Nexto Series

# 1. Product Description

Nexto Series is a powerful and complete Programmable Logic Controller (PLC) Series with unique and innovative features. Due to its flexibility, smart design, enhanced diagnostics capabilities and modular architecture, Nexto is suitable for control systems ranging from medium to high-end large applications. Finally, its compact size, high density of points per module and superior performance, allow Nexto Series to be applied in small automation systems with high performance requirements, such as manufacturing applications and industrial machines.

In this context, Nexto Jet is a selection of I/O modules that uses the existing CPUs and modules from Nexto Series to provide the best solution for applications in verticals like infrastructure, building, water, wastewater, food, machines and several OEM projects. Nexto Jet is ideal for systems with no hot-swapping and conformal coating requirements.

Finally, the module NJ6000 is a module that offers 8 individually configurable voltage or current analog inputs and it is a module that uses one rack position.



Its main features are:

- 08 inputs in a single width module
- Different voltage scales support: 0 to 10 Vdc, -5 to 5 Vdc and -10 to 10 Vdc
- Different current scales support: 0 to 20 mA and 4 to 20 mA
- Individual configuration per input
- Galvanic isolation between inputs and internal logic
- Protection against surge voltage
- Open loop diagnostics
- Under range and over range diagnostics
- Display for module diagnostics and input state indication
- Easy Plug System

#### **ATTENTION**

Starting from product revision AK, it was included the connector frontal cover (which was previously exclusive of NX models), thus adding the Easy Plug System feature to this product

# 2. Ordering Information

### 2.1. Included Items

The product package contains the following items:

- NJ6000 module
- 20-terminal connector with wire holder

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### 2.2. Product Code

The following code should be used to purchase the product:

Code	Description
NJ6000	8 AI Voltage/Current Module 16 Bits

Table 1: Product Code

## 3. Related Products

The following product must be purchased separately when necessary:

Code	Description	
NX9403	20-terminal connector with cable guides	

Table 2: Related Products

### 4. Innovative Features

Nexto Series brings to the user many innovations regarding utilization, supervision and system maintenance. These features were developed focusing a new concept in industrial automation.



**Easy Plug System:** Nexto Series has an exclusive method to plug and unplug I/O terminal blocks. The terminal blocks can be easily removed with a single movement and with no special tools. In order to plug the terminal block back to the module, the frontal cover assists the installation procedure, fitting the terminal block to the module.

# 5. Product Features

### 5.1. General Features

	NJ6000		
Backplane rack occupation	1 slot		
Number of inputs	8 analog inputs		
Input type	Voltage or current input, single ended, individually configured		
Data format	16 bits in two's complement, justified to the left		
Converter resolution	24 bits monotonicity guaranteed, no missing codes		
Input state indication	Yes		
One Touch Diag (OTD)	No		
Electronic Tag on Display (ETD)	No		
Status and diagnostic indication	Display, web pages and CPU's internal memory		
Hot swap capability	No		
Module protections	Yes, protection against surge voltages		
Wire gauge	0,5 mm <sup>2</sup> (20 AWG)		
Minimum wire temperature rating	75 °C		
Wire material	Copper only		
Isolation			
Input to logic	1500 Vac / 1 minute		
Input to protective earth 🗎	1500 Vac / 1 minute		
Logic to protective earth ⊕	1250 Vac / 1 minute		
Current consumption from backplane rack power supply	270 mA		
Maximum power dissipation	3 W		
IP level	IP 20		
Operating temperature	0 to 60 °C		
Storage temperature	-25 to 75 °C		
Operating and storage relative humidity	5% to 96%, non-condensing		
Module dimensions (W x H x D)	18.00 x 114.62 x 117.46 mm		
Package dimensions (W x H x D)	25.00 x 122.00 x 147.00 mm		
Weight	200 g		
Weight with package	250 g		

Table 3: General Features

### Nota:

**Wire gauge:** Crimp terminals for 0.5 mm<sup>2</sup> wire in each way respecting as described at Nexto Series User Manual - MU214600.

