



New generation of CNC



New Generation of CNC

This new generation of OPENcontrol CNC perfectly matches the former product line, increasing computational power and reliability, together with a very competitive price/performances ratio.

The OSAI NC solution is highly flexible and scalable, simplifying the installation and maintenance, thanks to the new hardware design. Moreover, the intuitive HMI makes the NC programming and machine commissioning easy. The OSAI CNC software have been specifically designed for 2D and 3D machines operating in different markets such as:



WOOD & COMPOSITES



ALUMINUM & SHEET METAL



GLASS & STONE



LEATHER

KEY FEATURES:

- Industry 4.0 ready
- Up to 24 processes
- Up to 64 controlled axes
- Coordinated, spindle, auxiliary, linear, rotary and rollover axes
- Gantry and dual axes
- Axis migration
- Advanced Tool Center Point (TCP), planes roto-translation, TCP with splines (High Speed Cutting) for machining centers with rotary heads

- Look-ahead with high number of pre-calculated blocks
- Velocity and Acceleration Feed Forward (VFF, AFF)
- Jerk control using advanced algorithms
- Management of tool magazine, tool life, random tool, multi-pocket tool
- Multi-axis Electronic CAM
- · Bidirectional lead screw compensation
- Cross Compensation
- Volumetric Compensation

OPENsmart entry level

UP TO 16 INTERP. AXES
UP TO 24 TOTAL AXES
UP TO 4 PROCESSES
MIN TICK 1 ms

UP TO 16 INTERP. AXES
UP TO 24 TOTAL AXES
UP TO 4 PROCESSES
MIN TICK 1 ms

advanced applications

OPENkey

OPENprime

heavy applications

UP TO 64 INTERP. AXES
UP TO 64 TOTAL AXES

UP TO 24 PROCESSES

MIN TICK 500 µs

OPENprime-i

time critical applications

UP TO 64 INTERP. AXES

UP TO 64 TOTAL AXES

UP TO 24 PROCESSES

MIN TICK 500 µs





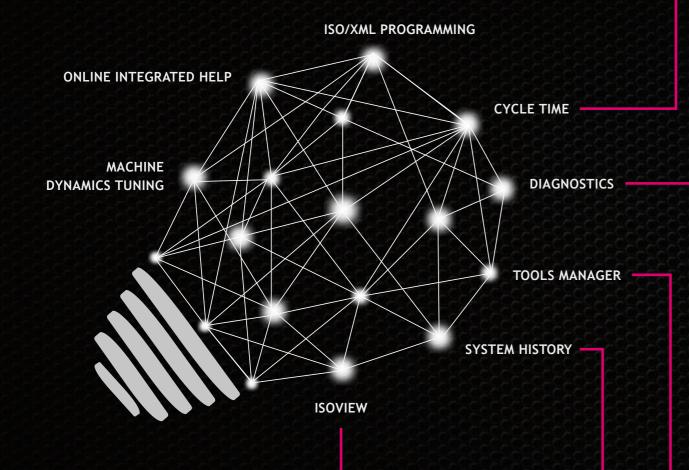
Higher and higher performances

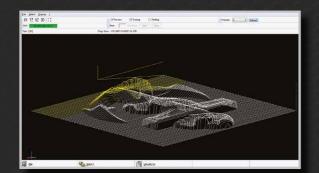
Computational power - Flexibility - Fieldbus range - Features

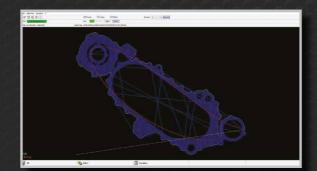




Advanced Software Tools and Functionalities







ON/OFF ongoing machining 2D/3D preview

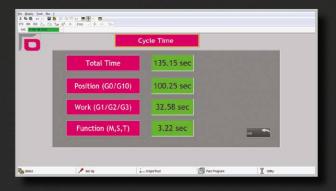
Preview of the working program in 2D and 3D.

Two levels of ISoView:

- Integrated HMI Isoview (On-Line)
- External IsoView useful for the simulation in On-Line and Off-line.

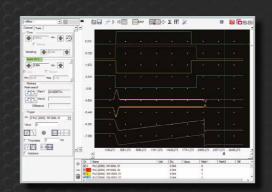
Cycle time evaluation

- Total time
- Rapid movement (G0/G10)
- Working movement (G1/G2/G3)
- Function time (M, S, T)



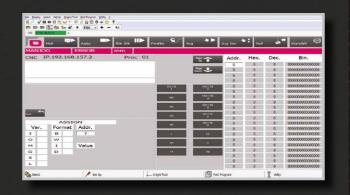
O-SCOPE:

- Simultaneous display of axis trace
- Simultaneous display of CNC and PLC variables
- Multiple selection of different traces
- Horizontal and vertical axis slider

