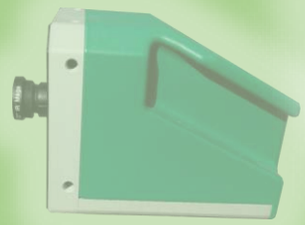
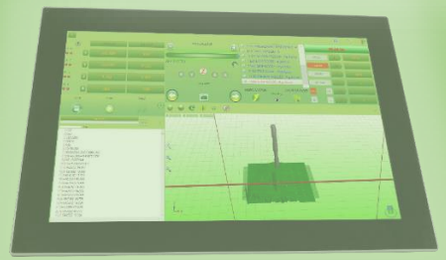
PROMAX Motion & Control

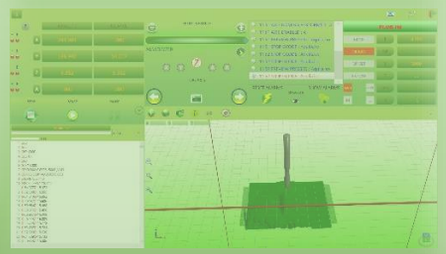


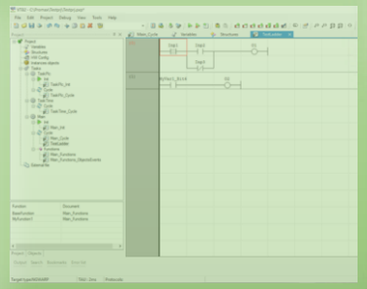
Promax Motion & Control

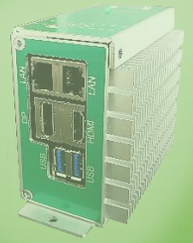
Products Brochure

Hardware & Software









Promax Srl

Promax Srl is an Italian company operating in the field of Industrial automation since 1991 specialized in CN.
We take care of both the hardware design and the software design of our products.

Our NCs can drive up to 64 axes in different bus types :

- Ethercat
- CanOpen
- +/- 10 Volt
- Step/Dir

Hardware

We entirely develop in-house most of the hardware used in our products.

Our NCs can be combined to be used in different types of machines and in different sectors.

Our philosophy is to maximize the NC for the machine and not the other way around.

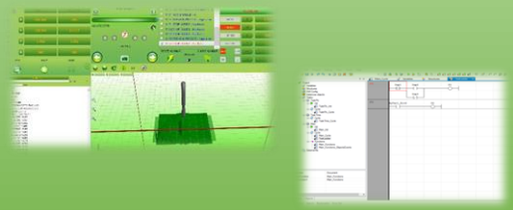
Therefore our solutions are flexible and economical.

Software

The software is also developed entirely in Promax.

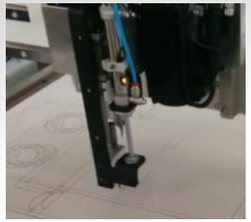
This allows an immediate response to the requests of our customers, to the machine customizations more and more requested in these years.

No more machine CLONES, but DIFFERENT machines that the same customers can develop by incorporating their technology that they have acquired over the years and want to protect.



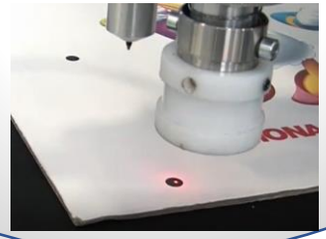
Applications

Wood
Working
Machines



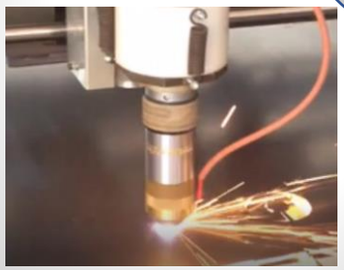
Cutting Plotter

(Reading Marker from Camera)

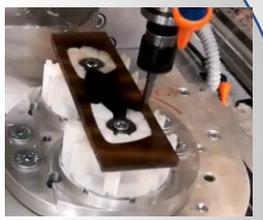


Plasma Machines

(THC)



Milling
Machines
Up To 9 axes



Laser
Machines

ISO US - Gcode Development Studio

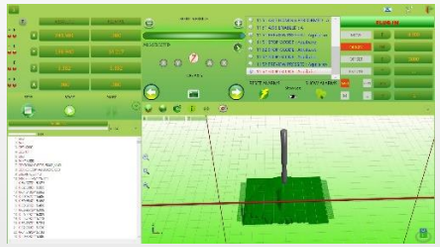
IsoUs is not a simple PC interface for Gcode management, but a development environment for Gcode applications.

Customizable, it allows to adapt the Interface to machine, making the most of all the potential of the system in a simple and intuitive way.

IsoUs can control the CN NGMEVO and NGWARP.

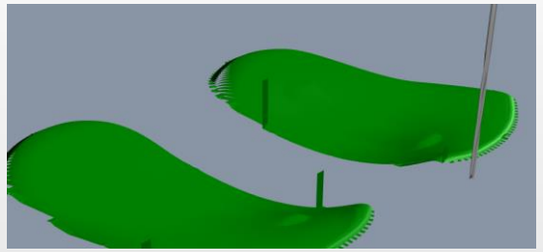
Windows Application

IsoUs is managed with a PC Windows® 7,8,10



3D Preview

Gcode 3D Preview with axes out of limits alarms



Parametric Gcode

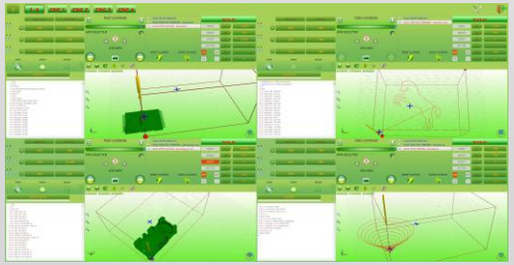
Parametric Gcode management with cycles:

IF, LOOP, GOTO, GOSUB...

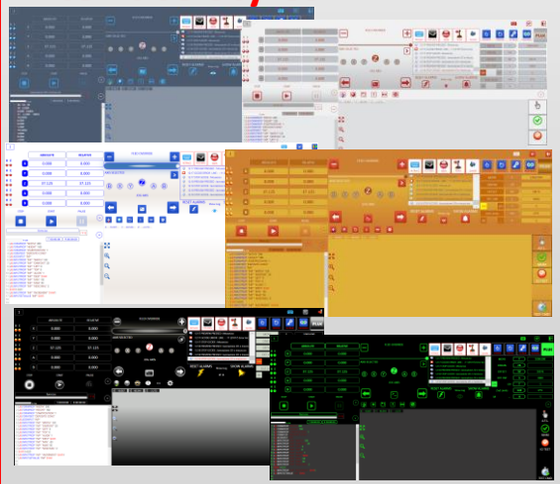
A real programmation language

Up To 9 Process

With the same PC, IsoUs can manage up to 9 different process



Interface Styles

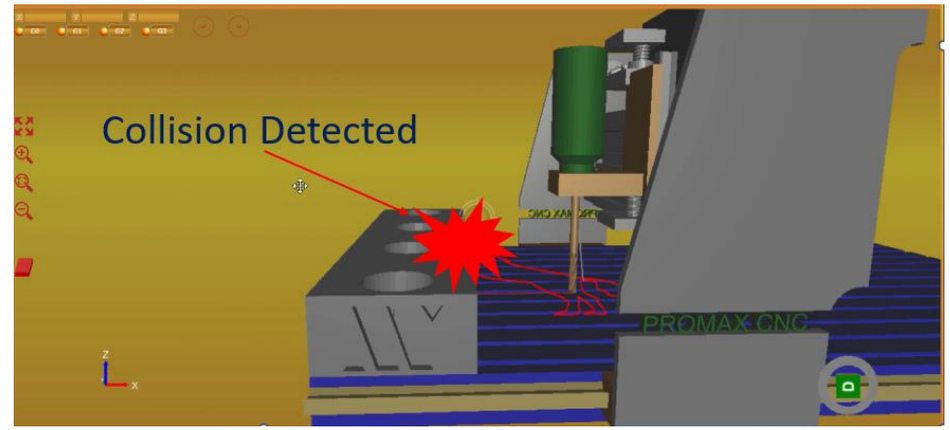


ISO US – REAL MACHINE SIMULATION

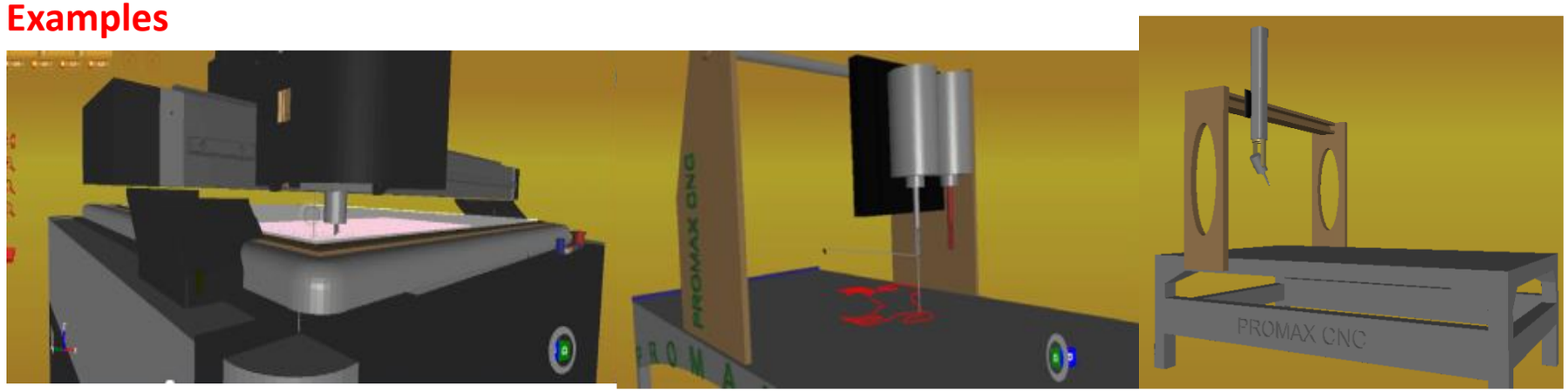
IsoUs can simulate the Machine in REAL MODE. This allows to get the following features:

- **CHECK AXES COLLISION**
- **DINAMIC UPDATE AXES LIMITS**
- **CHECK WORKING ON REAL PIECE**
- **PREVIEW AXES OUT OF LIMITS**
- **SIMULATION LASER, MILLING, CUT BLADE**
- **MULTI HEAD and R.T.C.P. 5 AXES**

Axes Collision



Examples



Hardware & Software

ISO US HSM - High Speed Machining

N.U.R.B.S. Non Uniform Rational Bspline

Special interpolation mode, to smoothing and softening profiles edges;

It allows to improve the machining speed, removing undesired stops on surface's edges.