#### **Standards and Certifications 5.2.**

	Standards and Certifications					
IEC	61131-2: Industrial-process measurement and control - Programmable controllers - Part 2: Equipment requirements and tests					
CE	2014/30/EU (EMC) 2014/35/EU (LVD) 2011/65/EU and 2015/863/EU (ROHS)					
UK	S.I. 2016 No. 1091 (EMC) S.I. 2016 No. 1101 (Safety) S.I. 2012 No. 3032 (ROHS)					
C UL US	UL/cUL Listed – UL 61010-1 UL 61010-2-201 (file E473496)					
EHE	TR 004/2011 (LVD) CU TR 020/2011 (EMC)					

Table 4: Standards and Certifications

#### **Voltage Mode Features 5.3.**

	NJ6000 – Voltage Mode		
	Range	Resolution	
Scale	0 to 10 Vdc	159.80 $\mu V$	
Scale	-5 to 5 Vdc	$159.80~\mu\mathrm{V}$	
	-10 to 10 Vdc	$319.60~\mu\mathrm{V}$	
Precision	$\pm$ 0.1% of full sca	le rating @ 25 °C	
1 recision	$\pm0.005\%$ of full s	cale rating / °C	
Over scale	$\pm$ 4.8% of ful	l scale rating	
Maximum input voltage	30 Vdc		
Scanning time	1 ms with one channel enabled		
Scanning time	6 ms with all channels enabled		
Input impedance	> 1 MΩ		
	Signal type per input		
Configurable parameters	Measurement range per input		
Comigurable parameters	Filters		
	Open loop valu	e	
Noise suppression filter	60 Hz, 50 Hz, 16.6 Hz, 10 Hz or disabled		
Low pass filter	First order digital filter		
Low pass filter time constant	100 ms, 1 s, 10 s or disabled		

Table 5: Voltage Mode Features

## **5.4.** Current Mode Features

	NJ6000 - Current Mode		
	Range	Resolution	
Scale	0 to 20 mA	322.18 nA	
	4 to 20 mA	322.18 nA	
Precision	$\pm~0.1\%$ of full sca	ale rating @ 25 °C	
1 recision	$\pm~0.005\%$ of full :	scale rating / °C	
Over scale	$\pm$ 4.8% of full scale rating		
Maximum input current	m input current 30 mA		
Scanning time	1 ms with one channel enabled		
Scanning time	6 ms with all channels enabled		
Input impedance	135 $\Omega$ , when in current input or non-configured mode		
	Signal type per input		
Configurable parameters	Measurement range per input		
Comigurable parameters	Filters		
	Open Loop Value		
Noise suppression filter	60 Hz, 50 Hz, 16.6 Hz, 10 Hz or disabled		
Low pass filter	First order digital filter		
Low pass filter time constant	100 ms, 1 s, 1	0 s or disabled	

Table 6: Current Mode Features

**Notes:** 



**Input ranges:** The presented resolutions are the optimal delivered by the hardware.

Noise Suppression Filter: When this parameter is configured, the filter value is applied to all analog inputs.

### 5.5. Compatibility with Other Products

The following table provides information regarding the compatibility of the module NJ6000 and other Nexto Series products.

NJ6	5000	Software Version Compatible			
Version Revision		NX3004	NX30x0	NX5110	MasterTool IEC XE
1.3.0.0 or higher	AA or higher	1.5.1.0 or higher	1.5.1.0 or higher	1.1.1.0 or higher	2.03 or higher
1.4.0.0 or higher	AJ or higher	-	-	-	3.14 or higher to use "Disabled" as "Open Loop Value" option

Table 7: Compatibility with Other Products

#### Note:

**Revision:** If the software is upgraded in the field the product revision indicated on the label will no longer match the actual revision of the product.

#### **ATTENTION**

The CPUs, racks and the PROFIBUS NX5110 remote head of Nexto Series support the use of Nexto Jet Modules. The Nexto Jet is formed by I/Os modules and when used in configuration with CPUs or PROFIBUS remote head of Nexto Series, no other I/O type of Nexto Series can be used in the same bus.

Dimensions in mm.



