REVOLUTIONARY SOLUTIONS FOR AUTOMATION

ELCO ELETTRONICA

TOP 7 ▪ 10 ▪ 12

INTEGRATED SOLUTION

SMART 7 ▪ 10 ▪ 15

DISTRIBUTED SOLUTION

REMOTE I/O

SERIE CX - ECAN100 - EMOD3000

ELCO AUTOMATION STUDIO

INTEGRATED AUTOMATION PLATFORM

TOP7 ▪ TOP10 ▪ TOP12

The PLC / CNC / HMI TOP product line is a true revolution in the concept of automation, joining the typical industrial PLC / CNC robustness and reliability and the PC operating system interconnection capabilities.
The product line is composed of 3 different colour touch screen HMI (7" / 10" / 12") with a frontal USB port and a 6 key mechanical keyboard.

	TOP7	TOP10	TOP12
Power Supply	24Vdc 1A		
Display	7'' 800x480	10'' 800x600	12'' 800x600
Keyboard	6-key mechanical keyboard		
Touchscreen	Industrial resistive technology touchscreen		
Serigraphy	Polycarbonate for industrial enviroment		
Programming Language	Ladder / C / ISO su Ethernet / Usb		
System Clock	Yes		
Fieldbus	1 Can Open – 2 Modbus (RTU / TCP) (optional)		
Usb	1 front USB (1 rear USB optional)		
Ethernet	1 Ethernet 10/100 Mbit		
Connectors	Removable with screws		
Front dimensions (mm)	H: 150 / L: 205	H: 212 / L: 283	H: 250 / L: 340
Depth (mm)	D: 66	D: 81	D: 85

ALL IN ONE SOLUTION | MODULAR AND CONFIGURABLE

TOP systems integrate HMI, PLC and CNC (axis control) into a single product, offering an integrated solution that meets every need.
The opportunity to configure the product with the required digital / analog I/O autonomously makes this solution even more flexible.
Finally the possibility to integrate on board or to remote I/O extends its usability, both for compact electrical panel applications or for remote operator panels.

▪ AUTO-DETECTING SYSTEM

The system consists of 5/7/8 slots for inserting I/O cards and it is based on a sophisticated communication bus that automatically detects each added board, thereby addressing the available resources.

▪ PC ORIENTED AND 4.0 SOLUTION

The PLC/CNC/HMI TOP series is Linux O.S. based and it integrates PC-oriented functionalities, such as network connection, remote control (VNC SERVER), data exchange with corporate information system software, standard file format manager (CSV, DXF, PDF …) and Database access (SQL, MySQL…).

▪ MOTION CONTROL, KINEMATICS / ROBOTICS AND LINKED MOTION

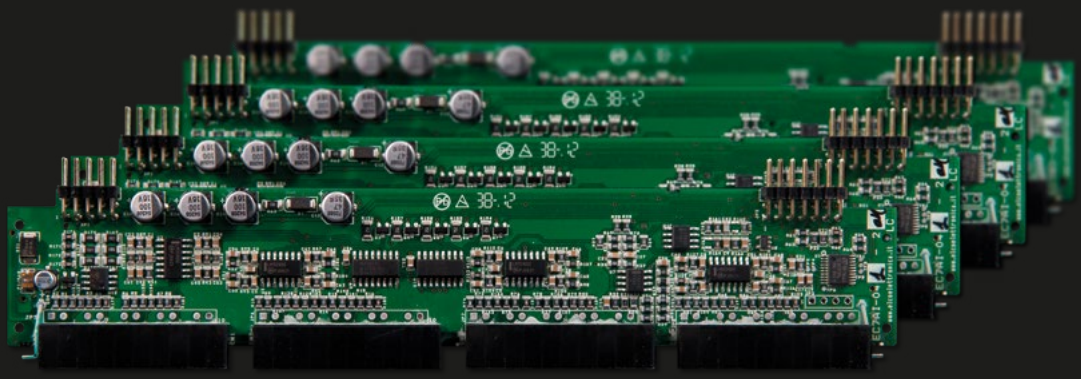
TOP series integrates an ISO G Code executor and can manage advanced kinematics and robotics (SCARA, DELTA, ANTROPOMORPH ARM) as well as evolved linked motion such as GANTRY, GEARING, ROTARY OR LINEAR FLYING SHEAR.

