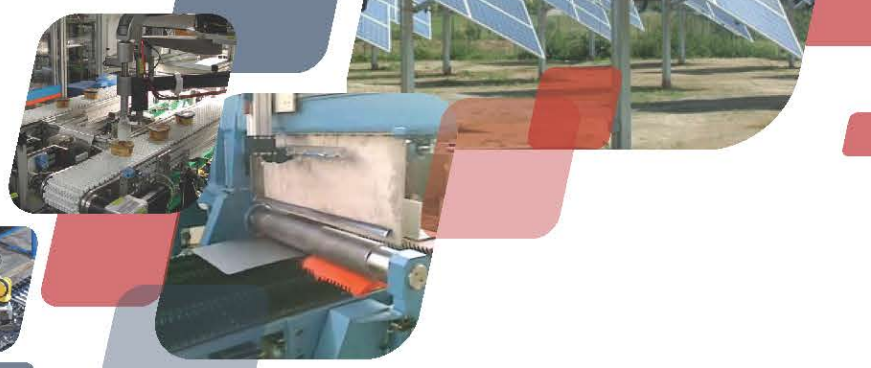


PLC CONTROLLERS

elap

elap NEXUS N2

MULTIFUNCTIONAL CONTROLLER With Embedded PLC

- **Control over 2/4 digital axes**
- **Embedded PLC, Ladder or Instruction List programming**
- **Configurable user interface**
- **Programming through the mini USB 2.0 port**
- **Real Time Clock**
- **FLASH memory for data backup**
- **Main bus for I/O expansion**
- **Modbus RTU communication protocol over 2 ports**
- **Removable SD card support for data, recipes and program backup/upload**

NEXUS N2 controls *two/four digital axes by* its 12-bit analogue output. Its *powerful embedded PLC* can be programmed both in *Ladder* and in *Instruction List* language. ***NEXUS N2*** *user interface* can be completely *configured according to the application requirements.* The user interface and PLC program graphical pages are stored into the wide *Flash Memory area in the microprocessor.*
NEXUS N2 can be programmed over the *mini USB port*, allowing for high speed in the communication, an important feature for programmers when developing projects.
Modbus RTU communication protocol is available on both communication ports, thus allowing **NEXUS N2** to operate as Master over COM1 RS485 port, and as Slave over COM2 RS232 port at the same time.
By means of the *SD card* it is possible to upload and save recipes, or working and axes data, and to manage the upgrades of application software.
The *Real Time Clock* with date keeping is accessible through PLC instructions and it allows to handle scheduled activities, such as programmed maintainance operations, productivity control and so on.
NEXUS BOX N2, the *inside-board mounting version*, can be profitably coupled to a touch-screen HMI terminal.

HARDWARE

- CPU 32 bit RISC
- Flash Memory 512 kB
- Memory for PLC programming: 64 kB Flash
- Memory for graphical pages: 192 kB in memoria Flash
- RAM for PLC data: 8 kB
- RAM for recipes: 1MB

