

OPEN-S, OPEN-M, OPEN-XL, OPEN-XLi

The *OPENcontrol* product family is an highly scalable CNC system based on several powerful hardware platforms. The same software, real-time and HMI, works on the whole *OPENcontrol* range, allowing to choose the model with the most suitable characteristics for the application, simplifying this way the development and the maintenance of machines with different complexity levels.

OPENcontrol performances increase with the models named **OPEN-S COMPACT**, **OPEN-M**, **OPEN-XL** and **OPEN-XLi**, the latter one being able to manage up to 24 process, 12 simultaneously interpolated axes per process and a total number of 64 axes.

OPEN-S COMPACT is the compact CNC solution integrating the control unit in the 12.1" display module of a complete and modular operator panel (display, console and keyboard). The software interface, specifically designed for this model, is characterized by soft keys on the display module ensuring speed and ease of use.



OPEN-S COMPACT



OPEN-M and **OPEN-XL**, respectively equipped with Intel Celeron-M 2.0 GHz CPU and Core 2 Duo 2.26 GHz, are suitable for the development of complex applications, having a computing power fitting the multi-process working centers with several axes. For both models, the SW structure with dual operating system Windows CE and Windows 7 (WES7) is available for the simultaneous execution, on the same hardware, of both CNC real time applications and market software for Windows™. Thanks to the i5 CPU, **OPEN-XLi** is the

solution that best fits working centers requiring the highest performances.

OPEN-M, **OPEN/XL** and **OPEN-XLi** can be completed with OSAI Operator Panels or with simple touch screen monitors, with high performances servo-drives and servo-motors driven by EtherCAT bus and with a complete line of modular I/Os.

Thanks to its characteristics, CNC *OPENcontrol* family allows obtaining high finishing in workpiece machining and optimization of working centers management:

- Control of 5 axes machines (bi-rotary head) by Tool Center Point (TCP)
- Algorithms for High Speed Cutting (HSC)
- Complete 3D roto-translations.
- Gantry and dual axes management
- Look-ahead with 1024 pre-calculated blocks
- Velocity Feed Forward (VFF) calculation
- Jerk control using advanced algorithms
- Management of tool magazine, tool life, random tool, multi-pocket tool
- Multi-axes electronic cam
- Cross compensation
- Volumetric compensation to correct both asymmetries and mechanical misalignments of the machine

Systems can be completely customized with a graphical software HMI and an embedded PLC offering:

- Multi-tasking real time execution
- Up to 250 tasks with 10 priority levels
- Task cycle time with 250 µSec. minimum scheduling
- More than 450 predefined functions
- Possibility to interpolate the axes also from machine logic
- Possibility to include customized functions and external software algorithms



Technical data

	OPEN-S COMPACT	OPEN-M	OPEN-XL	OPEN-XLI
CPU	Atom® 1.8 GHz	Celeron® M 2.0 GHz	Core 2 Duo 2.26 GHz	Intel Core™ i5-3610ME, Dual Core, 2.7 GHz
Servo-drives interface	EtherCAT Mechatrolink III P&D, Analog	EtherCAT, Mechatrolink I, II, III, Custom 90 MBit, P&D, Analogico		
I/O interface	EtherCAT / CANopen			
Max axes n°	8	32	64	64
Max n° of parallel processes	2	4	24	24
n° blocks/sec	2620 (4 axes)	7000 (5 axes)	8500 (5 axes)	>9000 (5 assi)
n° look ahead blocks	256	Configurabile fino a 1024		
Min. interpolation time	2 ms	0.25 ms		
Storage	1 / 4 GB	1 / 4 / 32 / 128 GB		128GB
RAM	1 GB	4GB		
Monitor port	VGA	1 x VGA + 1 x DVI-I (independent display)		Dual VGA or VGA/DVI (independent display)
Ethernet	3 x GbE	2 x GbE		
USB	2 x USB 2.0	6 x USB 2.0		4 x USB 3.0 2 x USB 2.0
PS/2	2 x	1 x		---
Serial Line	2 x RS232 1 x RS232/422/485	3 x RS232 + 1 x RS232/422/485		5 x RS232 1 x RS232/422/485
Parallel port	---	1 x LPT1		---
Expansion Slot	1 x PCI 32 bit / 33 MHz	2 x PCI 32 bit / 33 MHz		
Power Supply	24Vdc			
Power Consumption	2.5 A @ 24Vdc			
Dimensions (mm) W x H x D	335 x 535 x 80	195 x 268 x 101		215 x 272 x 114
Housing	modular	Aluminum Chassis		
Operating system	Windows CE (real time e HMI)	Windows CE (real time) Dual OS Windows CE (real time)+WES7 (HMI)		Dual OS Windows CE (real time)+WES7 (HMI)
Local I/O port				
Analog Axis	1 x 16 bit Analog Out + 1 x Inc. Encoder Input			
Analogic input	2 x 12 bit ±10V (channel 1 also configurable 4÷20 mA)			
Fast Input	4 (3 + Touch-Probe)			
Fast Output	3			
Power enabling	1 x digital out 24V			