



# MOTION CONTROLLERS





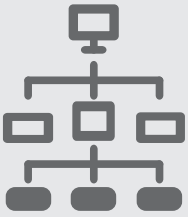
# MOTION CONTROLLERS



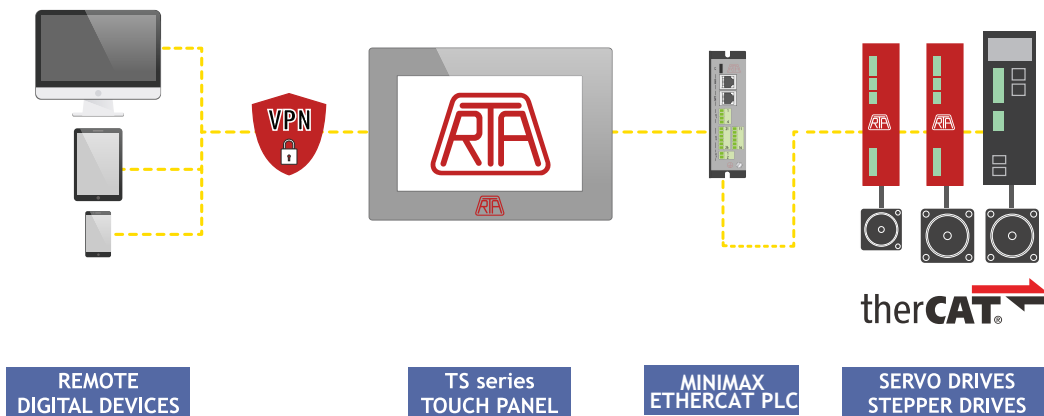
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# The architecture

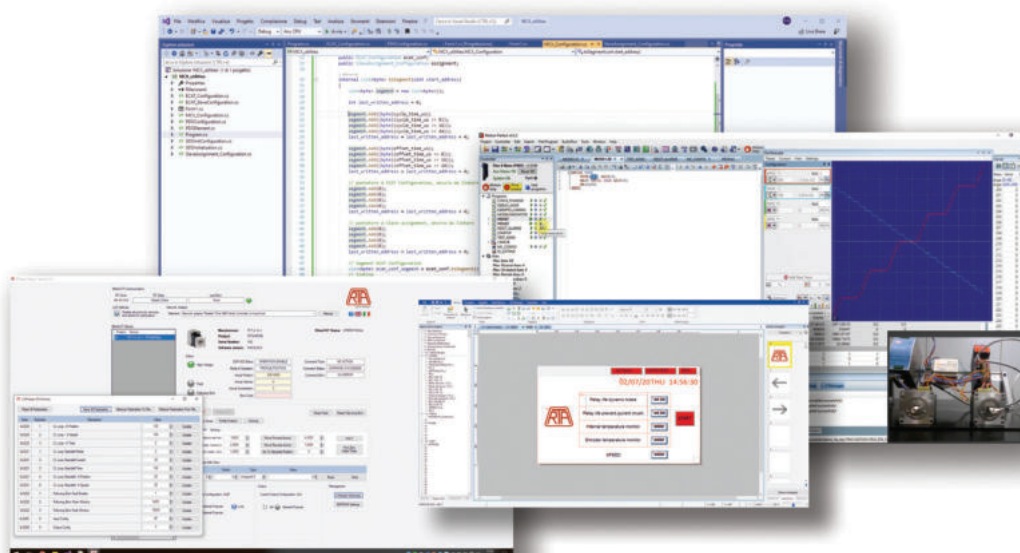


R.T.A. architecture is a flexible solution for a wide range of motion control applications in most industrial fields. It's an articulated system allowing the programming, functioning and monitoring of up to 128 axes of stepper, servo and linear motors (64 real and 64 virtual), based on the most common protocols. Products and technologies are fully compatible and scalable and they can be easily remotely monitored through VPN.



# Software development

- At R.T.A. we have a team of software engineers fully dedicated to software development projects.
- We can offer A-to-Z or partial software design, working closely with the customer's technicians in every phase of the project.
- FREE Windows-based programming interface for setup, diagnostic and configuration activities and a comprehensive motion library.
- Online and on-site fast and qualified technical assistance.



## Products and solutions



### MINIMAX ETHERCAT PLC SERIES



Drive of up to 40 advanced axes via EtherCAT real-time field bus. Smart Structured Text programming language with built-in function libraries through RTA Studio: unique software environment for configuration and debugging. Easy integration with other automation systems by Modbus TCP/IP, UDP and Modbus RTU. Availability of IOT ET D.8.8 EtherCAT module. RTA Wiki platform available for further technical insights.



### EtherCAT TRIO MOTION CONTROLLERS



Drive of up to 128 axes via EtherCAT real-time field bus TrioBASIC and IEC61131-3 programming languages. Precise calculation thanks to powerful dual- and quad-core processors. Multitasking programming language and free Windows-based development environment. Built-In Ethernet port, allowing programming, connection with HMI, and data transferring with the rest of the world, using the most common protocols.



## PULSE TRAIN & ANALOG MOTION CONTROLLERS

Linear, circular, helicoidal and spherical interpolation.

3, 5 or 8 multi-function channels.

TrioBASIC and IEC61131-3 programming languages.

Multitasking programming language and free Windows-based development environment.

Built-In Ethernet port, allowing programming, connection with HMI, and transferring data with the rest of the world, using the most common protocols.

PULSE TRAIN  
ANALOG INPUT  
ANALOG OUTPUT



## HMI - TS SERIES

Three standard models in three sizes.

Free Windows based developing program.

Free remote control (VPN) enabling the operator to easily connect and monitor the "on the field" HMI through a safely protected VPN connection.

Easy integration with all R.T.A. products



## ANALOG & DIGITAL I/Os

A selection of digital and analogue I/O terminals and motion modules designed for precise positioning

of stepper and servo motors, that perfectly fit in a complex system, that can be placed remotely from the master if needed.

Available modules: Power Connect, Thermocouple, RTD, Load Cell, 16 IN/out PnP, 2 Servo Axes, 8 Analog I/O

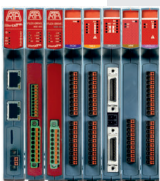


## CAN I/O



Digital and analogue I/O expansion modules provide a simple and scalable I/O system based on CANopen protocol.

## FLEXSLICE ARCHITECTURE MAIN FEATURES:



- Scalable and expandable system
- Easy parameter configuration
- Up to 6 drives in a row
- Up to 128 axes controlled (64 real and 64 virtual)
- DIN-rail mounted

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MOTION CONTROLLERS

# ETHERCAT MOTION CONTROLLERS & FLEXSLICE ARCHITECTURE

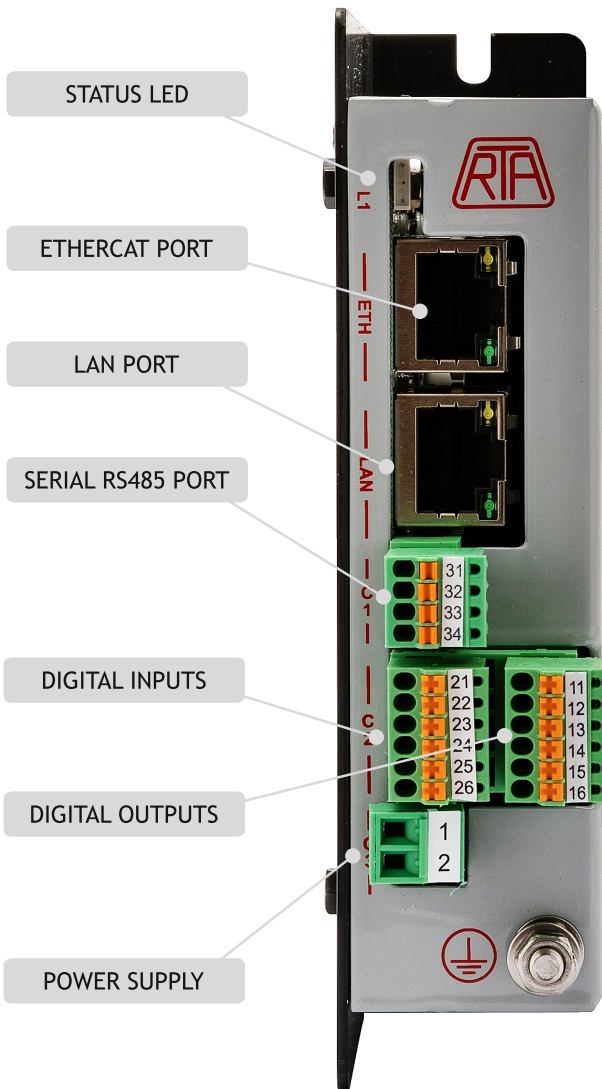


# MiniMax Series EtherCAT<sup>®</sup> PLC

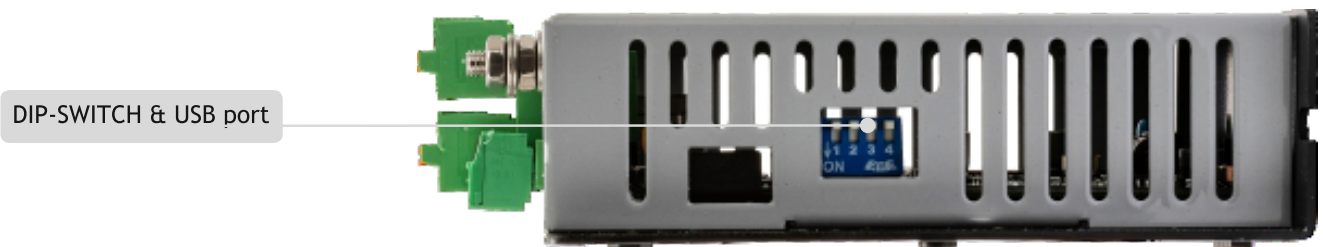
## INTRODUCTION

MiniMax is an EtherCAT PLC designed for easy configuration and programming of stepper and servo drives. It allows to develop EtherCAT automation solutions ranging from basic to medium complexity. With an additional LAN port featuring a Modbus TCP/IP server protocol, it can be easily integrated with HMIs, third party PLCs, Industrial PCs and other network devices.