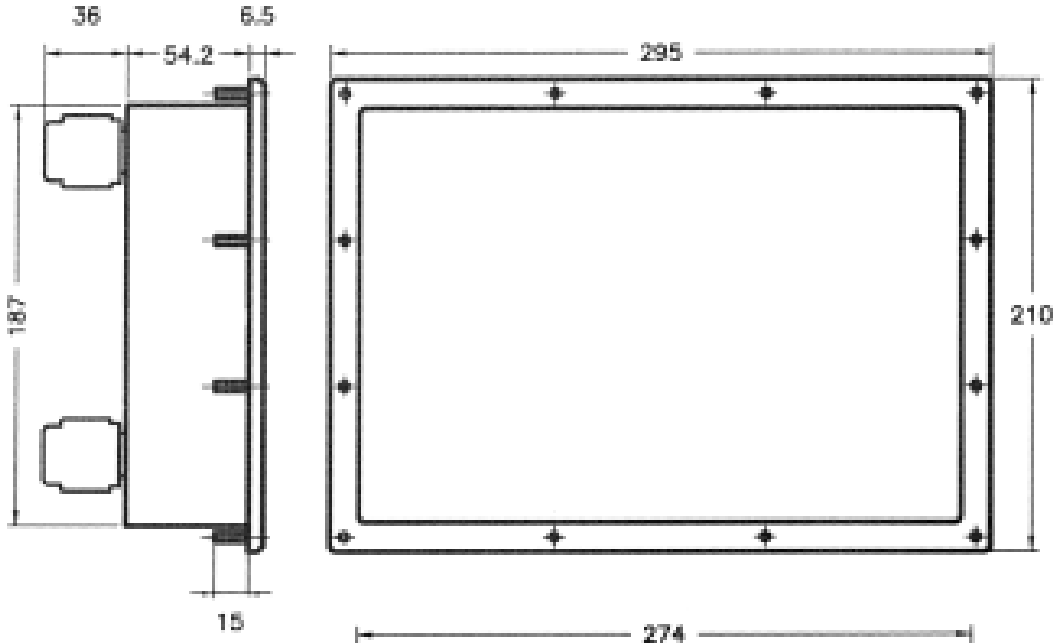
USER INTERFACE

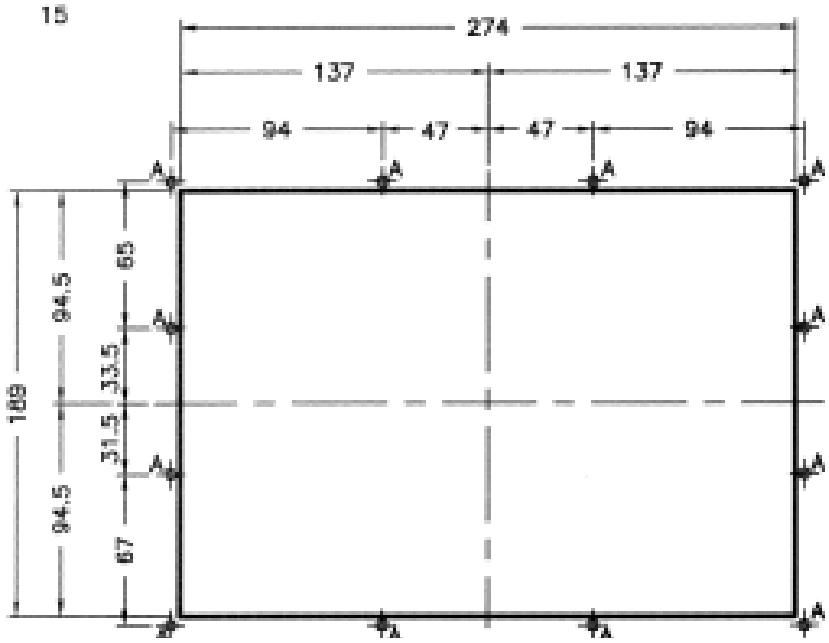
- Polyester 41-key-KEYBORD each key having programmable functions, i.e.:
  8 keys in the display area
  10 function keys with custom label possibility
  8 navigation keys
  1 key for reset function or alarm display
  Numerical pad
  START and STOP push-buttons with LEDs
  25 programmable signalling LEDs
- Rear-lighted GRAPHICAL DISPLAY 240 x 128 pixel
  128 expandable text pages
  25 graphical bit-map backgrounds 240x128 pixel
  256 messages, each by 30 bytes
  Storable data structures with indexed access (recipes)

INTERFACE TO THE FIELD

- DIGITAL INPUTS: 32 optoisolated inputs + 4 inputs devoted for interrupt command
- DIGITAL OUTPUTS: 32 50 mA optoisolated inputs
- I/O EXPANSION MODULES: 16 inputs + 16 outputs 500 mA – Fixing on DIN bar
- INCREMENTAL ENCODERS: 2 bidirectional count inputs, 5V Line Driver (RS422), with zero reference reading, 500 KHz frequency
- AXIS COMMAND: 2/4 differential analogue outputs ±10Vcc - 12 bit - Optional: 10 V analogue outputs
- Possibility to handle axes ON/OFF
- ANALOGUE INPUTS: 2/4 analogue inputs 0÷5 V- 10 bits – Optional: 10 V analogue inputs, common type
- ALARMS: 1 contact for system watch-dog
- COMMUNICATION: 2 RS232 serial ports, or 1 serial port RS232 + 1 serial port RS485

DIMENSIONS





Panel cut off
A = Holes Ø 4.5 mm

GENERAL SPECIFICATIONS

- Front protection degree: IP65
- Supply: 24 Vdc ±15% 30 Watt max.
- Connections:
  Extractable terminal box: supply, digital I/O
  Canon connectors: encoder, analogue I/O, serial ports
- On request: digital outputs on relay modules
- Lithium battery 5 years life
-

