



Modularity

Simplicity

Convenience

Intelligence

Compatibility

*The*  
**PLUS**   
*Factor*



## A New generation PLC...

Distinctly the Plus Advantage of NEXGEN-2000 Plus defines its remarkable ability, power and intelligence to rev up your machine or process beyond imagination.

Inheriting the DNA characteristics of NEXGEN-2000, this new PLC comes to you with add-on features that make it more user-friendly, easy to function and maintain, besides looking more elegant and contemporary with its international looks.

# Introducing...

# NEXGEN 2000PLUS



# PLUS



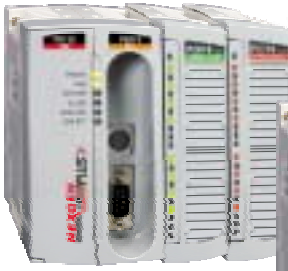
## A New generation PLC...

This modular PLC comes to you with significantly enhanced ergonomics, simplicity, convenience and aesthetic features. They are all smartly packaged in a design created with proven expertise of international product designers.

NEXGEN-2000 Plus integrates the benefits of small size controllers with the modularity of large PLCs with the option of open connectivity to suit variety of applications. It is designed to suit applications between 14 I/Os to 128 I/Os with a wide variety of I/O options.

# Modularity

2 I/O Slot PLC (32 I/Os)



4 I/O Slot PLC (64 I/Os)



6 I/O Slot PLC (96 I/Os)



8 I/O Slot PLC (128 I/Os)



## Exemplary Highlights

### True Power Inside

- High speed backplane serial bus
- Development of application specific function blocks
- Multi-level passwords
- Downloadable O.S. for system upgradability
- Huge memory
- Wide range of Digital & Analog I/O Modules
- Embedded intelligence in Digital & Analog I/O Modules
- 128 Local + 128 Remote I/Os for simplicity

### Embedded Intelligence in Digital I/O Modules

- Programmable input filter time
  - Filter time settable from 1ms to 255ms
- Programmable pulse catch (8 Ch)
  - Minimum 500µs pulse width
- HSC Functions:
  - 2 HSC: 20 KHz and 2 KHz on Mixed Digital I/O module Ch-0 and Ch-1 respectively
  - Frequency Measurement for Ch-2 upto 2KHz; resolution of 1µs

# PLUS





## A New generation PLC...

The essence of automation solution is its simplicity and while developing this PLC, we have deployed our rich expertise, experience and best engineering practises.

The result – a much simpler, yet more efficient PLC.

You just cannot think automation simpler than this!

# S i m p l i c i t y



**Easy Replacement  
of I/O Module**



**Easy Removal of  
I/O Wiring Arm**



**Easy Nomenclature**

- I/O Legends
- I/O Wiring Diagram



**Easy Installation**

- DIN Rail Mounting

**PLUS** 



## A New generation PLC...

The maintenance friendliness of the new PLC distinguishes it from those of the competitors'. Here we have a PLC with improved features of convenience such as CPU, I/O diagnostics and other maintenance friendly features.

The result - added features go a long way in enhancing the maintainability of your machines or processes.

# Convenience



### Easy CPU Diagnostics

- CPU Status LED Indications
  - POWER
  - RUN
  - CPU ERR
  - IO ERR
  - MEM ERR
  - LOW BAT



### Easy I/O Diagnostics

- Input Status LED Indications
  - Green colour LED
- Output Status LED indications
  - Red colour LED



### Easy Identification

- Via I/O Legends



### Easy Maintenance

- Via Pushfix I/O Terminals

# PLUS



## A New generation PLC...

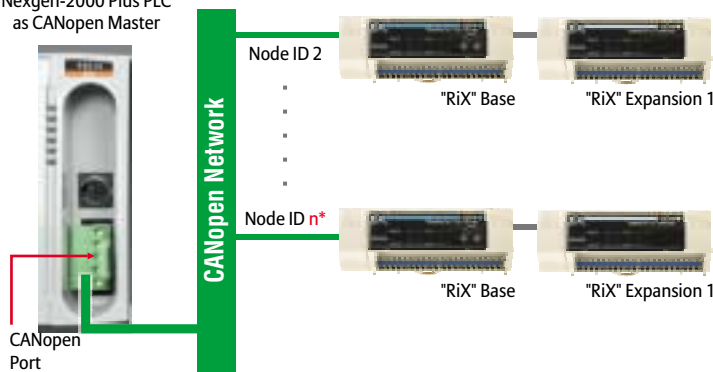
The embedded intelligence and its power are the essential DNA characteristics of this new PLC. This power navigates the entire/part of your machines or processes with clinical precision.

The result – The machine or process is guided smoothly.