## HIGHLIGHTS

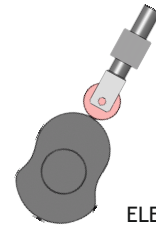


- RTA Studio: unique software environment for configuration and debugging
- Smart Structured Text programming language with built-in function libraries
- Full RTA and SANYO DENKI EtherCAT drives compatibility
- Easy integration with other automation systems by Modbus TCP/IP, UDP and Modbus RTU
- Up to 20 realtime parallel processes
- Compact Size: 32x130x106 mm
- Advanced Axes Motion Interpolation
- 5 Digital Inputs + 5 Digital Outputs
- **RTA Wiki** platform available for further technical insights



# MiniMax versions comparison

<b>MiniMax A1</b>	<b>MiniMax R2</b>
8 basic axes*	20 basic axes
2 advanced axes▲	20 advanced axes



ELECTRICAL CAMS MANAGEMENT

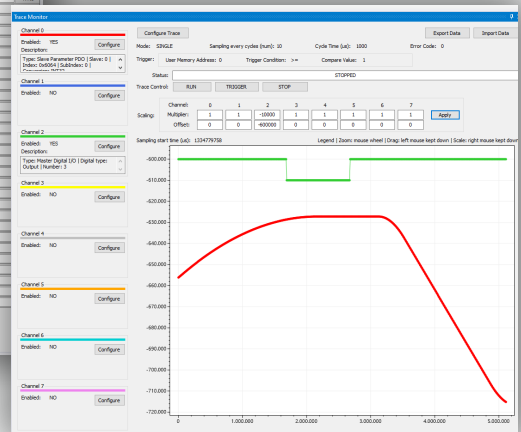
- \* Basic axes: point to point movements and homing (CSP mode of operation)
- ▲ Advanced axes: advanced axes interpolation, mechanical cam, gears and links

# MiniMax Development Environment

Complete integrated environment for Microsoft Windows

ID	Status	Control	Task Name	Start Address	Program Counter	Error Code	Current
0	Suspended	Assn Task	demo_motion	0x80	0x28B	0x0	Line: 46,
1	Running	Assn Task	hmi_management	0x301	0x31C	0x0	Line: 3, a
2	Stopped	Assn Task	-	0x0	0x0	0x0	-
3	Stopped	Assn Task	-	0x0	0x0	0x0	-

Trace monitoring of automation process parameters



Easy programming language and debugging tools

```

27 power_on_axis(axis);
28
29 // wait 1 second
30 wait(1000);
31
32 cycles = 12;
33
34 while(cycles > 0)
35 {
36     if (get_input(1, 5) == 1) {
37         set_speed(axis, 2 * 360);
38         set_acceleration(axis, 360);
39         set_deceleration(axis, 360);
40         move_relative(axis, 5 * 360);
41     }
42
43     set_speed(axis, 4 * 360);
44     set_acceleration(axis, 10 * 360);
45     set_deceleration(axis, 10 * 360);
46     move_relative(axis, -7 * 360);
47
48     wait_until movement_type(axis) == 0;
49     wait(1000);
50
51     cycles = cycles - 1;
52 }
53
54 power_off_axis(axis);
55

```

ID	Status	Control	Task Name	Start Address	Program Counter	Error Code	Current
0	Suspended	Assn Task	demo_motion	0x80	0x28B	0x0	Line: 46,
1	Running	Assn Task	hmi_management	0x301	0x31C	0x0	Line: 3, a
2	Stopped	Assn Task	-	0x0	0x0	0x0	-
3	Stopped	Assn Task	-	0x0	0x0	0x0	-

Quick Axis settings and testing setup

The Axis Management window shows configuration for Axis 1. Key parameters include:
 

- Enabled:
- Reference Position: 0
- Actual Position: 9545.64
- Commanded Position: 41147
- Speed: 200
- Acceleration: 100
- Deceleration: 300
- Home In Slave Number: -1
- Home In Active Mode: 0

 The interface includes a graph showing position over time and various control buttons like 'Enable', 'Disable', 'Home Backward', and 'Home Forward'.



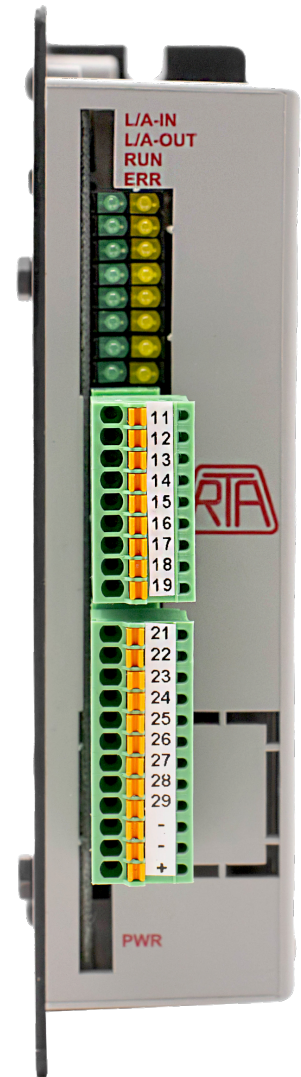
Download the MiniMax Series full Datasheet

# IOT ET D8.8 Module

The IOT module manages digital inputs/outputs, with integrated LED indication to display its status.

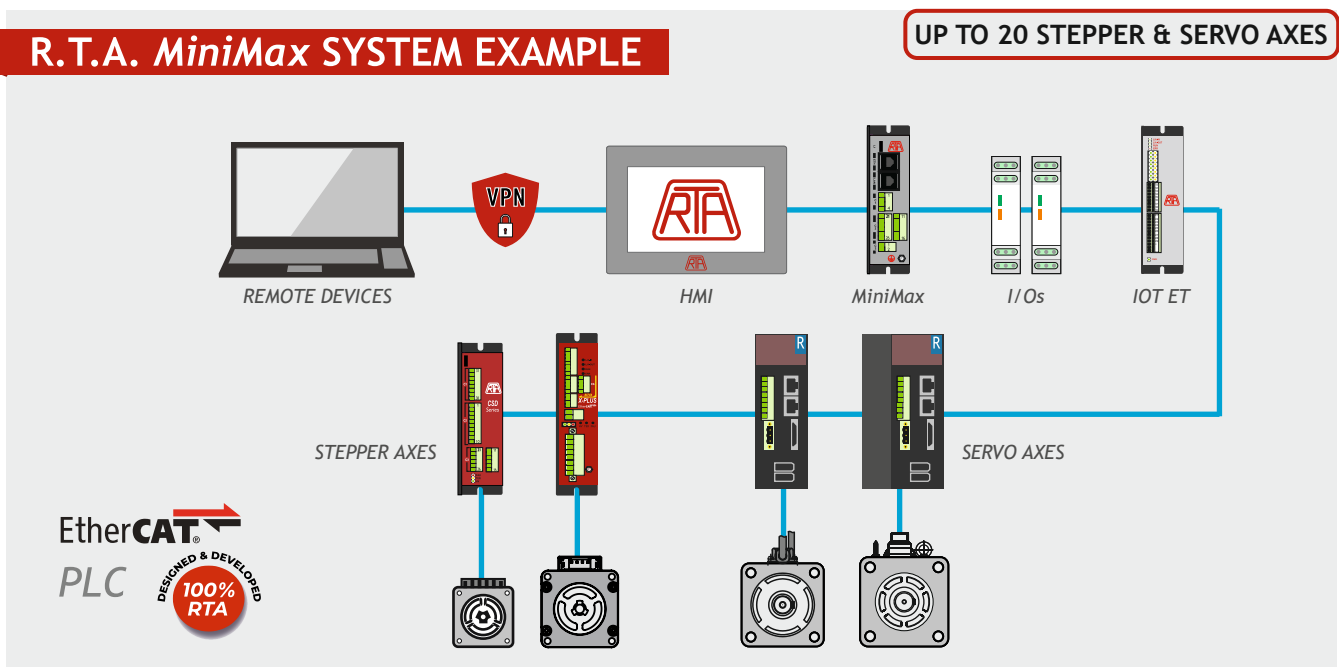
## HIGHLIGHTS

- It receives digital logic commands, detect digital inputs status and controls digital outputs.
- EtherCAT<sup>®</sup> interface
- RTA's EtherCAT PLC *MiniMax* expansion or stand-alone unit
- 8 digital input
- 8 digital bi-directional output
- Power supply: 24 VDC
- Protections Over-Voltage and Shortcircuit for outputs



## R.T.A. *MiniMax* SYSTEM EXAMPLE

UP TO 20 STEPPER & SERVO AXES







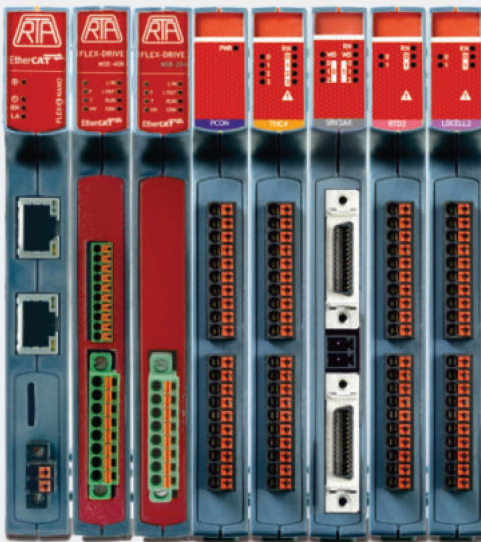
# FLEX-6 NANO *Integrated EtherCAT<sup>®</sup> Controller*

## INTRODUCTION

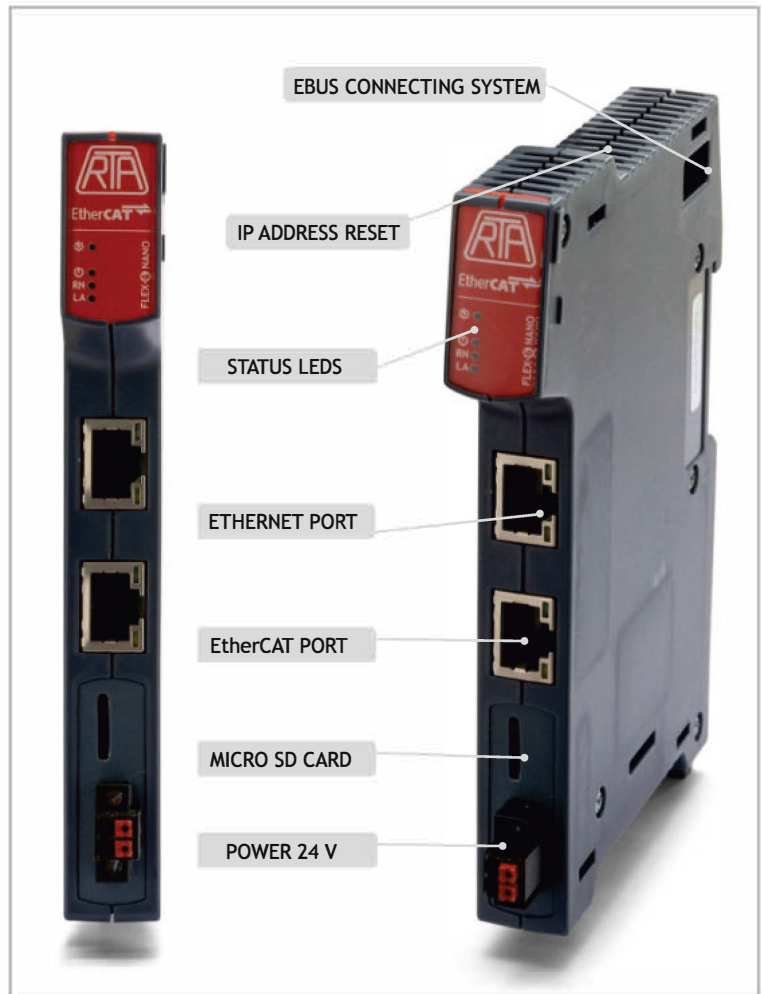
Flex-6 Nano is a powerful, flexible and compact DIN-rail mounted motion coordinator, controlling up to 64 stepper and servo axis.

