MIKRODEV®

Akıllı Kontrolde Teknoloji Devi

MP211

HARDWARE MANUAL

- MP211

  PLC Series

10 / 2017

MIKRODEV_HM_MP211_EN

V1.1

CONTENTS

FIGURES LIST

Preface

Mikrodev MP201 and 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 MP201/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

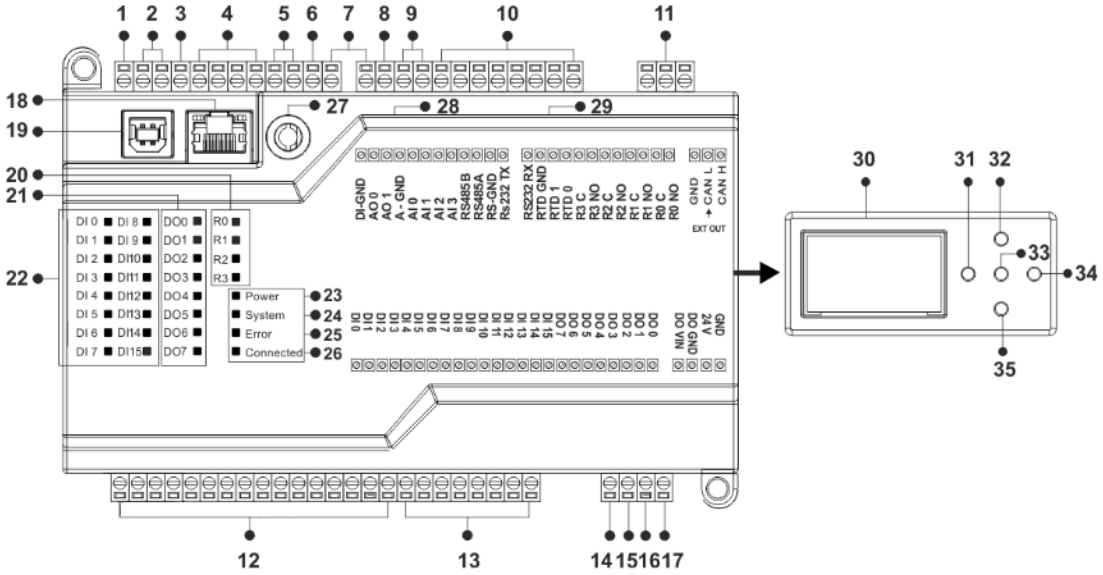

Figure 1 Connector and Physical Interfaces

1	Digital Input Neutral Connection	**19**	USB Port
2	Analog Output Connections	**20**	Relay Status Information
3	Analog Neutral Connection	**21**	Digital Output Status Information
4	Analog Input Connection	**22**	Digital Input Status Information
5	RS485 Connections	**23**	System Energised LED
6	RS-232 Neutral Connections	**24**	System Running LED
7	Rs232 TX-RX Connections	**25**	Error LED
8	RTD Neutral Connections	**26**	Protocol Data Transfer
9	RTD Connections	**27**	Antenna Connection
10	Relay Connections	**28**	SIM Card Slot
11	CAN BUS Communication 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 Connection	**32**	LCD Screen Up Button
15	Digital Output Neutral 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	**36**	

1.2 General Device Specifications

SPECIFICATION	ITEM	DESCRIPTION
Processor	Processor Architecture	ARM Cortex M4
	Precossror Internal RAM	196 KB
	CPU Processing Speed	168 MHz
	Adressing Architecture	Little Endian Addressing
Electrical	Supply	24 VDC (12-36VDC)
	Power	<10W
	Real Time Clock	Integrated
Input / Output	Digital Input	16
	Digital Output	8
	Analog Input	4
	Analog Output	2
	Relay Output	4
	RTD	2
Enviromental Conditions	Operating Temperature	-20 / +60 C
	Storage Temperature	-40 / +85 C
	Humidity	5..95 RH
Memory	Retentive Memory	4KB
	Program Memory	4MBit
Communication Ports	Ethernet Port	100 Mbit, MODBUS TCP
	RS485	1
	RS232	1
Wireless Communication	GSM / GPRS	Quad-Band 850/900/1800/1900 MHz
	Wi-Fi	
Extension Capacity	RAIL Type- CANBUS Extension	Max. 640 Digital IO (256 DI, 256 DO, 128 Relay Output)Max. 96 Analog IO (32 AI, 32 RTD Input, 32 AQ)

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 36 A - 36 B)

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.