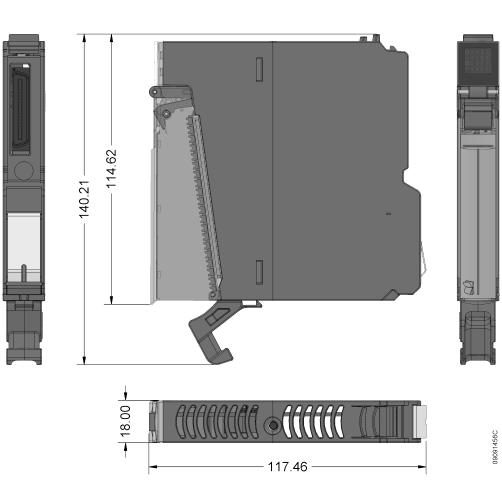


Figure 1: Physical Dimensions

# 6. Installation

For the correct installation of this product, it is necessary to use a rack (backplane rack) and it must be carried out according to the mechanical and electrical installation instructions that follow.

### 6.1. Product Identification

This product has some parts that must be observed before installation and use. The following figure identifies each of these parts.

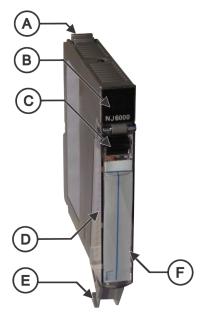


Figure 2: NJ6000

- A Fixing lock.
- B Status and diagnostic display.
- Terminal block extraction lever.
- Tront cover.
- ② pin terminal block with wire holder.
- (F) Label for module identification.

The product has in its mechanics a label that identifies it and in it are presented some symbols whose meaning is described below:



Attention! Before using the equipment and installing, read the documentation.

**—** Direct Current.

### **6.2.** Electrical Installation

The figure below shows an example where four inputs are used: input 00, input 02, input 03 and input 06. Each input presents a different connection, explained below.

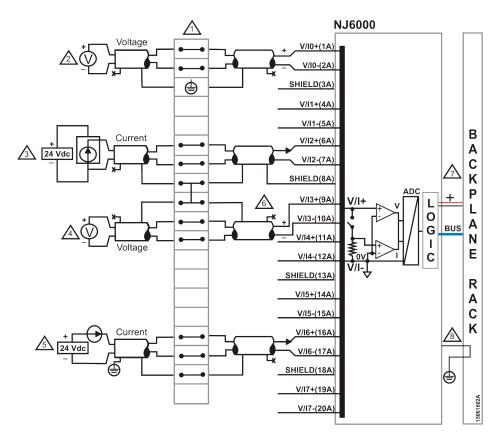
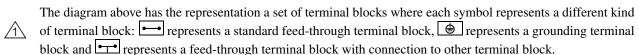
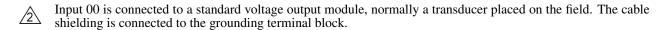


Figure 3: Electrical Installation

#### **Diagram Notes:**





Input 02 is connected to a current output module, normally a transducer. This kind of transducer has different pins for power supply and for current output. The cable shielding is connected to the SHIELD pin, which is shared with the input 03.

Input 03 is connected to a standard voltage output module, normally a transducer placed on the field. The cable shielding is connected to the SHIELD pin, which is shared with the input 02.

Input 06 is connected to a current output module, normally a transducer. This kind of transducer, different than the example above, uses the same pins for power supply and current output. In this case, only 4 to 20 mA scale is possible to be used. The cable shielding is connected to the earth close to the device on the field.

There is one SHIELD pin for each pair of analog inputs.

The module power supply is derived from the connection to the backplane rack, not requiring external connections.

NJ6000 is connected to the protective earth 🖨 through the backplane rack.

Protection earth terminal.

### 6.3. Connector Pinout

The following table shows the description of each connector terminal:

Terminal	Description	
1	Current / Voltage input 00	
2	Reference input 00	
3	Shield	
4	Current / Voltage input 01	
5	Reference input 01	
6	Current / Voltage input 02	
7	Reference input 02	
8	Shield	
9	Current / Voltage input 03	
10	Reference input 03	
11	Current / Voltage input 04	
12	Reference input 04	
13	Shield	
14	Current / Voltage input 05	
15	Reference input 05	
16	Current / Voltage input 06	
17	Reference input 06	
18	Shield	
19	Current / Voltage input 07	
20	Reference input 07	

Table 8: Connector Pinout

## 6.4. Mechanical and Electrical Assembly

The mechanical and electrical mounting and the connector pin insertion and removing for single hardware width I/O modules are described at Nexto Series User Manual – MU214600.