Is especially used in such profiles where the points accuracy, is not really important in final machining. Where the target is the surface smoothing that can be compromised by the high acceleration ramps on the edges.

Otherwise, without this system, we would be forced to reduce the machining speed, to avoid these problems.

MILD

Special algorithm that allow to have an edge's smoothing, without any changes on continuous segments. Is especially used in such profiles where the points accuracy, is not really important in final machining. The final surface acquire a more natural softness, only varying the edges on 2D and 3D work. This function can be activated using **G49** statement and **MILD** parameter, one for each axis, are used to define the smoothing level.

AFC – Adaptive Feed Control

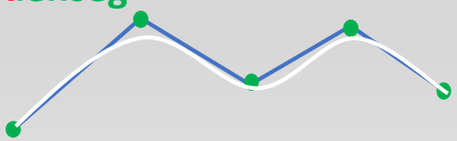
Adaptive speed control uses some special algorithms to optimize the machining speed, analyzing the working path.

In this way, using always the same feed, suitable for the machine type, CNC will adapt the machining speed to the path, trying to optimize speed and machining quality.

AFC has many algorithms inside:

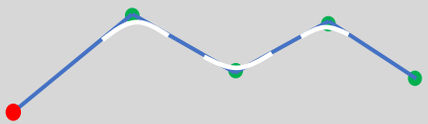
1) JOIN
2) Remove Short
3) Find Arcs
4) Acceleration Control
5) Deceleration Space

G72 Xval Yminlen Zorder Alenseg



G49 AxesName on Enable MILD

ex. XYZ

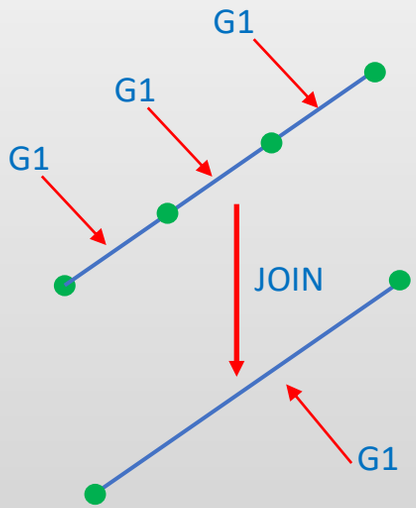


G66 X-100 Cflags

ISO US HSM - High Speed Machining

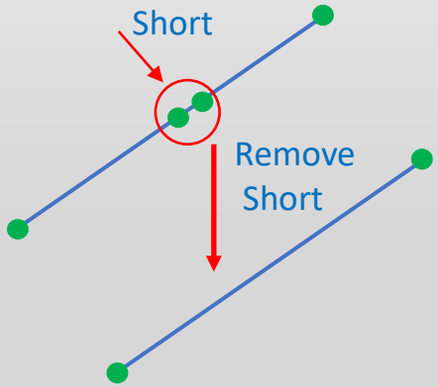
AFC – JOIN

Join allows to connect more **G1** segments in one **G1** segment.
This reduces the number od G1 inside to the Gcode and allows to increase the speed of work



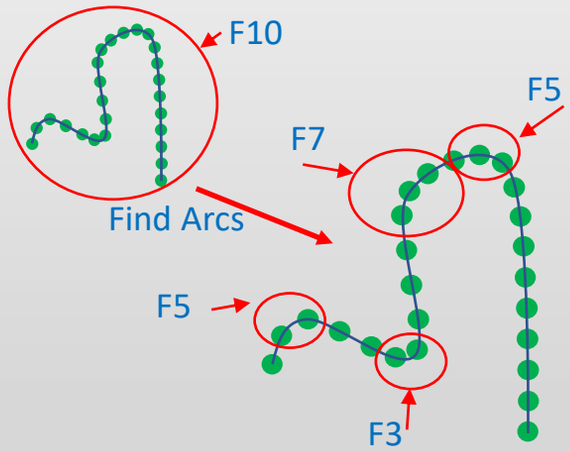
AFC – Remove Short

Remove Short allows to delete the short G1 segments that can't worked by the CN to current FEED.. In complex paths acquired by external machines, normally are inserted the short G1 segments.
These segments can create a slowness int the work of Gcode.
Remove Short, deletes these segments by joining them into a single G1 segment



AFC – Find Arcs

Is the first method that manage the feed on machining path. ***Find Arcs*** calculates the curve radius on **3 DIMENSIONS** joining **G1** segments and using centripetal acceleration (V^2/r) and **«ACC_RAGGIO_MAX»** parameter, it reduces the feed on various curves.

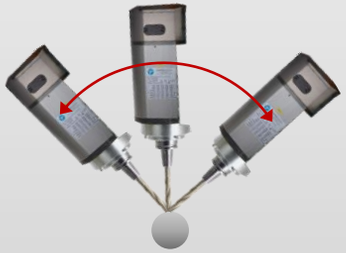


IsoUs – Special Functions

R.T.C.P

This function is specially designed for 4/5 axes machines with rotating/tilting spindle head. It's designed to continuously guarantee the perfect contact between the tool and the workpiece surface, during A&C axes movements.
This function is widely used in woodworking machines.

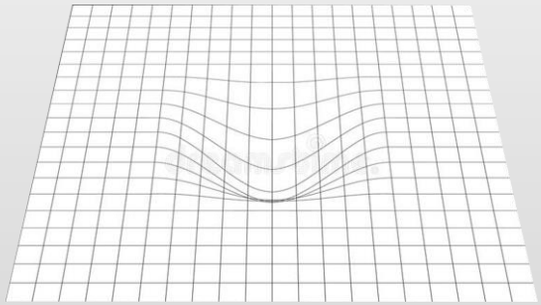
RTCP
DESELECTED



RTCP
SELECTED

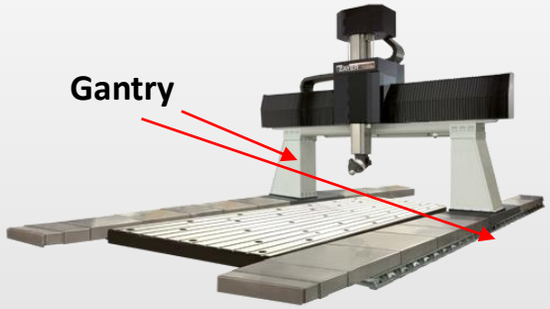
Work Plan Mapping

This special function, allow to map the work area, using a sensor. In this way we can automatically adjust the **Z** position, independently by path interpolation, correcting the non-planarity zones of the work plan.



Gantry Axes

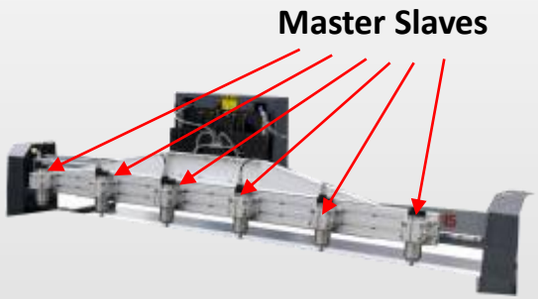
IsoUs can connect more **Axes Gantry**. With a machine parameter is possible to connect the Axis **Master** to Axis **Gantry**



IsoUs - Special Functions

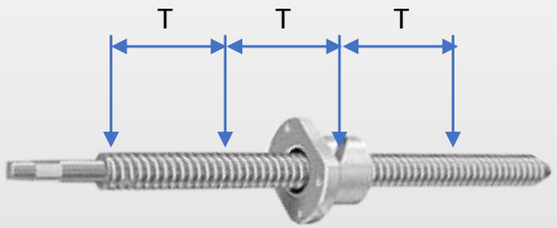
Axes Master Slaves

With the **G108** function, IsoUs can control in dynamic mode Axes Master and Slaves.



Axis Mapping

IsoUs can map in memory of the **CN** one or more axes that allows to compensate in Real Time the mechanical errors of **Axes**



Recovery Processing

IsoUs can resume the work interrupted from any point restoring the correct Axes position.
Also after the "**BalckOut**" IsoUs can recovery the last Gcode Line worked.
Is possible to resume the Gcode also from the last Tool Change used (**Tn**).