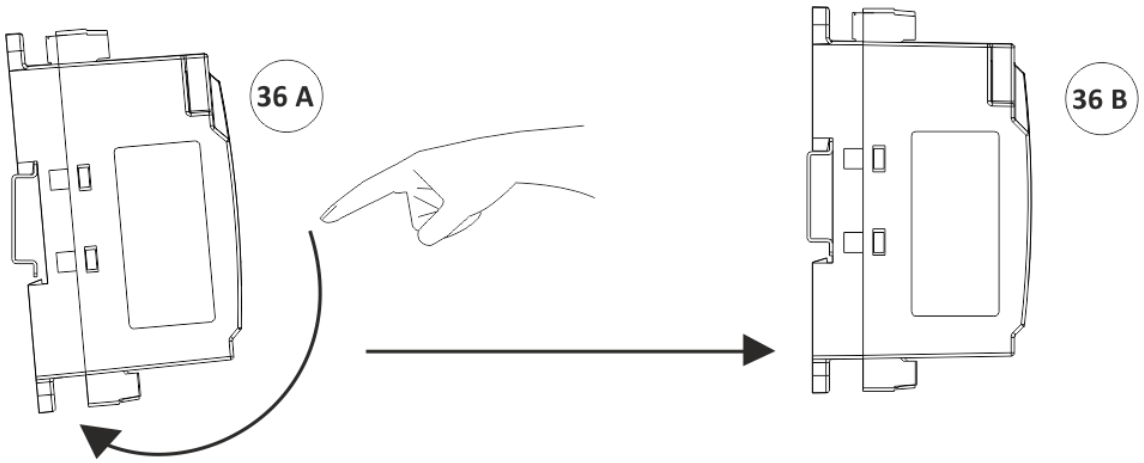

Figure 2 Mounting

2.2 Extension Installation

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

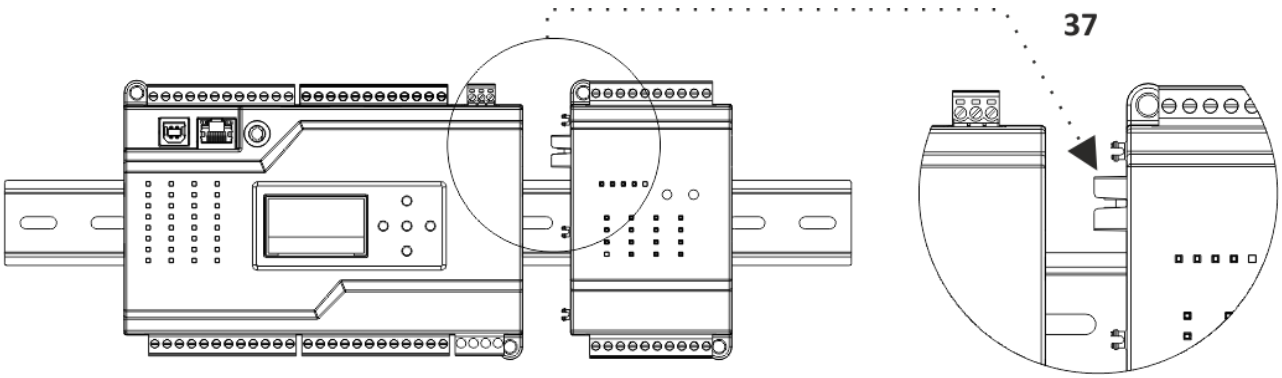

Figure 3 Extension Installation

3 CONNECTION DIAGRAMS

3.1 Supply Connection

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

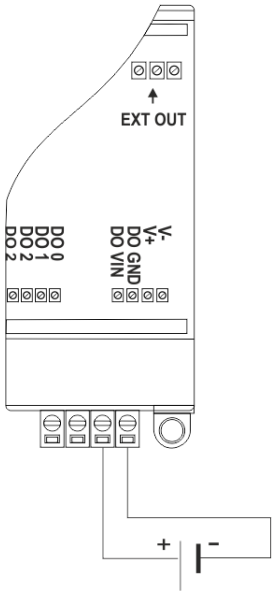

Figure 4 Power Connection Diagram

3.2 Digital Inputs

Module Input:	16 (Sink)
Voltage Range:	0-30 VDC
ON Voltage Level:	7 VDC -30 VDC
OFF Voltage Level:	0-4 VDC
Input Impedance:	>2M
Isolation:	Optical
OFF to ON Response:	20 us
ON to OFF Response:	90 us
Fast Counter Inputs:	DI12, DI13, DI14, DI15

