

DeltaTherm

Heating system



WE MEASURE
CONTROL
RECORD

ThermoCouple

Protective Tube	DIN	Temp. Range
Pythagoras	C 610	1450 C
Alsint	C 799	1700 C
AISI 446	1.4762	1100 C
310 S	1.4845	1100 C
Inconel 600	2.4816	1150 C
Kanthal APM	-----	1425 C
Molybdenum	-----	1650 C
Silicon Carbide	-----	1450 C

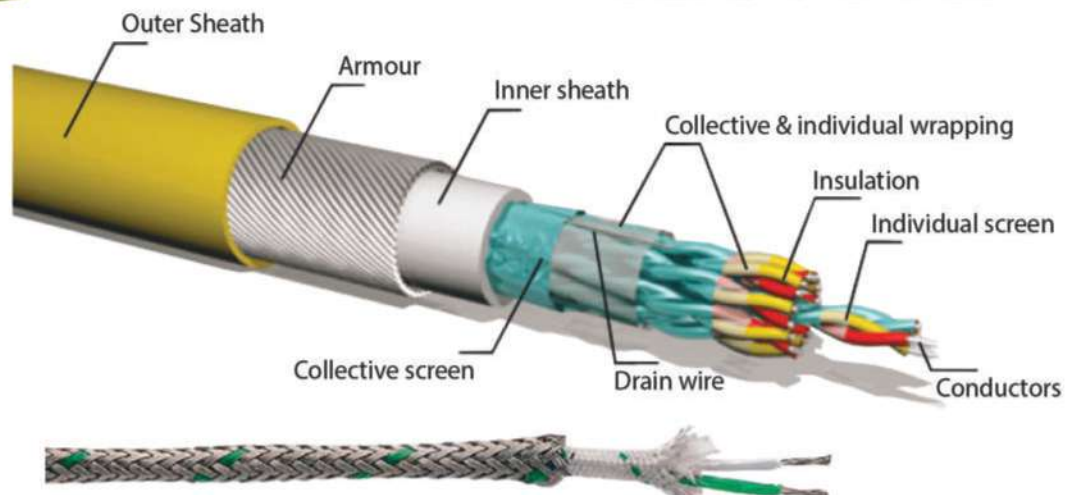
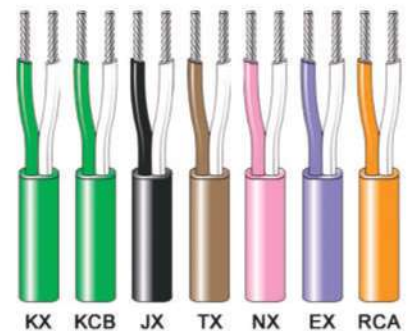
Type	Positive	Negative	Temp. Range
N	NiCrSi	NiSi	-270 : 1250 C
K	NiCr	Ni	0 : 1150 C
S	PT 10%Rh	PT	0 : 1650 C
R	PT 13%Rh	PT	0 : 1700 C
B	PT 30%Rh	PT 6%Rh	200 : 1750 C
J	Fe	Cu Ni	0 : 760 C
E	NiCr	Cu Ni	0 : 800 C
T	Cu	Cu Ni	-185 : 300 C



T/C Cable



- ▶ **Shield.**
- ▶ **Rubber.**
- ▶ **Teflon.**
- ▶ **Kapiton.**
- ▶ **Armored.**
- ▶ **Ceramic Fibber.**



Temp. Transmitter

O/P : 4 : 20 mA OR 20 : 4 mA
Free Widows configuration software



I/P J, K, T, E, N, R, S, B, Pt100, Pt1000 and NTC.

Probe gas analyzer



Water Cooled Gas analyzer sampling probe is used for continuous analysis of flue gas in extremely dusty, high temperature process. Water cooling cycle to assure long lasting operation in high temperature applications.