ORDERING INFORMATION

Type	*Axes No.*	*Input/Ouptut connections*	*Memory*	*Serial line*
Nexus N2 **Nexus Box N2** *Optional:* ***- 4 analogue inputs*** ***- SSI serial interface***	**2** = 2 axes **4 =** 4 axes	**32 + 32 I/O** - terminal box connections - external relays connections	**128 kB** RAM	2 RS232 serial ports 1 RS232 + 1 RS485 serial ports

elap VEGA+

MULTIFUNCTIONAL CONTROLLER with embedded PLC

Touch screen

- ***Control over one or two digital axes***
- ***Embedded PLC, Ladder or Instruction List programming***
- ***Touch screen***
- ***Graphical pages handled***
- ***Interface completely programmable via PC***
- ***Proprietary fieldbus for I/O expansion***
- ***Compatible with VEGA***
- ***Modbus RTU communication protocol***

New graphical design and a ***powerful man-machine interface*** are the main features of the ***controller VEGA+.***
The wide ***TFT color display*** is rear-lighted. Its ***touch screen*** functions are easily set by means of a dedicated program.
VEGA+. controls one or two digital axes with 12 bit analogue output; its mighty ***embedded PLC*** can be programmed both in Ladder and in Mnemonic language.
VEGA+ hardware specifications are consistent with VEGA prior version, while its software was enhanced to handle the touch screen functionalities.
VEGA PLC programs and tasks are compatible with VEGA+ applications.

HARDWARE

- **CPU** 32 bit RISC 65 MIPS
- **Flash memory** 256 Kbyte
- **RAM** for user programs, data and pages: 512 Kbyte - optional 128 Kbyte NV RAM