#### **ATTENTION**

Products with broken warranty seal are not covered in warranty.

#### **CAUTION**



The device is sensitive to static electricity (ESD). Always touch in a metallic grounded object before handling it.

#### **DANGER**



Nexto Series can operate with voltage up to 250 Vac. Special care must be taken during the installation, which should only be done by qualified technical personnel. Do not touch on the wiring field when in operation.

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# 7. Configuration

This module was developed to be used with Nexto Series products. All Nexto Series products are configured in MasterTool IEC XE. All configuration data of a given module can be accessed through a double click in it on the Graphical Editor.

#### 7.1. Process Data

Process Data are the variables used to access the module. The table below describes all the variables made available by this module when declared on the CPU or MODBUS Head bus.

In addition to the data in the table, this product also provides a set of variables containing information related to diagnostics, which are also described in this document.

Variable	Size	<b>Process Data</b>	Description	Type	Update
%IW(n)	WORD	AI 00	Analog Input 00	INT (Read)	Always
%IW(n+2)	WORD	AI 01	Analog Input 01	INT (Read)	Always
%IW(n+4)	WORD	AI 02	Analog Input 02	INT (Read)	Always
%IW(n+6)	WORD	AI 03	Analog Input 03	INT (Read)	Always
%IW(n+8)	WORD	AI 04	Analog Input 04	INT (Read)	Always
%IW(n+10)	WORD	AI 05	Analog Input 05	INT (Read)	Always
%IW(n+12)	WORD	AI 06	Analog Input 06	INT (Read)	Always
%IW(n+14)	WORD	AI 07	Analog Input 07	INT (Read)	Always

Table 9: Process Data

#### Note:

**Update:** The field "Update" indicates if the respective process data is updated by CPU and NJ6000 by default. When defined as "Always", it means that the process data is always updated. When defined as "Selectable", it means that the user can select if the respective process data will be updated or not. All these process data are exchanged between CPU and NJ6000 through the bus, to improve CPU performance. It's recommended to update only the process data that will be used in the application.

#### 7.1.1. PROFIBUS Data

When the module is inserted on the bus of a PROFIBUS Head, the variable type will be WORD. In this case, we recommend using symbolic variables of type INT, declared with the AT directive at the same addresses as the direct variables. Example, considering the direct variable %IW(n) from the previous table:

```
iChannel_0 AT %IW(n): INT;
```

The values sent by PROFIBUS are of the integer type and are fixedly configured in the -30,000 to +30,000 range. For example, on a channel configured as voltage 0 to 10 V, the voltage level of 0 V will be converted to a value close to -30,000, while the voltage value of 10 V will be provided by the module at a value close to +30,000.

### 7.2. Module Parameters

Name	Description	Standard Value	Options	Configuration
Noise Suppression Filter	Frequency of the noise filter	60 Hz	Disabled 10 Hz 16.6 Hz 50 Hz 60 Hz	Per module
Туре	Type and scale of a given input	Voltage 0 - 10 Vdc  Voltage 0 - 10 Vdc  Voltage ±5 Vdc Voltage ±10 Vdc  Current 0 - 20 mA Current 4 - 20 mA		Per input
Min Value	Minimum value for engineering scale	0 (see note)	-	Per input
Max Value	Maximum value for engineering scale	30000	-	Per input
Digital Filter	First order digital filter time constant (ms)	Disabled  Disabled  100 ms  1 s  10 s		Per input
Open Loop Value	Value when in open loop condition (only valid for 4 – 20 mA scale)	Min Value	0 Min Value Max Value Disabled	Per input
%Q Start Address of Module Diagnostics Area	Defines the start address of the module diagnostics area	-	-	Per module

Table 10: Module Parameters

#### **Notes:**

**Noise Suppression Filter:** For further information about this parameter, consult Noise Suppression Filter section. If a signal is present on a channel with filter enabled and a hot swap is performed in the module, the channel will start with a value of zero to dynamically, according to the selected time constant, reach the present value at the input.