Tool Clone

AUTOMATICALLY IsoUs can measure the **TOOL LENGTH** to each Tool Change (**Tn**), if the Length is not right (tool broken) the current work will be resume from the last Tool Change using the **TOOL CLONE**

IsoUs - Features

Interpolated Axes	9 for 8 Process
Positioned AXes	32 for 8 Process
Interpolation	Linear, Circular, Helicoidal, HSM, 3D, R.T.C.P.
Rotative Axes	9
Axes Resolution	min. 0.000001 mm
FEED Resolution	min. 0.001 mm/min
Canned Cycles	G81, G82, G83, G84
M Functions	Inside PC in Gcode – Inside CN in VTB
Subroutines	Gosub – Goto a Label
Variables/Array	32767 - Double
Mathematics	SQRT, LOG, SIN, COS, TAN, ASIN, ACOS etc.
Conditionals Cycles	IF, ELSE, END_IF
Iterative Cycles	LOOP, END_LOOP
Gcode Dimensions	Without Limit – Utilization PC RAM
PLC	Base I/O from Gcode – Real Time from VTB
Tool Compensation	Diameter - Length
Work Origins	256
Offset Origins	256
Tools per Head	256
Heads	256
BackLash	On all AXes
HandWheel	On all AXes

TANGENTIAL AXIS	Definible – with special Interpolation
Gantry Axes	Definible for each Axis
Master/Slave Axes	From Gcode G108
AFC	Adaptive Feed Control
3D Interpolation	With calculation automatic 3D threshold edge
Filters	N.U.R.B.S (Non Uniform Rational Bspline) NOISE RLS (Remove Len Segmenti) SMOOTHING MILD
Recovery Processing	From Line Number, Tn, from Marker
Retrace	From JOG Axes and resume from any point
Preview	3D with check Axes out of limits
Editor Gcode	Intellisense with Help On Line
Axes Limits Management	After work
Work Plane	On each pair of Axes
User Interface	Customizable
PlugIn	From Promax Store
S.O.	Windows 7® - Windows 8.1® - Windows 10®

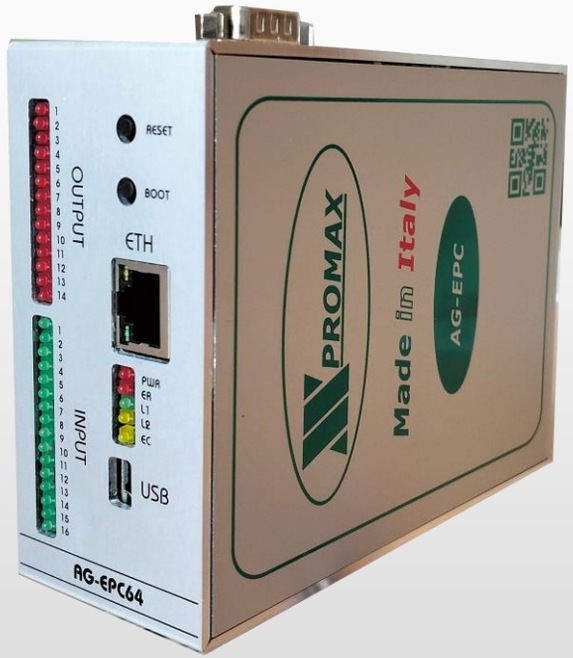
AG-EPC 64 - CNC up to 64 Axes

AG-EPC 64 is the high-end CNC Promax. The performances are ideal for high-level professional machines. The type of controlled axes allows a wide choice of engines, with the possibility of being able to use mixed solutions.

This uses ISOUS for GCODE PC application.

The CPU integrates **1 EHTHERNET**, **1 ETHERCAT CoE**, 2 RS232 serial ports (1 - 485), **2 CanOpen**, 8 Analog Inputs 12 Bit. With appropriate expansions, you can integrate up to 128 digital inputs, 114 outputs, 8 analog outputs and 8 channels of 1 MHz encoder.

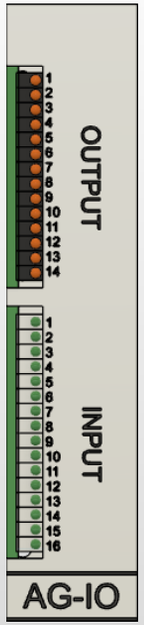
The PC connection is via ETHERNET up to 100 Mb. There is no memory limit with regard to the Part Program, since this uses the PC's RAM.



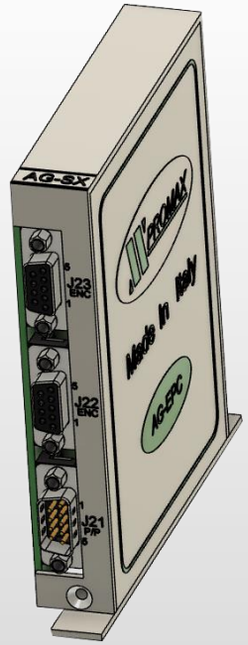
EtherCAT
CANopen
Pulse/Dir
+/- 10V

CPU
2 Rs232/485
2 CanOpen
1 Ethercat CoE
1 Ethernet
8 Analog Inputs
2 Analog Outputs 0-10V
8 Process for 9 Axes
16 Digital Inputs
14 Digital Outputs
2 Axes Pulse/Dir 500 Khz
1 encoder HandWheel

Expansions



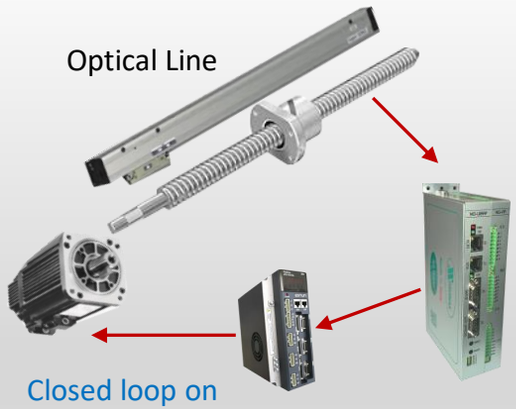
AG-IO (max 7)
16 IDigital Inputs
14 Digital Outputs
3 Fast Inputs- Interrupt



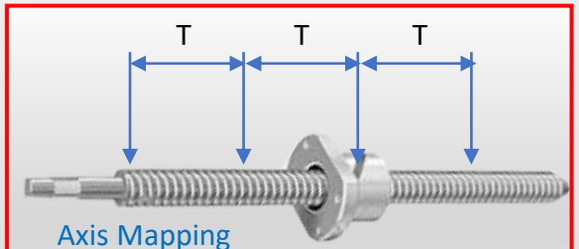
AG-SX (max 4)
2 Axes Pulse/Dir 500 Khz
2 Analog Outputs +/- 10V
2 Encoder Inputs
2 Relè Outputs

AG-EPC 32 - Features

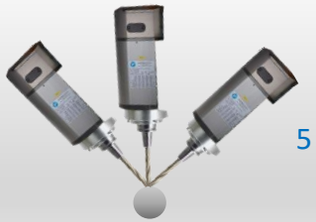
Axes Ethercat	64 Interpolated 64 Positioned
Axes CanOpen	64 Interpolated 64 Positioned
Axes Pulse/Dir	8 Interpolated clock 25 Mhz 8 Positioned clock 25 Mhz (Base - AG-SX)
Axes +/-10V	8 Interpolated 8 Positioned (AG-SX)
Digital Inputs	128 PNP 24 V (Base - AG_IO)
Digital Inputs	112 PNP 24 V ((Base - AG_IO)
Analog Inputs	8 12 bit 4-20Ma 0-10V
Analog Outputs	8 12 bit +/- 10V (AG-SX)
RS232/RS485	2 RS232 1 RS485
CanOpen	2 Master/Slave 1 Mb
Ethercat	1 CoE
Ethernet	1 10/100 Mb
Encoder Inputs	8 Line Driver 1 Mhz (AG-SX)
Nr. Blocks/Sec	1000
Interpolation	All managed from IsoUs
Look Ahead	4096 Blocks
Spindle	+/-10V – ModBus - CanOpen
PLC	Without limit
Multi Process	8 Process internal x 9 Axes
Power Supply	24 Vdc 3 W only CPU (no I/O)
Temperature	From -20° C to +70° C
Dimensions (mm)	CPU - L50 H102 W128 AG-IO/AG-SX L21 H102 W128



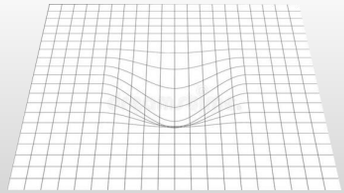
Closed loop on external encoder



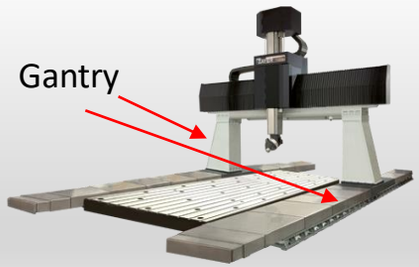
Axis Mapping

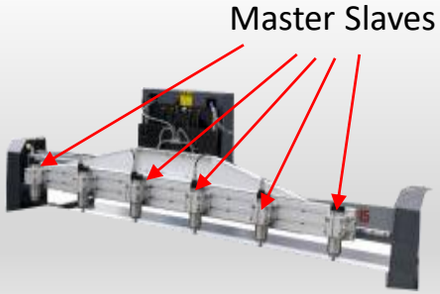


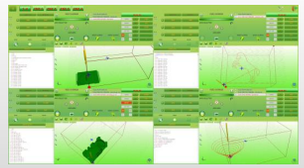
5 Axes R.T.C.P.