Flex-6 Nano can be used as a stand-alone controller or it can easily «plug» straight into the EtherCAT Flexslice Architecture, including servo and stepper drives and I/O modules.

## THE FLEXSLICE ARCHITECTURE



*NO NEED FOR EtherCAT COUPLER*




## HIGHLIGHTS

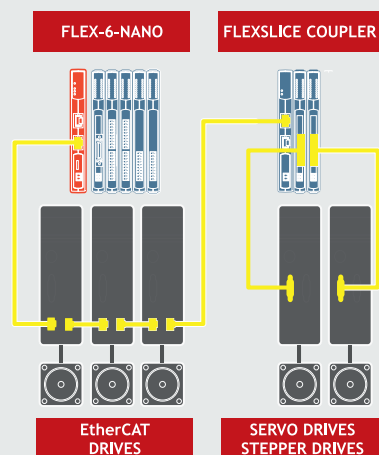
- Dual core 1GHZ Arm Processor
- 2 - 64 stepper and servo axis
- Built in EBus Coupler
- Cycle Time as low as 125us
- Ethercat Protocol to Individual modules using the Ebus System.
- Easy parameter configuration
- Remote placement of the modules from the master if needed.
- DIN-rail mounted

EtherCAT<sup>®</sup>

**POWERFUL**  
**COMPACT**  
**VERSATILE**

## SPECIFICATIONS

- Multitasking Operating System
- Comprehensive Motion Library
- TrioBasic Motion Language
- IEC61131-3 Programming
- HMI Support
- Robotic Functions 
- Multi-protocol Communications Support



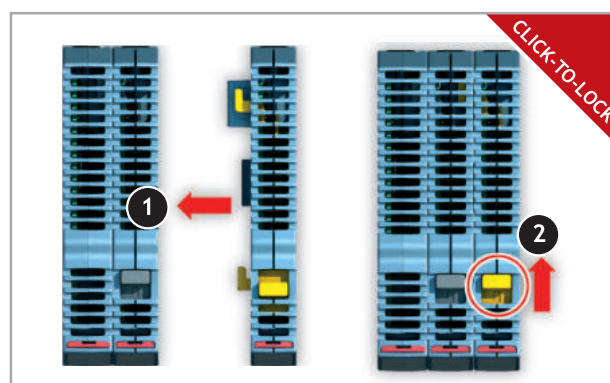
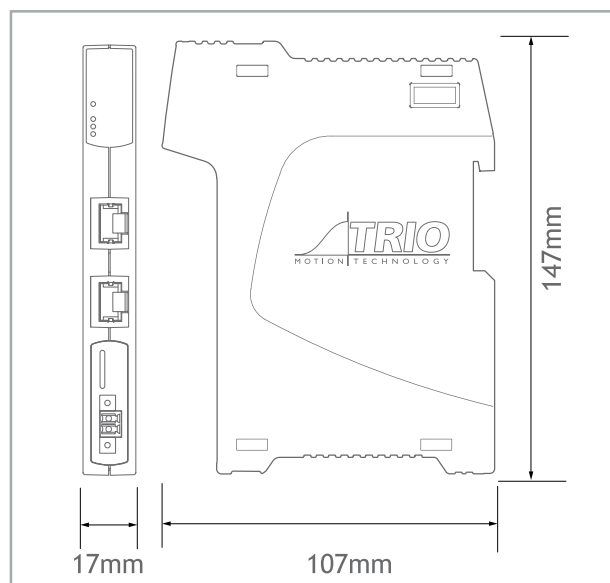
**EtherCAT** 

## TECHNICAL FEATURES

- Dual core 1 GHZ Arm Processor.
- 1 Gbit DDR3 Memory.
- 1 Gbit Fast Serial Flash Memory to store data.
- Built-in Long Time Retention RTC.
- Built-in Ethercat coupler for direct access to Flexslice modules.
- Completely field programmable with *Motion Perfect*.
- Bus cycle time synchronised with *Motion Coordinator* Servo Period.
- EtherCAT protocol remains intact down to individual modules using the EBUS system.
- I/O functions tightly synchronised to motion using EtherCAT distributed clock.
- Practical Push-In connector options.
- RoHS and UL approved.



## MECHANICAL DIMENSIONS



# Flexslice Architecture **EtherCAT**

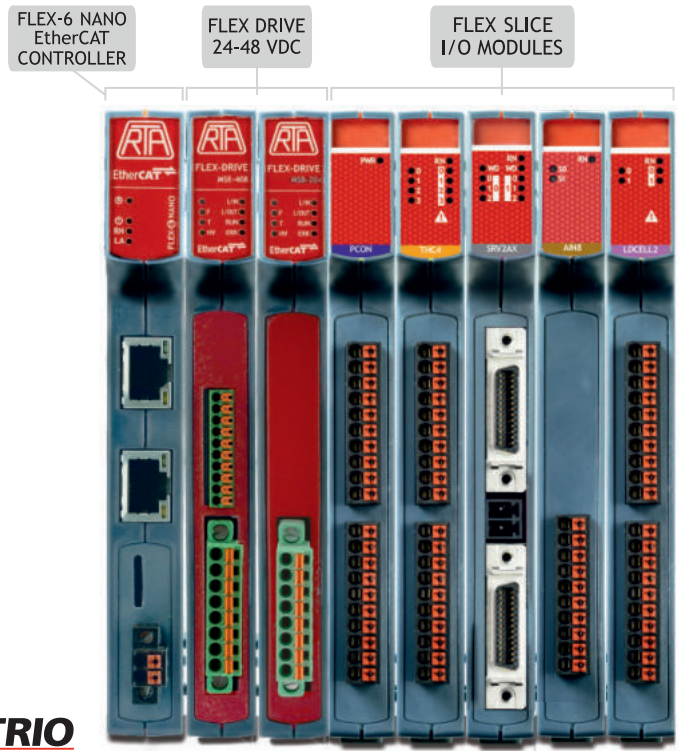
## INTRODUCTION

Flexslice architecture is a flexible solution for a wide range of motion control applications in most industrial fields. It is an articulated system allowing the complete process of programming, functioning and monitoring of up to 128 axes of stepper, servo and linear motors, based on the most common protocols.

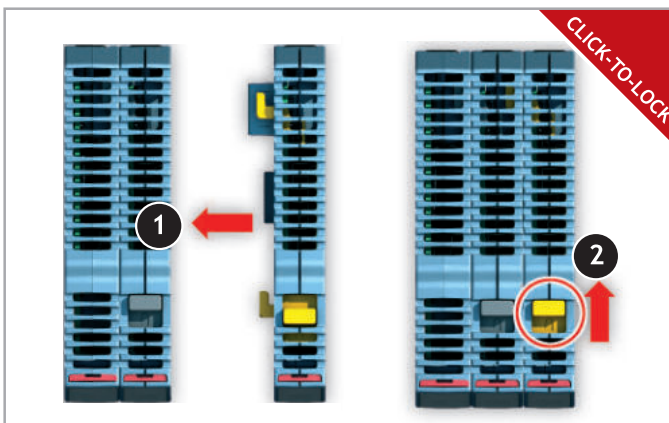
It is an intelligent system originally designed by TRIO Motion Technologies, where R.T.A. EtherCAT drives fit perfectly, developing a powerful and ultra-compact solution.

## HIGHLIGHTS

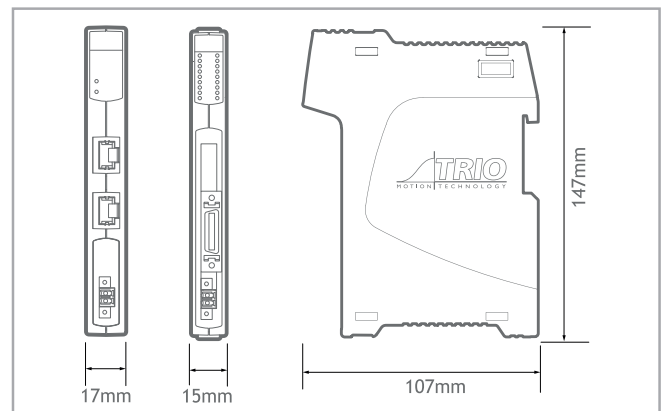
- Scalable and expandable system
- Easy parameter configuration
- Perfect matching with R.T.A. Flex-Drive EtherCAT stepping motor drive.
- Power supply:
  - for controller and Coupler: 24 VDC
  - for Flex-Drive: 24-48 VDC
  - for all Modules: via internal EBus
- Up to 128 axes controlled
- EtherCAT cycle times down to 125  $\mu$ s
- Wide selection of digital and analog I/O modules designed for precise positioning of stepper and servo motors.
- Secure remote monitoring through VPN
- DIN-rail mounted



## FAST & EASY ASSEMBLY



## MECHANICAL DIMENSIONS



## LOGIC MODULES



### Flex-6 Nano EtherCAT Motion Coordinator

- EBus output current: 2500 mA
- Power supply requirement: 24 VDC
- EtherCAT Connection: RJ45
- Protocol: EtherCAT Master
- Cycle Time as Low as 125us
- Modes of Operation: CSP, CSV and CST
- Communication: Modbus/TCP



### P366: EtherCAT Coupler

- EBus output current: 2500 mA
- Power supply requirement: 24 VDC
- EtherCAT Connection: RJ45
- Protocol: EtherCAT Slave
- Data rate 100 Mbit/s
- Network Cable: CAT 6

## POWER MODULES



### RTA Flex-Drive EtherCAT MSE 408 Model

- EBus module current consumption: 350 mA max + Encoder (85 mA max)
- Power supply requirement: 24-48 VDC
- $I_{NP}$  (Peak value): 4 A
- Sensor Feedback: ENCODER or OPEN LOOP



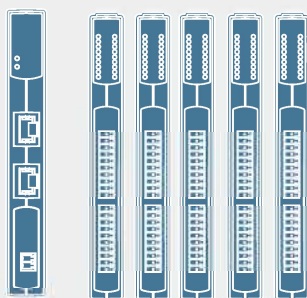
### RTA Flex-Drive EtherCAT MSB 204 Model

- EBus module current consumption: 350 mA max
- Power supply requirement: 24-48 VDC
- $I_{NP}$  (Peak value): 2.5 A
- Sensor Feedback: OPEN LOOP

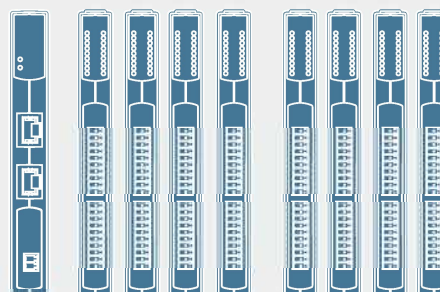
The configuration of a Flex-Drive Architecture can be defined considering that the **total sum** of the **EBus current consumption** of every included module should be lower than the Ebus output current of Flex-6-Nano Motion Coordinator or P366 EtherCAT coupler (**2500 mA**).

