EXCELLENCE IN AUTOMATION
FOR A WIDE RANGE OF
MARKET SEGMENTS AND APPLICATIONS

Data Acquisition and Communication

Sensing, Conditioning and Transmitters

Process Control and Indication

Software Interface

Metrology Services

NOVUS

We Measure, We Control, We Record

PRODUCTS AND SOLUTIONS FOR AUTOMATION
PRESENT IN OVER 60 COUNTRIES

● Sales Offices   ● Distributors

About NOVUS

For over 30 years, **NOVUS** has developed and manufactured innovative and reliable products for data acquisition, temperature and process control, signal conditioning and transmission of field variables complying with worldwide quality requirements providing solutions that exceed customers' expectations.

NOVUS is present in over 60 countries through a network of over 300 distributors and its own sales offices in Brazil, Argentina, the United States and France.

In 2018 **NOVUS** moved into its new headquarter facilities in the city of Canoas, southern Brazil. With more than five thousand square meters of built area, three thousand dedicated to factory, the new plant ensures the possibility to quadruplicate production capability.

Among the innovations, a real-time reconfigurable, autonomous manufacturing cell was implemented under Industry 4.0 concepts.

As part of **NOVUS** strategic plans, moving our highly skilled staff to larger and more modern facilities with an advanced production infrastructure along with well equiped research laboratories opens the path to productivity improvements achivieving higher throughput of a larger portifolio of valued added products and the consequent increase in national and international market shares.

Currently, half of the production is destined for export which is growing rapidly due to product quality recognition and added value perception in the world market.

Certifications and Approvals

Summary
Business Units

Data Acquisition and Communication

Data acquisition systems, I/O modules, wireless connectivity and gateways.

Sensing, Conditioning and Transmitters

Signal conditioners, temperature, relative humidity and pressure transmitters.

Process Control and Indication

Process controllers, temperature controllers, process indicators, electronic thermostats and HMIs.

Software Interface

Computer software and smartphone applications (for device configuration, data download and data acquisition), SCADA software, and cloud based platforms.

Metrology Services

Metrology services for temperature, relative humidity, pressure, electrical parameters, mass, volume, conductivity, time/frequency, and pH instruments.

Data Acquisition

Wireless Multichannel Data Loggers - LogBox Connect

LogBox Connect provides data acquisition and connectivity for any type of application. With all its wireless options, **LogBox Connect** is the gateway to the connected world.

Bluetooth Data Logger

- Suitable for battery operated applications
- Configuration and data download via USB or Bluetooth
- Powered by 4 AA alkaline batteries or external DC power supply
- Data communication via Bluetooth using **NXperience Mobile** app
- Free app for data download and configuration on Windows, Android and iOS

APPLICATIONS

Laboratory   Cold Chain   Data Centers

LogBox BLE

Wi-Fi Data Logger

- Suitable for distributed environments with existing Wi-Fi infrastructure
- Configuration and data download via USB or Wi-Fi
- Alarm notification via email
- Free app for data download and configuration on Windows, Android and iOS
- Ease of integration with Cloud based platforms, including **NOVUS Cloud**

APPLICATIONS

Distribution Centers   Cold Chain   Commercial Refrigeration

LogBox Wi-Fi

3G/2G Data Logger

- Suitable for mobile or applications over long distances
- Configuration and data download via USB or 3G
- Alarm notification via SMS
- Built-in rechargeable backup battery with more than 8 h autonomy
- Free app for configuration and data download on Windows®, Android® and iOS®
- Ease of integration with Cloud based platforms, including **NOVUS Cloud**
- Data communication via 3G network through **NXperience** and SCADA software

APPLICATIONS

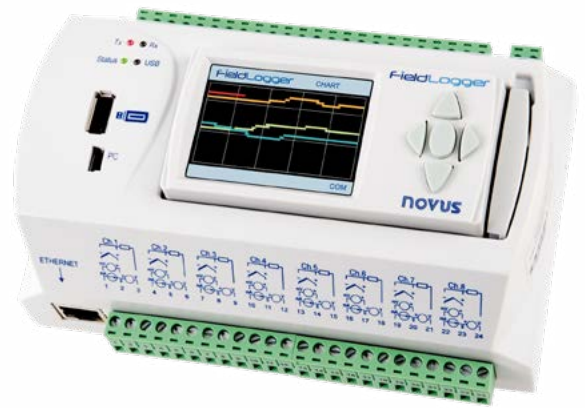Utility Services   Transportation of Temperature Sensitive Products   Agricultural Greenhouses

3G

LogBox 3G

Industrial Multichannel Data Logger - FieldLogger

FieldLogger high performance instrument for reading and recording variables with high input/output density and several options for displaying, logging and processing information. It can also be used as an analog + digital I/O expansion for PLCs in monitoring and control applications.

Easy to operate and to configure, **FieldLogger** has superior performance and a high degree of connectivity. Its colorful and detachable human-machine interface can be detached and used remotely, adapting to the most different processes and rigid safety standards.

FieldLogger

I/Os

- 8 Universal analog inputs
  - Thermocouples (J, K, T, N, E, R, S, and B), 0-5V, 0-10V, mV, mA, Pt100, and Pt1000
  - 128 virtual channels (refer to Mathematical Functions)
  - Sampling rate up of to 1000 readings/second (24-bit A-D conversion)
- 2 Relay outputs
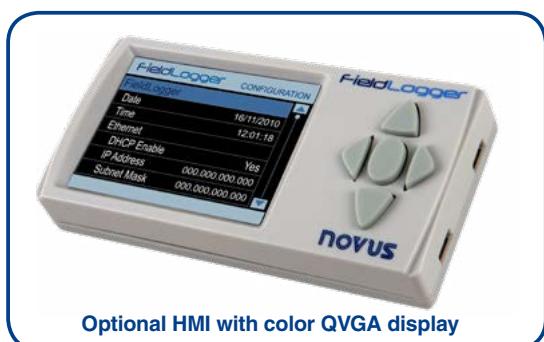- 8 Digital I/Os individually configurable as input or output

RECORDING

- Internal memory of up to 512,000 recordings
- Memory extension with SD or SDHC card
- Records up to 100 channels (local, remote or virtual variables)
- Recording rate of 1000 logs/second (max)
- Data download through configuration software (USB device, RS485, Ethernet or USB drive)

HMI

- 2.4" color QVGA screen and 96 x 48 mm format
- Screen menu with current channel value, history chart, and status information
- Allows to view and configure parameters
- Local or remote installation with RS485 communication

Optional HMI with color QVGA display

COMMUNICATION INTERFACES

- RS485 "Master" for reading from up to 64 remote channels (Modbus protocol)
- RS485 "Slave" for communicating with SCADA software or Host
- USB "Device" port for instrument configuration and data download
- USB "Host" port for downloading recorded data into USB drive)
- Ethernet (10/100 Mbps) – Optional
  - Protocols DHCP, HTTP, FTP, SNMP, SMTP Client, and
- Modbus TCP
  - Custom webpage server in XML format
  - Operates as a gateway between a Modbus TCP network and a Modbus RTU network

