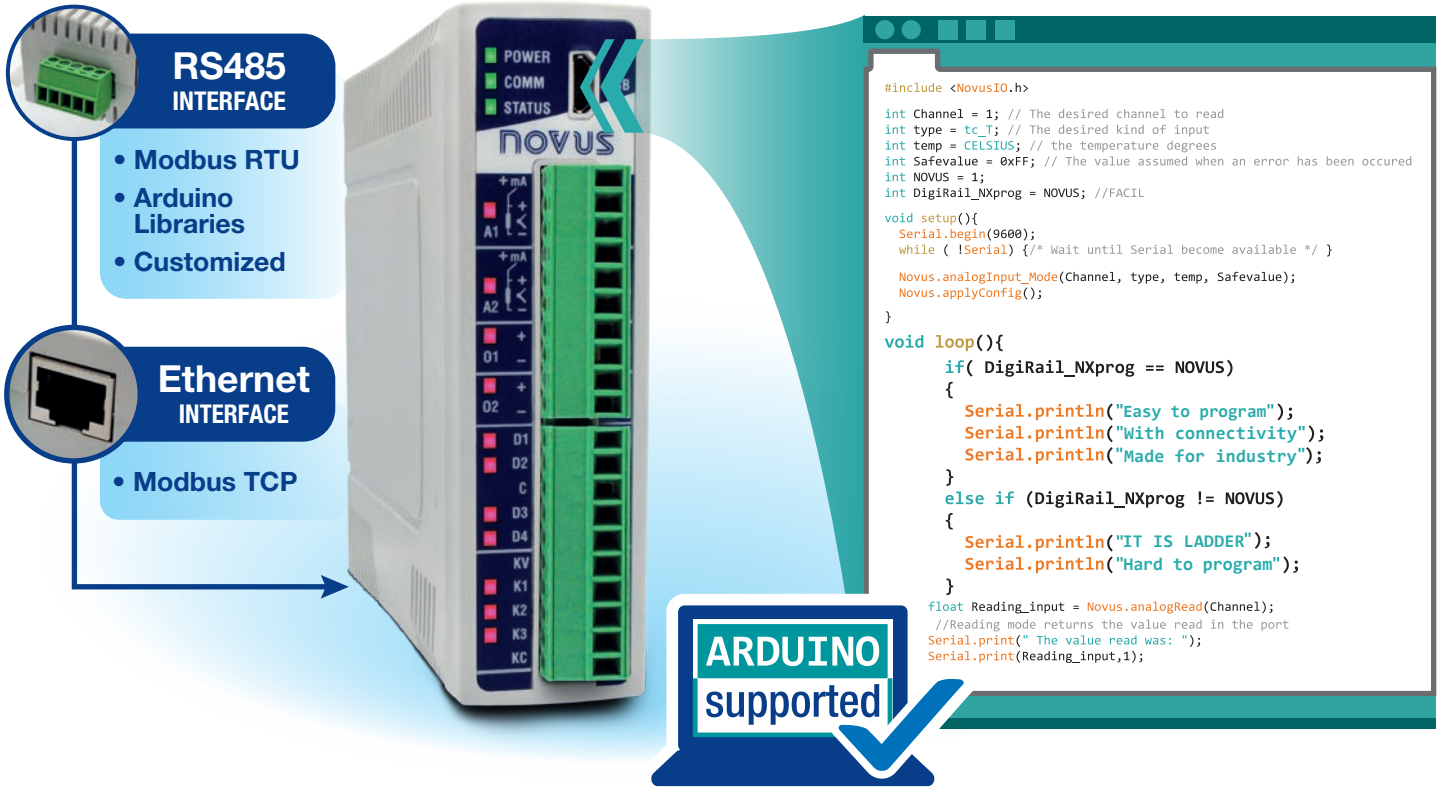
Micro PLC in C/C++

DigiRail NXprog



I/O Mix (analog and digital)

Interface RS485 and Ethernet

Robust and reliable for industry

Arduino IDE for high-level programming

Suitable for complex algorithms

DigiRail NXprog unites the best of both worlds: the easy programming from the Arduino community and the reliability and robustness of an industrial device for automation applications.