## SOME EXAMPLES OF FLEXSLICE ARCHITECTURES

**1 FLEX-6 NANO or 1 COUPLER**  
**+ UP TO 5 FLEX-DRIVE MSE 408**



**1 FLEX-6 NANO or 1 COUPLER**  
**+ UP TO 4 FLEX-DRIVE MSE 408**  
**+ 4 DIGITAL I/Os or 2 ANALOG I/Os**



*Please refer to R.T.A. Technical support in case of doubts about specific layouts.*

# FLEX-DRIVE Series Drives

## EtherCAT

### INTRODUCTION

- FLEX-DRIVE allows connection with any stepper motor up to Nema 24 (60 mm) with or without encoder feedback, supporting PP, CSP, CSV and Homing mode of operation.
- MSE 408 model is equipped with one configurable fast capture input, suitable for Touch Probe, proximity or free use.
- Easy setup: no need of programming software, all settings are made through EtherCAT network.
- Separated power supply for logic circuit and motor power.

### AUTO-FEED

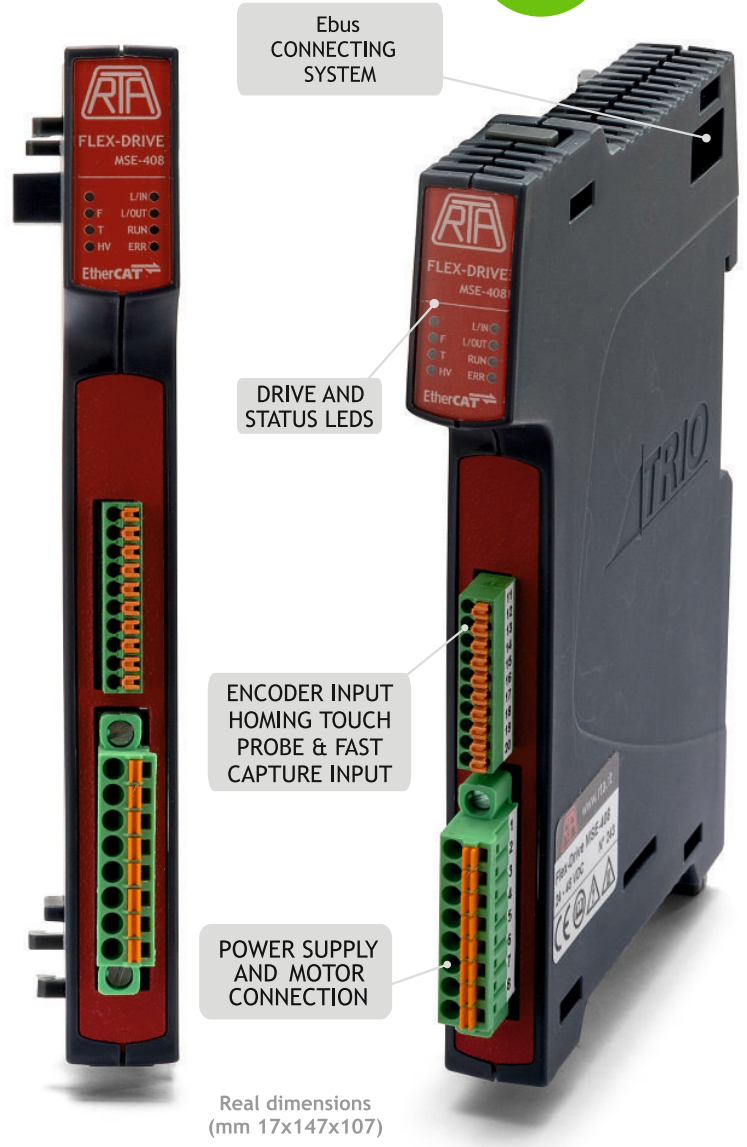
AUTO-FEED is a closed loop function with:

- Very simple tuning
- Lower power consumption and heating



### MAIN EtherCAT FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost (120%).
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.



Please refer to [download.rta.it](http://download.rta.it) for technical specifications



FLEX-DRIVE



SCAN THE QR CODES TO WATCH TWO VIDEOS ON FLEX-DRIVE AND AUTO-SYNC FUNCTION

AUTO-SYNC



# Flexslice Modules

## P362: Power Connect



The P362 Flexslice Power Connect provides a solution for simple and convenient wiring of 3 wire sensor power and return wires. The pins of the 2 x single-row push-in connectors are joined together to form 2 isolated banks of commoned connections. With 0V connected to the lower connector and 24V to the upper connector, the LED gives an indication that power is on.

- EBus Module current consumption: 0mA
- Power supply requirement: 24V (+/-20%) DC
- Max connector current: 4A

## P367: Thermocouple



The P367 Flexslice Thermocouple module has 4 thermocouple inputs, each digitised to a resolution of 16 bit. The 4 thermocouple inputs are brought out to a single row push-in connector. A second single row push-in connector has 4 relay outputs for control of a heater or other switched load.

- EBus Module current consumption: 160mA max
- Power supply: via the EBUS
- Number of Inputs: 4
- Thermocouple types: J, K, T, E
- Resolution: 16 bit
- Number of Outputs: 4
- Output type: Normally open (NO)
- Load type: Resistive, inductive and capacitive
- Max. Output Voltage: 24V
- Max Output Current: 100mA

## P368: RTD Module



The P368 Flexslice RTD module has 4 resistance temperature detector (RTD) inputs, each digitised to a resolution of 16 bit. The 4 RTD inputs are brought out to a single row push-in connector. A second single row push-in connector has 4 relay outputs for control of a heater or other switched load.

- EBus Module current consumption: 160mA max
- Power supply: via the EBUS
- Number of Inputs: 4
- RTD types Resolution: 16 bit
- Number of Outputs: 4
- Output type: Normally open (NO)
- Load type Resistive, inductive and capacitive
- Max. Output Voltage: 24V
- Max Output Current: 100mA

## P369: Load Cell Module



The P369 Flexslice Load Cell module has 2 load cell inputs, each digitised to a resolution of 16 bit. The 2 load cell inputs are brought out to a single row push-in connector. A second single row push-in connector has 4 relay outputs for control of a switched load.

- EBus Module current consumption: 160mA max
- Power supply: via the EBUS
- Number of Inputs: 2
- Load Cell types: 4 wire
- Resolution: 16 bit
- Number of Outputs: 4
- Output type: Normally open (NO)
- Load type Resistive, inductive and capacitive
- Max. Output Voltage: 24V
- Max Output Current: 100mA

## P371: 16-OUT PnP



The P371 digital output Flexslice connects the binary output Flexslice from the *Motion Coordinator* to the machine's output devices at 24V DC. All 16 outputs are current sourcing (PNP) type and have electrical isolation. Outputs and power connection are via 2 x single-row push-in connectors. The Flexslice module indicates the output signal states via LEDs.

- EBus Module current consumption: 110mA max
- Power supply: via the EBUS
- Power supply requirement: 24V (+/-20%) DC
- Number of Digital Outputs: 16 (2 banks of 8)
- Load type: Resistive, inductive and capacitive
- "ON" time: 110us (10% to 90%)
- "OFF" time 210us (90% to 10%)
- Max. Output current: 0.5A per channel
- Max. Output current: 4A per bank of 8
- Short-Circuit Protection: 1.4A typ per output
- Over voltage Protection: Yes
- Reverse Voltage Protection: Yes

## P372: 16-IN PnP



The P372 digital input Flexslice connects 24V DC signals from devices on the machine to the binary control registers in the *Motion Coordinator*. All 16 inputs are current sinking (PNP) type and have electrical isolation. Inputs and power connection are via 2 x single-row push-in connectors. The Flexslice module indicates the input signal states via LEDs.

- EBus Module current consumption: 110mA max
- Power supply: via the EBUS
- Power supply requirement: 24V (+/-20%) DC
- Number of Digital Inputs: 16 (2banks of 8)
- Load type: Resistive, inductive and capacitive
- "ON" Voltage Threshold: 11.2V typ
- "OFF" Voltage Threshold: 10.2V typ
- Input current: 3.5mA typ
- Input filter Cut-off (RC network): 18KHz

## P374: Analog 2 Servo Axes



The P374 Flexslice Analogue 2 Servo Axes module allows up to 2 servo motors, connected to a control system. It supports incrementale encoder inputs. If configured for stepper/pulse output an axis can be pulse+direction or quadrature simulated encoder output. Each MDR connector supports all the signals for full closed loop control of a servo axis.

- EBus Module current consumption: 180mA max
- Power Supply: via the EBUS
- Power Supply 24V (+/-20%) DC @ 100mA
- Max Axes: 2 (software configurable)
- Max Enc Rate: 8M Edges/s encoder count
- Max Step Rate: 8MHz pulse count
- Step/Pulse Width: Wave
- Enc/Step Input/Output: RS422
- DAC Voltage Output: 2 x 12bit +/-10V
- Registration inputs: 4 x 24V Isolated PNP
- WDOG Output: 2 x Normally open (NO)
- WDOG Max. Output Voltage: 24V
- WDOG Max Output Current: 100mA
- Field Programmable: Yes

## P378: 8 Analog outputs



The P378 Flexslice 8 Analogue Output module has eight programmable voltage range output terminals, each digitised to a resolution of 12 bit. The 8 single ended outputs have a common 0V potential and are brought out to a single push-in connector.

- EBus Module current consumption: 200mA max
- Power Supply: via the EBUS
- Signal voltage: -10...+10V; 0...+10V
- Signal current: +/-5mA max
- Resolution: 12 bit
- Output impedance: 16 ohm
- Number of Analogue Outputs: 8

## P379: 8 Analog inputs



The P379 Flexslice 8 Analogue Input module has eight programmable voltage range input terminals, each digitised to a resolution of 12 bit. The 8 single ended inputs have a common 0V potential and are brought out to a single row push-in connector.

- EBus Module current consumption: 160mA max
- Power Supply: via the EBUS
- Signal voltage: -10...+10V; 0...+10V
- Signal current: 0...20 mA
- Resolution: 12 bit
- Overvoltage protection: ±25V
- Number of Inputs: 8

Please refer to R.T.A. Technical Support for architectures layouts and Flexslice modules features.

# MC6N-ECAT Master

## INTRODUCTION

The MC6N is a high performance Motion Coordinator which perfectly dialogues with the R.T.A. motion control solution (servos and steppers).