MATHEMATICAL FUNCTIONS

- Supports up to 128 virtual channels
- Each virtual channel is a mathematical or logical operation performed over any input channel
- The result of one virtual channel can be used as input to another, which allows one to create complex formulas

ALARMS

- Up to 32 configurable alarms (with local, remote or virtual channels)
- The occurrence of an alarm allows:
  - Relay activation
  - Digital outputs activation
  - Sending emails to multiple recipients
  - Sending SNMP traps
  - Start and stop logging

Data Acquisition

Portable Data Loggers

	TagTemp USB	TagTemp Stick	TagTemp NFC LCD	TagTemp NFC
Measuring Range	-20 °C to 70 °C (-4 °F to 158 °F)		-40 °C to 70 °C (-40 °F to 158 °F)	
Temperature Accuracy	± 0.5 °C to 25 °C ± 1.0 °C span (± 0.9 °F to 77 °F ± 1.8 °F span)			
Resolution	0.1 °C/°F			
Memory Capability	32000 records		4020 records	
Acquisition Interval	Programmable from 5 seconds to 18 hours		Programmable from 1 minute to 4 hours	
Communication Interfaces	USB		RFID ISO 15693/NFC-V	
Power Supply	3 V lithium battery replaceable	3 V lithium battery non-replaceable	3 V lithium battery replaceable	3 V lithium battery non-replaceable
Battery Autonomy	1 year with 15 minute acquisition interval	2 years with 15 minute acquisition interval	2 years with 30 minute acquisition interval	Higher than 1 year with 30 minute acquisition interval
Housing	Housing and cover in ABS + PC. IP67 protection	Housing in polyamide. IP67 protection	Housing in ABS + PC. IP54 protection	Housing in polyamide. IP68 protection
Sensor	Internal temperature sensor		Internal temperature sensor Optional digital input	Internal temperature sensor

Rugged Data Loggers

	LogBox AA	LogBox DA	LogBox RHT
Input Signals	2 analog Inputs	1 digital Input 1 analog Input	Temperature and relative humidity sensors
Analog Signal Type	Thermocouples J, K, T, N, R, S, and B, Pt100, 0-50 mV, 0-10 V, 0-20 mA, 4-20 mA	(0-50 mV, 0-10 V, 0-20 mA, 4-20 mA)	-
Digital Outputs	1 electronic switch		-
Resolution	14 bits		Temperature 14 bits humidity 12 bits
Memory Capacity	32000 records or 64000 records		64000 records (32000 temperature and 32000 humidity)
Logging Interval	1 sec to 18 h		
Logging Mode	Instantaneous, average, minimum or maximum		
Logging Trigger	Date/time, start button or digital input	Date/time	Date/time, start button or setpoint
Alarms	2 alarms (one per channel) minimum and maximum values		
Communication Interface	Infrared through IR Link-3		
Configuration Software	LogChart II (Windows based)		
Power Supply	3.6 V replaceable lithium battery (½ AA)		
Battery Life	Typically 1 year		
Housing Protection	IP65 or IP67		IP40

I/O Modules

Ethernet I/O Module

- Mixed I/Os (analog and digital)
- Ethernet with Modbus TCP/IP protocol
- RS485 with Modbus RTU protocol
- Configurable via USB
- Advanced I/O functions

DigiRail Connect is a versatile DIN rail I/O module with Ethernet interface which can be easily integrated to any automation system.

With a flexible mix of industry-standard inputs and outputs, it performs field analog and digital signal handling with outstanding accuracy.

Specially designed to comply with international electromagnetic compatibility standards, it ensures robustness and reliability in the most demanding industrial applications.
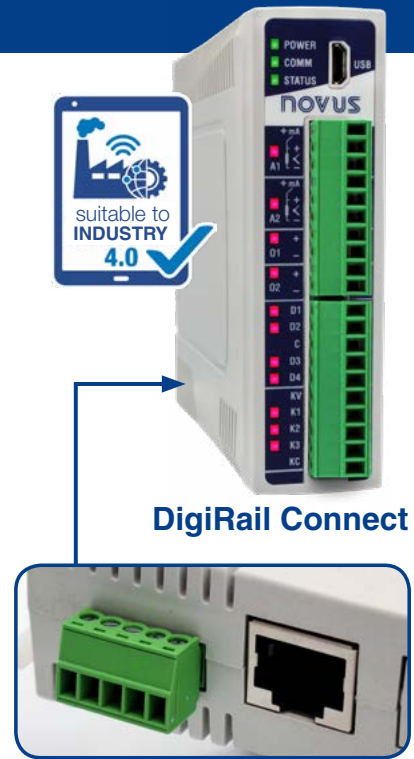
APPLICATIONS

| Industry | Energy | Steel Industry | Distribution Center |

DigiRail Connect

Programmable I/O Module

- Mixed I/Os (analog and digital)
- Rugged and reliable for industrial applications
- RS485 interface
- High-Level Programming with Arduino IDE

DigiRail NXprog is a programmable I/O module compatible with Arduino integrated development environment (IDE). With a mix of both analog and digital I/Os, **DigiRail NXprog** can be used as a controller in custom applications for machine or process automation.

Flexible user programmability allows access to the local I/Os and the communication interface.

The device can run complex algorithms and can connect with other devices via Modbus RTU protocol. **DigiRail NXprog** can run Arduino library codes or custom ones, providing great versatility in a wide range of applications.

APPLICATIONS

| General Automation | Food and Beverages | Plastics and Packaging | Water and Wastewater |

DigiRail NXprog
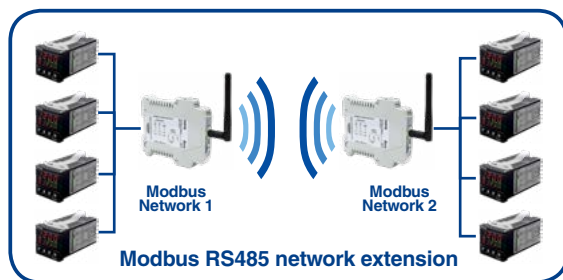
Programmable in Arduino IDE

Communication

Wireless Modbus Gateway

AirGate Modbus is a multifunctional device that can be used as a wireless repeater, Modbus master multiplexer, Modbus network wireless segment or as an RS485 USB converter.

- Wireless branches for any wired RS485 network node
- Four operation modes
- Automatic configuration of a wireless tree topology network
- Connects devices up to 1000 meters apart
- Easy-to-use configuration software

AirGate Modbus

Modbus RS485 network extension

Scalable wireless network

VPN Router for 3G Networks

AirGate 3G is a cellular router for Internet of Things (IoT) applications that provides remote access to local networks. It works as a master of a Modbus RTU network and reads up to 128 Modbus slave registers (remote channels). This data can be published in the cloud allowing access anytime anywhere as well as providing an efficient and reliable storage medium.