Work Plane Mapping







8 Process 9 Axes

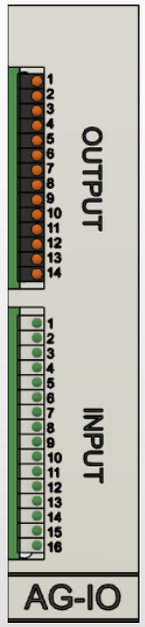
AG-EPC-32 - CNC up to 6 Axes

AG-EPC 32 is the new generation CNC Promax. The performances are ideal for Middle/high-level professional machines. The type of controlled axes allows a wide choice of engines, with the possibility of being able to use mixed solutions. This uses **ISOUS** for **GCODE PC** application. The **CPU** integrates **1 EHTHERNET**, **1 ETHERCAT CoE**, 2 **RS232 serial ports (1 - 485), 1 CanOpen**, **8 Analog Inputs 12 Bit, 2 Analog outputs 0-10V**. With appropriate expansions, you can integrate up to **80 digital inputs**, **70 outputs**, **6 analog outputs** and **6 channels of 500 Khz encoder**. The PC connection is via **ETHERNET** up to 100 Mb. There is no memory limit with regard to the Part Program, since this uses the PC's RAM

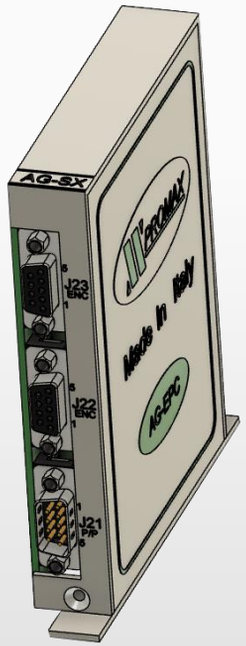
EtherCAT
CANopen
Pulse/Dir
+/- 10V

CPU
2 Rs232/485
1 Micro USB
1 CanOpen
1 Ethercat CoE
1 Ethernet
16 Digital Inputs
14 Digital Outputs
8 Analog Inputs
2 Analog Outputs 0-10V
4 Axes Pulse/Dir 500 Khz

Expansions



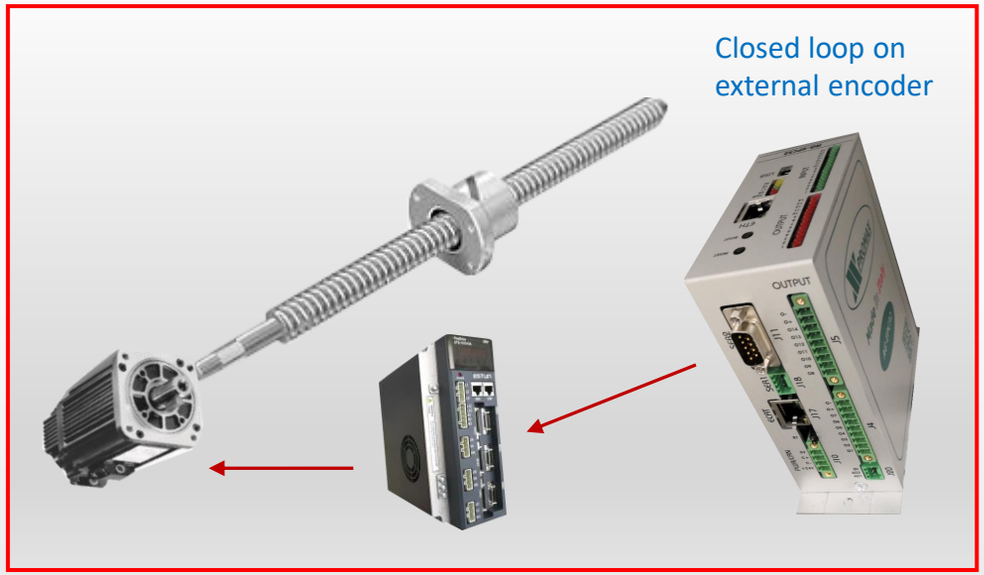
AG-IO (max 4)
16 Digital Inputs
14 Digital Outputs
3 Fast Inputs- Interrupt

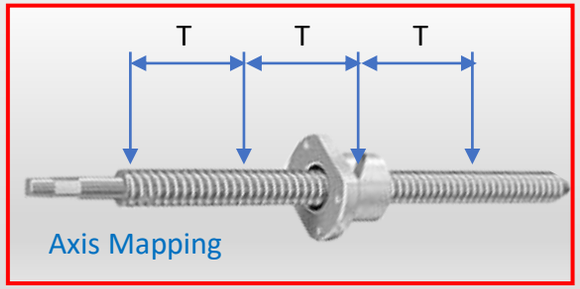


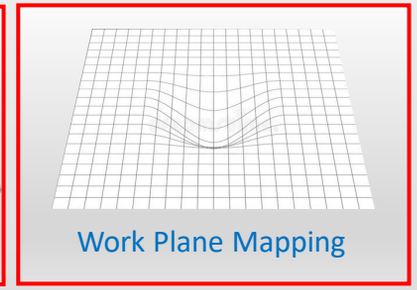
AG-SX (max 3)
2 Axes Pulse/Dir 500 Khz
2 Analog Outputs +/- 10V
2 Encoder Inputs
2 Relè Outèuts

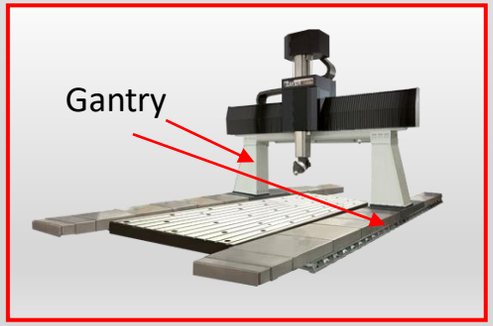
AG-EPC-32 - Features

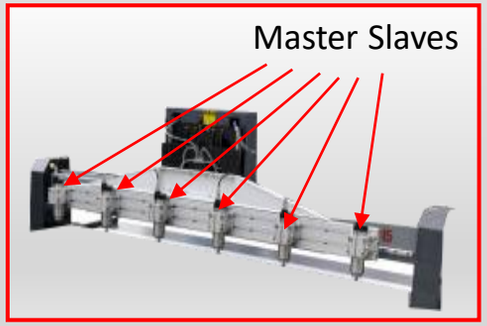
Axes Ethercat	6 Interpolated 16 Positioned
Axes CanOpen	6 Interpolated 16 Positioned
Axes Pulse/Dir Base+AG-SX	6 Interpolated clock 500 Khz 6 Positioned clock 500 Khz
Axes +/-10V AG-SX	6 Interpolated 6 Positioned
Digital Inputs	80 PNP 24 V (Base+AG-IO)
Digital Outputs	70 PNP 24 V Protection (Base+AG-IO)
Analog Inputs	8 12 bit 4-20Ma 0-10V
Analog Outputd	6 12 bit +/- 10V on AG-SX 2 PWM 0-10V on Base
RS232/RS485	2 RS232 1 /RS485 1 – Micro USB Programmation
CanOpen	1 Master/Slave 1 Mb
Ethercat	1 CoE
Ethernet	1 10/100 Mb
Encoder Inputs	6 Line Driver 500 Khx on AG-SX
Nr. Blocchi/Sec	500/1500
Interpolation	All manged from IsoUs
Look Ahead	1024 Blocks
Spindle	+/-10V – ModBus - CanOpen
PLC	Limited
Multi Process	NO
Power Supply	24 Vdc 3 W only CPU (without I/O)
Temperature	Da -20° C a +70° C
Dimensions (mm)	CPU - L50 H102 W128 AG-IO/AG-SX L21 H102 W128











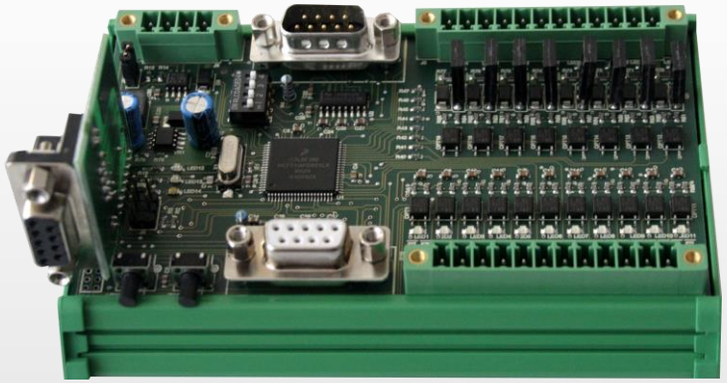
NGQuark/NGQx - I/O CanOpen

The I/O modules NGQ series are suitable for remoted Inputs and Outputs in the CanOpen. Inside they integrate different types of I / O:

- **Digital Inputs**
- **Digital Outputs**
- **Analog Inputs**
- **Analog Outputs**
- **Encoder Inputs**
- **PULSE/DIR Outputs**

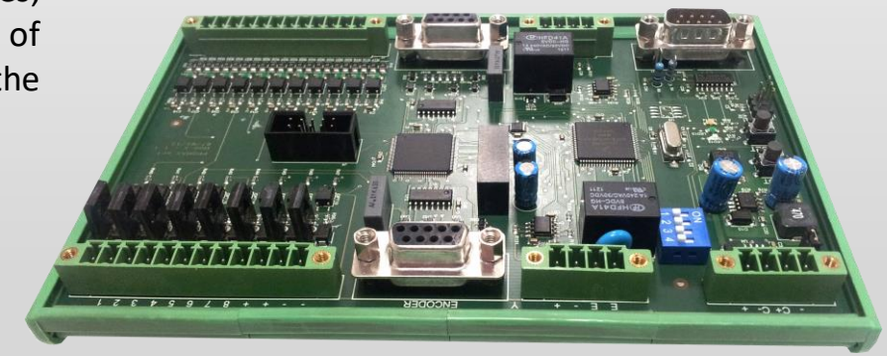
These can be shared with the NGWARP and NGMEVO CNCs, extending the possibility of managing the utilities in the machines.