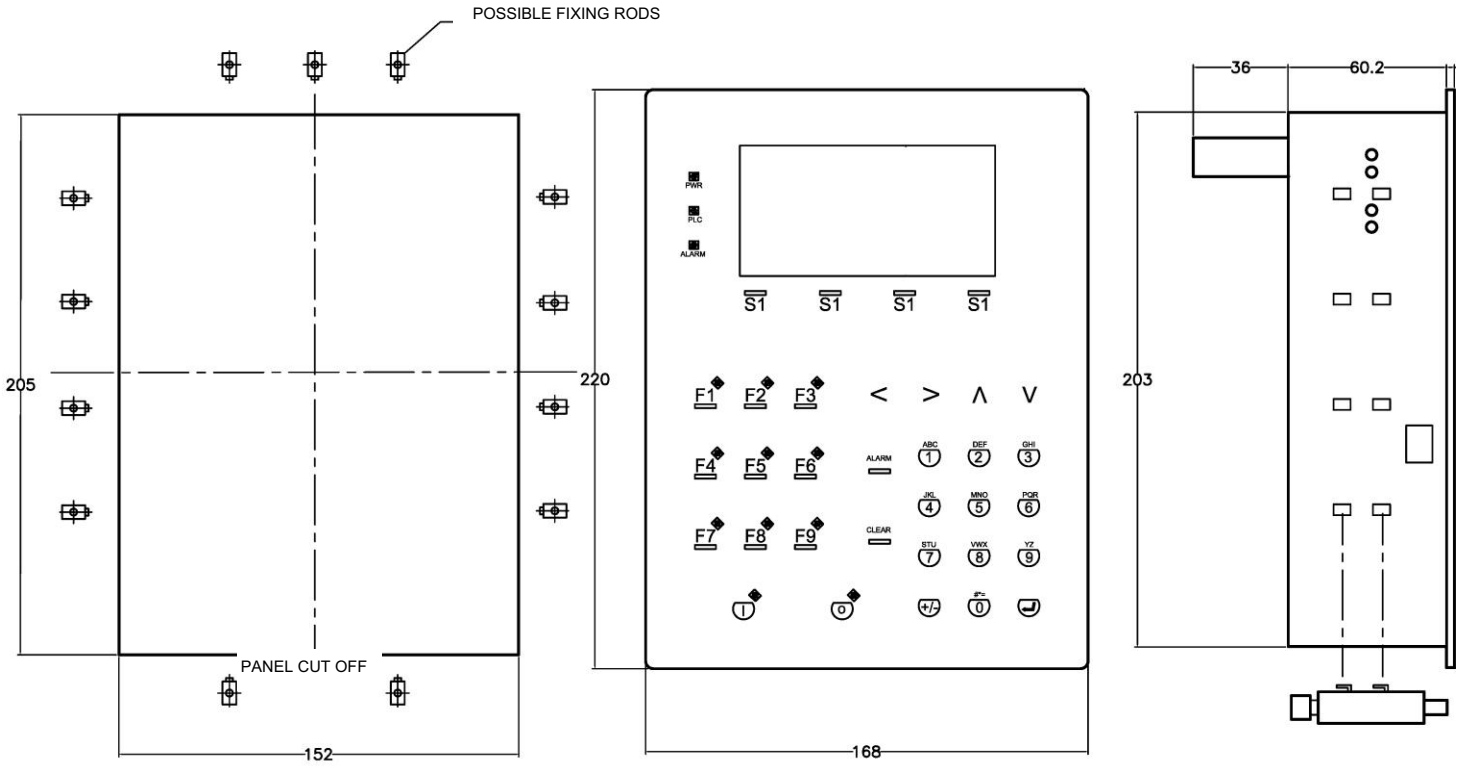
USER INTERFACE

- **Polyester** 33-key-**KEYBOARD,** each key having programmable functions, i.e.:
  4 keys in the display area
  9 function keys with signalling LEDs
  4 direction keys
  1 key for the reset function or alarm display
  Numerical pad
  START and STOP push-buttons with LEDs
- TFT COLOR **DISPLAY** Touch Screen 432 x 240 pixel, 4.2 inch, 65000 colours
  64 expandable text pages
  256 messages, each by 20 bytes
  Storable data structures with indexed access (recipes)
  Texts handled in four languages
  Images by 128x128 pixel for icons and animation
  Graphical touch screen push-buttons

INTERFACE TO THE FIELD

- **DIGITAL INPUTS:** 16 optoisolated inputs + 2 devoted to the interrupt command
- **DIGITAL OUTPUTS:** 16 50 mA optoisolated outputs I max 50 mA
- **INCREMENTAL ENCODERS**: 2 5V- Line Driver (RS422) bidirectional count inputs with zero reference reading, 500 KHz frequency
- **AXIS COMMAND:** 2 12-bit ±10Vdc differential analogue outputs. Possibility to command ON/OFF axes
- **ANALOGUE INTPUTS**: 4 0÷5 V analogue inputs with 10 bit resolution - Optional: 10 V analoogue outputs
- **ALARMS:** 1 contact for system watch-dog
- **COMMUNICATION:** 2 RS232 serial ports or 1 RS232 + 1 RS485 serial port – optional 1 USB port
- **EXPANSION MODULES:** 16 inputs + 16 outputs 500 mA
- DIN bar fixing
- **Modbus RTU** communication protocol in master or slave mode

DIMENSIONS



GENERAL SPECIFICATIONS

- Front protection degree: IP65
- Supply: 24 Vdc ±15% 24 Watt max.
- Connections:
- Extractable terminal box: supply, digital I/O
- Canon connectors: encoder, analogue I/O, serial ports
- On request: digital outputs on relay modules
- Lithium battery 5 years life (Except type with NV RAM)

ORDERING INFORMATION

VEGA+	1 axis	M	512K RAM	R

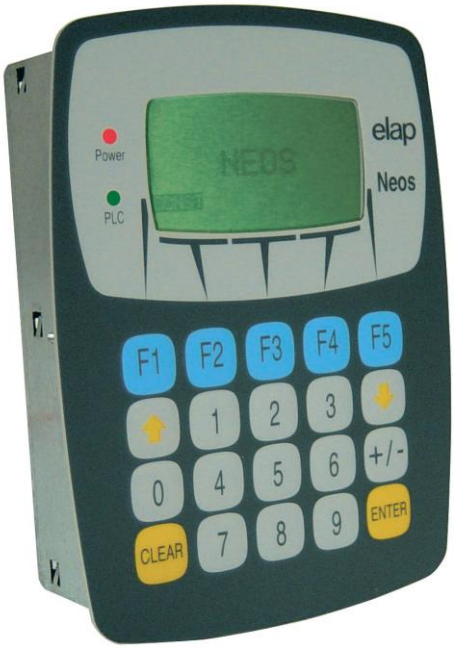
Type
VEGA+

Controlled Axes
1 axis
2 axes

Input/Outputs Connections
M = 16 + 16 I/O terminal box connections
R = 16 + 16 I/O on external relay modues