▪ COMMUNICATION AND FIELDBUS

The system is equipped with serial communication ports (RS232 / RS485), Can Open and Ethernet, thus offering the possibility to interface the product using standard protocols such as Modbus RTU / TCP and Can Bus Can Open with external slave devices (dives, remote I/O, inverters, sensors, Scada supervisors..).

▪ PROGRAMMABILITY

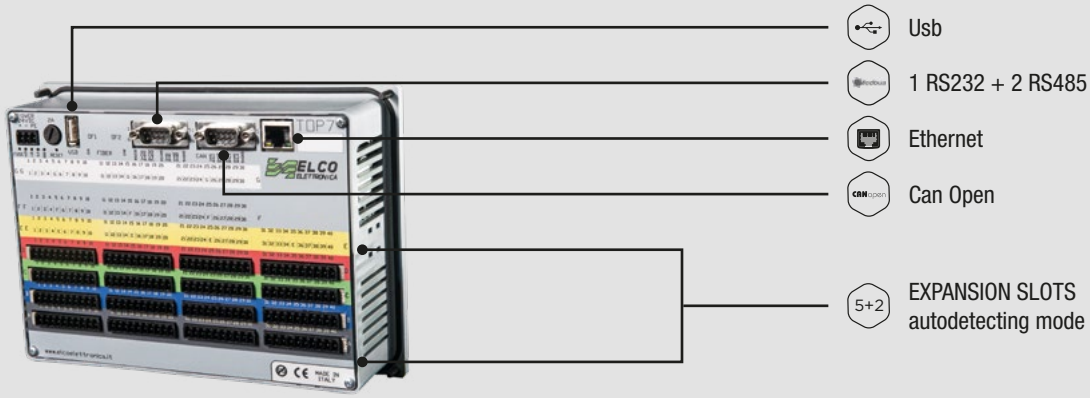
The high degree of flexibility and ease of use is ensured by integrated programming via Elco Automation Studio, a development suite that allows a single software to create PLC logic (PLC), axis motion control (CNC) and graphical user interface (HMI).

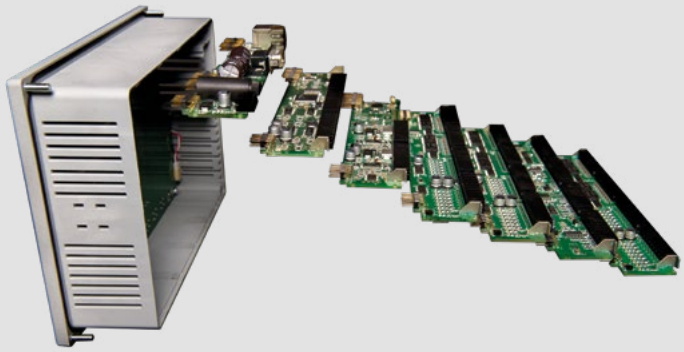


▪ INTEGRATED TOP SERIES BOARDS ▪

EC7XX boards are a flexible solution that allows you to complete the PLC/CNC/HMI TOP with analog / digital I/O, communication and fieldbus resources.

CODICE	CARATTERISTICHE	SLOT
EC7COM_011	24Vdc Power Supply + 1 RS232 + 1 Ethernet	COM
EC7COM_012	24Vdc Power Supply + 1 RS232 + 1 Ethernet + 2 RS485 + Rear USB	COM
EC7COM_013	24Vdc Power Supply + 1 RS232 + 1 Ethernet + 2 RS485 + Rear USB + Can Open	COM
EC7DIO_021	16 digital input PNP 24V + 16 digital output PNP 24V 1A	STD
EC7AS_031	2 encoder inputs (NPN – PUSH PULL – LINE DRIVER) + 2 analog outputs 16 bit (+/- 10V) + 2 pulse/dir frequency output (5V LD 2 Mhz)	STD
EC7AI_041	8 analog inputs 16 bit (0-10V – 4-20 mA – PT100) + 2 analog outputs 16 bit (+/- 10V)	STD
EC7SM_051	2 stepper drives 24V – 1,5 A	EXT
EC7SS_091	6 SSI inputs	EXT





The boards can be plugged into one of the 5/7/8 slots available without any constraints. The system is equipped with a self-detecting and self-addressing resources mechanism, that allows an easy, fast and flexible installation.

