	65 kHz

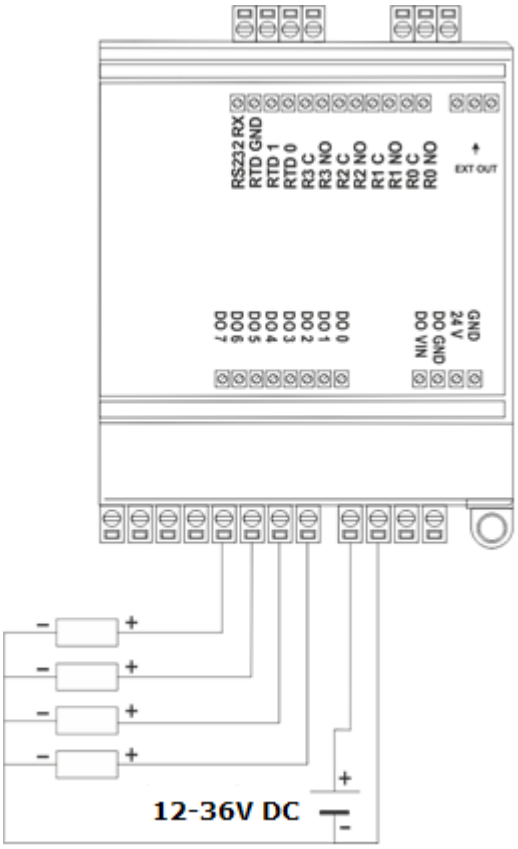

Figure 6 Digital Output Connection Diagram

3.4 Relay Outputs

Module Output:	4 Channel
Relay Contact Outputs:	NO(Normally Open) Contact
Contact Max. Current:	3A@30VDC – 5A@250VAC
Isolation	Dry Contact

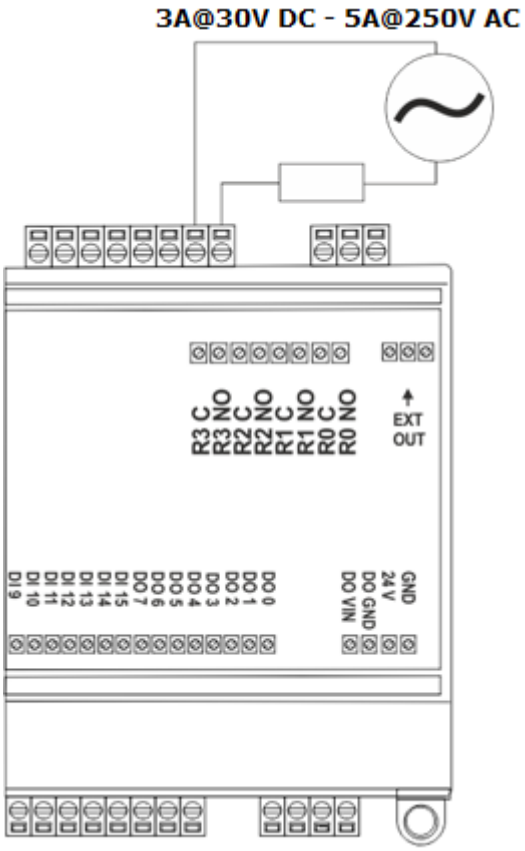

Figure 7 Relay Connection Diagram

3.5 Analog Inputs

Module Input:	4 Channel
Analog Input Type:	0-20 mA, 4-20 mA
Analog Input Resolution:	12 Bit
Analog Input Precision:	%1 Precision
Common Input GND:	1 GND (4 Point / Common)

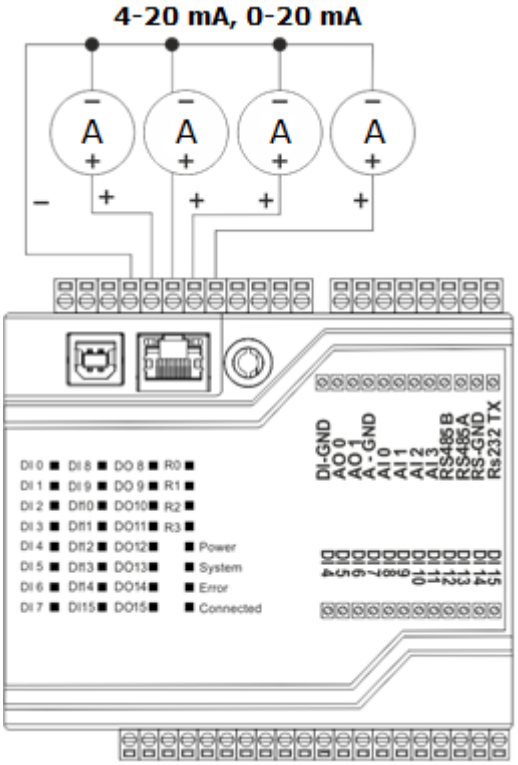

Figure 8 Analog Input Connection Diagram

3.6 Analog Outputs

Module Output:	2 Channel
Analog Output Type:	0-20 mA, 4-20 mA
Analog Output Resolution:	12 Bit
Current Output Precision:	%1 Precision
Common Output GND:	1 GND (2 Point / Common)