# Intelligence

## New Arrival: CANopen Master / Slave CPU in Nexgen-2000 Plus PLC

Nexgen-2000 Plus PLC  
as CANopen Master



### Highlighting Features:

- Maximum 128 I/Os in Remote configuration with "RiX" series Remote Base / Expansion Unit
- Same CPU can be configured as CANopen Master / Slave in CANopen Network via programming software CoDeSys
- Each "RiX" Base & Expansion Unit can have maximum 16 I/O points
- Each node can have 1 Base Unit + 3 Expansion Units
- n\* - Maximum 8 nodes in the network
- Maximum network length upto 500 mtrs.
- Variety of digital I/O units available in Base and Expansion type

### Vital Statistics – CPU

Number of Inputs and Outputs	128 Inputs/Outputs (8 slots) - Free Mix
Application Memory	128 Kbytes
Source Code Memory	512 Kbytes
Marker memory	8 Kbytes
File Markers	48 Kbytes
Data Memory	32 Kbytes
Real Time Clock	Present
Timer / Counter	Unlimited*
Battery type (Life = 3 Years)	3.6 V DC, Ni-MH, 40 mAh rechargeable
Instruction Execution Speed	0.6-0.8µS : BOOL operation < 1.2µS : WORD operation

(\*Limited by available Data Memory)

### Enhances CPU Functionality with Proven FB Libraries

#### Utility Library

- Freqrol FB
- MELSEC Servo FB
- Recipe Read / Write
- Bit Wise Data Handling
- Data Block Handling
- FIFO and LIFO
- String Handling Functions
- Motion Library
- PID FB

PID FB is the universal form of closed loop controls & can be used for temperature, humidity, flow & pressure control.

#### Features:

Anti-reset Windup, Auto/Manual Modes, Bumpless Transfer, Forward bias. PID to PWM FB for heater control via SSR.

### Computation Power

$\sqrt{5.239 \times \text{DiffPress}}$

$\text{CirA} = \text{PI}^* (\text{d}^* \text{d}) / 4$

	$\sqrt{\quad}$	
Log <sup>-1</sup>	3.142	PWM
BYTE	TIME	PID
ARRAY	TON	FIFO
LIFO	STRING	POINTER
TOF	COS	REAL
INT	TAN	SIN





## A New generation PLC...

The compatibility to Global Standard Programming Software makes this new PLC a versatile and high performance system.

The result – Flexibility with proven efficiency.

# Compatibility

## Global Standard IEC 61131-3 Compatible Programming Software Package



### Programming Platform : CoDeSys

- *Windows Based Programming Suite* - Identical Programming Platform for Nexgen-2000, Nexgen-2000 Plus & Nexgen-5000 PLC
- IEC 61131-3 Compatible programming defines advanced programming techniques
- Offline, Online, Debugging features & Auxiliary functions are available on the finger tip of the user
- Password protection for projects & FB libraries
- Modular programming
- Powerful graphical & textual language program editors
- Powerful function library management
- Offline simulation

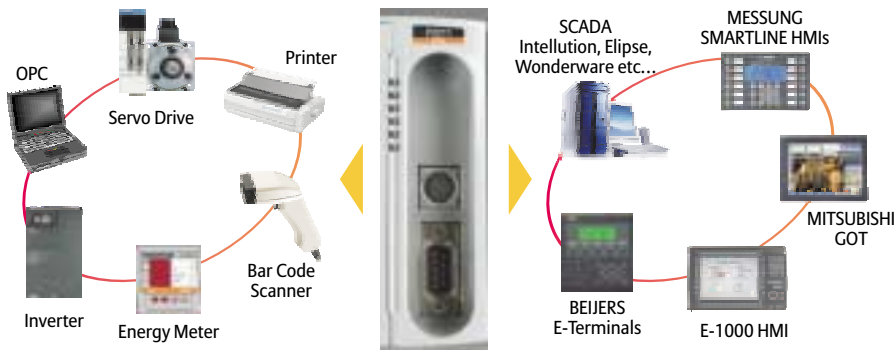
## Unique On-Line Graphics

- Sampling Trace
- Process Visualization

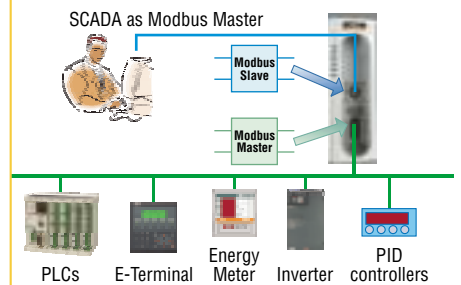
## Wide Choice of IEC Programming Languages

- LD : Ladder
- ST : Structured Text
- SFC : Sequential Function Chart
- IL : Instruction List
- CFC : Continuous Function Chart
- FBD : Function Block Diagram

## Versatile Connectivity Options



## Modbus Connectivity (Built-in)



# A New generation PLC...

## Smart Controller - A Perfect Fit for Every Applications

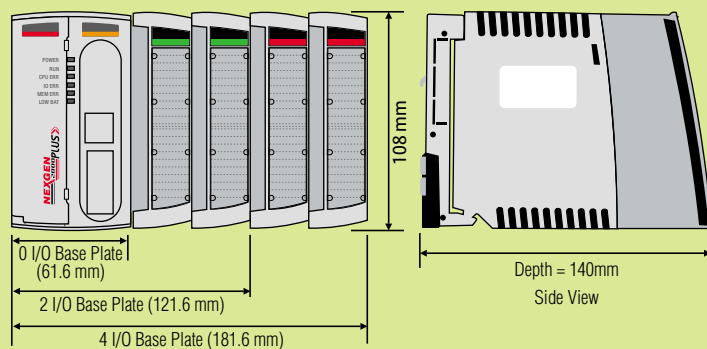


Nexgen-2000 Plus PLC can be used as PLC, Process Controller, Data Logger, Communication Gateway, Machine Controller and for many more applications...

