DigiRail-2R

Digital Outputs Module

INSTRUCTION MANUAL

V1.0x C

INTRODUCTION

The Modbus Module for Digital Outputs - **DigiRail-2R** is an electronic unit with two digital relay outputs. A serial interface RS485 allows the configuration and activating of these outputs through the communication network. It's appropriate for mounting on DIN 35 mm rails.

The outputs are electrically insulated from the serial interface and the module supply. There is no electrical insulation between serial interface and supply.

Configuration of the **DigiRail-2R** is performed through the RS485 interface by using Modbus RTU commands. The **DigiConfig** software allows the configuration of all features of the **DigiRail** as well as its diagnostics. The **DigiConfig** offers features for detecting the devices present in the Modbus network and for configuring the communication parameters of the **DigiRail-2R**.

This manual provides the instructions for installation and connection of the module. The installer for **DigiConfig** and the documentation regarding Modbus communication for the **DigiRail-2R** (*Communication Manual of the DigiRail-2R*) they are available for download at www.novusautomation.com.

SPECIFICATIONS

Outputs: Two independent outputs, with relay SPDT, 8 A, 250 Vac

Timing for activating the output relays: 32 bits (up to 4.294.967.295 hundredths of seconds), optional and configurable for each relay

Dielectric strength between open contacts: 1000 Vac

Power: 10 to 35 Vdc. Typical consumption: 90 mA @ 24 V. Internal protection against polarity inversion.

Electrical insulation between outputs and supply/serial port: 2000 Vac

Serial communication: RS485 at two wires, Modbus RTU protocol. Configurable parameters: Communication speed: from 1200 to 115200 bps; Parity: even, odd or none

Response time to the commands: 6 ms

Bounce time (NA/NC): 3 / 6 ms

Key for restoring communication parameters: The RCom key, at the front panel, will set the device in diagnostics mode (baud rate 1200, parity even, 1 stop bit), able to be detected and configured by the DigiConfig software.

Frontal light indicators for communication and status:

    TX: Signalizes that the device is sending data on the RS485 line;

    RX: Signalizes that the device is receiving data on the RS485 line;

    Status: When the light is permanently on, this means that the device is in normal operation; when the light is flashing in a second interval (approximately), this means that the device is in diagnostics mode.

Software configurator in Windows environment: DigiConfig

Electromagnetic compatibility: EN 61326:2000

Operating temperature: 0 to 70 °C

Operational relative humidity: 0 to 90% RH

Assembly: DIN 35 mm rail

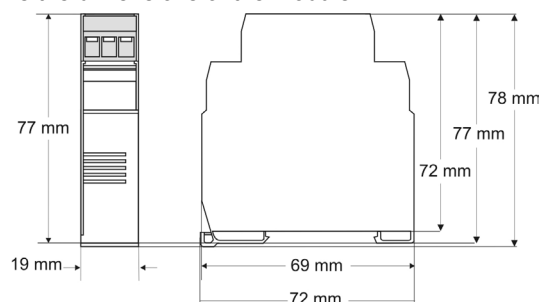**Dimensions:** The figure below shows the dimensions of the module.

Figure 1 – Dimensions

ELECTRICAL INSTALLATION

RECOMMENDATIONS FOR INSTALLATION

- Communication signal conductors must pass through the system plant separated from the electrical network conductors, if possible, in grounded conduits.
- The supply for the instruments must be provided from a proper network for instrumentation.
- In control and monitoring applications, it is essential considering what may occur if any of the system parts should fail.
- We recommend the use of RC FILTERS (47? and 100nF, series) in parallel with contactor and solenoid coils which are close or connected to **DigiRail**.

ELECTRICAL CONNECTIONS

Figure 2 shows the necessary electrical connections. The terminals 1, 2, 3, 7, 8 and 9 are intended for the output connections, 5 and 6 for the module supply and 10, 11 and 12 for the digital communication. For obtaining a better electrical contact with the connectors, we recommend the use of pin terminals at the conductors' end. For direct wire connection, the minimum gage recommended is 0.14 mm², not exceeding 4.00 mm².

> ⚠️ Be careful when connecting the supply terminals to the **DigiRail**. If the positive conductor of the supply source is connected, even momentarily, to one of the communication connection terminals, the module may be damaged.
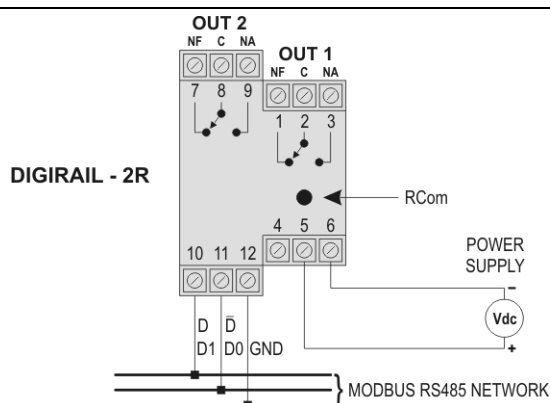
Figure 2 – Electrical Connections

CONFIGURATION

The application **DigiConfig** is a program for Windows® used for configuration of the modules **DigiRail**. For its installation, run the **DigiConfigSetup.exe,** available on our website and follow the instructions as shown.

DigiConfig is provided with a complete help file, giving all the information necessary for its full use. For using the help feature, start the application and chose the "Help" menu or press the F1 key.

Go to www.novusautomation.com in order to obtain the installer for **DigiConfig** and the additional product manuals.

WARRANTY

Warranty conditions are available on our website www.novusautomation.com/warranty.