Integrated I/O controlled analog and digital signals, allowing **DigiRail NXprog** to be used as an I/O extension of standard automation systems or as a brain of customized applications.

Compatible with Arduino, **DigiRail NXprog** allows the use of high-level programming languages, such as C/C++, which allow the implementation of complex algorithms such as recursive logic, state machines, statistical analysis and mathematical equations. This is an excellent advantage of this device in view of the programming difficulty (IEC standard) found in most PLCs in the global market, considered archaic by the new generation of automation technicians.

Designed especially for harsh environments, **DigiRail NXprog** demystifies the use of Arduino compatible devices for the industry and is the perfect combination of robustness and easy programming.

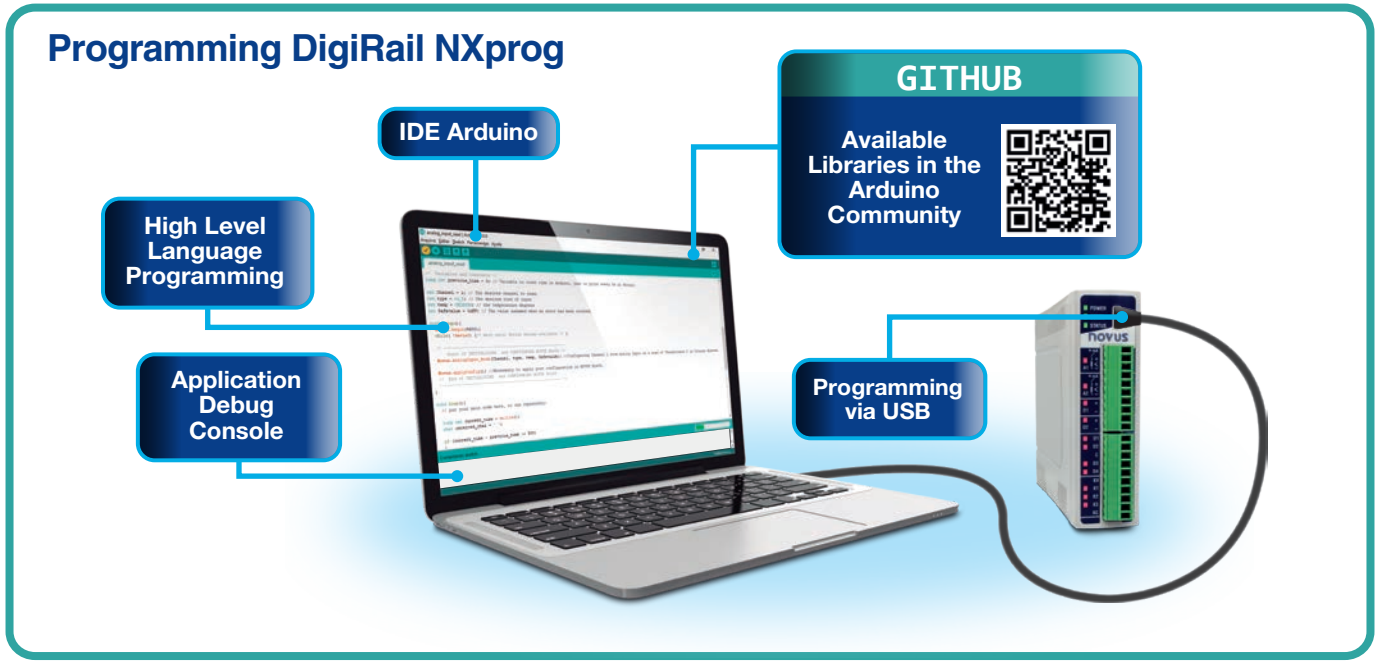
The RS485 interface allows the communication with other devices with Modbus RTU protocol, either master or slave. Flexible to receive protocols from Arduino community library or implement custom protocols, **DigiRail NXprog** enables a variety of applications with machines or processes connectivity.