RAM Capacity
512 KB RAM
128 KB NV RAM

Serial Ports
R = 2 RS232 serial ports
S = 1 RS232 + 1 RS485 serial ports
T = 1 RS232 + 1 RS422 serial ports
U = 2 RS232 serial ports+1 USB
V = 1 RS232 + 1 RS485 serial ports+1 USB
Z = 1 RS232 + 1 RS422 serial ports+1 USB



elap NEOS N1

SINGLE AXIS CONTROLLER with embedded PLC

- ***Control over 1 axis***
- ***embedded PLC, LADDER or Mnemonic programming***
- ***Programmable user interface***
- ***Graphical pages handled***
- ***Application programs available***

Small-sized and compact-shaped ***NEOS N1*** features *a single axis controller* with great potential.
Its embedded PLC allows to configurate several functional options, tailoring NEOS for any application in the *counting and positioning field* as well as for the *development of simple logic circuits* .
The Integrated Development Environment Elap CmStudio allows to create the PLC program and to configurate the user graphical interface.

HARDWARE

- **CPU** 8 bit 4 MIPS
- **Flash memory** 32 Kbyte
- **RAM/Flash memory** for user programs, pages and data: 3.6 Kbyte for the PLC + 32 Kbyte for pages and recipes

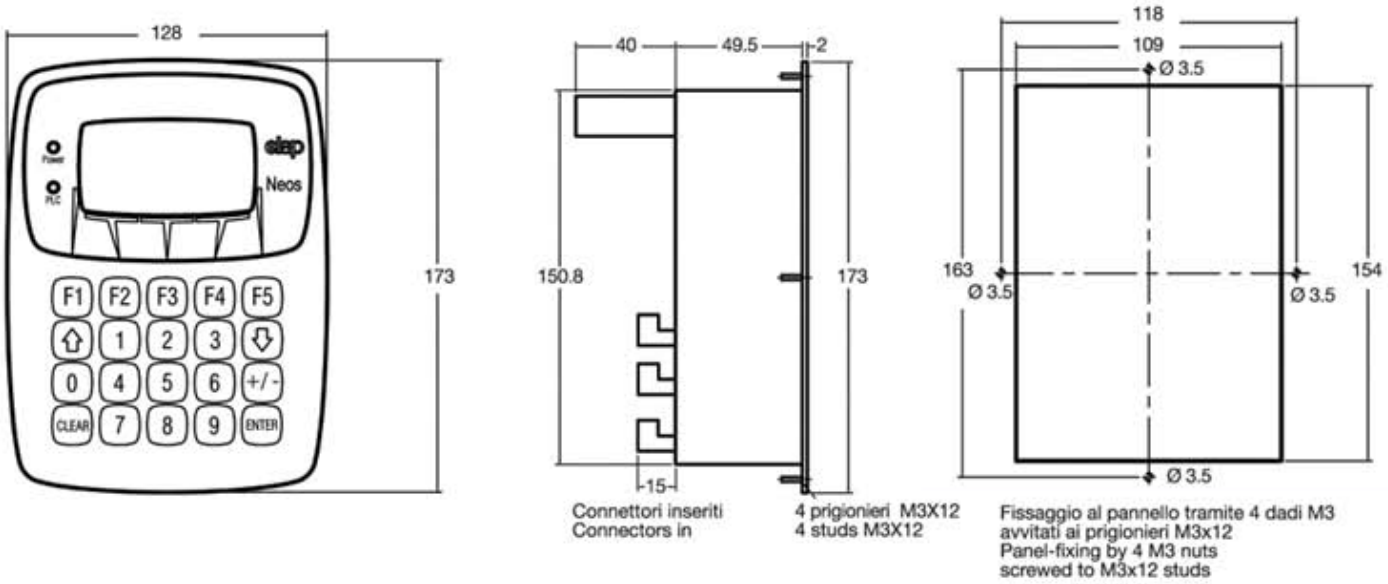
USER INTERFACE

- Polyester **KEYBOARD** with 20 keys,9 with programmable functions, i.e.:
  5 keys in the display area and/or function keys
  2 navigation keys
  1 reset or alarm display key
  numerical pad
- **LCD GRAPHIC LED DISPLAY,** rear-lighted 128x64 pixel
  expansible text pages
  messages
  storable data structures with indexed access (recipes)
  images up to 16x16 pixel for icons and animation