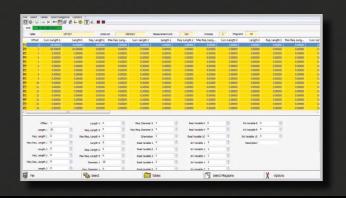


DEBUG HMI PAGES:

- CNC status
- PLC and CNC Variables view
- Part program line view



- 300 tools with magazine (option)
- 300 tools offset
- 100 origins
- 100 user variables



List of all messages from System and PLC

Four classes of messages:

- Plc messages
- Emergency messages
- Part program and system messages
- System Anomaly messages

| OK TO | THE REAL | | | | | | | | |
|------------------|-----------|--|------------|---------------|----------|---------|-------------|------------|------|
| Mosage D W | Type | Message | Date | Time | Code | Process | Source line | Sourcefile | |
| O 164/5207 | Errie | File William found | 99/93/2017 | 132801389 | 23/100 | 00 | | | |
| Q 164/5206 | leer | File MAZU not found | 38/03/2017 | 13/22/50 381 | 29/100 | 60 | | | |
| 271550171 | Emergency | StyDown | 98/93/2017 | 13(21:25.899) | 90 | Ad | | | |
| 271905130 | Emergency | Shift Count | 09/03/2017 | 12/36/29 650 | 90 | All | | | |
| 27158/5094 | Imergency | PutDown | 38/03/20LT | 13:05:53.857 | 90 | A4 | | | |
| 2:12/500 | Emergency | Stuffern | 98/93/2917 | 13/23/27,450 | 90 | 61 | | | - 12 |
| 10/6/G | Leo | Message from PLC : 5214 Machine Assiliary OFF | 18/01/2017 | (7-36-20-958 | 21/202 | PIC | | | |
| EE 135/5027 | Lep | Message from PLC : \$114 Machine Auxiliary OFF | 97/93/2017 | 08:59:01.427 | 21/202 | PIC | | | |
| 27155/4080 | Emergency | Shullown | 07/01/2017 | 083836841 | 90 | At. | | | |
| Q 153,4965 | Error | Command and system status not congruent | 92/93/2017 | 145736.698 | 23/17 | 00 | | | |
| 27153/4964 | Emergency | Till everbased first reached Asia Z (M 6) for Engl requested on Positive Limit | 92/93/2017 | 14.57.36,646 | 520 | 00 | | | |
| 2"153,4050 | Emergency | Silf evertrane limit mached dais 2 (bt 4) for first movement on Positive Limit | 02/03/29/7 | 3855527648 | 120 | 00 | | | |
| Q 123/4920 | teor | Manual movement not executed no axis configured | 32/03/2017 | 340003.027 | 25/339 | 00 | | | |
| 20152/4016 | Emarganer | PuCoss | 32/93/2017 | 34.53.54.227 | 00 | A4 | | | |
| O 152/4012 | Lear | Asis net found | 02/03/2017 | 14:50:27.830 | 32/5 | 00 | | | |
| 27131/4875 | Emergency | StyDown | 02:03/2017 | 34,5030,036 | 90 | All | | | |
| FE171.4962 | Len | Message from PLC - 5154 Marking Assiliary OFF | 92/93/29/7 | 67.0353.871 | 21/202 | PIC | | | |
| EEE 230/4848 | 640 | Message from PLC / S224 Mechine Auxiliary CM | 01/01/2017 | 67/2935-793 | 21/202 | PSC. | | | |
| E 149/4827 | Lon | Message from PLC : S214 Mechine Auxiliary OFF | 29/02/2017 | (7,2220,656 | 21/202 | PLC | | | |
| DE 145/4500 | Leg | Message from PLC S214 Machine Auxiliary OFF | 24/92/2017 | 17-31-29-208 | 20/202 | PIC | | | |
| EE2147/4785 | Low | Message from PLC : S234 Machine Assiliery OFF | 24/02/2017 | 31.1204.050 | 21/202 | PIC | | | |
| E016/4764 | Les | Message from PLC / SIDE Machine Austien/ OFF | 22/02/2017 | 124325.018 | 21/202 | PIC | | | |
| 2:146/4360 | Emergency | Emergency Switch Opened (System) | 22/02/2017 | 124305.538 | 191 | At. | | | |
| EE546/4752 | Leg | Message from PLC - SESA Machine Auxiliary OFF | 22/02/2017 | 120341.318 | 21/202 | PIC | | | |
| 27145/4745 | Inegercy | Emergency Switch Opened (System) | 22/03/2017 | 12:13:12:017 | 121 | All | | | |
| O 145/4740 | tro | Axis Y (b) 2: Nomed Micro-Marker distance 0,000000 | 22/02/2017 | 12:04:06:902 | 22,5001 | 00 | | | |
| O 146/4720 | Lower | Avis X 3x 1: homed Silcon-Marker distance 0.000000 | 22/02/2017 | 12/34/04/902 | 22/5005 | 00 | | | |
| O 145/47(8) | Leor | Aus D (br 31) homed Micro-Marker distance 3,00000 | 22/02/2007 | 12:04:06:892 | 22/6001 | 00 | | | |
| Q 145/4737 | from: | Avis 8 St St Normed Micro-Marker distance 0,000000 | 22/02/2017 | 12/24/04/892 | 22/5001 | 60 | | | |
| O 146/4736 | Error | Axis A Gri 4: homed Micro-Marter distance 0.000000 | 22/02/2017 | 12:0406.892 | 22,/5001 | 00 | | | |
| O 145/4733 | Eror | Auls Z (3:1) homed Micro-Metter distance 0.00000 | 22/02/20(7 | 12:24:06:752 | 22/5001 | 00 | | | |
| 100 1 46 PK 72 3 | Log | Message from PLC : \$158 Mechine Auxiliary OFF | 22/02/2907 | 120721.015 | 21/202 | PLC | | | |
| D ru | | Select E e | de | | | | | | |