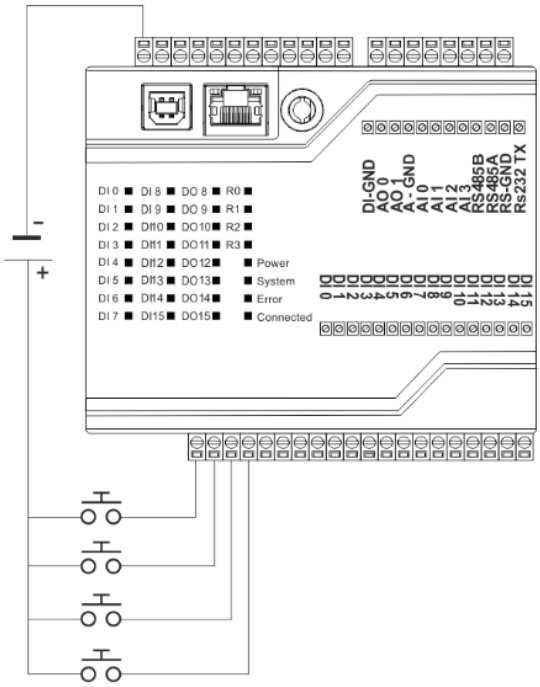

Figure 5 DIN Connection Diagram

3.3 Digital Outputs

Module Output:	Mosfet Output
Voltage Range:	0-40 VDC
Max. Output Current:	2 A/point (@30V)
Isolation:	Optical
External Voltage Input:	3.3-40 VDC
Fast Outputs PWM, PTO:	DQ1, DQ2, DQ3, DQ4
Fast Outputs Max. Frekans	20 kHz

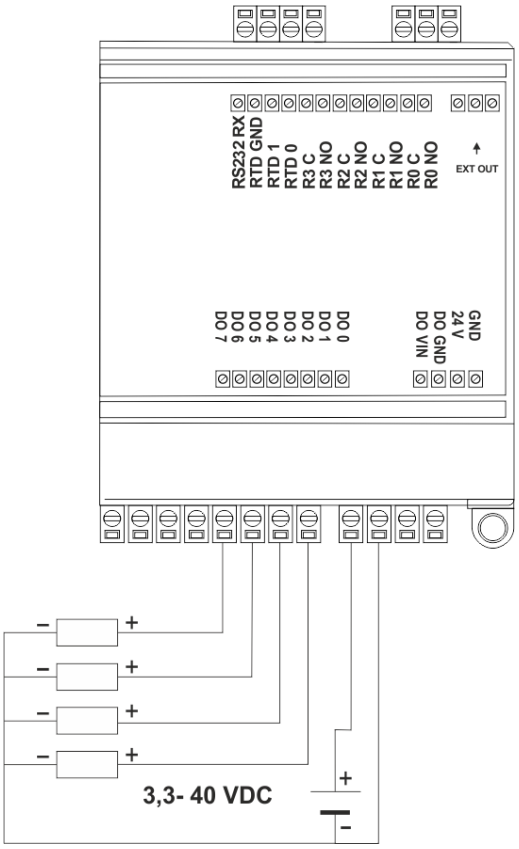

Figure 6 DOUT Connection Diagram

3.4 Relay Outputs

Module Output:	4
Relay Contact Outputs:	COM-NO (Normally Open)
Contact Max. Current:	3A@250VAC – 3A@30VDC
Isolation	Potential of relay contacts are isolated from power source and inputs.(Dry Contacts)

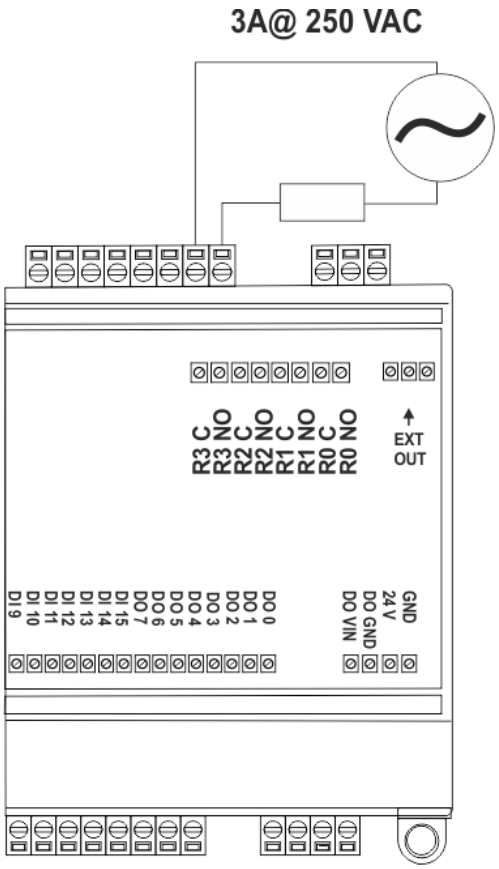

Figure 7 Relay Connection Diagram

3.5 Analog Inputs

Current Input Count	4
Current Input Type	Current, 0-20 mA
Current Input Precision:	%1 Precision
Common Input GND:	1 (4 point / common)