- Dual SIM card for connection redundancy
- Two Ethernet ports
- Memory for temporary buffering if connection is lost
- Metal housing with DIN rail mounting

FEATURES

SMS VPN 3G

AirGate 3G

Profibus to Modbus Gateway

DigiGate Profibus is a cost-effective gateway for communication between Profibus and Modbus networks. The gateway takes care of all protocols specificities to forward Profibus DP commands to devices connected in a Modbus network.

- LED indicators for communication status
- Reliable interconnection between a Profibus and a Modbus network
- Profibus network acts as the master to Modbus devices
- Easy configuration via **DigiConfig** for Windows®

DigiGate Profibus

Modbus IO Modules

DigiRail signal conditioning modules can easily integrate different analog or digital signals into PLCs or supervisory systems in a cost-effective way being the right choice for input and output expansion with great flexibility.

- Communication and status LED indicators
- Universal and configurable inputs and outputs
- Configuration and calibration can be performed with the free **DigiConfig** software

DigiRail 2A, 2R e 4C

DigiRail 2A

Two universal analog inputs
- Analog inputs: type J, K, T, E, N, R, S and B T/Cs, Pt100, mV, V, mA
- Resolution: 17 bits
- Isolation: 1000 Vac between inputs and power or communication port

DigiRail 4C

Four digital I/Os
- Fast inputs allow up to 1000 Hz digital signals
- Resolution: 32-bit counting
- Isolation: 1000 Vdc between input

DigiRail 2R

Two relay outputs
- 8 A / 250 Vac SPDT relay, resistive load
- Configurable activation time
- Isolation: 2000 Vac between power and communication

Electrical Parameters Transmitter

DigiRail-VA is a cost effective electrical parameters signal conditioner and transmitter specifically designed for single phase AC power analysis and measurement applications.

- Measures voltage, current, active power, apparent power, reactive power, frequency, and power factor
- Retransmits the measured variables in both analog and digital (RS485 Modbus) ways
- Features a USB interface for configuration and reading
- Easy-to-use DigiConfig configuration software (free of charge)

DigiRail VA

USB to RS485 Converter

Fast and reliable solution for interfacing between PCs and RS485 or RS422 industrial communication buses.

- Plug and Play USB Interface
- Automatic detection and installation when connected to USB
- Compatible with any serial communication application
- Compact and easy to use in the field

USB i485

Pressure Transmitters

Ultra Low Differential Pressure Transmitter

Ideal for HVAC, clean-room and flow measurement applications, **NP785** is an ultra low differential pressure transmitter for measuring very small over-pressures, under-pressure and differential pressure in neutral and non-corrosive gaseous media. It provides linear pressure characteristic with configurable measuring range via USB using the configuration software.

NP785 can operate bi-directionally, being able to measure differential pressure ranges from vacuum to positive pressure. It is housed in a DIN rail mountable ABS/PC enclosure and its nickel plated brass fittings accept pneumatic hoses with 4 mm or 6 mm internal diameter. The analog output can be set to either 0-10 V or 4-20 mA while having an RS485 with Modbus RTU communication protocol. Designed for HVAC and industrial environment, **NP785** ensures temperature compensation for long-term stability and complies with EMC standards, providing robustness and reliability for a wide range of applications.

- Available ranges of ± 5 mbar and ± 20 mbar, reprogrammable
- Temperature compensated for higher stability at low pressures
- 4 or 6 mm connection for pneumatic hoses
- Output signal 0 to 10 V or 4 to 20 mA and slave Modbus RTU, in one-only-model
- Zero range and span fully configurable by software

NP785

Current Loop Indicator

LoopView is a two-wire 4-20 mA, loop-powered indicator. Its excellent accuracy allows the indication of many physical quantities such as pressure, differential pressure, level, flow, pH, relative humidity, temperature, acceleration and others.

LoopView is powered by the current loop. It is inserted into sensors already installed in industrial facilities.

This device has a 4-digit display and 2 keys for the adjustment of indication range, decimal point position, digital filter and user calibration, in a quick and easy way.

The parameters modification is password protected and is accomplished directly in the indicator through its panel keys.

LoopView

- Compact size: 65 x 45 x 45 mm (2.55 x 1.77 x 1.77 in)
- Loop-powered, does not require external power supply
- 4-digit red LED display with adjustable range
- Connectors standard EN175301-803 (old DIN 43650) male and female
- Easy configuration by front panel keys
- Easy to assemble onto transmitters
- Adjustable engineering unit indication

COUPLED TO PRESSURE SENSORS

NP400 ¼ NPT

NP640 ¼ NPT

COUPLED WITH TEMPERATURE SENSORS

Temperature Sensor

Pressure Transmitters

Pressure Transmitters

The rangeability of **NP640** pressure transmitter brings versatility, allowing its transmission ranges to be turned down to up to 1/3 of its nominal range. Featuring high accuracy coupled with temperature stability, the **NP640** performs well in the most challenging applications and in harsh environments.

- Customer configuration of range via USB
- All stainless steel media compatibility
- High accuracy 0.25% of full scale
- USB Configuration via free software and adapter interface

NP640

Through the **TxConfig DIN43650** interface and the free **TxConfig II** software the **NP600** pressure transmitters series can be fully configured according to customer's preferred range and unit needs (bar, mbar, Mpa, kPa, kgf / m2, kgf / cm2, atm, mH20, psi).

In addition, output status can be set up for upscale or downscale alarm in case of error and zeroing function is also available. The **TxConfig II** software brings great versatility to the end user by allowing range configuration right in the process.

Configuration via the TxConfig DIN43650 interface and the free TxConfig II software

	NP400	NP600	NP620	NP640
Pressure Sensor	Piezoresistive (ceramic)		Polyisilicon piezoresistive (oil filled)	
Software Configuration	-	TxConfig II (Via NOVUS Interface TxConfig DIN 43650 NOVUS)		
Transmission Rangeability	-	3:1		
Pressure Range (bar)	0...2, 5, 10, 16, 25, 40, 60, 100, 160, 250, 400	0...1, 4, 10, 16, 25, 40, 60, 100, 160, 250, 400		
Pressure Range (psi)	0...30, 75, 150, 200, 400, 600, 900, 1500, 2000, 4000, 6000	0...15, 60, 150, 250, 375, 600, 900, 1500, 2000, 4000, 6000		
Material in Contact with the Medium	Stainless steel 316 / FKM / ceramic (Al 203 96%)[3]	Stainless steel 316/ FKM / ceramic (Al 203 96%)	Stainless steel 316 / FKM	All stainless steel 316
Housing Material	Stainless steel 316			
Power Supply	11 ~ 33 Vdc			
Output Signal	4-20 mA			
Accuracy (Including Hysteresis, Linearity and Repeatability)	<60 bar ± 0.5 % FS >100 bar ± 1.0 % FS	± 0.25 % FS		
Process Connection	¼ NPT , ½ NPT , ½ BSP , ¼ G			
Electrical Connection	DIN 43650 connector			
Operating Temperature	- 20 to 70 °C (-4 to 158 °F)			
Thermal Drift	< ± 0.06 % FS/°C	< ± 0.05 % FS/°C		
Dynamic Response	< 30 ms			
Overpressure	2 x FS			