SMART7 ▪ SMART10 ▪ SMART15

The PLC/CNC/HMI SMART series is the best solution for distributed automation. It is an HMI series with powerful calculation capabilities and many different communication channels. In the SMART series are available Serial, Ethernet, Usb and Can Bus ports and all the products are Modbus RTU, Modbus TCP, Can Open (DS301 – DS402) and Ethercat Master.

	SMART 7	SMART 10	SMART 15
Power supply	24 Vdc - 1A		
Display	7" 800X480	10,4" 800X600	15" 1024X768
Touchscreen	Industrial resistive technology touchscreen		
Serigraphy	Polycarbonate for industrial enviroment		
Programming	Ladder / C / ISO on Ethernet / USB		
System Clock	Yes		
Serial	1 RS232 + 2 RS485		
USB	2 / 4 Usb		
Ethernet	1 / 2 LAN 10-100 Mbit		
Fieldbus	Can Open (DS301 – DS402) – Modbus (RTU / TCP) – Ethercat (CoE)*		
Front dimensions (mm)	190 x 120	211.3 x 120	360 x 290
Depth (mm)	34,2	43	50

The SMART 7 model is also available in Open Frame version for a rear installation

SOLUTION FOR DISTRIBUTED AUTOMATION

The SMART series with its strong communication capabilities makes easy every application requiring distributed automation. These products allow the developers to use different communication channels or fieldbus protocols, in order to manage remote devices (I/O, valves, Ineverters, Drives…) when they are installed in remote electrical cabinets or junction boxes.

▪ COMMUNICATION AND FIELDBUS

- Modbus RTU (RS232 / RS485) – Master e Slave
- Modbus TCP (Ethernet) – Master e Slave
- Can Bus Can Open (DS301 / DS402) - Master
- Ethercat (CoE)* - Master

▪ PC ORIENTED AND 4.0 SOLUTION

The PLC/CNC/HMI SMART series is Linux o.s. based and integrates PC Oriented features, such as network connectivity, remote control (VNC SERVER), data exchange with corporate information systems, standard file formats manager, (CSV, DXF, PDF…) and database access (SQL and MySQL).

▪ MOTION CONTROL, KINEMATICS / ROBOTICS AND LINKED MOTION

SMART products include a G ISO Code processor and can manage advanced kinematics and robotics as SCARA, DELTA, ANTROPOMORPHIC ARM, as well as evolved linked motion as GANTRY, ROTARY and LINEAR FLYING SAW.

▪ PROGRAMMABILITY

SMART series can be programmed with Elco Automation Studio, a powerful and user friendly integrated suite that with only one application allows the developer to create PLC Logic (PLC), Axis Motion Control (CNC) and graphical user interface (HMI).

*Under development

▪ REMOTE I/O ▪

Elco Elettronica Automation distributed I/O are intelligent devices which allow PLC/CNC master to control various remote analog / digital resorces via a communication bus. Elco Elettronica distributed modules are based on standard communication fieldbus protocols such as Ethercat, Can Open and Modbus (Ethernet/IP and Profinet on request). All the series offer DIN rail modules with autonomous 24V power supply, integrated coupler, indipendent IN / OUT BUS connection for a fast and easy wiring installation. Every connection is offered on a screw-removable connector.

CANopen PROFINET

EtherCAT EtherNet/IP

CX

- Power supply: 24 Vdc – 0,5 A
- Electrical insulation: 1 kv
- Fieldbus: Can Open / Ethercat (on request Ethernet/IP - Profinet)
- Dimensions: 101 x 119 x 23 (mm)
- Installation: din rail

CODE	FIELDBUS	FEATURES
CX-CAN-011	Can Open	16 digital input PNP 24V + 16 digital output PNP 24V 1A
CX-CAT-011	Ethercat	16 digital input PNP 24V + 16 digital output PNP 24V 1A

CANopen

ECAN

- Power supply: 24 Vdc (18 – 36 Vdc) – 0,5
- Electrical insulation: 1 kv
- Fieldbus: Can Bus Can Open
- Baudrate: 125 kbit, 250 kbit, 500 kbit, 1 Mbit
- Dimensions: 100 x 100 x 25 (mm)
- Installation: din rail