## HIGHLIGHTS

- High performance motion coordinator for remote servo and stepper drives via EtherCAT bus.
- EtherCAT drives can be connected and driven in cyclic synchronous position, speed or torque modes.
- 1 GHz dual core processor controlling up to 64 axes (twice as the previous model MC4N).
- Same simple programming as the traditional analog and step/dir axes, with the possibility to set up drives and process alarms over the EtherCAT bus.
- Ideal for high axes count machines or robotic applications.

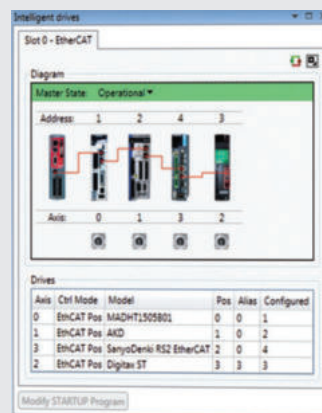


1st GENERATION	Vs	2nd GENERATION
MC4N		MC6N
<ul style="list-style-type: none"> <li>■ 532 Mhz ARM11</li> <li>■ up to 32 axis</li> <li>■ Execution time: 35 lines/ms</li> <li>■ 350 mA power consumption</li> <li>■ Maximum retentive variables: 4096</li> </ul>		<ul style="list-style-type: none"> <li>■ 1GHz dual core ARM Cortex-A7 processor</li> <li>■ up to 64 axis</li> <li>■ Execution time: 102 lines m/s</li> <li>■ 180 mA power consumption</li> <li>■ Maximum retentive variables: 16384</li> </ul>

## EASY PROGRAMMING SYSTEM

The built-in Ethernet port allows programming and connection of common PLC and HMI protocols.

Standard IEC 61131-3 languages available, allowing a fully functional PLC programming system.

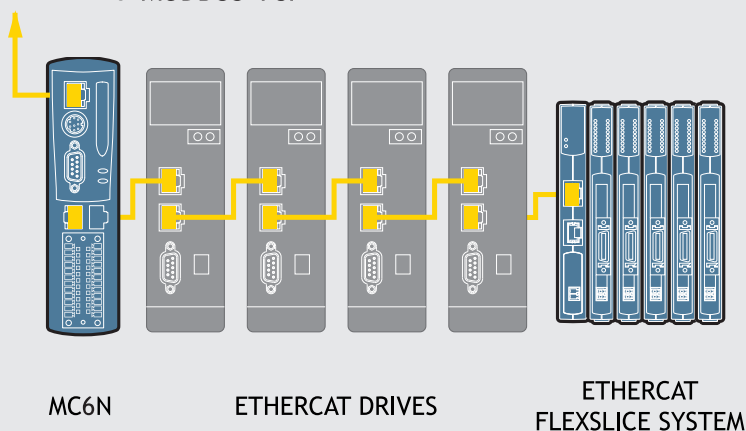


## SPECIFICATIONS

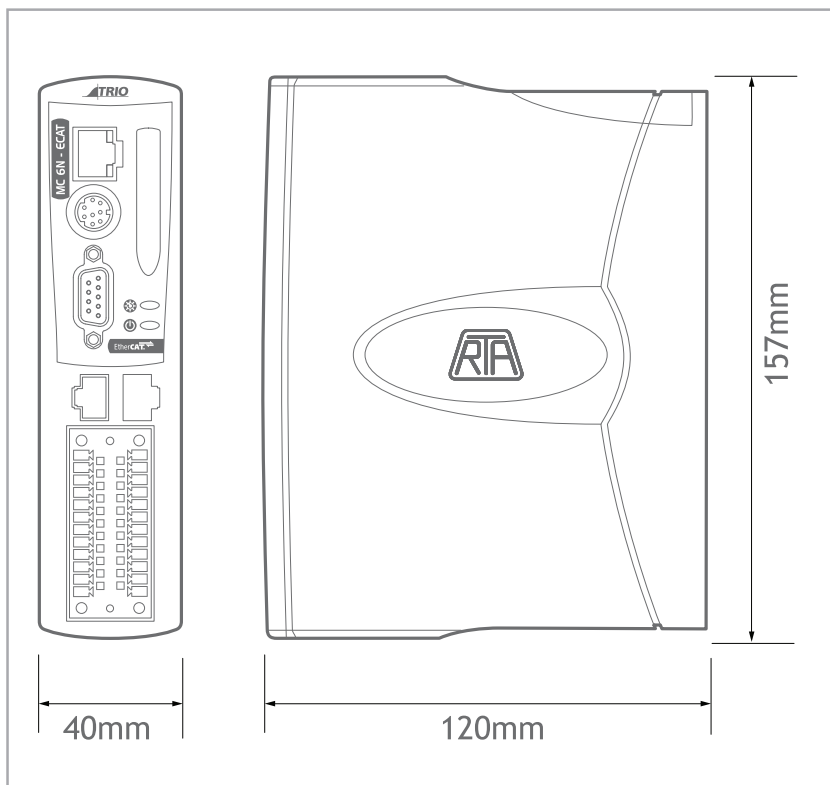
- Up to 64 EtherCAT digital drive virtual axis
- Multitasking operating system
- Up to 1024 EtherCAT I/O
- Ethercat cycle times down to 125 µsec.
- Linear, circular, helical and spherical interpolation
- EnDAT and SSI absolute encoder supported
- Ethernet-IP / Modbus TCP / Trio Activex / HMI Uniplay / UDP / Ethernet interface built-in
- Metal backplate for maximum noiselessness
- Robotic transformations
- High speed registration inputs
- SD memory card slot
- CANopen I/O expansions
- RoHS and UL approved

FACTORY ETHERNET  
COMMS eg: MODBUS-TCP

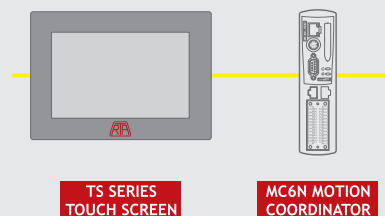
EtherCAT®



## MECHANICAL DIMENSIONS



### TS SERIES TOUCH SCREEN COMPATIBILITY



Easy interaction with R.T.A.'s TS series touch screens.

### MAXIMUM VERSATILITY

Built-in support for digital drives and I/Os of most brands on the market.



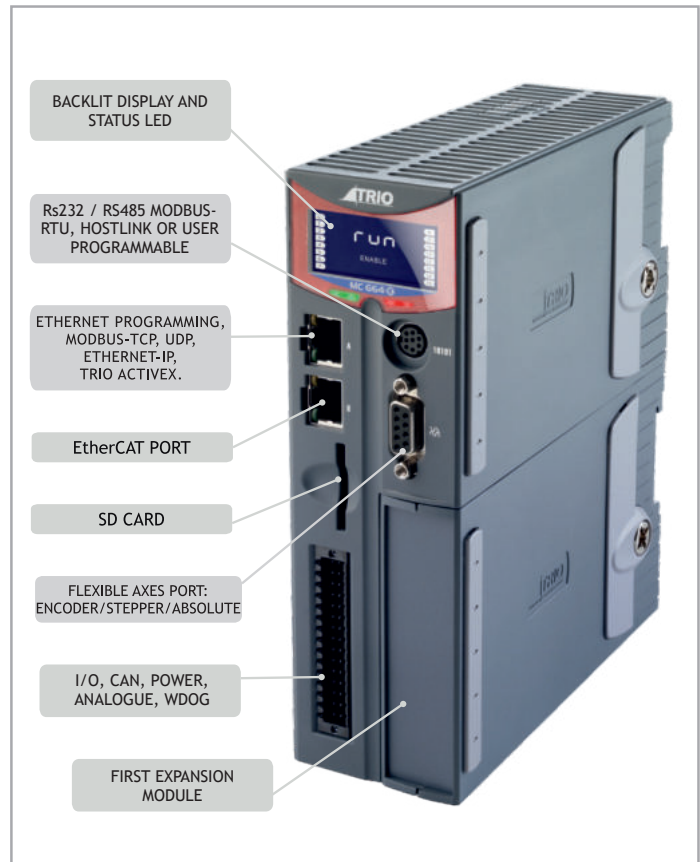
# MC664X *Quad Core 128 Axis EtherCAT<sup>®</sup> Coordinator*

## INTRODUCTION

The MC664X is a very performing flexible EtherCAT Motion Coordinator which perfectly fits the R.T.A. EtherCAT motion control solution (servos and steppers).

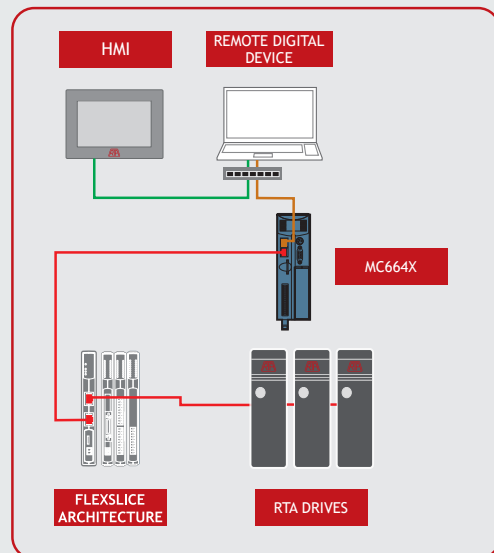
## HIGHLIGHTS

- High performance Motion Coordinator for driving servo and stepper drives via EtherCAT bus.
- Able to manage up to 128 axes (64 stepper/servo and 64 virtual), 1024 digital inputs and outputs and 32 analogue inputs and analog outputs.
- Precise 64 bit Motion Calculations with Quad Core Cortex A9 1GHz Processor for multiple simultaneous robotic transformations.
- Ideal for ultra-precise axes count machines or robotic applications.
- Expansions modules available for managing step & dir analogue signals and encoder feedback.