**Configuration:** Configuration indicates if the parameter is related to the entire module (per module) or if the parameter is related to a single input (per input). In case of input wise parameters, all parameters will be repeated for each available input.

**Min and Max Value:** These parameters can be configured in any value from -30000 to 30000, as long as the Max Value is larger than the Min Value. In PROFIBUS-DP remotes, the minimum and maximum values are fixed at -30000 and 30000, respectively.

**Open Loop Value:** "Disabled" option only available for firmware version 1.4.0.0 or higher.

## 7.3. Noise Suppression Filter

This parameter enables or disables a filter that rejects a particular frequency in the measurements, but this rejection includes a delay per enabled input for data acquisition, which depends on the selected frequency. It is important to consider the delays presented in the table below while developing an application.

<b>Noise Suppression Frequency</b>	<b>Conversion Time (per Input)</b>
Disabled	$600~\mu \mathrm{s}$
10 Hz	200 ms
16.6 Hz	120 ms
50 Hz	40 ms
60 Hz	35 ms

Table 11: Noise Suppression Filter

## 8. Usage

### 8.1. General Purpose Input Read

NJ6000 has one variable for each input. The parameters Min Value and Max Value are used by the module to convert the analog input value to the corresponding engineering value.

### 9. Maintenance

Altus recommends that all modules' connections should be checked and any dust or any kind of dirt located in the module's enclosure should be removed at least every 6 months.

This module offers important features to assist users during the maintenance: Status and Diagnostics Indicators, Web Page with Complete Status and Diagnostics List, and Diagnostics Mapped to Variables.

## 9.1. Status and Diagnostics Indicators

Nexto I/O modules have a display with the following symbols: D, E,  $\square$ ,  $\square$  and numerical characters. The states of the symbols D, E,  $\square$  and  $\square$  are common for all Nexto Series I/O modules. These states can be consulted in the table below.

#### 9.1.1. D and E States

D	E	Description	Cause	Solution	Priority
Off	Off	Display failure or module off	<ul> <li>Module disconnected;</li> <li>External power supply failure;</li> <li>Hardware failure.</li> </ul>	Check:  - If the module is completely connected to the rack;  - If the rack is powered by an external source;  - If the module has external power.	-
On	Off	Normal use	-	-	9 (Lower)
Blinking 1x	Off	Active diagnostics	There is at least one active diagnostic related to the module.	Check what the active diagnostic is. More information can be found at section Diagnostics Through Variables.	8



D	E	Description	Cause	Solution	Priority
Blinking 2x	Off	No I/O data update	- CPU in STOP mode; - Head/Remote in non-ACTIVE state.	Check: - If the CPU is in operation; - If the Fieldbus Master is in operation; - The integrity of the network between the MOD-BUS Client and the Head-/Remote.	7
Blinking 3x	Off	Reserved	-	-	6
Blinking 4x	Off	Non-fatal fault	Failure in some hardware or software component, which does not have impact on the basic functionality of the product.	Check the module's diagnostic information. If it is a hardware failure, have the part replaced. If it's software, contact Technical Support.	5
Off	Blinking 2x	Loss of bus master	Loss of communication between:  - The module and the CPU;  - The module and the Head/Remote;  - The Head/Remote and the Field Network Master.	Check: - If the module is completely connected to the rack; - If the CPU is in RUN mode; - If the Fieldbus Master is in operation; - Network integrity between PROFIBUS Master and Head/Remote.	4
Off	Blinking 3x	Module without calibration	<ul><li>The module is not calibrated;</li><li>There was an error with the calibration value.</li></ul>	The module must return to the manufacturer.	3
Off	Blinking 1x	Missing or parameterization error	The module isn't parameterized.	Check: - If the module parameterization is correct; - Network integrity between PROFIBUS Master and Head/Remote; - Network integrity between PROFINET Controller and Head/Remote.	2
Off	Blinking 4x	Fatal hardware fault	Hardware fault.	The module must return to the manufacturer.	1 (Higher)

Table 12: Status of Symbols D and E

#### **Notes:**

**Field net master:** There are different field net solutions, using different nomenclatures to refer to the net master. Examples: Profibus Master, MODBUS Client, PROFINET Controller, etc.