Relative Humidity and Temperature Transmitters

Wireless Relative Humidity and Temperature Transmitter

RHT Air is a wireless relative humidity and temperature transmitter which operates over long distances and allows configuration and parameters reading over a wireless network within 500 m distance. It has a long operating battery life combined with the convenience of a wireless sensor that avoids electrical noise susceptibility ensuring a robust and secure solution. Operation without cables or wires simplifies installation and relocation of devices. **RHT Air** operates on its own wireless network and works independently from the company's IT infrastructure.

- Relative humidity and temperature measurement over long distances
- Independent industrial wireless network
- Long operating battery life
- Easy network scalability
- Noise immunity

RHT Air

Wall mounting

	RHT WM	RHT WM 485 LCD	RHT XS	RHT P10	RHT Air
Input Type	Integrated RHT probe		Extended RHT probe (3 m cable)	Extended RHT probe (flange mounting) (3 m cable)	Integrated RHT probe
Measurement Range	Temperature: -10 to 65 °C (14 to 149 °F) Humidity: 0 to 95% RH	Temperature: -40 to 70 °C (-40 to 150 °F) Humidity: 0 to 95% RH	Temperature: -40 to 120 °C (-40 to 248 °F) Humidity: 0 to 100% RH		Temperature: -10 to 70 °C (14 to 158 °F) Humidity: 0 to 95% RH
Accuracy	Temperature: ± 2 °C (3.6 °F) RH: ± 3 % (20 - 80% RH) and ± 5 % (0 - 100% RH)				
Analog Output Type	4-20 mA or 0-10 V	-	4-20 mA or 0-10 V		-
Advanced Functions	Dew point retransmission	Dew point indication	Dew point retransmission		Battery level dew point indication
Communication	Through TxConfig adapter	RS485 Modbus RTU	Through TxConfig adapter		USB mini-B type NOVUS Air (IEEE 802.15.4)
Approvals	CE				Anatel (0172-13-7089) FCC and CE
Operating Conditions (Housing)	-10 to 65 °C (14 to 149 °F) 0 to 95% RH	-40 to 70 °C (-40 to 150 °F) 0 to 95% RH	-10 to 65 °C (14 to 149 °F) 0 to 95% RH		-10 to 70 °C (14 to 158 °F) 0 to 95% RH
Power Supply	12-30 Vdc (18-30 Vdc)	12-30 Vdc	12-30 Vdc (18-30 Vdc)		12-30 Vdc or Replaceable 3.6 V Lithium battery
Ingress Protection	Housing: IP65 Probe: IP40				IP40

High Accuracy Relative Humidity and Temperature Transmitter

RHT Climate relative humidity and temperature transmitter provides highly accurate and stable measurements and transmits both signals via two independent analog outputs and the RS485 Modbus RTU communication. The **RHT Climate** is fully USB configurable through its free **NXperience** software which also performs diagnostics and input/output simulation, instalation and comissioning tasks.
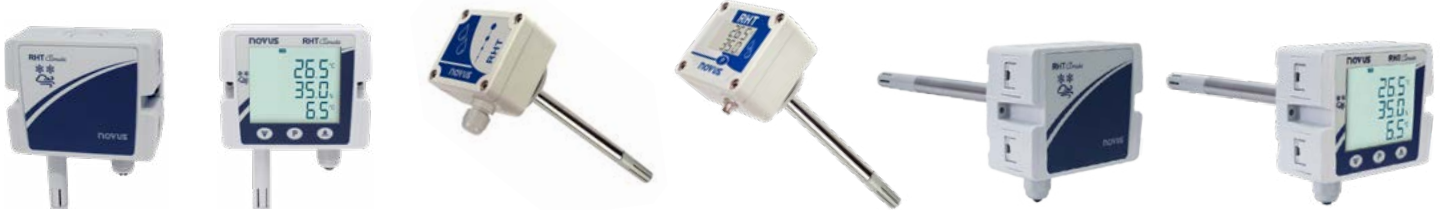
RHT Climate is available with or without LCD display for duct or wall mounting with different probe lengths.

- High accuracy measurement
- Large display with backlight
- Configurable analog outputs
- Configuration via USB or front keys
- Alarm outputs and buzzer

RHT Climate

Duct Mounting

RHT Climate WM	RHT Climate WM LCD	RHT DM	RHT DM 485 LCD	RHT Climate DM	RHT Climate DM LCD
Integrated RHT probe		Integrated RHT probe (options: 150, 250, and 400 mm)			
Temperature: -40 to 60 °C (-40 to 140 °F) Humidity: 0 to 100% RH		Temperature: -40 to 120 °C (-40 to 248 °F) Humidity: 0 to 100% RH	Temperature: -40 to 100 °C (-40 to 212 °F) Humidity: 0 to 100% RH		
Temperature: ± 0.2 K (0 to 60 °C) (32 to 140 °F); Humidity: ± 1.8 % RH and 23 °C (0 - 90 % RH)		Temperature: ± 2 °C (3.6 °F) RH: ± 3 % (20 - 80% RH) and ± 5 % (0 - 100% RH)	Temperature: ± 2 °C (3.6 °F) RH: ± 3 % (20 - 80% RH) and ± 5 % (0 - 100% RH)	Temperature: ± 0.2 K (0 to 60 °C) (32 to 140°F); Humidity: ± 1,8 % RH and 23 °C (0 - 90 % RH)	
4-20 mA or 0-10 V (10-0 V)		4-20 mA	-	4-20 mA or 0-10 V (10-0 V)	
Psychrometric properties, alarm buzzer, 2 digital outputs, maximum and minimum values, simulation of inputs, simulation of outputs, custom calibration and front keys (LCD version only)		Dew point retransmission	Dew point indication	Psychrometric properties, alarm buzzer, 2 digital outputs, maximum and minimum values, simulation of inputs, simulation of outputs, custom calibration and front keys (LCD version only)	
USB Micro-B Type and RS485 Modbus RTU		Through the TxConfig adapter	RS485 Modbus RTU	USB Micro-B Type and RS485 Modbus RTU	
CE		CE			
-40 to 60 °C (-40 to 140 °F) 0 to 95% RH		-10 to 65 °C (14 to 149 °F) 0 to 95% RH	-40 to 70 °C (-40 to 158 °F) 0 to 95% RH	-40 to 60 °C (-40 to 140 °F) 0 to 95% RH	
12-30 Vdc		12-30 Vdc (18-30 Vdc)	12-30 Vdc		
Housing: IP65 Probe: IP30 or IP40		Housing: IP65 Probe: IP40		Housing: IP65 Probe: IP30 or IP40	

Temperature Transmitters

Built-in Temperature Transmitters

The **TxMini** series are compact and yet accurate loop powered temperature transmitters designed for conditioning Pt100 and Pt1000 sensors in a very small package for embedded applications.

