



>> **OSWire** is the OSAI propriety communication bus, enabling a very high performance connection between the CNC and other devices, like drives and digital and analogue modules.

It combines a CNC master with the slave units in a multi-drop topology network. A clock generated by the CNC, received and used by each slave module, synchronizes the communication. The outstanding performance allows the exchange of a large amount of data in real-time, enhancing the control of the machine with a huge advantage in accuracy and speed. The digital command to the motion controller avoids the inaccuracies of traditional analogue control caused by the analogue component drift and the effect of noise on signals. A unique cabling system for axes and I/O reduces wiring costs and minimizes installation and maintenance.

- ◆ Data transfer speed: 90 Mbaud
- ◆ 32 bit word read time: in 1  $\mu$ s
- ◆ Memory mapping of all slave modules to be accessed by the CNC
- ◆ Real-time access to all the slave parameters
- ◆ Maximum number of connected devices: 64
- ◆ Automatic identification of devices, parameter changes and firmware downloaded via communication Bus
- ◆ Fast backup/restore of all the parameters resident on the Master





# OS<sup>3</sup> Drives



>> **OS<sup>3</sup> Drives** can be connected directly to the three-phase power supply with output voltage range between 220 VAC and 480 VAC.

This feature allows the same drive to be used in many different geographic locations having different voltages, with no need of a transformer.

The drives can have an internal power supply for the control boards supplied directly from the mains. This solution allows the controlled stop of the load in case of a power cut. The electronics is still powered from an external 24v power supply. During the stop phase, an internal resistor dissipates the braking energy. For extremely high duty cycles it is possible to connect an external or parallel resistor instead of the internal one. The high voltage bus is accessible through a connector, allowing the use of an external power supply that includes a braking resistor common to more than one drive.

OS<sup>3</sup> drives can be used with motors of different technologies: permanent magnets brushless, asynchronous motors, variable reluctance motors. The standard transducer is a SinCos encoder. Programmable I/O increases the drive's flexibility.



OS<sup>3</sup> is available in two different types: A type includes three power size 3/6A, 5/10A and 9/18A connected to the three-phase power supply with a voltage level between 220 VAC and 480 VAC +/-10%. B type includes three power size 5/10A, 10/20A and 15/30A connected to the three-phase power supply with a voltage level between 380 VAC and 440 VAC +/-10%.

## >> **Tuning Software for OS<sup>3</sup>**

The auto-tuning of the connected motor, thanks to the Windows software configuration tool, simplifies tuning operations.

The configuration tool displays the motor's data and analyzes the drive's status with many different diagnostics.

- ◆ The introduction of digital filters allows compensation for mechanical resonance.
- ◆ The time for operating the brake in motors fitted with brakes can be adjusted
- ◆ A configurable oscilloscope is available to analyze the details of the machine behaviour.