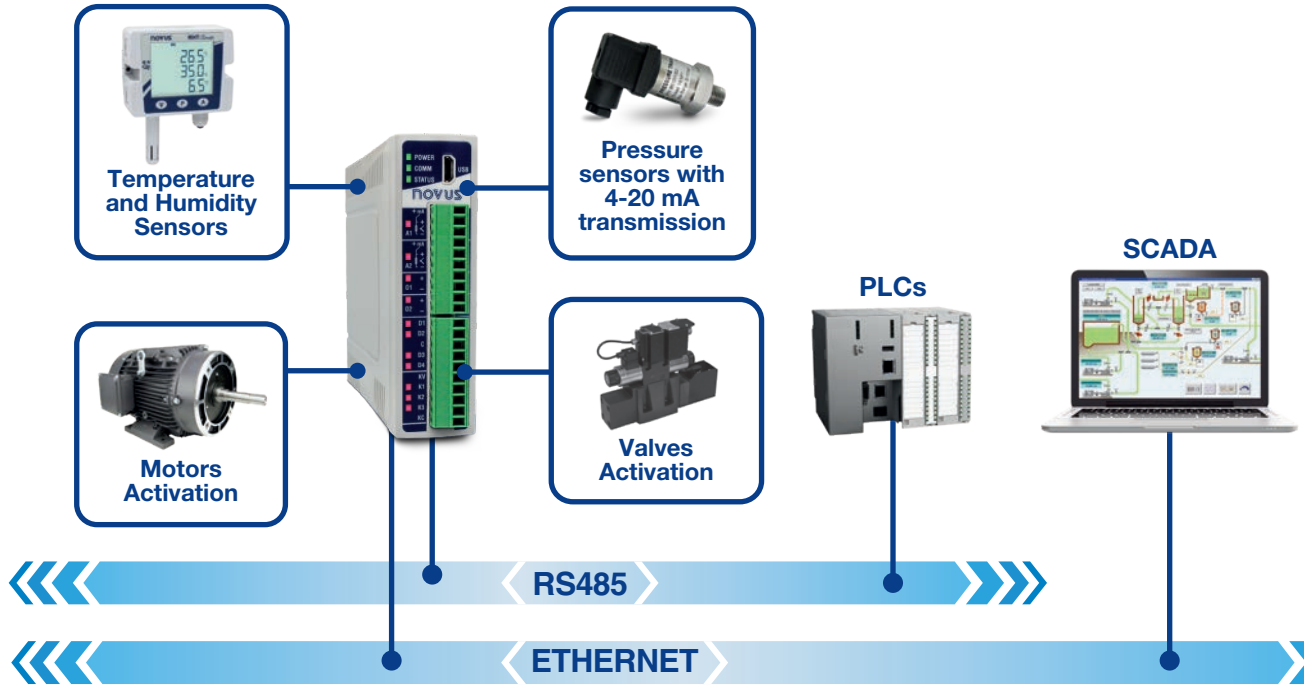
Technical Specifications

Model	RAMIX: Rich Analog Mix
Inputs	4 digitals, 2 analog (isolated)
Output	3 digitals or 2 relays, 2 analog (isolated)
Analog Input Types	Thermocouples J, K, T, N, E, R, S and B Pt100, Pt1000, NTC, 0-60 mV, 0-5 V, 0-10 V, 0-20 mA, 4-20 mA
Analog Output Types	0-20 mA, 4-20 mA, 0-10 V
Analog Resolution	Analog Inputs: 16 bits (65000 levels) Analog Outputs: 12 bits
Programming Interface	Arduino IDE with **NOVUS** library available
Configuration Software	**NOVUS NXperience** (via USB)

Communication Interface	USB RS485
Power Supply	Voltage: 10 Vcc to 36 Vcc Maximum power: 5 W Typical consumption current: 20 mA
Operation Conditions	Temperature: -20 to 60 °C (-4 to 140 °F) Humidity: 5 to 95 %, without condensation
Housing	ABS+PC
Integrated Arduino Board	Processor: ATMEGA4809 Flash program memory: 48 Kb RAM Memory: 6 Kb Minimum cycle time: 50 ms Watchdog Timer Real Time Clock EEPROM 32 Kb

Programming DigiRail NXprog





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STARTER GUIDE

Programmable I/O Module
DigiRail NXprog RAMIX

See NOVUS Product Page

Included:

- ✓ 1 x DigiRail NXprog RAMIX
- ✓ 1 x 5-pin connector
- ✓ 2 x 10-pin connector

novus
We Measure, We Control, We Record

Step-by-step guide for DigiRail NXprog RAMIX

English

See Manual

- Go to GitHub page (www.github.com) and type “nxprog” in the “Search” field, or type https://github.com/NOVUS-Products/DigiRail-NXprog
- Follow the instructions to install and configure all packages.
- Confer the Arduino community library repository on Github as a reference for application development.