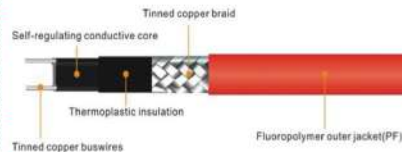
Temp. Controller



I/P: T/C J, K, T, PT100.
Relay 3 A. or SSR

O/P: Dual relay output or 1 Pulse and 1 Relay.
Single loop PID & ON/OFF controller and PID auto tuning

Drum & Heat Trace



Heat trace : 50 watt per meter
Heating belt : 25x174 Cm , 3 Kw.@230v

Temp. Recorder



2 Relay outputs
8 Universal analog input channels T/Cs

J, K, T, E, N, R, S, B, Pt100, Pt1000 and NTC, V, mV, mA, Pt100 and Pt1000; Reading and logging rates of up to 1000/Second.

Temperature and Humidity Transmitter



Temp. -40.0 °C to 100.0 °C
Relative Humidity (RH): 0.0 to 100.0% RH
Dew Point: -40.0 °C and 100.0 °C

Pressure Transmitter



Retransmission can be re-scaled to 3:1
Output: loop powered 4-20 mA

0.2 MPa (2 bar)	2 MPa (20 bar)
0.5 MPa (5 bar)	5 MPa (50 bar)
1 MPa (10 bar)	10 MPa (100 bar)

Process connection: external thread ¼ NPT, ½ NPT or ½ BSP

Ignition Electrode



Electronic gas ceramic igniter for gas burner hot

Hand Held Thermometer



Dual / Single Input.
With ThermoCouple type K
Working Temp. up to 1300°C.

Infra Red Thermometer



D:S = 12 : 1 = -50 : +420C
D:S = 12 : 1 = 50 : +950°C
D:S = 20 : 1 = -50 : +1150°C
D:S = 50 : 1 = +200 : +1650°C

Industrial Heaters



Air & Water Heaters



Hot Runner



Electrical Trace Heater



Silicon Carbide Heaters



Drum Heater



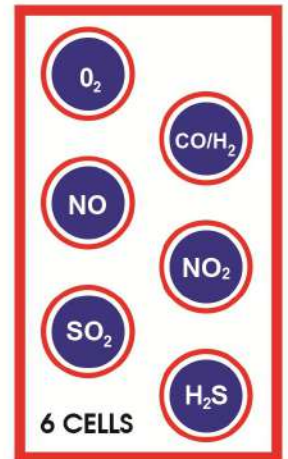
Infra Red Heater



NEW - 6 CELLS

Industrial Emissions Analyzer - CHEMIST 600

- ▶ This new analyzer, whilst has the same external look of 4 cells Chemist 500, can accept up to 6 single gas cells.
- ▶ The measurable gases with electrochemical cells are 6: O₂, CO/H₂, NO, NO₂, SO₂, H₂S.
- ▶ C_xH_y (unburnt hydrocarbons) are measured with a pellistor cell and CO₂ is directly measured with an infrared (NDIR) cell.
- ▶ Standard features are also a second dilution pump to protect CO cell and Bluetooth communication.
- ▶ 10 different languages and 13 different fuels are selectable, internal memory can store up to 500 complete analysis.



Discover CHEMIST 600

CHEMIST 604 N

4 Sensors (O₂, CO/H₂, NO, NO₂).
Expandable up to 6 sensors.
Integrated printer.
With dilution pump for CO.

CHEMIST 604 S

4 Sensors (O₂, CO/H₂, NO, NO₂).
Expandable up to 6 sensors.
Integrated printer.
With dilution pump for CO.

CHEMIST 605

5 Sensors (O₂, CO/H₂, NO, NO₂, SO₂).
Expandable up to 6 sensors.
Integrated printer.
With dilution pump for CO.

Chemist 900

Measurement of up to 12 gaseous emissions simultaneously.

9 Gases measured with individual sensors:

Electrochemical, pellistor, NDIR (Non-Dispersive InfraRed), FLEX series, identical to those used used in the hand held Chemist 500 analysers.
Pre-calibrated FLEX-type gas measurement sensors which can be replaced in the field by the user.

3 Gases (CO, CO₂ e CH₄) measured simultaneously with NDIR bench and dedicated anti dust filter.

The NDIR bench ensures maximum measurement accuracy for the 3 gases, because there is no interference from other gases, as is the case with other electrochemical cells.

Gases measured: O₂, CO, CO/H₂, CO₂, NO, NO₂, SO₂, H₂S, C_xH_y.

Fuel already in the memory:

Methane, LPG, butane, propane, propane-air mixtures, diesel, fuel oil, wood, wood chip, pellets, biogas, coal.