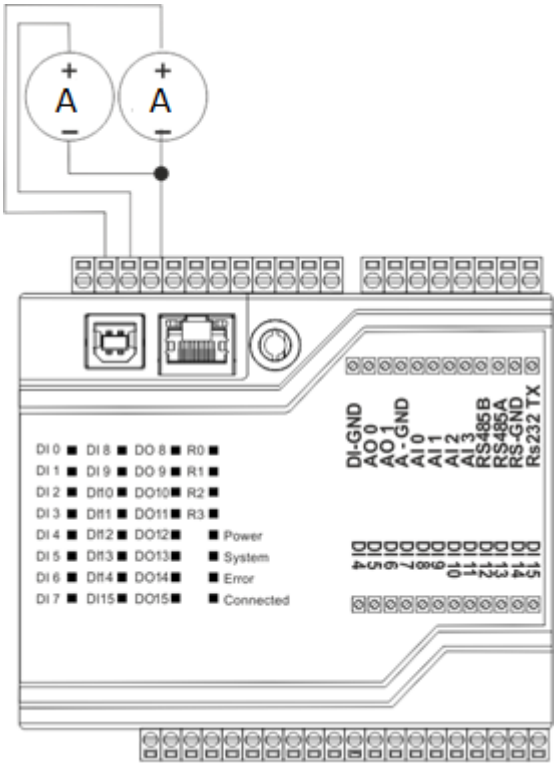

Figure 9 Analog Output Connection Diagram

3.7 RTD Inputs

RTD Input Count	2 Channel
RTD Input Type	PT1000, 2 Wire
Temperature Range:	-50…+200 C
Common Input GND:	1 GND (2 Points / Common)

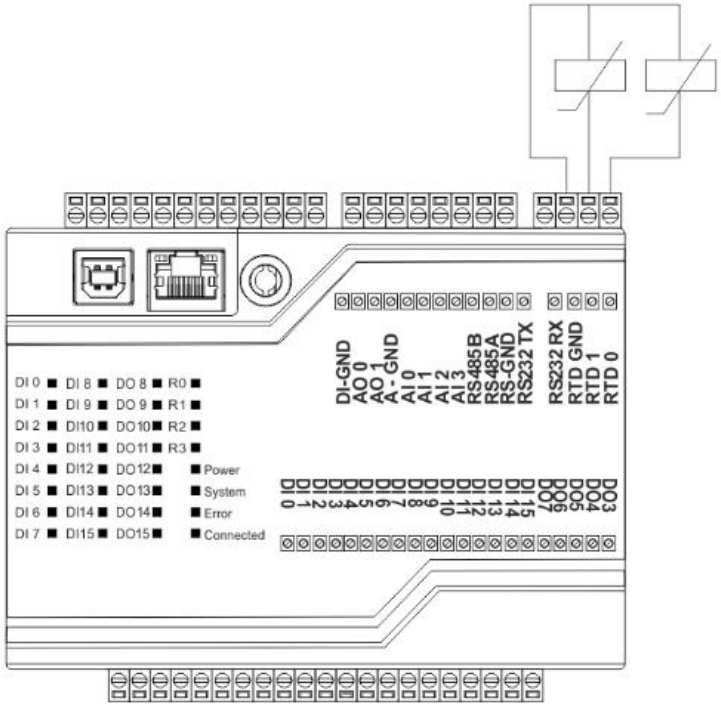

Figure 10 RTD Input Connection Diagram

3.8 RS485 SERIAL PORT

RS485 Port Count:	1 Port, 3 kV ESD Protection
Maximum Slave Count	Limited to Hardware
Isolation:	Galvanic and Optical
Communication Distance:	1000 m
Data Bits:	7-8
Stop Bits:	1-2
Parity:	None-Even-Odd
Baudrate:	300 bps to 200 kbps