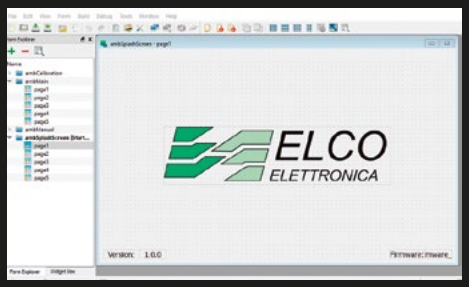
CODE	FEATURES
ECAN100/1	8 digital input PNP 24V + 4 digital output PNP 24V (1A)
ECAN100/2	8 digital output PNP 24V (1A) + 4 digital input PNP 24V
ECAN100/3	12 digital input PNP 24V
ECAN100/4	12 digital output PNP 24V (1A)

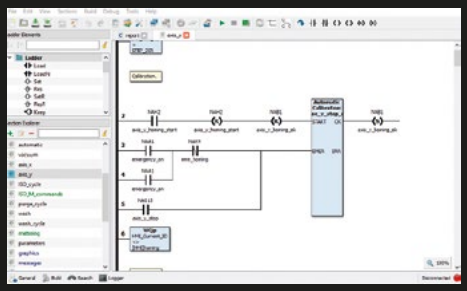
Modbus

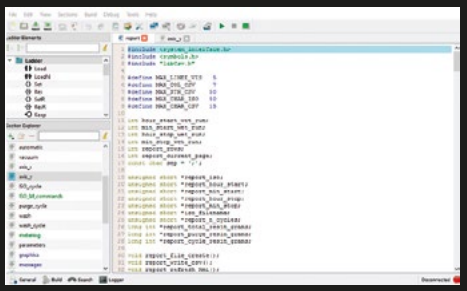
EMOD

- Power supply: 24 Vdc (18 – 30 Vdc)
- Electrical insulation: 200 Vca 50 hz
- Fieldbus: Modbus RTU
- Baudrate: 38,5 kbps
- Dimensions: 101 x 119 x 17 (mm)
- Installation: din rail

CODE	FEATURES
EMOD 3188/8	8 digital input PNP 24V + 8 digital output PNP 24V
EMOD 3014	4 RTD analog input (PT100 / PT1000 / Ni100 / Ni1000)
EMOD 3015 V/I	4 +/-10V analog input (V) / 4 0-20 Ma analog input (I)
EMOD 3016	4 TC analog input (J,K,S,R,B,E,T,N)
EMOD 3017 V/I	8 +/-10V analog input (V) / 8 0-20 Ma analog input (I)
EMOD 3018	8 TC analog input (J,K,S,R,B,E,T,N)
EMOD 3019	8 RTD analog input (PT100 / PT1000 / Ni100 / Ni1000)
EMOD 3024	4 0-10V / 0-20 Ma analog output
EMOD 3028	8 0-10V analog output







▪ ELCO AUTOMATION STUDIO ▪

Elco Automation Studio is the powerful integrated platform developed by Elco Elettronica to program the PLC/CNC/HMI products. One of the main point of interest of Elco Automation Studio is the complete control and develop of the product by Elco team, in order to provide a constant evolution and update to the customer, with monthly releases. The platform is basically composed of two main areas: the logic area, where the developer can write the automation logic functions using Ladder language, ANSI C language and the powerful intergrated functions blocks, and the graphic area, where with a powerful designer the developer can create the HMI screens. The two areas are completeley integrated: without any configuration all the variables used are immediately shared between them.

PROJECT MANAGER

- allow multiple istances to be opened simultanously to manage multiple projects at the same time
- import / export project variables
- integrated PLC simulator
- integrated manuals

HMI EDITOR

- combobox, progress bar, buttons and many other graphic objects
- image gallery
- HMI simulation on the PC
- individual object properties directly related to the PLC variables

LADDER EDITOR

- simple ready to use function blocks
- high speed programming with keyboard shortcuts
- advanced variable research function
- drag and drop to add a new branch

MOTION

- easy configuration
- ISO G Code language support
- customized controls and variables for ISO language (M commands)
- axis configuration with absolute or incremental reference
- ready to use axis linked motion functionalities

KINEMATICS & ROBOTIC

- scara robot
- delta robot (2d e 3D)
- anthropomorphic robot
- gantry robot

ISO G CODE EDITOR

- integrated G ISO Code editor
- integrated G Code file manager

RUNTIME

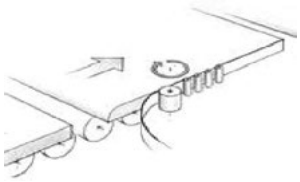
- online variable status
- online program highlighting function