INTERFACE TO THE FIELD

- **DIGITAL INPUTS:**6 optoisolated inputs
- **DIGITAL OUTPUTS:** 4 500-mAmp optoisolated outputs
  2 1-Amp solid state NPN outputs
- **INCREMENTAL ENCODERS:** 5 Vdc Line driver (RS422) bidirectional count input with zero reference reading, frequency 400 KHz
  Optional: 5 or 12 Vdc push-pull/NPN open collector, 12 Vdc line driver
- **AXIS COMMAND**: 1 ±10Vdc differential analog output 12 bit resolution. ON/OFF axes control possible
- **COMMUNICATION:** 1 serial port RS232 or RS485
- **VERSION SA**: 1 potentiometer input + 3 PNP inputs

DIMENSIONS



GENERAL SPEICIFICATIONS

- Supply 24Vdc±15% 10 Watt max./19,5Vac ±10% 10VA
- Frontal protection degreee: IP65
- Connections:
  extractible terminal box: supply, digital I/O
  Canon connector: encoder, I/O analogici, porta seriale serial port
- Data memory on Flash EEPROM

ORDERING INFORMATION

NEOS N1 | **1 axis** | **6+6 I/O** | **5 Vdc LD** | **R**

Type
NEOS N1

Axes number
1 = axis

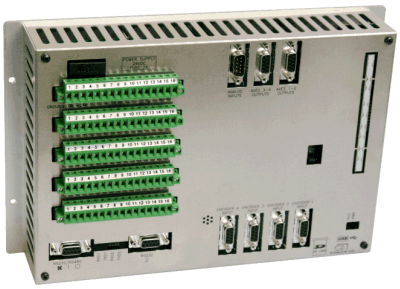
Inputs/outputs
6 + 6 I/O PNP
3i+6o PNP (version SA)

Count input
5 Vdc line driver/push pull/open collector
12 Vdc line driver/ push pull/open collector

Serial line
R = 1 serial port RS232
S = 1 serial port RS485

PLC CONTROLLERS
NEXUS N2 BOX
VEGA BOX

The PLC controllers series ***NEXUS*** and ***VEGA*** can be supplied in the ***BOX version for inside board mounting.*** ***NEXUS BOX N2*** *and* ***VEGA BOX*** can be employed together with operator terminals to develop complex controlling systems.



NEXUS BOX N2
2/4 axes controller

- ***INSIDE BOARD VERSION***
- Fixing plate dimensions mm 300x190
- ***2 to 4 digital axes managed*** by means of ±10Vdc (0÷ ±5 Vdc) digital outputs *with* 12 bit resolution
- CPU 32 bit RISC ● Input signals: 5 Vdc line driver
- ***PLC ● IDE CMStudio for PLC programmng (ladder or IL).***
- Supply voltage: 24 Vdc ±15% 36 Watt ● Connections on terminal box or on external relay modules
- ***Modbus RTU communication protocol ● Master RS485 + Slave RS232 option***
- ***PLC program saved on EEprom***
- ***PLC program memory 64 kB ● Programming via USB 2.0 mini port ● Real Time Clock***
- ***Flash memory 1 MB for the backup or the RAM data ● SD card slot max. 2 GB for data backup/upload, receipt and programs– SD card included***

OPTIONAL: ● 4 0-5V analogue input s ● 4 10V analogue inputs ● 0÷ ±10 Vdc analogue outputs

VEGA BOX
1/2 axes controller

- ***INSIDE BOARD VERSION***
- Fixing plate dimensions mm 233 x 154
- CPU 32 bit RISC 65 MIPS
- ***1 or 2 digital axes managed by ±10Vcc (0÷ ±5 Vdc) differential analogue outputs, 12 bit resolution***
- Input signals: r 5 Vdc line driver
- ***PLC ● IDE CMStudio for PLC programmng (ladder or IL).***
- Dimensions: mm 158x210x60
- Supply voltage: 24 Vdc ±15% 24 Watt max.
- Connections on terminal box or on external relay modules
- **Modbus RTU communication protocol**

OPTIONAL***:*** ● 4 0-5V analogue input s ● 4 10V analogue inputs ● 0÷ ±10 Vdc analogue outputs

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