NGQuark



CPU
2 Rs232/485
1 CanOpen
4 Pulse/Dir 35 Khz
4 Analog Inputs
11 Digital Inputs
8 Digital Outputs
2 Analog Outputs +/-10V

NGQx



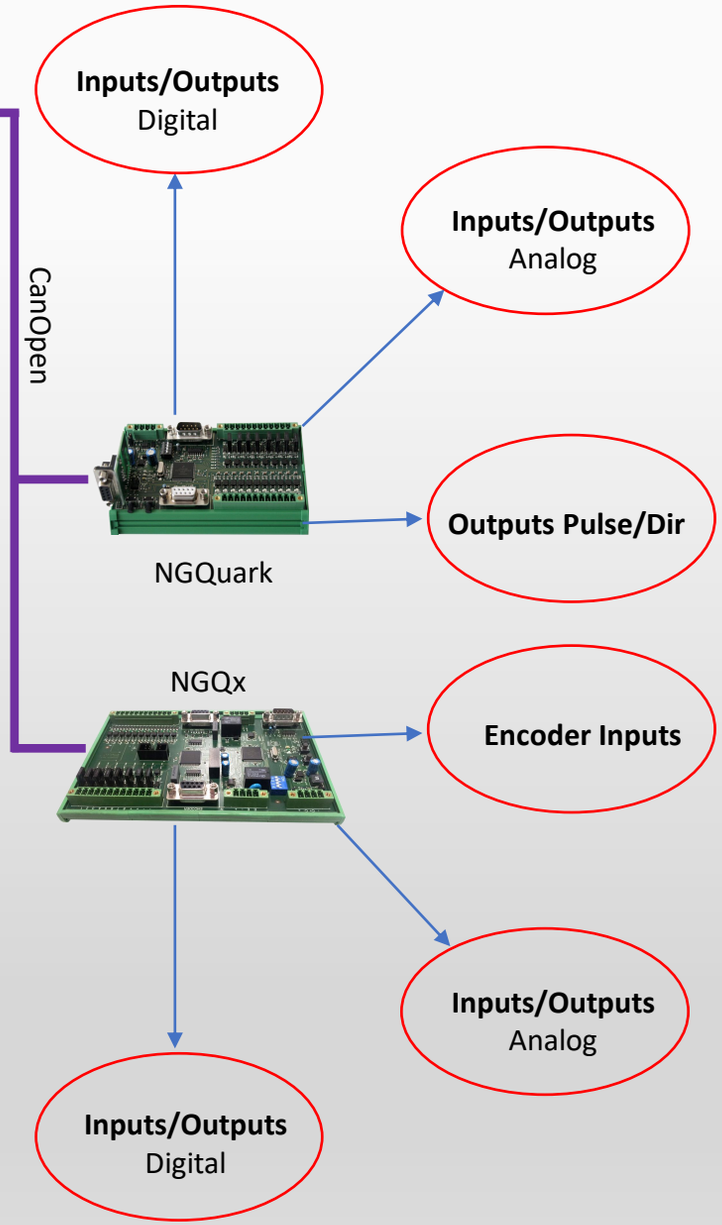
CPU
2 Rs232/485
1 CanOpen
2 Encoder Inputs
1 Analog Input
11 Digital Inputs
8 Digital Outputs
2 Analog Outputs +/-10V
2 Relè Outputs

NGQuark - Features

Axes Pulse/Dir	4 Posizionated clock 125 Khz
Digital Inputs	11 PNP 24 V
Digital Outputs	8 PNP 24 V 1 A
Analog Inputs	4 12 bit 4-20Ma, 0-10V, 0-24 V
Analog Outputs	2 +/-10V
RS232/RS485	2 RS232 1 RS485
CanOpen	1 Master/Slave 1 Mb
Power Supply	24 Vdc 2,6 W CPU
Temperature	From -20° C to +70° C
Dimensions (mm)	L124 H93 W40

NGQx - Features

Encoder Inputs	2 Line Drive 500 Khz
Digital Inputs	11 PNP 24 V
Digital Outputs	8 PNP 24 V 1 A
Analog Inputs	1 da 12 bit configurabile 4-20Ma, 0-10V, 0-24 V
Analog Outputs	2 +/-10V
Relè Output	2 1A
RS232/RS485	2 RS232 1 Configurabile RS485
CanOpen	1 Master/Slave 1 Mb
Power Supply	24 Vdc 2,6 W CPU
Temperature	From -20° C to +70° C
Dimensions (mm)	L166 H112 W40



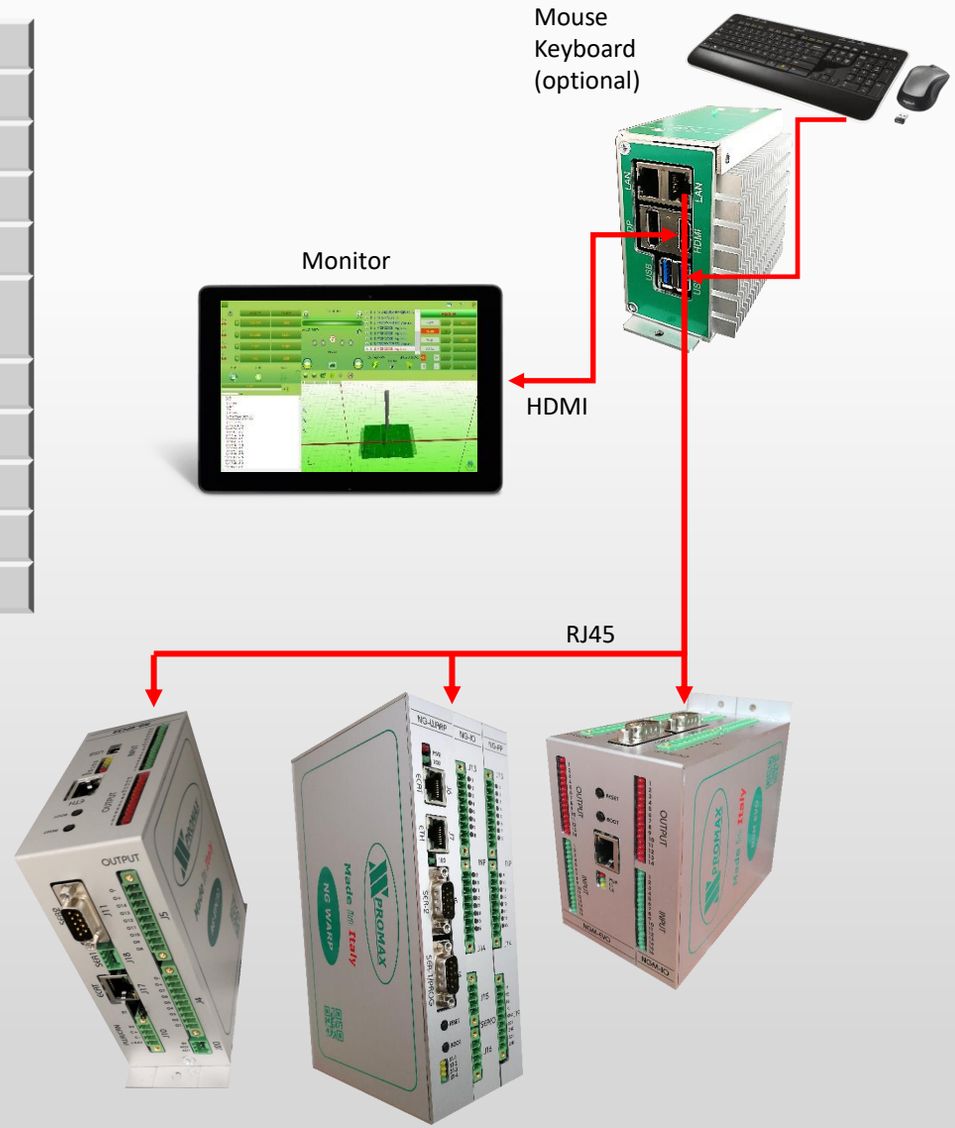
WPC – Industrial PC Windows 10

WPC is a MiniPc Windows low price. Inside is installed the Windows 10 Enterprise S.O.
Anything similar to a normal PC can connect to the Promax systems via RJ45 Ethernet.
It can be connected to external monitors via HDMI or DP port.
The 3 USB ports allow broad connectivity with external devices such as Mouse, Keyboards, TouchScreen, USB Drives and so on.
Ideal for use with **IsoUs**.
Industrial aluminum and Power 24 Vdc

S.O. Windows 10 Enterprise LTSB
3 USB 3.0
1 USB OTG
1 HDMI
2 Gb Ethernet
CPU Intel® Celeron N3350/N4200
RAM 2/4/8 Gb LPDDR4
Storage 32/64/128 GB eMMC
Power Supply 24 Vdc

WPC - Features

CPU	Intel® Celeron N3350/N4200
RAM	2/4/8 Gb LPDDR4
STORAGE	eMMC 32/64/128 Gb
ETHERNET	2 Gb ETHERNET
GRAPHICS	Intel® Gen 9 HD/500 HD/505
USB	3 USB 3.0 1 USB OTG
VIDEO OUTPUT	1 HDMI
S.O.	Windows 10 Enterprise LTSB
Power Supply	24 Vdc 1,25 A max
Temperature	From -20° C to +70° C
Dimensions (mm)	L55 H95 W90