## SPECIFICATIONS

- Multitasking Operating System
- Comprehensive Motion Library
- TrioBasic Motion Language
- IEC61131-3 Programming
- TS SERIES HMI Support
- Robotic Functions (licensed separately)
- Multi-protocol Communications Support

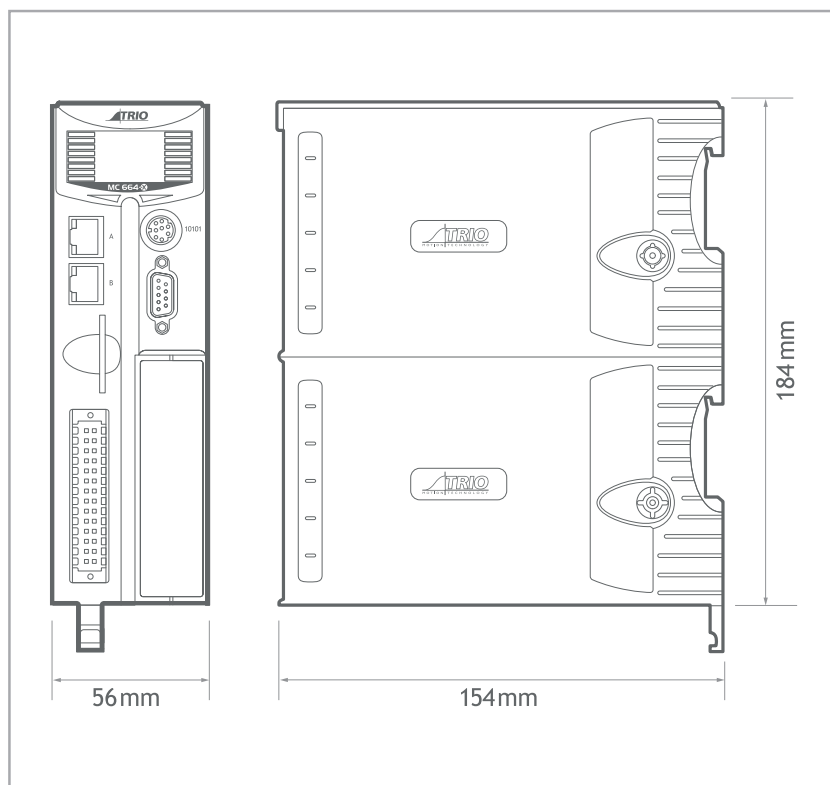


## TECHNICAL FEATURES

- Up to 128 Axes - Stepper / Servo Axes
- Precise 64 bit Motion calculations with Quad Core Cortex A9 1GHz Processor
- Dedicated communications Core
- Built-in EtherCAT port
- Built-in Ethernet interface / Ethernet-IP / Modbus TCP
- Anybus-CC module for flexible factory comms including Profinet/Profibus, Sercos II, SLM and RTEX
- Multi-tasking TRIO BASIC programming
- SD memory card slot
- CANopen I/O expansion
- Backlit LCD display



## MECHANICAL DIMENSIONS





MOTION CONTROLLERS

# PULSE TRAIN & ANALOG INPUT MOTION CONTROLLERS



# A-Series PLC SYSTEM CPU - Modules - HMI

## INTRODUCTION

A-series integrated PLC system, including CPU, modules and touch screens, is a versatile and programmable logic controller, expandable with external modules.

It is typically suitable for simple stepper position applications, thanks to easy and flexible parameters setting.

It perfectly integrates with R.T.A. selected products and technologies, forming an easy-to-use control system.

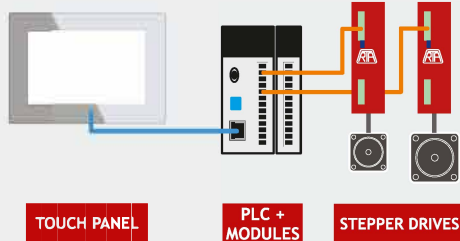
## TOUCH SCREENS



- Easy integration with the PLC System
- Compact size
- Quick installation

## R.T.A. PLC SYSTEM

— STEP-DIR — MODBUS TCP



TOUCH PANEL

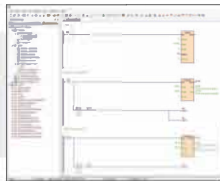
PLC + MODULES

STEPPER DRIVES

POSITIONING CONTROL  
*made easy*

## LADDER LOGIC

*Programming System*



**CPU MODELS**  
AH16S0P  
AT16S0P

**MODULES MODELS**  
A16XDP  
A04XA  
A04TC

## MAIN FEATURES

CPU MAIN FEATURES		
	AH16S0P	AT16S0P
PULSE/TRAIN AXES	4	2
MOVEMENT	Single and multi-axes	Single axes movement
ETHERNET	yes	yes
EXPANDABLE	15 modules	15 modules
INPUT/OUTPUT	8 Digital Input / 8 Digital Output	

MODULES MAIN FEATURES			
	A16XDP	A04XA	A04TC
DIGITAL INPUT	8	0	0
DIGITAL OUTPUT	8	0	0
ANALOG INPUT		2	0
ANALOG OUTPUT		2	0
THERMOCOUPLE			4

## TECHNICAL SPECIFICATIONS

PLC SPECIFICATIONS	AH16S0P	T16S0P
POWER SUPPLY	24 VDC $\pm$ 15%	
POWER PROTECTION	DC input power polarity reverse, over voltage protection	
STEP/DIR OUTPUT	4 (200KHz, 24V PNP)	2 (200KHz, 24V PNP)
AB ENCODER INPUT	4 (200KHz, 24V PNP)	2 (200KHz, 24V PNP)

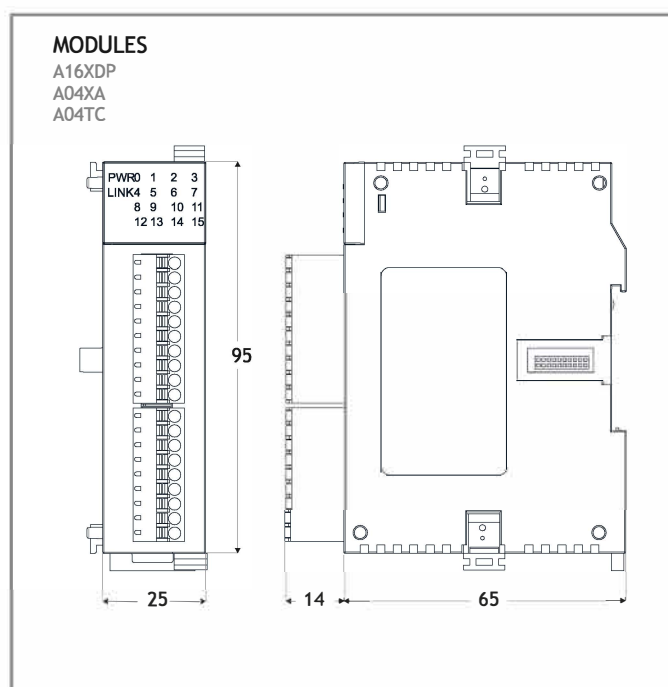
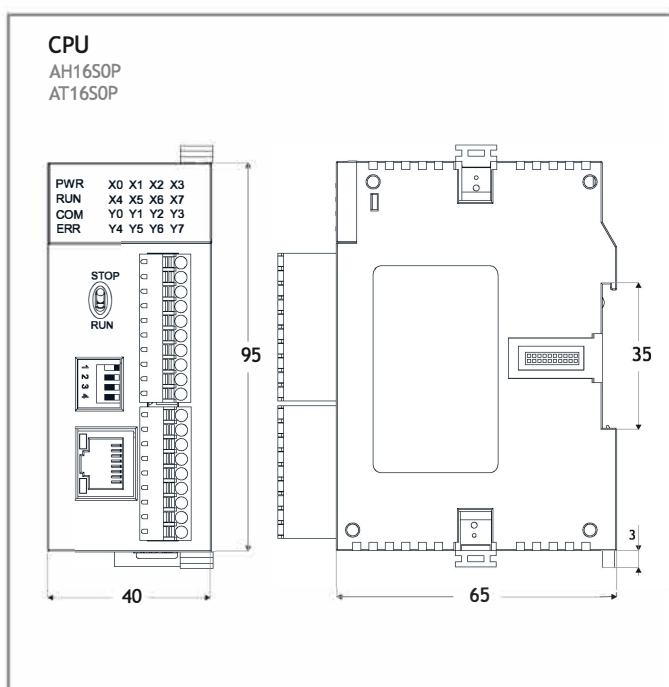
DIGITAL INPUT SPECIFICATIONS	
INPUT SIGNAL	24 VDC PNP
INPUT IMPEDANCE	4.3K $\Omega$
MAX INPUT CURRENT	10 mA
INSULATION TYPE	Optoelectronic isolation for each channel

DIGITAL OUTPUT SPECIFICATIONS	
MAX LOAD	0,5A/1 point, 2A/4 points COM, 24VDC PNP
REACTION TIME	Off->On 10 ms, On->Off 5 ms
INSULATION TYPE	Optoelectronic isolation for each channel

ANALOG INPUT /OUTPUT SPECIFICATIONS					
	VOLTAGE INPUT/OUTPUT			CURRENT INPUT/OUTPUT	
INPUT/OUTPUT RANGE	0V - +10V	0V - +5V	1V - +5V	0 - 20 mA	4 - 20 mA
RESOLUTION	2.5 mV	1.25 mV	1.25 mV	5 $\mu$ A	
DIGITAL INPUT/OUTPUT RANGE	12 bits, Code range: 0~ 32000				

THERMOCOUPLE MODULE SPECIFICATIONS	
INPUT RANGE	IS, K, E, B, N, R, Wre/25, Wre5/26, [0, 20]mV, [0, 50]mV, [0, 100]mV
RESOLUTION	0.1 °C
MAX INPUT RANGE	$\pm$ 30mA
RESPONSE TIME	560ms/4 Channel
DIGITAL OUTPUT RANGE	12 bits, Code range: 0 ~ 32000

## MECHANICAL DIMENSIONS (mm)



# MC 403 / MC 405 *Flexible Motion Coordinators*

## INTRODUCTION

MC 403 and MC 405 are high specification and flexible Motion Coordinators which perfectly fits the traditional R.T.A. motion control solution.

Both models offer maximum flexibility for advanced application in industrial automation, where high performance in interpolated motion is required.

## MAIN FEATURES

- Linear, circular, helical and spherical interpolation.
- Virtual axes flexible cam shapes, and linked motion.
- Precise 64 bit Motion Calculator ARM11 processor with VFP.
- Multi-tasking TRIO BASIC programming.
- Text file handing.
- Robotic transformations.
- Micro SD Memory Card slot.
- CANopen I/O expansions available.
- RoHS and UL approved.

