

Syncro rack

The SYNCRO system is available with a single rack unit to adapt to any machine requirement. It can control up to 10 axes, divisible in groups (with the possibility of quickly moving an axis from one group to another) and up to 192+192 inputs/outputs, thanks to a powerful integrated PLC. It can control axes driven by DC, AC, brushless, linear and hydraulic motors. A powerful and flexible language, SBL (Syncro Basic Language), allows fully exploiting the wide range of possibilities to drive gantry axes, synchronised axes (e.g. for in-flight cutting) and in-position control of axes driven at 500 m/min with an accuracy of hundredths of a mm, etc. SYNCRO is integratable with boards for connection to Ethernet and connection to LAN/field bus (Profibus, CAN, Mechatrolink). Because of its versatility it can also be used in automation of transfer lines, both in production and assembly. Generally, it is connected to a PC or operator terminal in order to fully exploit the potential with a complete man-machine interface.



Code H1CESXXXXXX

CHARACTERISTICS	DESCRIPTION	GENERAL
	NOTES	
Dimensions (LxHxD)	268mm x 133mm x 268mm 368mm x 133mm x 268mm	- For the short rack (8 positions) - For the medium rack (12 positions)
Installation	Securing to 19" panel according to European standards	-
Operating environment	Industrial	-
Protection class	IP20	-
Weight	approx. 3 kg	-
Operating temperature	From 0° to 50°C	- Maximum temperature control
Operating humidity (without condensate)	≤75%	-
Max operating altitude	2000m	-
Conformity	CEI EN 50081/2, EN-50082-2, EC1000-4-2	-
	ELECTRICAL	
Supply voltage	24 VAC +30% / -40% 24 VDC ±10%	-
Absorption	180 W	-
Fuses	6.3A delayed / 1A	-
Encoder power supply	+5V / +12V (Line driver / Open collector)	- Internal power supply
Analog outputs	±10 V	-
Voltage monitoring	15 VDC, 5 VDC, -15 VDC, 24 VDC	- LEDs on for correct voltages
	INTERFACES	
Serial	2 RS232, RS-422, 20MA LOOP lines	- 1 DB9 and 1 DB25
Ethernet	1 10 MB line	- On RJ45
Field bus	2 or 4 CANOpen lines with control of 192I/O	- DSP-DS301/401 communication protocol - On 2 DB9 connectors
Local bus	1 line for local control of 80 inputs/outputs	-

CHARACTERISTICS	DESCRIPTION	GENERAL
CPU		
Microprocessor	Motorola 68EC020 32-bit 24MHz	-
Working memory	Flash EPROM 1 Megabyte RAM 2 Megabyte	- -
MAX memory for programs	659 Kbytes	-
Max memory available for programs PLC	640Kbytes	-
Monitoring functions	RUN WD	- Blinking LED for active CPU - LED on for WATCHDOG enable
AXES		
MAX number of axes controllable	10	- Controlled simultaneously - Each board has 2 axes
Max number of digital inputs/outputs	192+192	
Encoder interface	Line driver, Open collector 5/12V	- Configurable with jumpers
Encoder input filter	500 KHz on square-wave	-
Encoder count	2 MHz	- with multiplication by 4
Analog reference	±10 Volt	- Resolution 5mV on Rc=10Kohm
Limit switch inputs	1 per axis	-
In-flight position connection inputs	1 per axis	-
Axis monitoring	- Axis disable in case of error - Software limit control - Tracking error control	- LED for local control by operator on encoder phases and zero micro
Drive control	- Motion control on individual axis - Possibility of in-flight connection for high-precision mode	- Based on fully-developed PID -
Axis performance	- Automatic axis offset connection - Positioning with trajectory control - Linear and circular interpolation of up to 8 axes on the plane - Automatic interpolation speed adjustment on the connectors and direction change - S-ramp - Interpolation with 2 C-axes for tangent cutting - Electrical axis (Gantry)	- Possibility to define the working plane in the space - - - - -
Digital inputs/outputs	Each board controls 24 inputs and 24 outputs	- Input signals filtered every 5 ms - Max number of boards = 16 - The active inputs are seen as logic 0
SOFTWARE		
Development and analysis environment	SyncroView32	- Automatic monitoring of the last 6 sec. - For the axes, dedicated instructions for punching and form-pressing functions
Languages available	- PLC on IL basis (Tecnos Instruction List) - SBL -ISO	- Possibility of defining parallel processes - Set of commands for motion control (axes) with parallel processes and interaction with and by the PLC - Specifications for sector application
EXPANSIONS		
DC axis board	Line driver, Open collector 5/12V	- Use of axis boards in direct current
AC axis board	Line driver, Open collector 5/12V	- Use of axis boards in alternate current
Digital I/O board	- 24 high active inputs - 24 outputs	MAX number of boards = 16
Analog I/O board	- 4 inputs ±10 Volt at 12- or 14-bit - 4 outputs at ±10 Volt at 12 or 16-bit	MAX number of boards = 16
Profibus board	- Remote I/O station control	- MAX number of remote stations = 8 - Each station controls 128 inputs/outputs for a total of max 192 inputs/outputs
Ethernet serial board	- 1 RS232 line - 1 10 MB line	- 1 DB9 and 1 DB25 - On RJ45
Mechatrolink board	- 1 Mechatrolink line - 2 analog inputs 12-bit ±10VDC - 2 analog outputs 12-bit ±10VDC	
CANBUS board	- 2 or 4 CANOpen lines with control of 192 inputs/outputs - BLT	- DSP-DS301/401 communication protocol - on 2 DB9 connectors - Tecnos local bus for digital inputs/outputs

With Profibus board: Relay output module, output module with solid state relays, input module

With CANBUS board: CAN_BUS Node Coupler Module, BLT Power Supply Module, D/A Converter Module, A/D Converter Module, 8-input PNP Module, 8-input PNP/NPN Module, 8-output PNP Module, 4-output 220VAC Relay Module