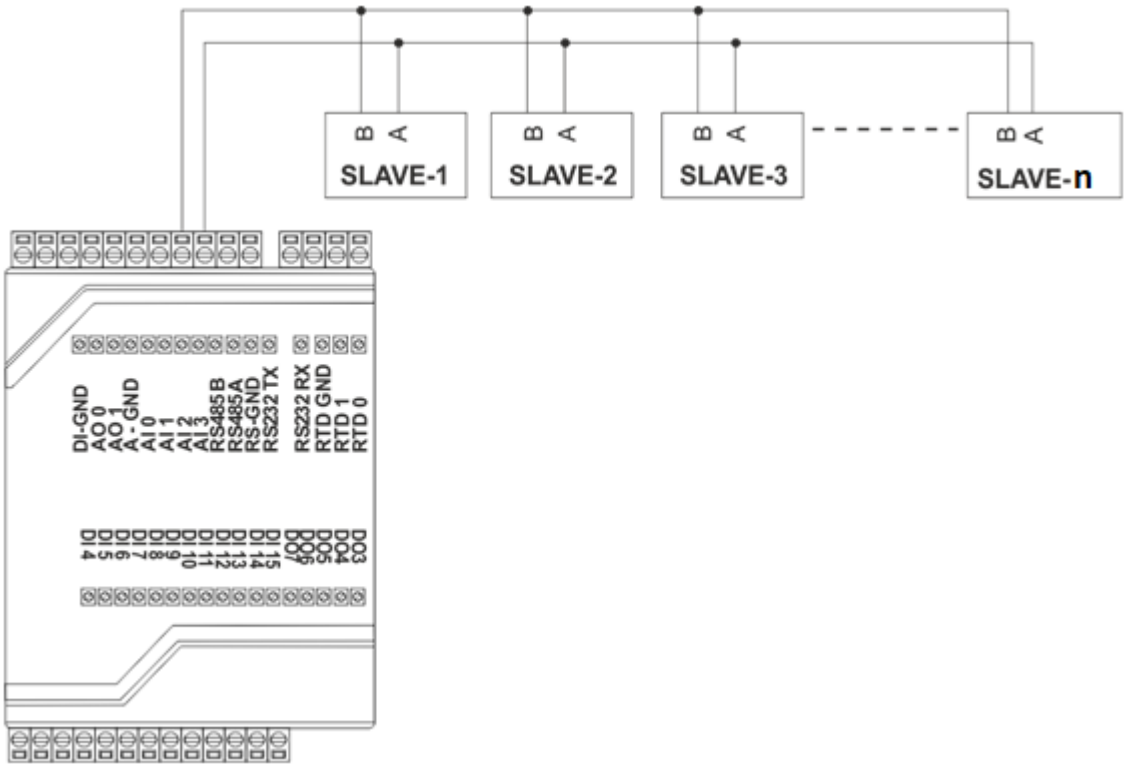

Figure 11 RS485 Serial Port Connection Diagram

3.9 RS232 SERIAL PORT

RS232 Port Count:	1 Port
Communication Distance:	10 m
Data Bits:	7-8
Stop Bits:	1-2
Parity:	None-Even-Odd
Baudrate:	300 bps to 200 kbps

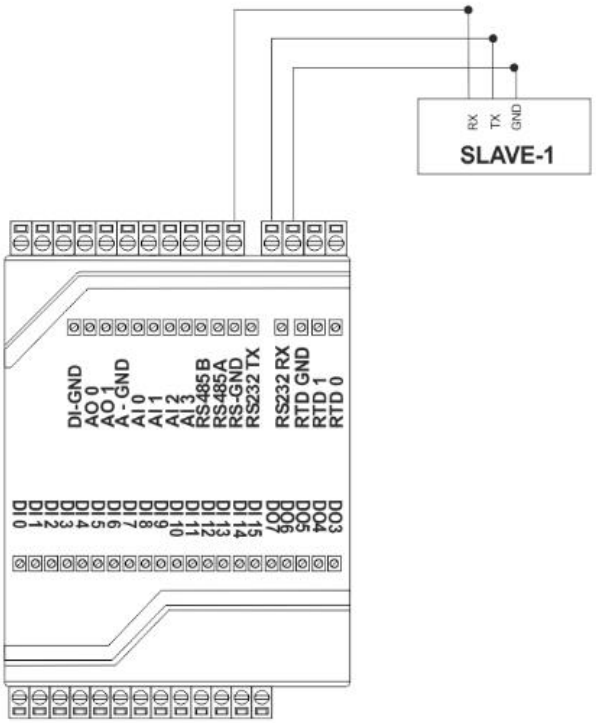

Figure 12 RS232 Serial Port Connection Diagram