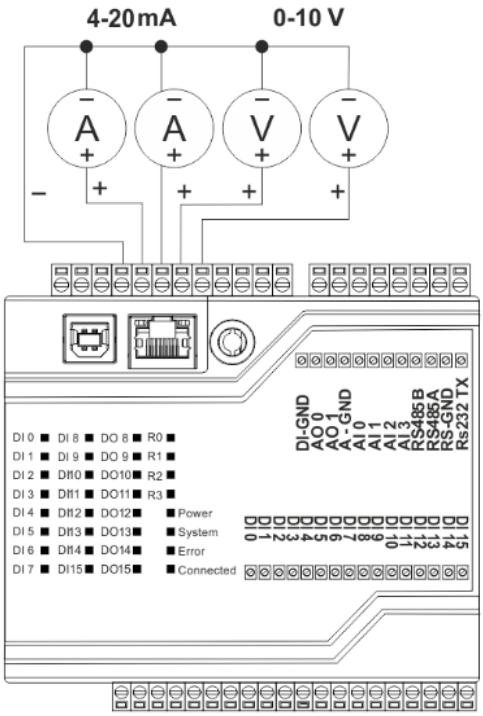

Figure 8 Analog Input Connection Diagram

3.6 Analog Outputs

Current Output Count	2
Current Output Type	Current, 0-20 mA
Current Output Precision:	%1 Precision
Common Output GND:	1 (2 point / common)

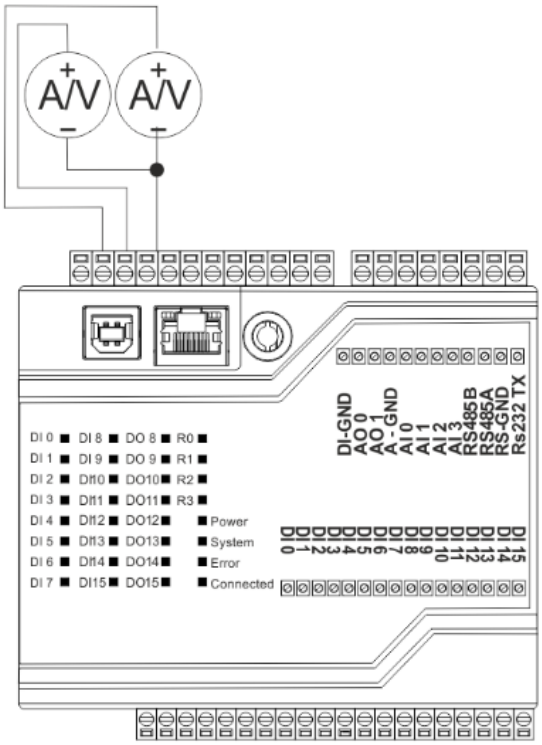

Figure 9 Analog Output Connection Diagram

3.7 RTD Inputs

RTD Input Count	2
RTD Input Type	PT1000, 2 wire
Temperature Range:	-50 … +200 C
Common Input GND:	1 (2 points / common)