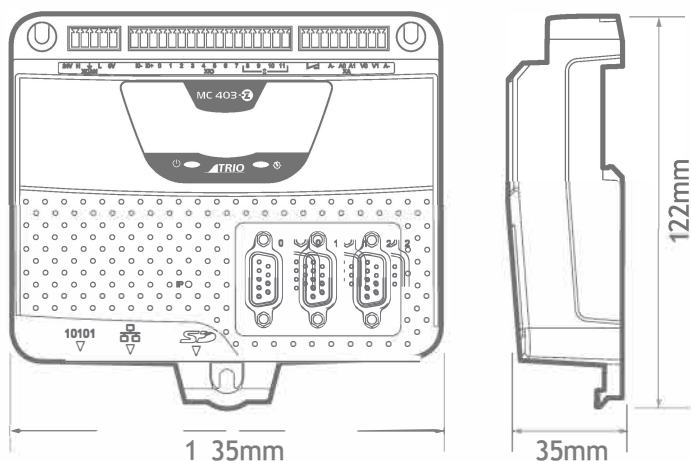


## TECNICAL FEATURES

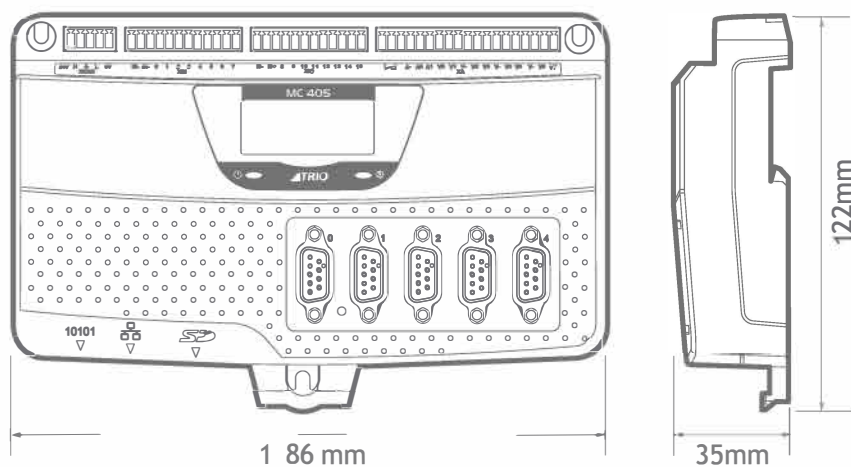
SPECIFICATIONS	MC 403	MC 405
PULSE TRAIN/AXIS	3	5
SERVO AXIS	2	4
DRIVE COMMUNICATION LOOP	125 - 2000 $\mu$ s	
BUILT-IN INTERFACES	Ethernet Interface / Ethernet-IP / Modbus TCP	
SUPPORTED ENCODER	EnDat Line Driver ABZ SSI Absolute	
PROGRAMMING LANGUAGE	TRIO BASIC and IEC 61131-3	

## MECHANICAL DIMENSIONS

MC 403



MC 405





MOTION CONTROLLERS  
**CAN I/O MODULES**





# CAN 16-IN / OUT digital

## INTRODUCTION

The Trio CAN16 Input/Output module offers a compact DIN rail mounted I/O expansion capability for motion coordinators.

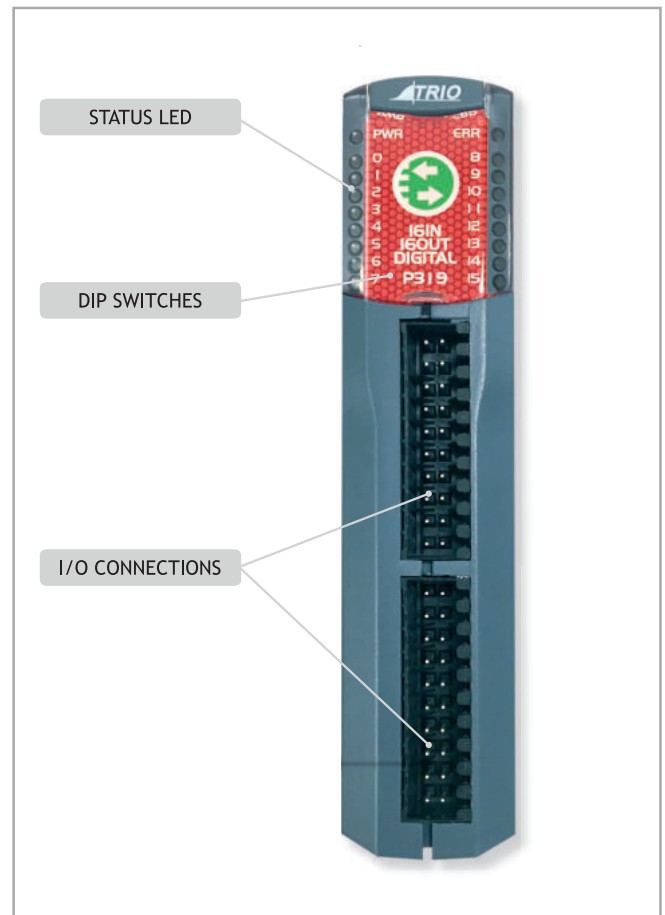
It can provide up to 256 distributed bi-directional I/O channels at 24 VDC level.

This module can be mixed on the same bus, with other types in the CAN I/O range, reducing considerably the machine wiring.

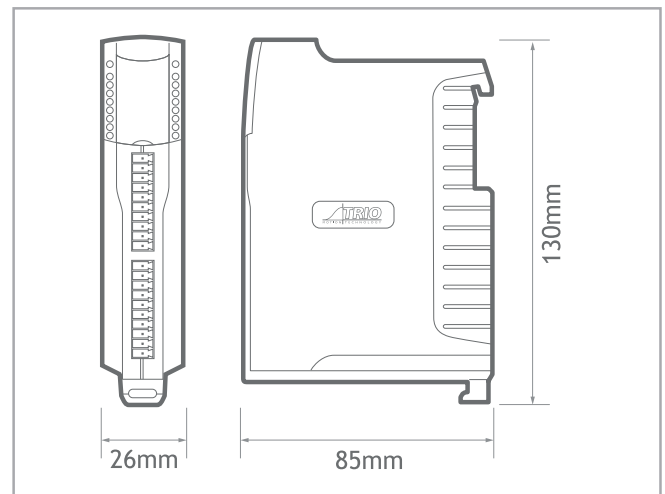


## MAIN FEATURES

<b>Inputs</b>	16 x 24V input channels with 2500V isolation
<b>Outputs</b>	16 x 24V sourcing (PNP) output channels
<b>Configuration</b>	2 x 8 bi-directional input/output channels
<b>Protection</b>	Outputs are overcurrent and over temperature rated
<b>Indicators</b>	Individual status LEDs
<b>Address settings</b>	Via DIP switches
<b>Power supply</b>	24 V / 1,5 W
<b>Mounting</b>	DIN rail mount
<b>Size</b>	26 mm wide x 85 mm deep x 130 mm high
<b>Weight</b>	168 g
<b>CAN</b>	500 kHz, up to 256 expansion output channels
<b>EMC</b>	EN61000-6-2 (2005) Industrial Noise Immunity EN61000-6-4 (2007) Industrial Noise Emissions
<b>CAN protocol</b>	TrioCAN I/O / CANopen Ds401
<b>Compliances</b>	UL and RoHS



## MECHANICAL DIMENSIONS



MOTION CONTROLLERS

**HMI - TS SERIES**





# HMI Touch Screen - TS series



## MAIN FEATURES

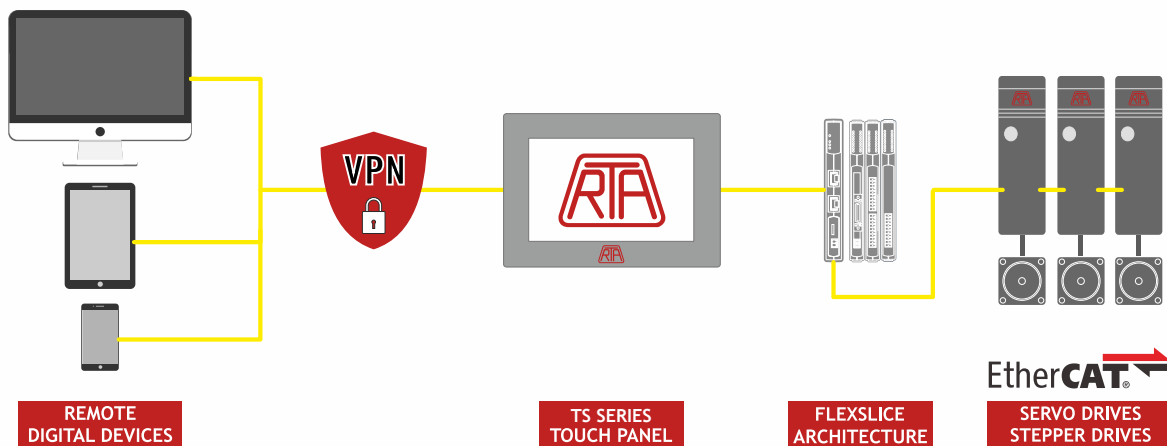
- Four models in two sizes
- Free developer tools
- Optional remote control (VPN)
- Easy integration with R.T.A. products
- R.T.A. support team



MODEL	TS-07-IP-B-08072	TS-07-CMT-A-02078X	TS-07-CMT-A-03072XH2	TS-10-CMT-A-03092X
*BASE FUNCTIONS	■	■	■	■
**ADVANCED FUNCTIONS		■	■	■
PLC TAG EMBEDDED IN PROJECT	■	■	■	■
OPC SERVER			■	■
EXTERNAL DATABASE			■	■
SUPPORT				
<p><b>*Base functions:</b> Pictures/ Sharpe Library embedded in project, Enhanced Security Mode, VNC Server, Circular Trend Display, Combo Button, Operation Log, OPC UA Client, Picture Viewer, Recipe Database / Reciper View</p> <p><b>**Advanced functions:</b> e-Mail, Media Player, MQTT (Publisher / Subscriber), USB Camera, IP Camera, VNC Viewer,</p>				
REMOTE CONTROL	EASY ACCESS 2.0 (CRZACEA020)	/	Optional	Optional
I/O PORT	ETHERNET	10/100 Base-T x 1	10/100 Base-T x 2	10/100 Base-T x 1 10/100/1000 Base-T x 1

## HOW THE REMOTE CONTROL WORKS

EasyAccess 2.0 enables the operator to easily connect and monitor the remote HMI from anywhere in the world, through a protected remote VPN connection.