Module without calibration: Only valid for modules that have calibration, typically analog modules. Modules that do not have calibration will never show such an indication through the symbols D and E.



#### 9.1.2. 0, 1 and Numerical Characters

The meaning of the numerical characters can be different for specific modules. In case of analog modules, the numerical characters show the respective state of each input. When the numerical character is on, the respective input is configured and enabled, and if the numerical character is off, the respective input is disabled. The relationship between the input number and its respective numerical character can be found on the following figure.

The segments  $\Box$  and  $\Box$  are used to group the numerical characters used for inputs and outputs. In NJ6000 module's case, the characters that are placed at the right side of character  $\Box$  represent the input sfrom 00 to 07, where character 0 represents the input 00 and character 7 represents the input 07. The characters that are placed at the right side of character  $\Box$  and the segment  $\Box$  itself are not used in NJ6000 module. The figure below shows the relationship between the numerical characters and the respective inputs.

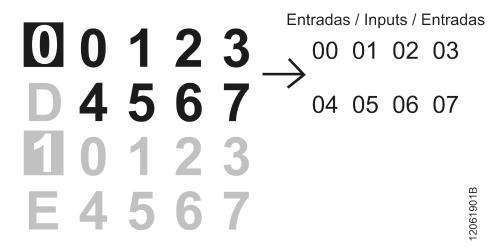


Figure 4: Numerical Characters

### 9.2. Web Page with Complete Status and Diagnostics List

Another way to access diagnostics information on Nexto Series is via web pages. Nexto Series CPU's has an embedded web page server that provides all Nexto status and diagnostics information, which can be accessed using a simple browser.

More information about web page with complete status and diagnostics list can be found at User Manual of each respective CPU (listed at Nexto Series User Manual - MU214600).

## 9.3. Diagnostics Through Variables

All diagnostics in this module can be accessed through variables that can be handled by the user application or even forwarded to a supervisory system using a communication channel. There are two different ways to access diagnostics in the user application: using symbolic variables with AT directive or addressing memory. Altus recommends use symbolic variables for diagnostic accessing. The table below shows all available diagnostics for this module and their respective memory address, description, symbolic variable and string that will be shown on the CPU graphical display and web.

#### 9.3.1. General Diagnostics

Direct Var	iable	Diagnostic Message	Symbolic Variable DG_NJ6000.tGeneral.*	Description	PROFIBUS Message Code
Variable	Bit				
		INPUT 00 W/ DIAG	bActiveDiagnosticsInput00	TRUE – Input 00 has active diagnostics	-

Direct Variable		Diagnostic Message	Symbolic Variable DG_NJ6000.tGeneral.*	Description	PROFIBUS Message Code	
Variable	Bit					
		-		FALSE – Input 00 has no active diagnostics		
	1	INPUT 01 W/ DIAG	bActiveDiagnosticsInput01	TRUE – Input 01 has active diagnostics	-	
	1	-	bActiveDiagnosticsInputo1	FALSE – Input 01 has no active diagnostics		
	2	INPUT 02 W/ DIAG	bActiveDiagnosticsInput02	TRUE – Input 02 has active diagnostics	-	
		-		FALSE – Input 02 has no active diagnostics		
	3	INPUT 03 W/ DIAG	bActiveDiagnosticsInput03	TRUE – Input 03 has active diagnostics	-	
	3	-		FALSE – Input 03 has no active diagnostics		
%QB(n)	1	INPUT 04 W/ DIAG	- bActiveDiagnosticsInput04	TRUE – Input 04 has active diagnostics	-	
	4	-		FALSE – Input 04 has no active diagnostics		
	5	INPUT 05 W/ DIAG	bActiveDiagnosticsInput05	TRUE – Input 05 has active diagnostics	-	
		-		FALSE – Input 05 has no active diagnostics		
	6	INPUT 06 W/ DIAG	h A stine Die energie James 100	TRUE – Input 06 has active diagnostics	-	
	0	-	bActiveDiagnosticsInput06	FALSE – Input 06 has no active diagnostics		
	7	INPUT 07 W/ DIAG	h A stine Die en esties Innut 07	TRUE – Input 07 has active diagnostics	-	
	7	-	bActiveDiagnosticsInput07	FALSE – Input 07 has no active diagnostics		
		MODULE W/ DIAGNOSTIC	bActiveDiagnostics -	TRUE – Module has active diagnostics	-	
	0	NO DIAG		FALSE – Module has no active diagnostics		
	4	MODULE W/ FATAL ERROR	15.75	TRUE – Fatal error	25	
	1	-	bFatalError	FALSE – No fatal error		
	2	CONFIG. MISMATCH		TRUE – Parameterization error	26	
		-		FALSE – Parameterization ok		
% QB(n+1)	3	WATCHDOG ERROR	bWatchdogError	TRUE – Watchdog has been detected	27	
	J	- ENNOR	·	FALSE – No watchdog	21	
	4	Reserved				
	5	CALIBRATION ERROR	bCalibrationError	TRUE – Module without calibration	29	
	67	-	Racania	FALSE – Module calibrated		
	0/	Reserved				