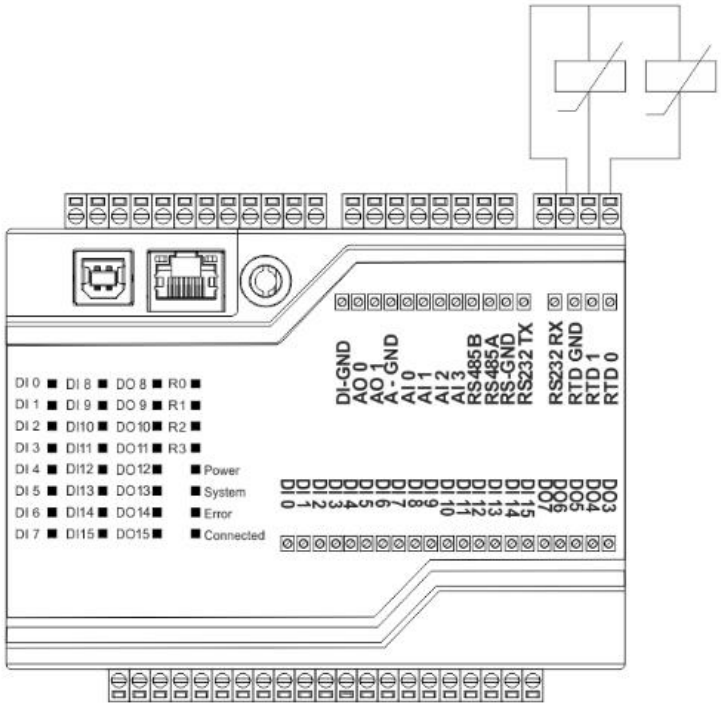

Figure 10 RTD Input Connection Diagram

3.8 RS485 SERIAL PORT

RS485 port Count:	1
Isolation:	Galvanic
Maximum Slave Counts:	200
Communication Distance:	1000 m
Data Bits:	7-8
Stop Bits:	1-2
Parity:	None-Even-Odd
Baudrate:	300 bps to 200 kbps

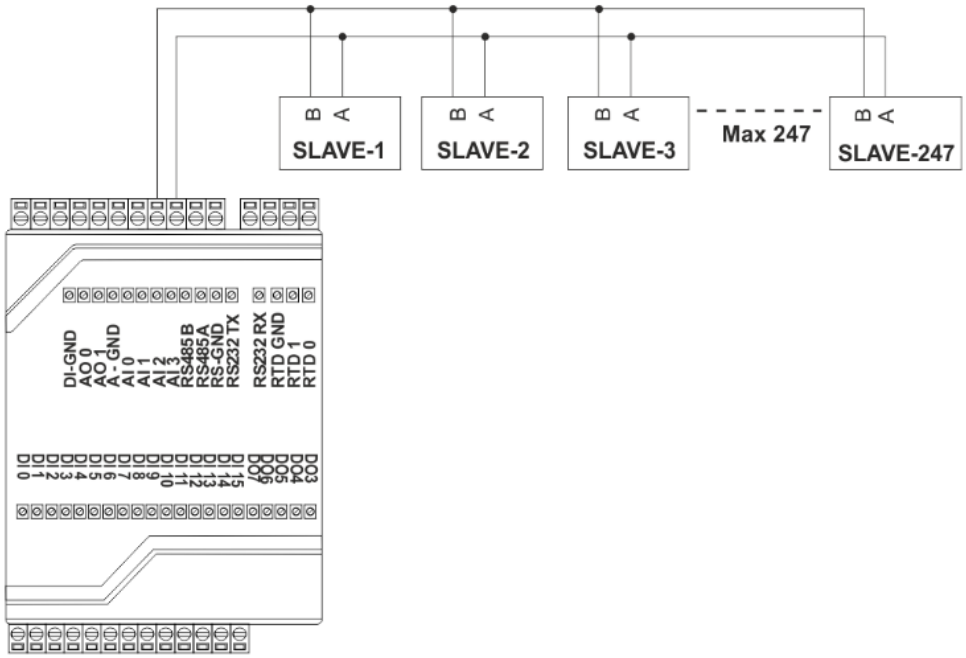

Figure 11 RS485 Input Connection Diagram

3.9 RS232 SERIAL PORT

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

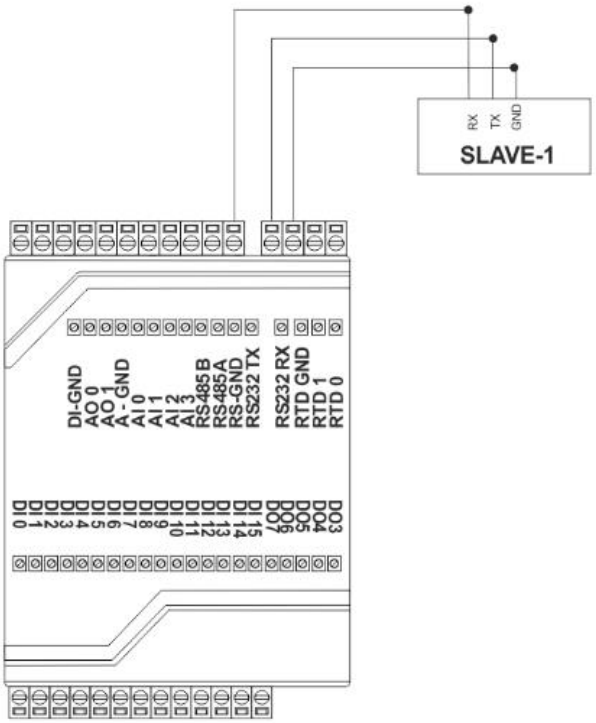

Figure 12 RS232 Input Connection Diagram