Español

Ver Manual

- Vaya a la página de GitHub (www.github.com) y escriba “nxprog” en el campo “Buscar”, o escriba https://github.com/NOVUS-Products/DigiRail-NXprog
- Siga las instrucciones para instalar y configurar todos los paquetes.
- Consulte el repositorio de bibliotecas de la comunidad Arduino en Github como referencia para el desarrollo de aplicaciones.

Português

Ver Manual

- Vá para a página do GitHub (www.github.com) e digite “nxprog” no campo “Pesquisar” ou digite https://github.com/NOVUS-Products/DigiRail-NXprog
- Siga as instruções para instalar e configurar todos os pacotes.
- Consulte o repositório de bibliotecas da comunidade Arduino no Github como referência para o desenvolvimento de aplicações.

Français

Voir Manuel

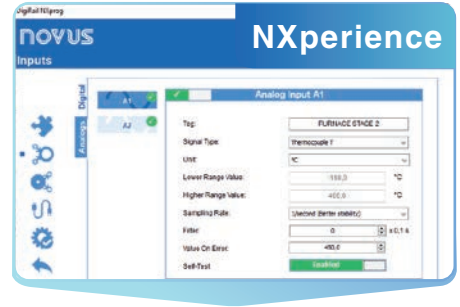
- Accédez à la page GitHub (www.github.com) et tapez “nxprog” dans le champ “Rechercher”, ou tapez https://github.com/NOVUS-Products/DigiRail-NXprog
- Suivez les instructions pour installer et configurer tous les packages.
- Consultez le référentiel de la bibliothèque de la communauté Arduino sur Github comme référence pour le développement d'applications.

1. http://www.novus.com.br/produtos/506433
2. https://www.arduino.cc/en/main/software
3. https://github.com/NOVUS-Products/DigiRail-NXprog

Installation Tutorial

1. Install NXperience
2. Install Arduino IDE
3. Install DigiRail NXprog Arduino package

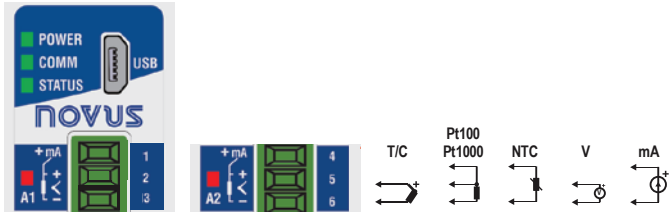
4. Power the DigiRail NXprog with 24 Vdc
5. Connect in the USB
6. Configure I/O via Software



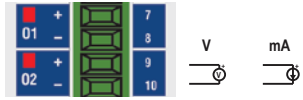
7. Write the program code

Connections

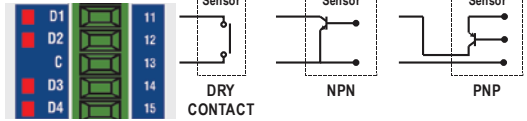
Analog inputs:



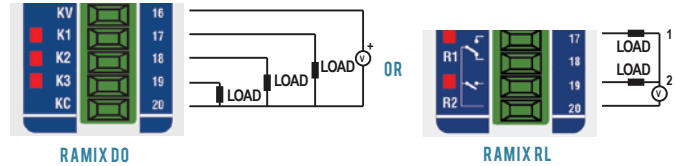
Analog outputs:



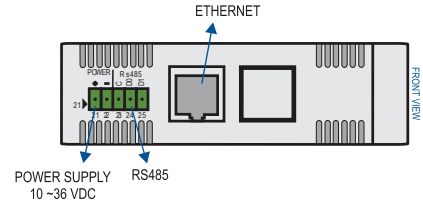
Digital inputs:



Digital outputs:



Power Supply and Communication Interfaces:



The Digital Output channels are not electrically isolated from the Digital Input channels, but are isolated from the other DigiRail NxProg RAMIX electrical circuits.