uPC - Industrial PC Windows 10

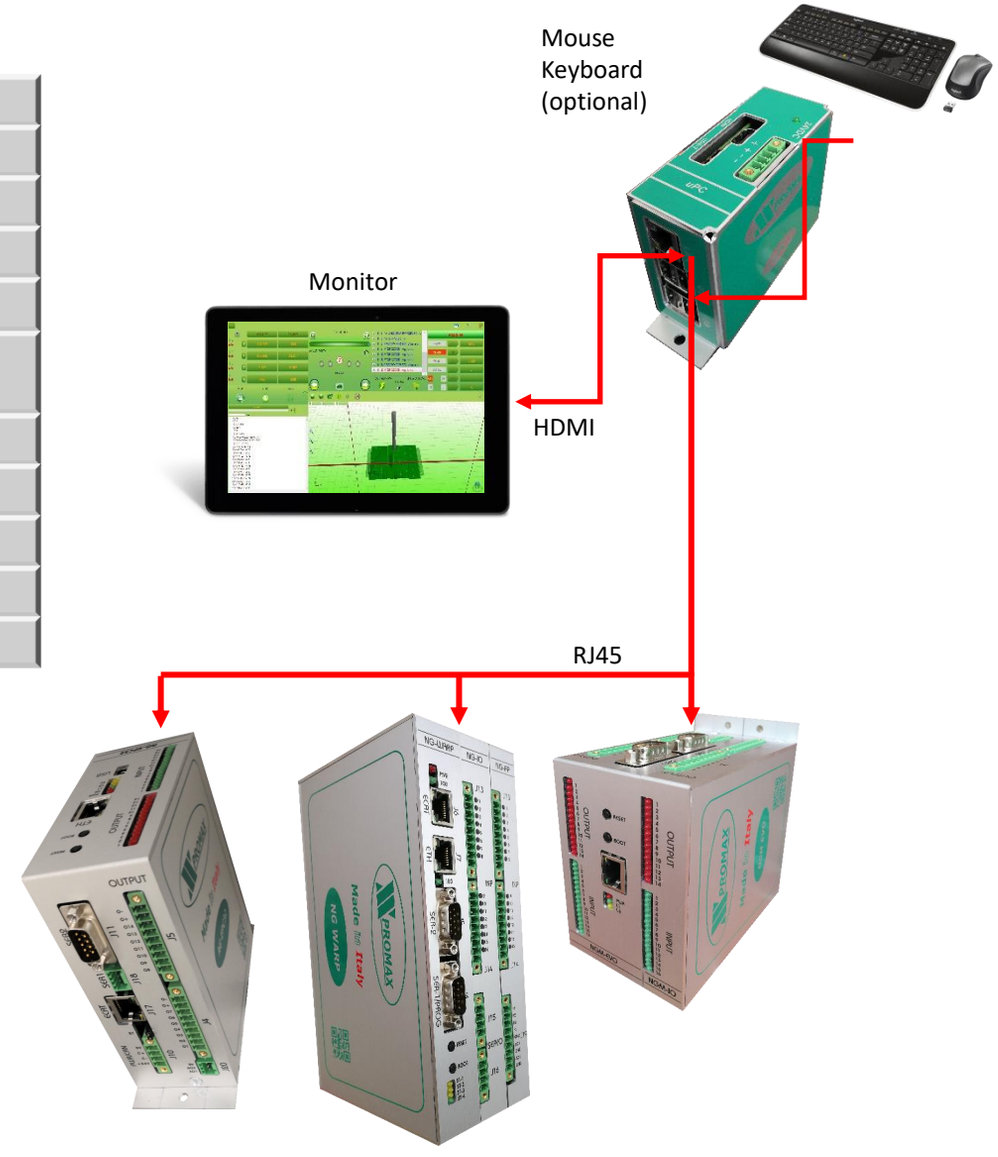
uPC is a MiniPc Windows low price. Inside is installed the Windows 10 Enterprise O.S.

Anything similar to a normal PC can connect to the Promax systems via RJ45 Ethernet.
It can be connected to external monitors via HDMI or DP port.
The 4 USB ports allow broad connectivity with external devices such as Mouse, Keyboards, TouchScreen, USB Drives and so on.
Ideal for use with **IsoUs**.
Industrial aluminum and Power 24 Vdc

S.O. Windows 10 Enterprise LTSB
4 USB 2.0 Type A
1 USB OTG
1 HDMI
1 Gb Ethernet
CPU Intel® Atom™ x5.z8350 1.92 Ghz
RAM 2/4 Gb LPDDR4
Storage 32/64 GB eMMC
Alimentazione 24 Vdc

uPC - Features

CPU	Intel® Atom™ x5.z8350
RAM	2/4 Gb LPDDR4
STORAGE	eMMC 32/64 Gb
ETHERNET	1 Gb ETHERNET
GRAPHICS	Intel® HD 400
USB	4 USB 2.0 Type A 1 USB OTG
VIDEO OUTPUT	1 HDMI
S.O.	Windows 10 Enterprise LTSB
Power Supply	24 Vdc 1,25 A max
Temperature	Da -20° C a +70° C
Dimensions (mm)	L38 H90 P72



WPP 10 - Panel PC Windows 10

WPP 10 is a 10" Multi Touch Panel PC suitable for industrial applications.
The installed operating system is Windows 10 IoT Enterprise.
Similar to a normal PC Panel, it is equipped with all the necessary peripherals.
3 USB Ports
2 Ethernet on RJ45
1 eMMC
Compatible with all Windows application.
Panel mounting with gasket and 24 VDC power supply

Display 10” Multi Touch 1280x800 wide
CPU Intel® Celeron N3350 2,4 Ghz
GPU Intel® Gen 9 HD/500 HD/505
RAM 2/4Gb LPDDR3
STORAGE eMMC 32Gb
2 Gb ETHERNET
3 USB 3.0
O.S. Windows 10 IoT Enterprise
IP65 (front)
Power Supply 24 Vdc
Panel Mounting

WPP - Features

CPU	Intel® Celeron N3350
RAM	2/4 Gb LPDDR4
DISPLAY	10» Multi Touch Wide 1280x800 px
STORAGE	eMMC 32 Gb
ETHERNET	2 Gb ETHERNET
GRAPHICS	Intel® Gen 9 HD/500 HD/505
USB	3 USB 3.0
S.O.	Windows 10 Enterprise LTSB
Power Supply	24 Vdc 1,5 A max
Protection	IP65 (front)
Mounting	Panel
Temperature	From -20° C to +70° C
Dimensions (mm)	L258 H177 W67

WPB 12 - Panel PC Windows 10

WPB 12 is a 12" Touch Panel PC suitable for industrial applications.
The installed operating system is Windows 10 IoT Enterprise.
Similar to a normal PC Panel, it is equipped with all the necessary peripherals.

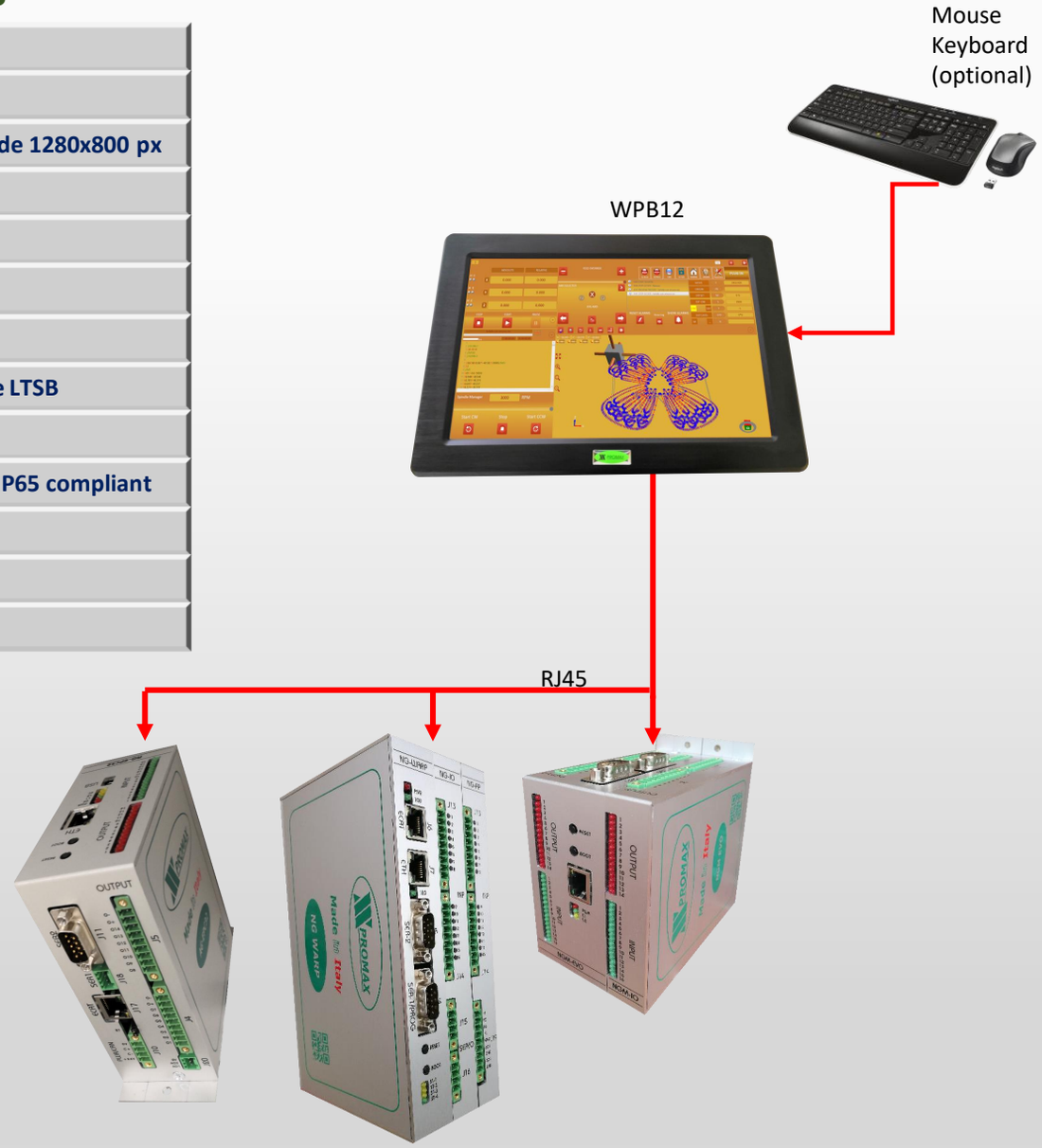
4 USB Ports
1 Ethernet on RJ45
1 eMMC

Compatible with all Windows application.
Panel mounting with gasket and 24 VDC power supply

Display 12” Touch 1280x800 wide
CPU Intel® Atom X5 Z8350 1,92 Ghz
RAM 2/4Gb LPDDR3
STORAGE eMMC 32/64 Gb
1 Gb ETHERNET
4 USB 2.0 Type A
O.S. Windows® 10 IoT Enterprise
IP65 on Front
Power Supply 24 Vdc
Panel Mounting

WPB12 - Features

CPU	Intel® Atom X5 Z8350
RAM	2/4 Gb LPDDR4
DISPLAY	12» Resistive Touch Wide 1280x800 px
STORAGE	eMMC 32/64 Gb
ETHERNET	1 Gb ETHERNET
GRAPHICS	Intel® HD 400
USB	4 USB 2.0 Type A
S.O.	Windows 10 Enterprise LTSB
Power Supply	24 Vdc 0.6 A max
Protection	Front Panel Protection IP65 compliant
Mounting	Panel
Temperature	From -20° C to +70° C
Dimensions (mm)	L320 H219 W82



WPB 15 - Panel PC Windows 10

WPB 15 is a 15" Touch Panel PC suitable for industrial applications.
The installed operating system is Windows 10 IoT Enterprise.
Similar to a normal PC Panel, it is equipped with all the necessary peripherals.