Configuration can be done through a USB interface without any power supply.

A Modbus RTU communication version is offered with M12 connector suitable for networked applications.

4-20 mA DIN format temperature transmitter

TxMini DIN

4-20 mA or Modbus RTU M12 format temperature transmitter

TxMini M12

	Sensor Probe Mounting			Wall Mounting	Duct Mounting			
	TxMini M12	**TxMini M12 485**	**TxMini DIN43650**	**TEMP WM 4-20mA**	**TEMP DM 150mm 4-20mA**	**TEMP DM 150mm 0-10V**	**TEMP DM 250mm 4-20mA**	**TEMP DM 250mm 0-10V**
Type	Pt100 / Pt1000 sensor programmable range	Pt100 sensor programmable range	Pt100 / Pt1000 sensor programmable range	Integrated probe	Integrated probe			
Accuracy	0.2% of span			0.9% of span	0.9% of span			
Input Type	Pt100 and Pt1000	Pt100	Pt100 and Pt1000	Integrated temperature sensor	Integrated temperature sensor			
Output Type	4-20 mA 20-4 mA			4-20 mA 20-4 mA	4-20 mA 20-4 mA	0-10 V	4-20 mA 20-4 mA	0-10 V
Range	-200 to 650°C (-328 to 1202 °F)	-200 to 600°C (-328 to 1112 °F)	-200 to 650°C (-328 to 1202 °F)	-50 to 120°C (-58 to 248°F)	-50 to 120 °C (-58 to 248 °F)			
Configuration Interface	TxConfig M12 interface		TxConfig DIN43650 interface	TxConfig USB interface	TxConfig USB interface	TxConfig USB interface		TxConfig-USB interface
Software	TxConfig II	DigiConfig	TxConfig II	TxConfig	TxConfig			
Operating Conditions	-40 to 85 °C (-40 to 185 °F) 0 to 90% RH			-20 to 65 °C (-4 to 149 °F) 0 to 90% UR	-20 to 65 °C (-4 to 149 °F) 0 to 90% RH			
Power Supply	Loop powered 4-20 mA (8 - 35 Vdc)	7 - 40 Vdc	Loop powered 4-20 mA (8 - 35 Vdc)	12 - 30 Vdc	12 - 30 Vdc	18 - 30 Vdc	12 - 30 Vdc	18 - 30 Vdc
Dimensions	51.2 mm x 20 mm (2.01 in x 0.79 in)	59.7 mm x 20 mm (2.35 in x 0.79 in)	28.5 mm x 28.5 mm (1.12 in x 1.12 in)	70 mm x 60 mm (2.75 in x 2.36 in)	70 mm x 60 mm (2.75 in x 2.36 in)			
Housing	Polyamide		ABS UL94-HB	Polycarbonate	Polycarbonate			
Format/ Mounting	M12 Connector Thread PG9 to Probe		DIN43650 Connector M24x2 Screw	Wall	Duct			

HART® Temperature Transmitters

The **TxIsoRail-HRT** temperature transmitter combines the proven quality of HART® certification with the robustness of **NOVUS** devices. It is compatible with HART® certified devices and has electrical isolation between input and output, supporting voltage surges up to 1.5 kVrms.

Using a worldwide known protocol, with over 40 million field instruments supporting HART® technology, **NOVUS TxIsoRail-HRT** temperature transmitter enables the use of standard HART® configuration and supervision software that provides users with great flexibility in remote configuration and calibration capability through the two-wire 4-20 mA current loop without having to remove it from the plant.

TxIsoRail HRT and **TxIsoBlock HRT**, the **NOVUS** HART® temperature transmitters, are fully compatible with HART® certified devices from worldwide market. Full configuration can be done only with two-wire 4-20 mA current loop, providing more features for device configuration and monitoring and this is the big spotlight of the HART® devices. When a configuration change is needed, for example, remote interaction can be done with the device without removing it from the installation place.

TxIsoBlock HRT

TxConfig HRT Configurator

TxIsoRail HRT

HART®
COMMUNICATION PROTOCOL

Head Mounting					DIN Rail Mounting		
TxMiniBlock	**TxBlock USB RTD**	**TxBlock-USB**	**TxIsoPack**	**TxIsoBlock HRT**	**TxRail USB**	**TxIsoRail**	**TxIsoRail HRT**
Pt100 sensor programmable range	Pt100 sensor programmable range	Universal programmable	Universal isolated programmable	Universal isolated HART programmable	Universal programmable	Universal isolated programmable	Universal isolated HART programmable
0.2 % of span	Pt100 / mV: 0.2 % span T/C: 0.15% range ±1 °C (± 1.8 °F) NTC: 0.7% span	Pt100 / mV: 0.2 % span T/C: 0.7% span	Pt100 / mV: 0.15 % span T/C: 0.15 % span ±1 °C (± 1.8 °F) NTC: 0.45% span	Pt100 / mV: 0.2 % span T/C: 0.15% span ±1 °C (± 1.8 °F) NTC: 0.7% span	Pt100, mV e mA: 0.2 % span T/C: 0.2% span ±1 °C	Pt100 / mV: 0.15 % span T/C: 0.15 % span ±1 °C NTC: 0.45% span
Pt100	J, K, T, N, R, S, B, E, Pt100, Pt1000, NTC, and 0-50 mV	J, K, T, N, R, S, B, E, Pt100, and 0-50 mV	J, K, T, N, R, S, B, E, Pt100, Pt1000, NTC, and 0-50 mV	J, K, T, N, R, S, B, E, Pt100, Pt1000, NTC and 0-50 mV	J, K, T, N, R, S, B, E, Pt100, 0-50 mV, 0-10 V, 0-20 mA, and 4-20 mA	J, K, T, N, R, S, B, E, Pt100, Pt1000, NTC and 0-50 mV
4-20 mA 20-4 mA			4-20 mA	4-20 mA (20-4 mA) 0-10 V (10-0 V)	4-20 mA 20-4 mA	4-20 mA
-200 to 650 °C (-328 to 1202 °F)	See manual				See manual	
TxConfig-USB interface	USB Micro-B Type	USB Mini Type	Through TxConfig-HRT interface or HART® certified handheld	USB Micro-B Type	TxConfig-USB interface	Through TxConfig-HRT interface or HART® certified handheld
TxConfig	TxConfig II	TxConfig	TxConfig II or HART® certified software	TxConfig II	TxConfig	TxConfig II or HART® certified software
-40 to 50 °C (-40 to 122 °F) 0 to 90% RH	-40 to 85 °C (-40 to 185 °F) 0 to 90% RH	-20 a 75 °C 0 a 90% RH	-40 to 85 °C (-40 to 185 °F) 0 to 90% RH	-40 to 85 °C (-40 to 185 °F) 0 to 90% RH		
Loop powered 4-20 mA (12 - 35 Vdc)			Loop powered 4-20 mA (8.5 - 36 Vdc)	Loop powered 4-20 mA (12 - 35 Vdc)	Loop powered 4-20 mA (8,5 - 36 Vdc)
34 mm x 18 mm (1.34 in x 0.71 in)	34 mm x 18 mm (1.34 in x 0.71 in)	44 mm x 24 mm (1.73 in x 0.94 in)	43.5 mm x 20.5 mm (1.71 in x 0.79 in)	114 mm x 99.5 mm (4.49 in x 3.92 in)	77 mm x 72 mm (3.03 in x 2.83 in)	114 mm x 99.5 mm (4.49 in x 3.92 in)
ABS	ABS UL94-HB	ABS	ABS UL94-HB	ABS UL94-HB	-	ABS UL94-HB
Small head	Head				35 mm DIN rail	