Additional 16 fuels can be added provided the physical chemical characteristics are known.

Vacuum pump for gas samples, dilution pump to extend the measurement field / CO cell protection.

Auto-zero cycle for gas and pressure sensors even with sampling probe already inserted in the chimney.

Flue gas, combustion air, external air and other auxiliary temperatures measurement.

Positive, negative and differential pressure measurement.

High accuracy and resolution draught measurement with external accessory.

Gas pipes tightness test with fittings accessory.

Combustion analysis in automatic and manual modes.

Data logger function.

Gas sampling probes in various materials and lengths.

Gas sampling probe with heated head and hose to avoid condensation.

Special sampling probe for internal combustion engines.

Mechanical water trap or peltier effect cooler anti-condensation system

Double anti-dust filter.

Automatic condensation evacuation system with peristaltic pump.

Data memory for up to 16,000 complete analyses.

Type-B USB output for PC connection.

Smart Flue Software for data storage and management.

Bluetooth connectivity up to 100 m (in open field).

Operation with mains power 100... 240 V AC.

Operation with internal rechargeable lithium ion battery power (not for heated line flue gas probe).

Robust metal housing with optional transportation trolley.



Temp. Recorder



Field logger

8 universal analog input channels

- Thermocouples, V - mV - mA - Pt100 and Pt1000 .
- Reading and logging rates of up to 1000/second .
- 24 bit A/D conversion resolution .

8 digital I/Os (individually configured as input or output) .

- 2 relay outputs (No, NC and common) .
- RS485 interface (Modbus master or slave) .
- When acting as a master, can read up to 64 registers from other slaves .
- Registers read can be used in logging , alarms or mathematical operations .

Up to 32 configurable alarms .

- Alarm actions can include :
 - Activating relays .
 - Activating digital outputs .
 - E-mails sending to multiple receivers .



Data logger IR



Data Acquisition



Pressure Transmitter



Temp. Controller



Portable Temp. Smart meter



Temp. Transmitter

Smart & Hart Protocol

IP J K T E
N - R - S - B
Pt100 RTD
and 50-0 mV

A I / P Multi
sensors
O / P SSR OR
Relay

HART® Temperature Transmitters

The **TxlsoRail-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 TxlsoRail-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.

TxlsoRail HRT and **TxlsoBlock 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.



Head Mounting DIN Rail Mounting



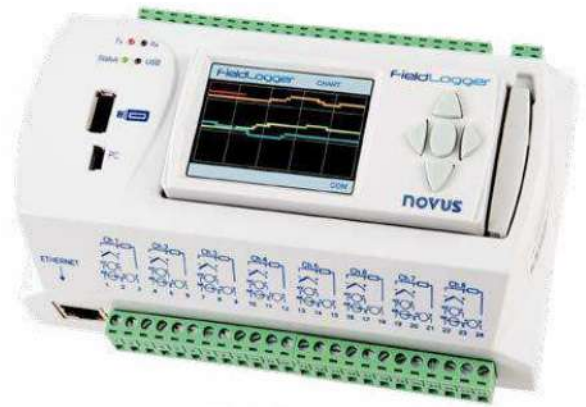
TxMiniBlock	TxBlock USB RTD	TxBlock-USB	TxIsoPack	TxIsoBlock HRT	TxRail USB	TxIsoRail	TxIsoRail HRT
Pt100 sensor programmable range	Pt100 sensor programmable range	Universal programmable	Universal isolated programmable	Universal isolated HART programmable	Universal programmable	Universal isolated programmable	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% range ±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		



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



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 maintenance
- 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



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, 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		
NConfig	-	NConfig						
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		

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, mH2O, 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)		Polysilicon 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 (AI 203 96%) ₃	Stainless steel 316 / FKM / ceramic (AI 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			

DeltaTherm

Heating system



Applications :-

Iron & Steel, Cement, Ceramic, Glass, Petrochemical industries,

Stock from all thermocouple cables

(Shield, Rubber, Teflon, Armored, Kapton,.....).

Temp. Controller, Recorder, Humidity, Data recording & Logging

(Novus - Brazil).

All industrial heater types.

Gas analyzer for combustion exhaust.

Fax : 040 328 8161
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Vodafone : 010 1269 9048

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