4 USB Ports
1 Ethernet on RJ45
1 eMMC

Compatible with all Windows application.
Panel mounting with gasket and 24 VDC power supply

Display 15” Touch 1920x1080 wide
CPU Intel® Atom X5 Z8350 1,92 Ghz
CPU Intel® Celeron N3350 2,4 Ghz
GPU Intel® Gen 9 HD/500 HD/505
RAM 2/4Gb LPDDR3
STORAGE eMMC 32/64 Gb
1/2 Gb ETHERNET
3/4 USB 2.0/3.0 Type A
O.S. Windows® 10 IoT Enterprise
IP65 on Front
Power Supply 24 Vdc
Panel Mounting

WPB15 - Features

CPU	Intel® Atom™ X5 Z8350 1,92 Ghz (WPB15/01) Intel® Celeron™ N3350 Dual Core 2.4 Ghz (WPB15/02)
RAM	2/4 Gb LPDDR4
DISPLAY	15” Touch Resistivo Wide 1920x1080
STORAGE	eMMC 32/64 Gb
ETHERNET	1 – Gb ETHERNET (WPB15/01) 2 – Gb ETHERNET (WPB15/02)
GRAPHICS	Intel® HD 400 (WPB15/01) Intel® Gen 9 HD/500 HD/505 (WPB15/02)
USB	4 - USB 2.0 Type A (WPB15/01) 3 – USB 3.0 (WPB15/02)
S.O.	Windows® 10 Enterprise LTSB
Power Supply	24 Vdc – 0,6/1.2 A max
Protection	Front Panel Protection IP65 compliant
Mounting	Panel
Temperature	From -20° C to +70° C
Dimensions (mm)	W400 H250 D85 (WPB15/01) W400 H250 D102 (WPB15/02)

WPB 19 - Panel PC Windows 10

WPB 19 is a 19" Touch Panel PC suitable for industrial applications.
The installed operating system is Windows 10 IoT Enterprise.
Similar to a normal PC Panel, it is equipped with all the necessary peripherals.

4 USB Ports
1 Ethernet on RJ45
1 eMMC

Compatible with all Windows application.
Panel mounting with gasket and 24 VDC power supply

Display 19” Touch 1920x1080 wide
CPU Intel® Atom X5 Z8350 1,92 Ghz
CPU Intel® Celeron N3350 2,4 Ghz
GPU Intel® Gen 9 HD/500 HD/505
RAM 2/4Gb LPDDR3
STORAGE eMMC 32/64 Gb
1/2 Gb ETHERNET
3/4 USB 2.0/3.0 Type A
O.S. Windows® 10 IoT Enterprise
IP65 on Front
Power Supply 24 Vdc
Panel Mounting

WPB19 - Features

CPU	Intel® Atom™ X5 Z8350 1,92 Ghz (WPB19/01) Intel® Celeron™ N3350 Dual Core 2.4 Ghz (WPB19/02)
RAM	2/4 Gb LPDDR4
DISPLAY	19” Resistive Touch Wide 1920x1080
STORAGE	eMMC 32/64 Gb
ETHERNET	1 – Gb ETHERNET (WPB19/01) 2 – Gb ETHERNET (WPB19/02)
GRAPHICS	Intel® HD 400 (WPB19/01) Intel® Gen 9 HD/500 HD/505 (WPB19/02)
USB	4 - USB 2.0 Type A (WPB19/01) 3 – USB 3.0 (WPB19/02)
S.O.	Windows® 10 Enterprise LTSB
Power Supply	24 Vdc – 0,6/1.2 A max
Protection	Front Panel Protection IP65 compliant
Mounting	Panel
Temperature	From -20° C to +70° C
Dimensions (mm)	W480 H330 D85 (WPB19/01) W480 H330 D102 (WPB19/02)

MP 12 – Industrial Monitor

MP 12 is a rugged industrial monitor 12” Touch.

1 HDMI Input

1 VGA Input

1 USB Touch output

Panel mounting with gasket and 12 VDC power supply included

Display 12” Touch 1280x800 wide
1 HDMI
1 VGA
1 USB Touch
IP65
Power Supply 12 Vdc
Panel Mounting

MP 12 - Features

DISPLAY	12” Resistive Touch Wide 1280x800 (max 1920x1080)
VIDEO INPUT	1 – HDMI 1 - VGA
USB	1 - USB Output Touch
Power	12 Vdc – 0,6 A max
TEMPERATURE	From -20° C to +70° C
PROTECTION	Front Panel Protection IP65 compliant
DIMENSIONS (mm)	W320 H219 D38

MP 15 – Industrial Monitor

MP 15 is a rugged industrial monitor 15” Touch.

1 HDMI Input

1 VGA Input

1 USB Touch output

Panel mounting with gasket and 12 VDC power supply included

Display 15” Touch 1920x1080 wide
1 HDMI
1 VGA
1 USB Touch
IP65
Power Supply 12 Vdc
Panel Mounting

MP 15 - Features

DISPLAY	15” Resistive Touch Wide 1920x1080
VIDEO INPUT	1 – HDMI 1 - VGA
USB	1 - USB Output Touch
Power	12 Vdc – 0,8 A max
TEMPERATURE	From -20° C to +70° C
PROTECTION	Front Panel Protection IP65 compliant
DIMENSIONS (mm)	W400 H250 D38

MP 19 – Industrial Monitor

MP 19 is a rugged industrial monitor 19” Touch.

1 HDMI Input

1 VGA Input

1 USB Touch output

Panel mounting with gasket and 12 VDC power supply included

Display 19” Touch 1920x1080 wide
1 HDMI
1 VGA
1 USB Touch
IP65
Power Supply 12 Vdc
Panel Mounting

MP 15 - Features

DISPLAY	19” Resistive Touch Wide 1920x1080
VIDEO INPUT	1 – HDMI 1 - VGA
USB	1 - USB Output Touch
Power	12 Vdc – 1 A max
TEMPERATURE	From -20° C to +70° C
PROTECTION	Front Panel Protection IP65 compliant
DIMENSIONS (mm)	W480 H330 D38

WHC - WiFi HandWheel

WHC is a Remote WiFi HandWheel with Battery. It allows the manual handling of machines without any cables and therefore in total freedom.
JOG Button
JOG by HandWheel
START – STOP – PAUSE
AXIS SELECTION
are already pre-set functions. Four **F1-F2-F3-F4** keys can be programmed in IsoUs Environment for custom functions (eg Homing Machines, Utility Management).
A potentiometric override allows immediate and accurate control of Axis **FEED**.
The battery lasts for more than a day with medium usage.
The battery charger is built-in and you only need to connect it to the supplied 220 Vac adapter.

Remote HandWheel WiFi
Lithium Battery
Display 4x20
Show Axes Values
Show Machines Alarms
Feed Override
6 Axes Management
Axis JOG from Button
Start-Stop-Pause
4 Customized Functions by Keys

WHC - Features

BATTERY	Lithium 1.800 ma/h
DISPLAY	LCD 4 Rows x 20 Char Back Light
WiFi	1 WiFi 802.11 b/g/n
HANDWHEEL	100 I/r
FEED OVERRIDE	Potentiometric
BUTTONS	18
AXES	6
Temperature	From 0° C to +50° C
Dimensions (mm)	L224 H106 W40
WEIGHT (gr)	500

PWR

WiFi

WiFi Connection

RJ45 – RS232

PxVision – Vision System

PxVision is a vision system based on high resolution camera with interchangeable lenses.
It can be used for a various images acquisition and objects detection.
The Max resolution of **2592x1944 Pixel** allows images with high definition of objects, with a FOV of 5 cm x 3,8 cm the definition is of **0.019 mm per Pixel**.
Promax offers a large software for use in all application of