Controllers

PID Controller with LCD Display

N1050 is a PID temperature controller with LCD that combines high performance and vivid design. It combines the proven robustness of **NOVUS** PID algorithm with a large and bright easy-to-read dual color 11-segment LCD display with alphanumeric mnemonics and crystal clear status signaling.

It also features 5 ramp-and-soak profile programs, soft start output and timer function which complement the advanced features of the controller.

- Wide and high contrast dual color LCD display
- Distinguished multi angle viewing
- Compact depth, suitable for restricted spaces
- Elegant design for machines
- Ramp and Soak programs and timer function

N1050

Temperature PID Controllers

	N1030	N1030T	N1040	N1040T	N1020	N1050	N480D
Input Sensor	J, K, T, and Pt100				J, K, T, R, S, E, N, Pt100 and 0-50mV	J, K, T, S and Pt100	J, K, T, R, S, E, N and Pt100
PID Control Features	Auto tune				Auto tune Self adaptive	Auto tune	Analog (optional) Auto tune
Control Action	Heating or cooling						
Control Output	1 pulse Up to 2 relays		1 pulse Up to 3 relays		1 pulse 1 relay	1 pulse Up to 3 relays	1 pulse Up to 3 relays Analog (optional)
Ramp and Soak	-	-	-	-	1 ramp	5 programs 4 segments	1 program 9 segments
Special Functions	1 alarm (6 types)		Soft-start PID loop break detection 2 alarms (6 types)			2 alarms (7 types)	2 alarms (8 types)
Advanced Functions	-	Timer	-	Timer			-
Optional Resources	-	RS485 Modbus					
USB Configuration	-	-	✓	✓	✓	✓	✓
Certification	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL
Power Supply	100-240 Vac/dc or 12-24 Vdc (optional)				100-240 Vac/dc	100-240 Vac/dc or 12-24 Vdc (optional)	100-240 Vac/dc or 12-24 Vdc (optional)
Housing	48x48 DIN 1/16				48x24 DIN 1/32		48x48 DIN 1/16

Compact PID Controller

N1030 is a temperature controller that features a high performance PID algorithm in a very compact housing with only 35 mm depth.

Its innovative compact construction and the convenient detachable connector provide an easy set up on short profile panels, optimizing scarce space and reducing installation cost. It has two outputs always available which can be configured both as a control or an alarm.

- Compact profile, only 35 mm depth
- Detachable connector simplifies device installation, commissioning and maintainance
- IP 65 protection rate ensures resistance to water jets
- Protection and safety according to UL94 V-2 anti-flame housing
- Timer and two relay options to suit different processes

N1030

Process PID Controllers

N960	N2020	N120	N3000	N1200	N1200 HC	N2000	N2000 S
J, K, T, R, S, E, N and Pt100	J, K, T and Pt100	J, K, T, R, S, E, B, N, Pt100 4-20mA, 0-50mV, 0-5V and 0-10V	J, K, T, R, S, E, B, N, Pt100, 4-20mA, 0-50mV and 0-5V	J, K, T, R, S, E, B, N, Pt100, 4-20mA, 0-50mV, 0-5V and 0-10V		J, K, T, R, S, E, B, N, Pt100, 4-20mA, 0-50mV and 0-5V	J, K, T, R, S, N, Pt100, 4-20mA, 0-50mV and 0-5V
Analog (optional) Auto-tuning		Auto-tuning	Analog (optional) Auto-tuning	Auto-tuning Auto-adaptive		Auto-tuning	
Heating or cooling		Heating & cooling with overlap	Heating or cooling		Heating & cooling with overlap	Heating or cooling	Slave
1 pulse 2 relays 1 analog	1 pulse 2 relays analog (optional)	1 pulse 2 relays	1 pulse Up to 4 relays 1 analog	1 pulse Up to 3 relays 1 analog		1 pulse Up to 4 relays 1 analog	
1 program 9 segments		20 programs 9 segments	7 programs 7 segments	20 programs 9 segments		7 programs 7 segments	
2 alarms (8 types)	Soft-Start Bumpless Manual/auto PID loop break 2 alarms (7 types)	Soft-Start Bumpless Manual/auto PID loop break 2 alarms (7 types)	Soft-Start Bumpless Manual/auto 4 alarms (7 types)	Soft-Start Bumpless Manual/auto PID loop break 4 Alarms (8 types)		Soft-Start Bumpless Manual/auto 4 alarms (7 types)	Soft-Start Bumpless Manual/auto 2 alarms (9 types)
-	SP retransmission	Digital input	Digital input Remote SP SP retransmission Square root 24 Vdc output	Digital Input Remote SP SP retransmission Square root		Digital input Remote SP SP retransmission Square root 24 Vdc output	Digital input Retransmission SP Square root 24 Vdc output
-	-	Data logger	RS485 Modbus	RS485 Modbus Heater break 24 Vdc output + 2 I/O	RS485 Modbus 24 Vdc output + 2 I/O	RS485 Modbus	
✓	-	✓	✓	✓	✓	✓	-
CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL	CE, UL
100-240 Vac/dc or 12-24 Vdc (optional)	100-240 Vac/dc	100-240 Vac/dc or 12-24 Vdc (optional)					
96x96 DIN 1/4	96x48 DIN 1/8	Open board Dual display	96x96 DIN 1/4	48x48 DIN 1/16		96x48 DIN 1/8	

Universal Process Indicator

N1540 is a high technology process indicator designed for the best performance and reliability in most demanding applications. Based on an advanced and rugged hardware platform, the **N1540** can be fully configured from the frontal keyboard or USB port. The exclusive USB interface allows, for example, to configure several devices with the same parameters in an easy way, saving time in the setup. Compact, the device has a 34 mm depth and can be easily installed in panels where space is restricted.

