SyncMotion

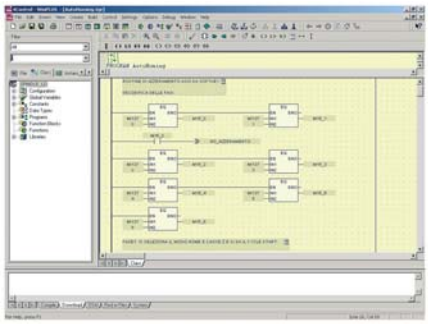
>>> **SyncMotion** is a completely open, PC-based automation system for the control and visualization of technological processes in machine, factory, process or shop floor automation.
OSAI SyncMotion hardware is based on low power CPU (fanless) and solid state disk to ensure reliability in industrial environments, due to lack of rotating parts. The system uses the Microsoft **WindowsCE.Net 5.0** embedded operating system which gives additional reliability, performance and high level real-time.


SyncMotion 15"

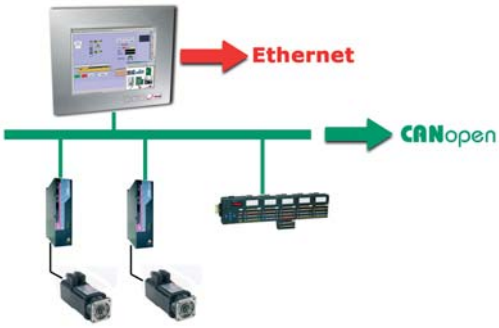

SyncMotion Compact

This new automation solution is offered as a Panel PC with 6.4", 10.4", 12.1" or 15" TFT with touch screen option, ideal for mounting on the machine, or as a black box, without display, with the possibility to connect an external standard monitor.

The **SyncMotion Compact** version offers an excellent price-performance ratio by integrating digital and analogue I/O within the same unit. This control unit can be connected to industrial monitors and provides an analogue interface for up to 4/8 axes +/-10V and encoder feebdack, 24/48 digital inputs, 16/32 digital outputs and 2/4 analogue inputs. Additional I/Os can be managed by the Modbus RTU interface via RS-485.



>>> **Soft-PLC**: the integrated Soft-PLC run-time module is designed for complex and time critical operations. The development tool is a user friendly, graphic oriented environment allowing high level and multitasking, **IEC 61131-3** compliant programming. Users can choose among five different programming languages: Instruction list, Ladder Diagram, Function Block, Structured Text or Sequential Flow Chart. The standard IEC61131-3 libraries are complemented by a continuously expanding motion control library to manage synchronized axes and motion tasks. Homing, positioning, velocity or torque control and master-slave synchronization are some of the axes function blocks included in the motion library. A symbolic debugger allows step by step execution, breakpoint setting and the monitoring of variables at run-time. Application downloading and debugging is executed through a standard Ethernet TCP/IP communication link between the development tool and the control unit.



>>> **Fieldbus**: SyncMotion includes a CANopen master interface which runs on a dedicated processor to offload the main system CPU from the communication process. Distributed modular I/O's and intelligent brushless drives are connected directly to CANopen. It is also possible to allow the communication with other devices through Profibus-DP or DeviceNet. SyncMotion also includes the Modbus RTU interface via RS-485. A standard configuration tool, accessible from the SoftPLC engineering tool, can be used to setup the CANopen network and to add third party, standard devices.

>>> **HMI**: SyncMotion provides the **WinNBI** (Windows Network Based Interface), a software development tool, extremely powerful and easy to use, dedicated to HMI and used to display, control and supervise any automation application. The WinNBI runs on a standard PC under Windows operating system but it is also possible to modify the screens directly on SyncMotion. It is possible to handle pre-defined graphic objects, alarms and multi-language texts. The Remote WinNBI is the distributed version running on a remote PC connected to the control unit through Ethernet TCP/IP.

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SyncMotion

SyncMotion Control Units					
HARDWARE	**COMPACT**	**Panel PC 10.4"**	**Panel PC 12"**	**Panel PC 15"**	**RACK**
CPU	Via Mark 533Mhz		Celeron M 600MHz		
Memory	from 128Mb to 256Mb RAM, DiskOnModule from 64Mb to 1Gb				
NVRAM	64Kb retentive memory				
Interfaces	RS232, RS232/422/485, USB 1.1, Ethernet 10/100Mbp, VGA output, PS2				
Led	Power, PLC Run, Fault				
Display	-	10,4" TFT (800x600)	12" TFT (800x600)	15" TFT (1024x768)	-
Touch Screen	-	resistive			-
Field bus	CANopen with 1 dedicated processor and dual port interface				
Operating System	Windows CE .Net 5.0				
Power supply	24Vdc ±10%				
Protection	IP20	IP54 o IP65	IP65		IP20
Front Panel	-	Painted steel or INOX + protective film	INOX + protective film		
Dimensions (A x L x P)	210 x 197 x 62 mm	250 x 305 x 86 mm	266,5 x 345 x 88 mm	296 x 370 x 89 mm	210 x 197 x 86 mm
Cut-out	-	234 x 282 mm	248 x 316 mm	272 x 340 mm	-
Temperature	0 ÷ 45° operative (-20°÷60° storage) - Umidity: 10-90% without condensing				
SoftPLC					
Programming	Preemptive multitasking with minimum scheduling time of 2ms				
Languages	IEC 61131-3: Instruction List, Ladder Diagram, Function Block, Structured Text, Sequential Flow Chart				
Tasks	No limits on the number of tasks, 25 created by default. Time driven or event driven tasks (32 predefined events + 32 user defined events). 10 levels of priority can be assigned to each task; round-robin scheduling for tasks with same priority. Watch dog and overrun protection for each task. Cold and warm start behaviour. Possibility of incremental reconfiguration at run-time				
Variables	Input, Output, Input/OutputLocal (unlimited), Global (1Mbyte), Global retentive (128 kbyte)				
Data types	BOOL, BYTE, WORD, DWORD, INT, DINT, REAL, LREAL, TIME, STRING, STRUCT, ARRAY, ARRAY STRUCT				
Function Libraries	IEC 61131-3 Standard libraries: arithmetical, logarithmic and trigonometric functions; string, selection, compare and type conversion functions; system diagnostic functions; time, flip flop, trigger and counter functions. Motion library based on PLCopen recommendation for axes control: enable, disable, init and reset functions; home, positioning (absolute or relative), velocity mode, torque mode, start move, stop move and hold move functions; set gear ratio, engage and disengage functions for master/slave synchronization. Functions to access files both in reading and writing. User can define proprietary libraries in all IEC 61131-3 available programming languages protecting know how by password.				
HMI					
OSAI WinNBI	WinNBI can directly access the PLC memory, 72kbytes of non retentive variables and 64kbytes of retentive variables. The main characteristics are: possibility to import user defined bitmap; use of pre-defined graphic objects included in a specific library; multi-language text, menu and graphic objects (i.e. text over pushbuttons) management; use of Unicode mode (for special languages like Chinese, Arab and Cyrillic); possibility to activate Visual Basic software through pushbuttons.				

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