Technical Specifications

| | OPENsmart | | OPENke | у | OPENp | rime Ol | PENprime-i | | |
|-----------------------|--|--------------------|---------------------|--------------------|--------------|---------------------|-------------------|--|--|
| NUMERICAL CONTROL | | | | | | | | | |
| Interpolator Tick | | ns | 500 μs | | | | | | |
| Max interpolated axes | 12322 | 6 | 64 | | | | | | |
| Max axis number | 153353 | 4 | 64 | | | | | | |
| Processes | 181818 | | 24 | | | | | | |
| Retentive memory | Hardware | | | | | | | | |
| OPERATING SYSTEM | | | | | | 202020 | | | |
| Dual OS | Available | | | | | | | | |
| PERIPHERALS | 020200 | | -5-5-5 | | | 5-5-5- | | | |
| LAN | 1-1-18 | | | | 2 | | | | |
| RS232 | | | | | | | | | |
| RS232/422/485 | B IN SEE IN IN SEE IN | | | | | | | | |
| USB | 1 x 3.0 3 x 2.0 | 1 x 3.0 3 x 2.0 | 2 x 3.0 2 x 2.0 | | | | | | |
| Video | E3888 | 1-1 | DVI-D + VGA | | | | | | |
| FIELDBUS | 646-646 | Cestes | | | | | | | |
| Fieldbus 1 | EtherCAT | EtherCAT | Mechatrolink III | Mechatrolink II | EtherCAT | Mechatrolink III | Mechatrolin II | | |
| Fieldbus 2 | CAN | CAN | Ethe | rCAT | EtherCAT | | | | |
| Fieldbus 3 | 100 | - | CAN | CAN/Profibus | CAN | | | | |
| Fieldbus 4 | 4.3.80 | | | | CAN/Profibus | | | | |
| INTEGRATED I/O | 1752575 | 77.72 | 77.00 | | DECED | THE RE | | | |
| Power ON enabling Out | YES | | | | | | | | |
| Fast I/O | 1 In | | 200 | 1000 | | | | | |
| Analog In 1 | - 12 bit res. / +10V÷-10V or 4÷20 mA | | | | | | | | |
| Analog In 2 | - 12 bit res. / +10V÷-10V | | | | | | | | |
| Analog Out | - 1 x 16 bit res. | | | | | | | | |
| Encoder In | - 1 x ABZ Inc. | | | | | | | | |







● PRIMA ELECTRO S.p.A.

Corporate Headquarters:

Strada Carignano, 48/2 - 10024 Moncalieri (TO) Italy Production/Service:

Via Torino, 14 - 10010 Barone Canavese (TO) Italy t. +39 011 9899 800 - f. +39 011 9899 804

OSAI - UK Ltd

Sales and Service:

Mount House, Bond Avenue, Bletchley
Milton Keynes, MK1 1 SF - United Kingdom
t. +44 (0) 1908 642687 - f. +44 (0) 1908 642688

OSAI USA

Manufacturing, Sales and Service: 711 East Main Street, Chicopee, MA 01020 USA t. +1 413 598 5200 - f. +1 413 598 5201

● PRIMA ELECTRO CHINA CO. Ltd

Sales and Service:

23G, East Tower, Fuxing, Shangmao Mansion 163 Huangpu West Avenue - Tianhe District, Guangzhou - PRC

t. +86 20 875 18211 - f. +86 20 3849 1180

osaicnc.com

sales.osai.italy@primaelectro.com

• POINT AUTOMATION

Turkey Sales Partner t. + 90 224 441 0 530 mkongur@point.com.tr

● NOVITAS ELEKTRONIK AG

Switzerland/Germany Sales Partner t. +41 44 908 3666 mbielli@novitas.ch

▼ TOOLCRAFT SYSTEMS

India Sales Partner t. +91 80 2345 4619 toolcraft@vsnl.com

● SP GLOBAL FZE

UAE Sales Partner t. +971 6 5262317

karen.hovsepian@spglobal.ae

Concept e design Ars Media

Stampato in Italia da Tipografia Commerciale 05/2017