- Universal input: TCs J, K, T, E, N, R, S, B, P100, 0-50 mV, 0-5 V, 0-10 V, 0-20 mA, and 4-20 mA
- Sampling rate up to 50 samples per second
- Two relays SPST 1.5 A / 240 Vca
- Holds minimum and maximum values

N1540

	Cost Effective		Advanced Features			
	N1040i	**N1540**	**N1500G**	**N1500**	**N1500 FT**	**N1500 LC**
Indicator Type	Universal		Universal		Flow rate	Load cell
Input Type	Thermocouples, Pt100, voltage and current		Thermocouples, Pt100, voltage and current		4-20 mA, NPN, PNP, dry contact or magnetic signal	Voltage and current
Accuracy	J, K, T, E: 0.25% ± 1 °C (± 1.8 °F) N, R, S, B: 0.25% ± 3 °C (± 5.4 °F) Pt100: 0.20% Voltage/Current: 0.2%		J, K, T, E: 0.25% ±1°C (± 1.8 °F) N, R, S, B: 0.25% ±3°C (± 5.4 °F) Pt100: 0.20% Voltage/Current: 0.2%		4-20 mA: ±0.2% of span Pulse: ±30 ppm @25 °C (77 °F) Magnetic: ±0.1 % @25 °C (77 °F)	0.2 % span
Resolution	15 bits		>14 bits	17 bits	15 bits	17 bits
Programmable Range	-1999 to 9999	-2000 to 30000	-1999 to 9999	-31000 to 31000 0 to 60000 0 to 120000	Scale factor	-31000 to 31000 0 to 60000 0 to 120000
Sampling Rate	55 sps		5 sps	5 to 15 sps	-	15 sps
Alarms	2 setpoints 7 alarm types 2 relay outputs		2 setpoints 7 alarm types 4 timing modes 2 relay outputs	4 setpoints 7 alarm types 4 timing modes 2 (up to 4) relay outputs	2 (up to 4) setpoints 4 alarm types 4 timing modes 2 (up to 4) relay outputs	4 setpoints 7 alarm types 4 timing modes 2 (up to 4) relay outputs
Special Fetaures	Optional 24 Vdc output	Hold maximum / minimum custom linearization 24 Vdc output	Hold maximum / minimum custom linearization Square root Digital Input retransmission 24 Vdc output		Hold maximum / minimum Custom linearization Square root Digital input Analog retransmission Pulse retransmission 24 Vdc output	Hold maximum / minimum Custom linearization Digital input retransmission 10 Vdc or 5 Vdc output
Communication Interface	USB (Mini-B type) Optional RS485 Modbus		Optional RS485 Modbus			
Certification	CE,UL		-	CE, UL		
Frontal Protection Rate	IP65		IP30	IP65		
Power Supply	100-240 Vac/dc or 12-24 Vdc		100-240 Vac/dc or 12-24 Vdc			
Housing	48x48 DIN 1/16	96x48 DIN 1/8	310 x 110 x 37 mm panel (12.20 x 4.33 x 1.46 in)	96x48 DIN 1/8		

Panel PC

Glass capacitive touch panel

NXview is a unique great looking operator interface designed for outstanding machine or process automation. Its crystal-clear high definition 7" color display provides the best user experience visualization. Its glass capacitive panel allows tablet-like usage with multi touch capability.

Designed with Linux based embedded system and a powerful processing core, the **NXview** offers a high performance platform to most types of machines, for standalone or networked operation.

Its integrated mixed I/Os simplify signal conditioning as an all-in-one device solution for automation.

The standard Modbus RTU on RS485 or Modbus TCP on Ethernet interfaces along with the optional WiFi interface ensure total flexibility in system connectivity.

Additionally, its thin bezel, low profile and water and dust protection enclosure turns **NXview** the right choice for machine automation control panel.

NXview

Display	7" Capacitive Multi-Touch Widescreen IPS Panel (multi-viewing angle)
Resolution	1024 x 600
Brightness	500 cd/m² (NITS)
Color	RGB 24 bits - 16.8 millions of colors
Communication Interfaces	Ethernet USB Host USB device RS485 SD Card slot
RAM Memory	256 MB
Flash Memory	512 MB Flash
RTC	Built-in RTC
Input/Output Types	4 digital configurable inputs/outputs 4 universal analog inputs (4-20 mA, 0-10 V, TC, Pt100, Pt1000 and NTC) 2 analog outputs (4-20 mA, 0-20 mA and 0-10 V) *All analog inputs/outputs are isolated
Certifications	CE
Power Supply	10 to 30 Vdc
Operating Conditions	Temperature: -20 to 70°C (-4 to 158 °F) Humidity: 5% to 90% non-condensing
IP Rating	Frontal: IP65 Rear: IP20

IP65

Ethernet Connectivity

Integrated Analog and Digital I/O and RS485 interface

High definition display

APPLICATIONS

Food Processing Machine

Production Management in MES Systems

Industrial Machine User Interface

Indoor Comfort Room Display

Electronic Thermostats

Refrigeration Thermostat with Defrost

- Refrigeration control with automatic defrost
- Defrost by compressor stop, resistance heating or reverse cycle
- Programmable defrost cycle intervals
- Keeps indication during defrosting cycle
- Programmable delay on power-up to prevent simultaneous loads
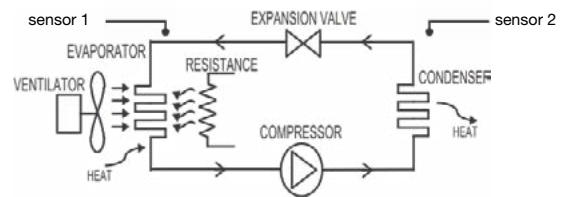- Control relay can directly switch compressor up to 1 hp

Models:
N321R: one output for compressor, accepts sensor type NTC, Pt100 or Pt1000 and optional voltage protection for compressor
N323R: three outputs (compressor, defrost and fan), monitors 2 NTC sensors (chamber and evaporator)
N323TR: similar to **N323R** plus real time clock for scheduling defrost events, with weekly timer,

Typical application:
Refrigeration cooling counters and air conditioning systems

Solar Heating Controller

- Ideal for solar panels applications
- Operates by the temperature difference between the solar collector and the storage tank
- Uses 2 NTC type sensors (included)
- Output control relay drives the water circulation pump
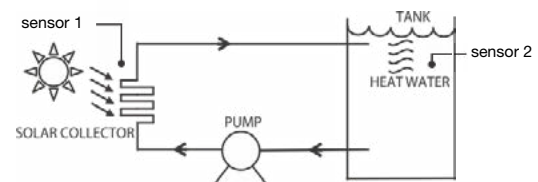- Protection against pipeline overheating or freezing