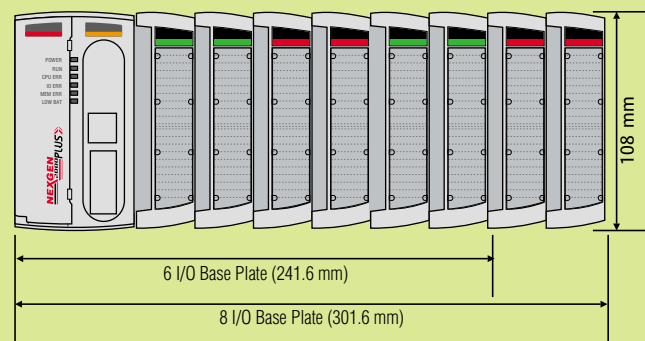


## Dimensional Details

### 2113 -5 V, 1.5 A PSU



### 2115 -5 V, 3 A PSU



## Ordering Specifications

Description	Ordering code
<b>CPU</b>	
CPU with one serial port (PG)	P 2210
CPU with two serial ports (PG and Aux.)	P 2211
CPU with one Serial Port (PG) and one CANopen Port	P 2213
CPU with 2 HSC and 2 PTO	P 2214 (Upcoming)
<b>Power Supply</b>	
85 to 260 VAC Universal Input Supply Module, 1.5 Amp at 5 VDC Output	P 2113
85 to 260 VAC Universal Input Supply Module, 3 Amp at 5 VDC Output	P 2115
24 VDC Input Supply Module, 1.5 Amp at 5 VDC Output	P 2112
<b>Base Plates</b>	
No I/O Base Plate with 1.5 A PSU + CPU slots	P 2910
2 I/O Base Plate with 1.5 A PSU + CPU slots	P 2912
4 I/O Base Plate with 1.5 A PSU + CPU slots	P 2914
6 I/O Base Plate with AC, 3 A PSU + CPU slots	P 2916
8 I/O Base Plate with AC, 3 A PSU + CPU slots	P 2918

## Programming Package

Programming Software	9920
Programming Cable 9 pin Mini DIN to 9 pin D-type	2910
9 pin Mini DIN to 9 pin D Connector Conversion Cable	2911
Program Cassette	9904

## General Specifications

<b>Operating Temperature</b>	<b>0-55°C</b>
<b>Relative Humidity</b>	<b>5-95% Non Condensing</b>
<b>Noise Immunity</b>	<b>As per 61131-2</b>
- PSU	2 KV, 5KHz superimposed on supply as per IEC 1000-4-4
- Communication Port	1 KV, 5KHz capacitive coupled to signal lines as per IEC 1000-4-4
- I/O	1 KV, 5KHz capacitive coupled to lines as per IEC 1000-4-4
<b>No. of I/O slots</b>	<b>0, 2, 4, 6, and 8 I/O slots</b>

Description	Ordering code
<b>Input/Output Modules</b>	
16pt. 24 VDC Input* Module	P 2616
12pt. Relay Output Module, 500 mA per point	P 2712
8 pt. P. F. Relay Output Module, 1 Amp per point	P 2711
16 pt. 24 VDC Output Module, 250 mA per point Module	P 2716
8pt. 24 VDC Output Module, 1.5 Amps per point, 4 Amps(Group of 4 Output Points)	P 2708

\* Sink/source selectable Input

### Special Modules

8pt. 24 VDC Input* (Inclusive of HSC 1 @ 20 kHz + HSC 2 @ 2 kHz input & Frequency Measurement @ 2 KHz at input 2)+ 6pt. Relay @ 500 mA per point (8 DI + 6 RO)	P 2415
8pt. 24 VDC Input* (inclusive of HSC 1 @ 20 kHz + HSC 2 @ 2 kHz inputs & Frequency Measurement @ 2KHz at input 2)+ 8pt. 24 VDC Output Module, 250 mA per point (8 DI + 8 DO)	P 2417
4 Ch., 16 bit Analog Input Module V / I	P 2304
2 Ch., 12 bit Analog Output Module V / I	P 2332
2 Ch. Analog Voltage / Current Input + 2 Ch. Analog Output	P 2364

\* Sink/source selectable Input

## Program Cassette - 9904

- Program Cassette can be used as an Application Program Storage and Carrier Device
- Program back- up available on Field & Easy Maintenance of distant projects





पूर्णतिः भारतीय उद्योग

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