C EDITOR

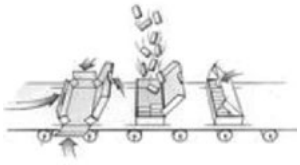
- ansi C standard language function
- language syntax highlighting

▪ APPLICATIONS ▪

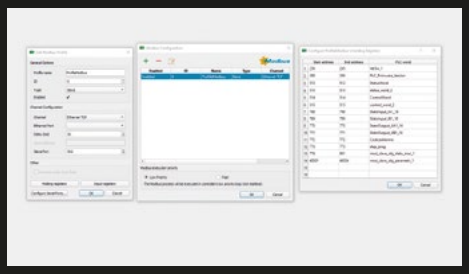
EDGE BANDING

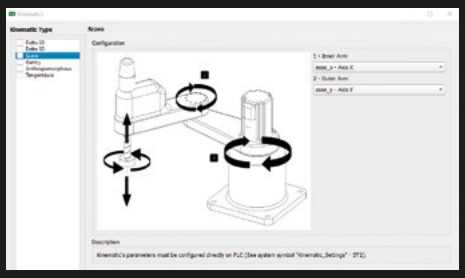


PACKAGING



LABELLING





DATABASE

- SQL Client
- MySQL Client

CONNETTIVITÀ DI RETE

- FTP Server
- VNC Server
- NTP Server
- SMB Client
- OPC/UA Server

LINKED MOTION

- Electronic CAM
- Flying rotating cutter
- Flying shear

FIELDBUS CONFIGURATOR

- Can Open configurator with EDS import function and PDO /SDO mapping
- Modbus register configurator

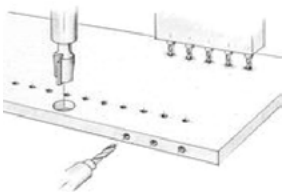
DIAGNOSTIC TOOLS

- integrated Oscilloscope
- C function logger
- Modbus and Can Open communications logger

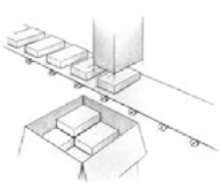
EXTERNAL LIBRARIES & PLUGIN

- Lib CSV
- Lib JSON
- Lib DXF
- Lib OPTI 1D
- Lib OPTI 2D

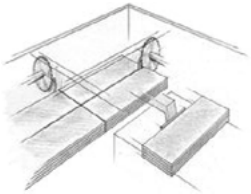
DRILLING

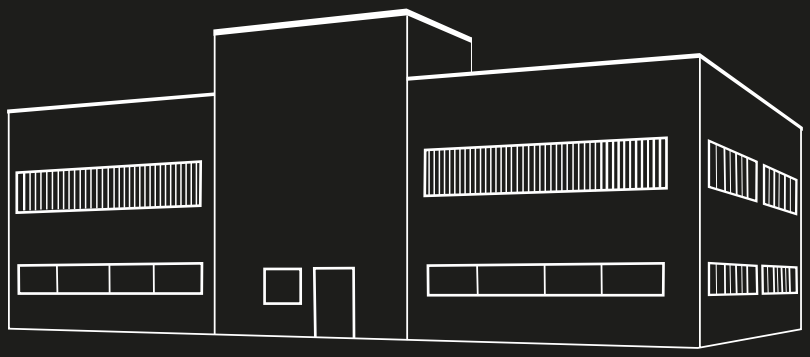


PICK & PLACE



CUTTING





▪ COMPANY PROFILE ▪

Elco Elettronica Automation designs and manufactures complete systems for industrial automation with high technlogy and high portability. The company is the product of more then 40 years of experience in industrial automation and a philosophy that placed the customer at the center of the project.

Elco Elettronica can offer custom products and design (according to specific customer needs), tested hardware and software working solutions for the automation of machines, including management software and standard PLC/CNC/HMI easily programmable.

Elco Elettronica offers also a software house service based on a team of skilled technicians, capable of custom applications with a complete line of software packages for automation: from the PLC, HMI and motion control software to the supervisor Scada applications.

SINCE 1976

Elco Elettronica Automation S.R.L. specifies that the technical information contained in this brochure maybe subject to change without prior notifice.

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