Models:
N321S: one output for circulation pump
N322S: two outputs for circulation pump and waer heater booster

Typical application:
Thermal tank, pool heating, and boiler

Cooling/Heating Controller

- Control with alarm or multi-stage
- Direct drive of compressors or electric heaters
- Programmable delay on powerup to avoid simultaneous switching
- Low, high or differential alarm functions
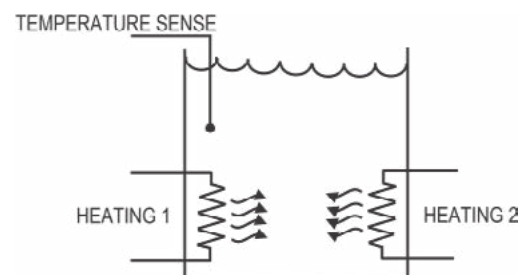- Sensor type: NTC, Pt100, Pt1000, and thermocouples J, K and T

Models:
N321: one relay output control
N322: two outputs (control and alarm or second control)
N323: three outputs (control and 2 alarms or 3 control stages)

Typical application:
Cold chambers, ovens, food industry, and commercial refrigerators
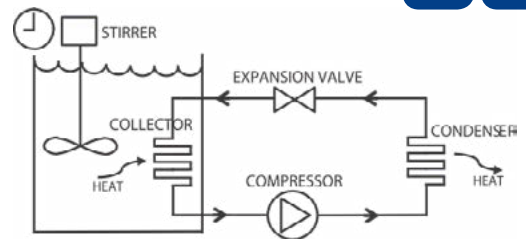
Controller with Timer

- Suitable for processes with cyclic operation requirement
- Timer for forced defrost cycle or stirring of liquids
- Accepts the following sensors: NTC, Pt100, Pt1000, and thermocouples J, K and T
- Programmable delay on powerup to avoid simultaneous switching
- Control relay can directly switch compressor up to 1 hp
- Optional: audible alert and voltage protection for compressor

Models:
N322T: two outputs (control and defrost or timer output)

Typical application:
Milk cooling and ice cream machines

Electronic Humidistat

- Environment control, displays temperature and humidity
- Configurable interval between temperature and humidity indication
- Control relay can directly switch compressor up to 1 hp
- Heating or cooling temperature control
- Humidification or dehumidification control
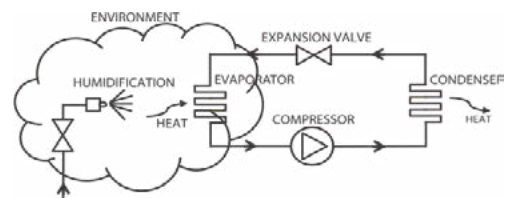- Uses integrated RHT probe (sold separately)

Models:
N322RHT: two relay outputs (either control or alarm)
N323RHT: three relay outputs (control, alarm or timer function)

Typical application:
Climate chambers, textile processes, and environmental control
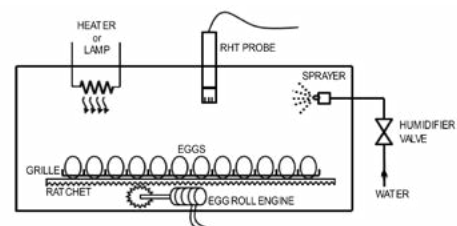
Egg Incubator Controller

- Control of humidity and temperature in the incubator (heating and humidification or refrigeration and dehumidification)
- Cycle timing control for egg rolling
- Configurable interval between temperature and humidity indication
- Uses integrated RHT probe (sold separately)

Models:
N323RHT (EI): three outputs (humidifier, heating and egg roll motor)

Typical application:
Egg incubators

Software Interface

Configuration and Download Tool Software

NXperience is a software suite of tools for **NOVUS** device configuration, diagnostics and data download, as well as data management in a reliable way. With versions for different platforms and requirements, **NXperience Mobile** and the **NXperience Trust** complement the portfolio. With extensive connectivity and powerful data analysis and visualization capabilities, user can access different devices via USB, Modbus RS485 or Ethernet/Wi-Fi connection, or access cloud data from **NOVUS Cloud**.

NXperience makes it possible to adjust the device parameters and functionalities, allowing secure data download and complete analysis, graphical viewing, mathematical formulas, and reports issuance.

NXperience Trust is FDA 21CFR Part 11 compliant and suitable for pharmaceutical, medical, food and drugs applications.

NXperience Mobile is a smartphone application (Android and iOS) for configuring and downloading data wirelessly from LogBox BLE and **LogBox Wi-Fi** devices.

NXperience

NXperience Trust

NXperience Mobile

SCADA – Supervisory Software

SuperView is an industrial process control and supervision software (SCADA) that presents a visual development model to the user for building applications. Besides the communication with Modbus RTU and Modbus TCP devices, it is also possible to use **SuperView** workstations as Client and Server to manage geographically distributed processes on TCP/IP networks.

SuperView Mobile

SuperView

Dashboard and IoT Cloud Platform

NOVUS Cloud is a platform focused on Internet of Things solution that expands the horizons of data viewing. Combined with **NOVUS** devices, this platform receives, stores, analyzes and displays on dashboards measurements of temperature, humidity, pressure, geolocation or any other variable of interest. Data access via the Internet is particulary necessary for several market segments, such as logistics, health, building, energy, sanitation, and agribusiness areas.

NOVUS Cloud

Metrology Laboratory

Choosing the right partner ensures your customer satisfaction

NOVUS Metrology Lab is ISO-17025 accredited by the Brazilian National Calibration Body, a signatory of the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Agreement (MRA). Its calibration certificates are recognized in over 70 countries, covering metrology services for temperature, relative humidity, pressure, electrical parameters, mass, volume, conductivity, time/frequency, and pH instruments.

Customized services to meet our customer's expectations of deadline and application is what makes **NOVUS Metrology Laboratory** the right partner for your business bringing all all the credibility that an RBC service with internationally recognized certificate can offer.

Economy
- Calibration at **NOVUS** facilities.
- You buy the device and the service with just one process.
- Avoid adittional logistic costs.

Productivity
- Field calibration services (please check covered regions).
- Highly qualified professionals.
- The device is calibrated at the points and ranges you need.

Agility
- Devices calibrated from the factory.
- Customized and scheduled services.

Trustworthy
- High accuracy: significantly lower uncertainty values.
- RBC accreditation.
- ABNT NBR ISO/IEC 17025.

- **Conductivity**
- **Thermal Studies**
- **Mass**
- **Volume**
- **Temperature**
- **pH**
- **Pressure**
- **Electricity**
- **Time/Frequency**
- **Humidity**

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