Table 13: General Diagnostics



#### 9.3.2. Detailed Diagnostics

Direct Variable		Diagnostic Message	Symbolic Variable DG_NJ6000.tDetailed .tAnalogInput_XX.*	Description	PROFIBUS Message Code
Variable	Bit				
%QB (n+2 +XX*2)	07	Reserved			
	0	OVER RANGE	bOverRange	TRUE – Input data is over range	24
		-		FALSE – Input data is ok	
	1	UNDER RANGE	bUnderRange	TRUE – Input data is under range	25
% QB (n+2+ 2*XX +1)		-		FALSE – Input data is ok	
	2	OPEN LOOP	bOpenLoop	TRUE – Input is open	26
-		-		FALSE – Input is ok	20
	3	-	bInputNotEnable(1)	TRUE – Input is not enable	-
		-		FALSE – Input is enable	
	47	47 Reserved			

Table 14: Detailed Diagnostics

#### Notes

(1): This diagnosis does not apply to the module when declared on the Profibus Heads or PROFINET Heads bus. It is valid only when the module is declared on the UCPs or MODBUS Heads bus.

**Open Loop Diagnostic:** This diagnostic only applies to channels configured as 4-20 mA input current, and is set when the input current is lower than 3 mA.

**Under Range:** This diagnostic turns true when the input value is 1% of the full scale rating below the scale. E.g. for the 0 to 10 Vdc scale, under range diagnostic turns true for measurements below -0.1 Vdc.

**Over Range:** This diagnostic turns true when the input value is 1% of the full scale rating above the scale. E.g. for the 0 to 10 Vdc scale, over range diagnostic turns true for measurements above 10.1 Vdc.

**Direct Representation Variable:** "n" is the address defined in the field %Q Start Address of Module Diagnostics Area on the NJ6000's configuration screen – Module Parameters tab in the MasterTool IEC XE, "XX" is the channel of analog input.

**Symbolic Variable:** Some symbolic variables serve to access diagnostics. These diagnostics are stored into the addressing memory, then the AT directive is used to map the symbolic variables in the addressing memory. The AT directive is a reserved word in the MasterTool IEC XE, that uses this directive to declare the diagnostics automatically on a symbolic variables. All symbolic variables declared automatically can be found inside of Diagnostics object.

# 10. Manuals

For further technical details, configuration, installation and programming, the table below should be consulted.

The table below is only a guide of some relevant documents that can be useful during the use, maintenance, and programming of this product.

Code	Description	Language
CE114000	CE114000 Nexto Series – Technical Characteristics	
CT114000	Série Nexto – Características Técnicas	Portuguese
CS114000	Serie Nexto – Características Técnicas	Spanish
MU214600	Nexto Series User Manual	English
MU214000	Manual de Utilização Série Nexto	Portuguese
MU299609	MasterTool IEC XE User Manual	English
MU299048	Manual de Utilização MasterTool IEC XE	Portuguese
MP399609	MasterTool IEC XE Programming Manual	English
MP399048	Manual de Programação MasterTool IEC XE	Portuguese
MU214608	MU214608 Nexto PROFIBUS-DP Head Utilization Manual	
MU214108	Manual de Utilização da Cabeça PROFIBUS-DP Nexto	Portuguese

Table 15: Related Documents