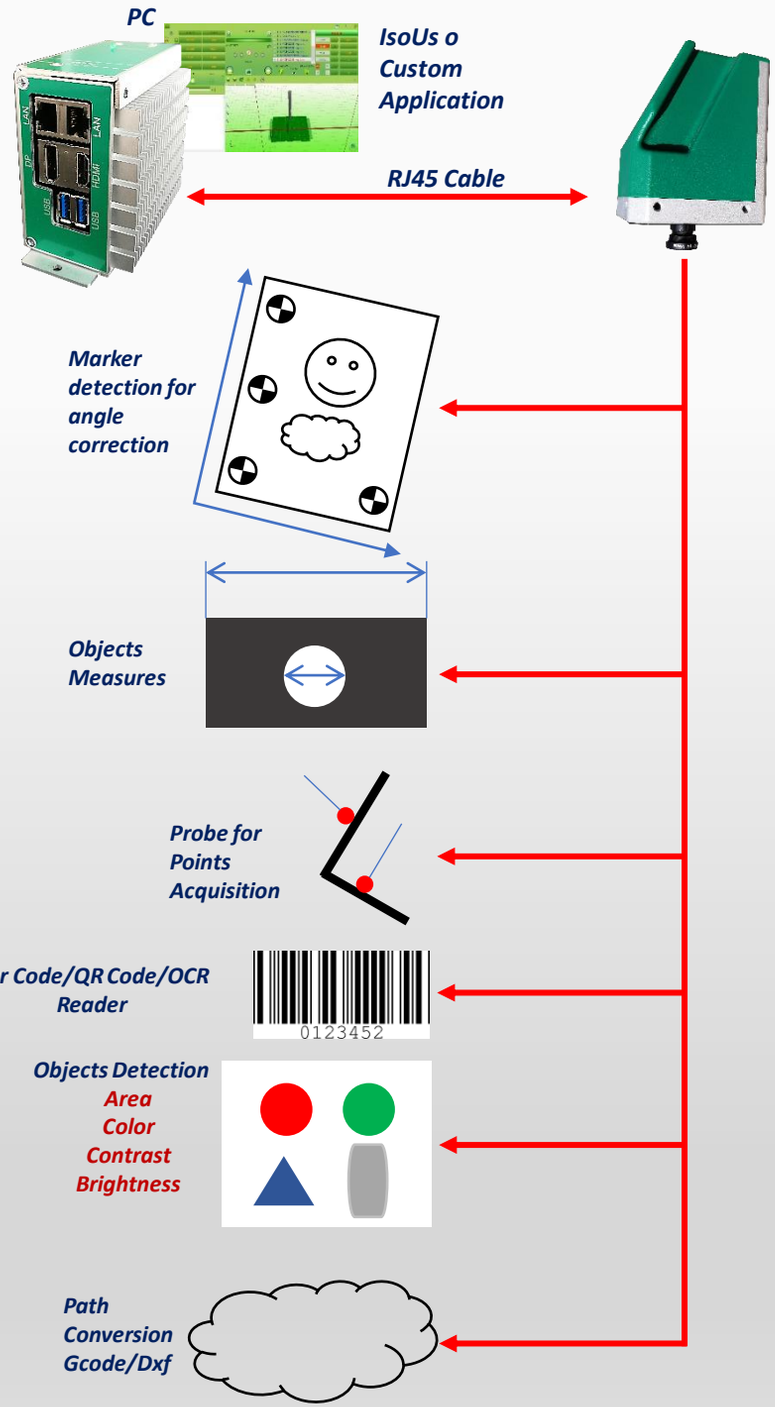
“Digital Image Processing”

PxVision is a strong industrial system with 4 side mounting, **24 Vdc** Power, **Ethernet** connection,
8 LED for Illumination with variable power.
PxVision can mount Autofocus Lenses or fixed focus with different focal lengths.
All parameters are set by **PxVisionBrowser** application that allows to a easy system management.
PxVision is directly integrated in IsoUs by **PlugIn** or **G102.1** function that allows to connection with main camera functions.
Is available a complete **FrameWork** for visual Studio or an Ethernet Server for customized applications.

Camera resolution up-to 5 Mpx 2592x1944 px
Interchangeable Lenses
AutoFocus
8 Illumination Led with variable power
Ethernet Connection
Marker/Objects Detection, Measures
BarCode, QrCode,OCR Reader
PlugIn for IsoUs
Path conversion in Gcode/DXF
4 Side Mounting
Power 24 Vdc

PxVision - Features

Camera Resolution	Max 5 Mpixel
Possible Resolutions	2592x1944 – 2048x1536 – 1920x1080 – 1600x1200 – 1280x1024
Optics	AutoFocus or fixed focus with differents Focal lengths Type M12
PC Connection	ETHERNET RJ45
Frame/Sec	From 3 Frame/Sec to 15 Frame/Sec
Illumination Led	8 – Led with variable power from 0 to 100%
Acquisition Type	Marker Detection – Objects Measures Probe – Objects Detection
FrameWork	For Visual Studio .NET
Server Ethernet	TCP/IP for Commands – UDP for image transfer
IsoUs	Plug In Marker Acquisition and Gcode angle correction Plug In for Wide FOV and points detection
Mounting	4 Side
Power Supply	24 Vdc – 0.105A with 8 Led On max power (0.095A without Led)
Temperature	From 0° C to +60° C
Protection	IP20
Dimensions (mm)	L70 H90 P70 (Without lenses)



VTBII - Visual Tool Basic IDE

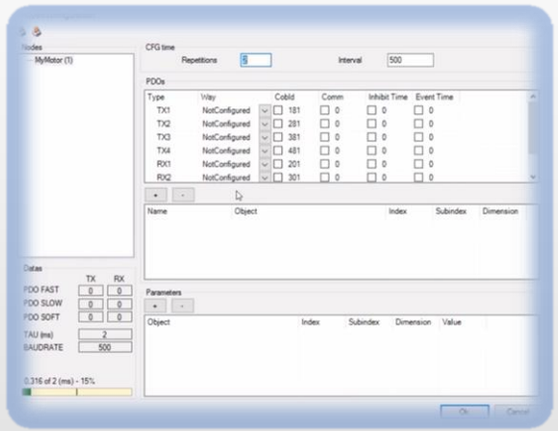
VTBII is an integrated development environment for object-oriented programming on all platforms PROMAX. The environment contains within it all the tools required for developing applications in a simple and intuitive. VTB's philosophy is based on the latest technologies **RAD** (Rapid Application Development) that allows rapid application development by writing a small amount of code due to a huge library of objects and functions available technologies. However, implementing the additional code can handle any type of industrial application. VTB integrates a high-level language like BASIC MOTION LADDER language evolved and a graphical management of PLC cycles faster (I / O). In addition to the **CANOPEN, ETHERCAT** can be managed RS232/RS485 serial protocols such as **MODBUS**. The configuration of an **OPEN LINE CAN** or **EtherCAT** is done in a simple and driven by defining any node as an object to make it available to VTB environment. Powerful axis movement allows the management of any type of machine using linear interpolation functions, **CIRCULAR**, **LINEAR SPEED, POWER LINES**, **CAM PROFILE etc**.
A powerful **DEBUG** allows you to control the operation of applying a remote location.

IDE R.A.D.
OBJECT Oriented
Large Object Library
Axes Functions Control
eCAM Functions
eGear Functions
Motion Functions Technology
Debug Step by Step
Multitask
Native Code CPU

VTBII - Functions

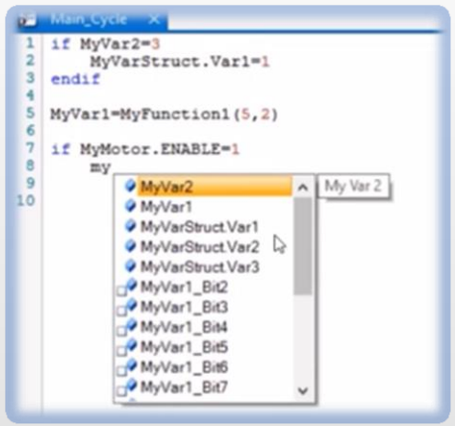
CanOpen Configurator

Integrated CanOpen configurator for all devices.



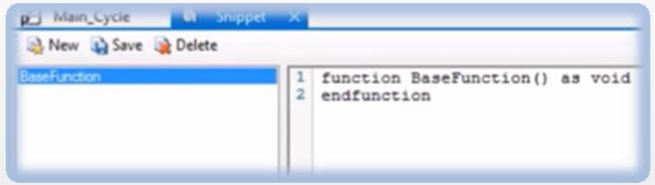
Editor Intellisense

Editor Intellisense with Help On Line



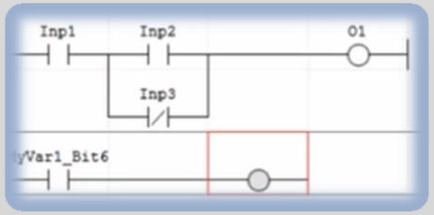
Code Snippet

Managemrnt of code «SNIPPET»



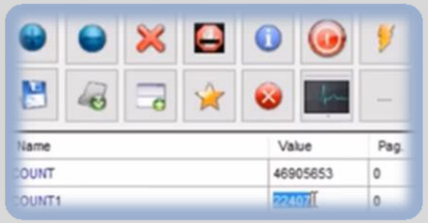
Ladder

Basic Functions Ladder for PLC cycles



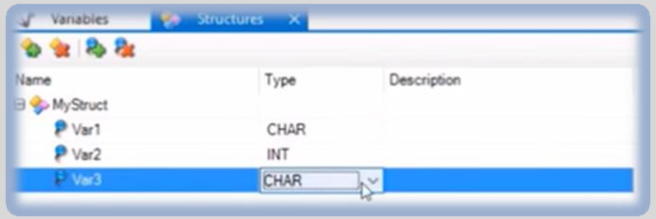
Debug

Debug Application with Break Points, execution Step by Step of code and Variables Watch



Structures

Management of data Structure



VTBII - Features

Variables Type	BIT 0 /1 CHAR -128 / +127 UNSIGNED CHAR 0 / 255 INT -32768 / +32767 UINT 0 / 65535 LONG -2.147.483.648 / +2.147.483.647 FLOAT (Double) 2.22507e-308 / 1.79769e+308
Memory	GLOBAL Visible all Tasks PRIVATE Visible inside Task STATIC RAM with Battery FIXED Address fixed
Array	For all Variables types except BIT
Structure	For all Variables types except BIT
Pointers	CHAR,UCHAR,INT,UINT,LONG,FLOAT,STRUCTURE
Functions	Like «C»
Delegate	Call Function by Address
Iterative Cycles	FOR, NEXT, EXITFOR, STEP,WHILE,LOOP,EXITWHILE
Conditional Cycles	IF,ELSE,ENDIF,SELECT,CASE,ENDSELECT
Logical and Mathematical	() Paranthesis [] Pointer + -*/ Mathematical > < >= <= <> = Condition || && | & ! ~ ^ Logical and BIT management >> << Shift Bit
Mathematical Functions	SIN,COS,SQR,TAN,ATAN,ASIN,ACOS,ATAN2,ABS,FABS

System Functions	Timers Management String Management Memory Alloc/Dealloc FAT32 RS232 Stack Ethernet I/O Motion CanOpen Ethercat eCam Gear
Debug	BreakPoint, Step By Step, Variables Watch

ITALY
FRANCE
SPAIN
TURKEY
IRAN
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