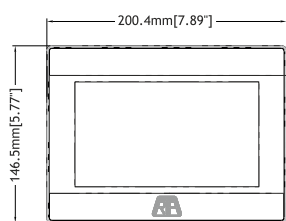


## ADVANCED SPECIFICATIONS

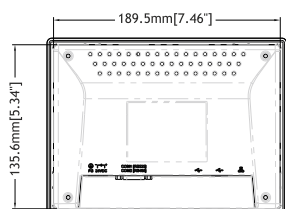
	MODEL	TS-07-IP-B-08072	TS-07-CMT-A-02078X	TS-07-CMT-A-03072XH2	TS-10-CMT-A-03092X
DISPLAY	DISPLAY	7" TFT	7" TFT	7" TFT	9.7" TFT
	RESOLUTION	800x480	800x480	1024x600	1024x768
	BACKLIGHT LIFE TIME	>30,000 hrs.	>30,000 hrs.	>25,000 hrs.	>30,000 hrs.
MEMORY	FLASH	256 Mb	4 Gb	4 Gb	4 Gb
	RAM	128 Mb	1 Gb	1 Gb	1 Gb
PROCESSOR		Dual-core RISC	Quadcore RISC	Quadcore RISC	Quadcore RISC
I/O PORT	USB HOST	USB 2.0 x 1	USB 2.0 x 1	USB 2.0 x 1	USB 2.0 x 1
	COM PORT	COM1 RS-232, COM2 RS-485 2W/4W	COM2 RS-485 2W/4W, COM3 RS-485 2W	COM2 RS-485 2W/4W, COM3 RS-485 2W CAN Bus	COM2 RS-485 2W/4W, COM3 RS-485 2W CAN Bus
RTC		Built-in	Built-in	Built-in	Built-in
CERTIFICATE		CE	CE/UL	CE/UL	CE/UL
DIMENSIONS	DIMENSIONS WxHxD	200.4 x 146.5 x 34 mm	200.3 x 146.3 x 35 mm	200.3 x 146.3 x 35 mm	260.6 x 203.1 x 44.5 mm
	PANEL CUTOUT	192 x 138 mm	192 x 138 mm	192 x 138 mm	250 x 192 mm
ENVIROMENT	PROTECTION STRUCTURE	NEMA4 / IP65 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel
POWER	INPUT POWER	24 ± 20% VDC	24 ± 20% VDC	24 ± 20% VDC	24 ± 20% VDC
	POWER CONSUMPTION	450 mA at 24VDC	820 mA at 24VDC	850 mA at 24VDC	1 A at 24 VDC
	POWER ISOLATION	Built-in	Built-in	Built-in	Built-in

## MECHANICAL DIMENSIONS (mm)

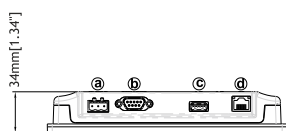
Model TS-07-IP-B-08072



Front View

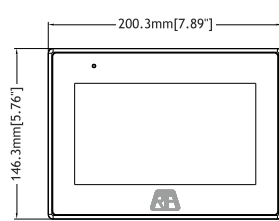


Rear View

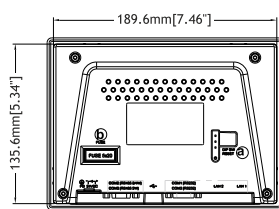


Bottom View

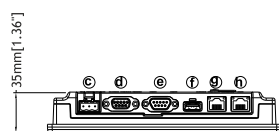
Model TS-07-CMT-A-03072XH2  
TS-07-CMT-A-02078X



Front View

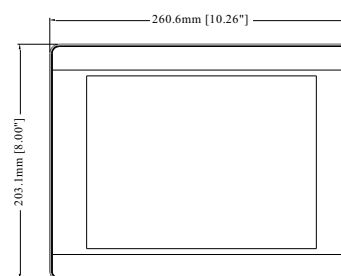


Rear View

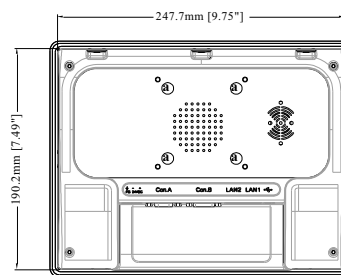


Bottom View

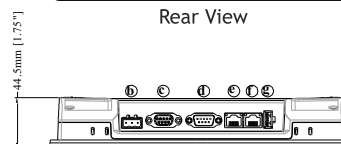
Model TS-10-CMT-A-03092X



Front View



Rear View

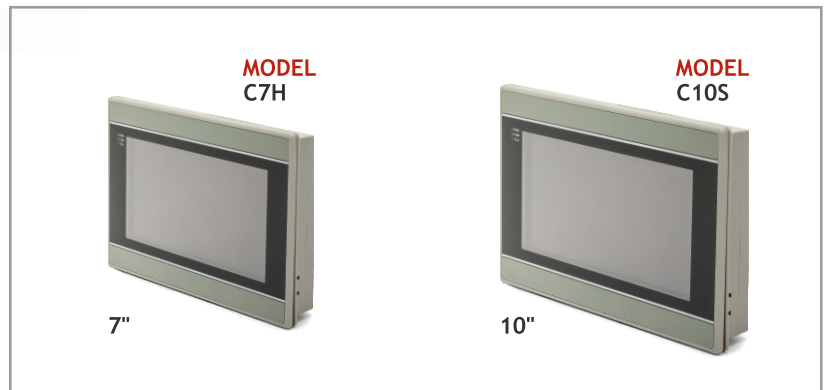


Bottom View

# HMI Touch Screen C7H - C10S

## MAIN FEATURES

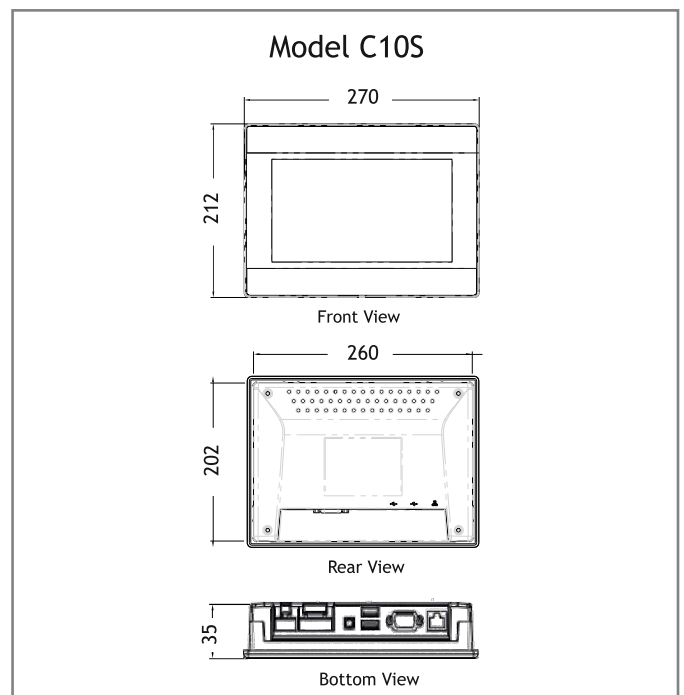
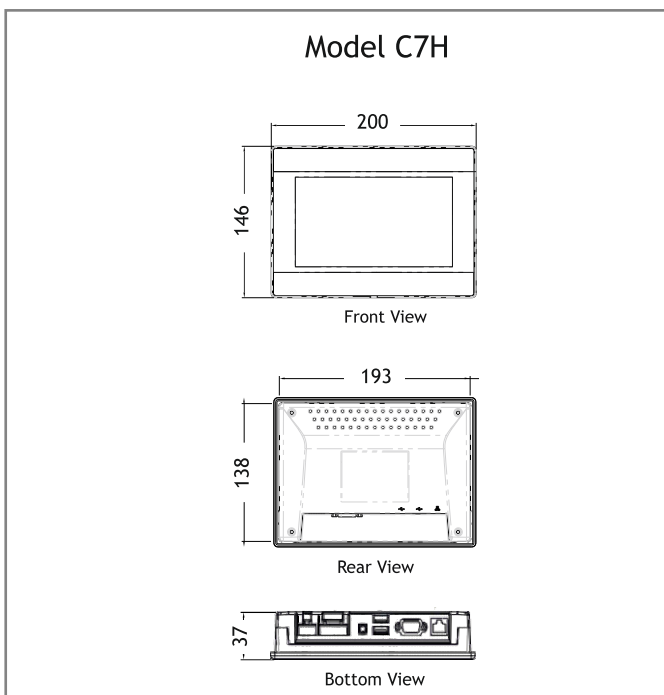
- 2 serial ports , 2 USB ports, SD card
- Compact size for easy installation
- R.T.A. support team



## TECHNICAL SPECIFICATIONS

MODEL		C7H	C10S
DISPLAY	DISPLAY	7"	10.1"
	RESOLUTION	1024x600 pixels	1024x600 pixels
MEMORY	FLASH	4 Gb	
	RAM	512 Mb	
DIMENSIONS	DIMENSION	200x146x37 mm	270x212x35 mm
	WEIGHT	0.8 Kg	1.3 Kg
POWER	POWER CONSUMPTION	24±20% VDC	
	INPUT POWER	7 W	10 W

## MECHANICAL DIMENSIONS (mm)





# SAFETY PLC

## INTRODUCTION

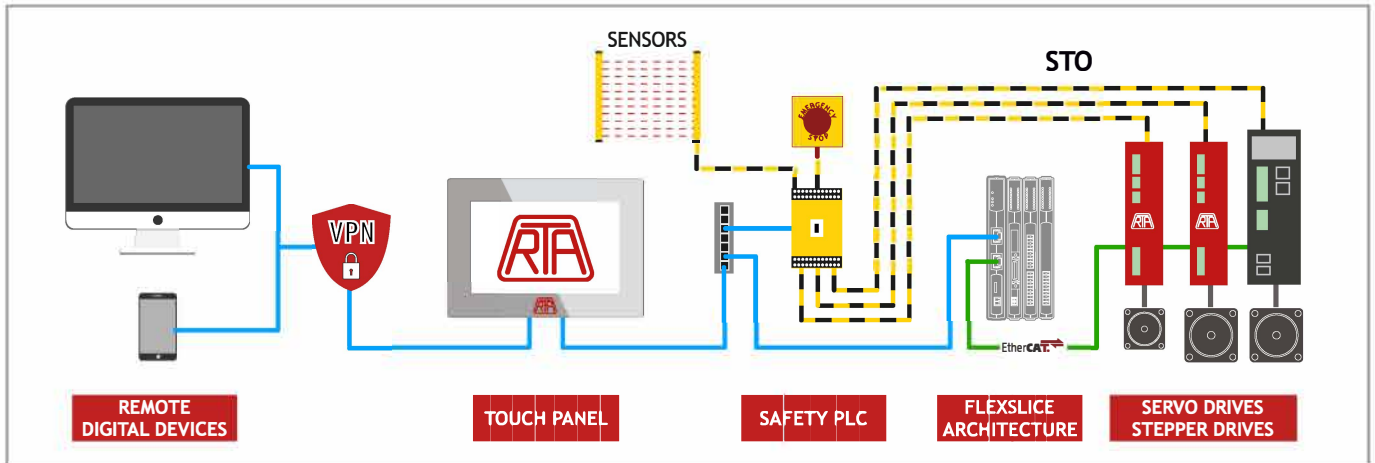
The samosPRO Compact module is suitable for monitoring safety sensors, emergency STOP buttons, safety door switches and door locks, safety light curtains and laser scanners.

## HIGHLIGHTS

- 16 safe input, 4 safe output
- 4 configurable I/Os
- Mini-USB and Ethernet ports
- Modbus TCP/IP communication
- Easy integration in the R.T.A. system



## R.T.A. SAFETY PLC SYSTEM



## MAIN FEATURES

GENERAL FEATURES	
TYPE OF PROTECTION (ACCORDING TO DIN 60529)	IP20
NORMATIVE	EN 62508, EN 62061, EN ISO 13849-1, EN 50156, EN 81-1
CERTIFICATIONS	TUV, UL
SAFETY PARAMETERS	
CATEGORY (ISO 13849-1)	4
PL (ISO 13849-1)	Level e
SIL <sub>CL</sub> (IEC 62061)	3
HFT	1
T <sub>M</sub>	20 a

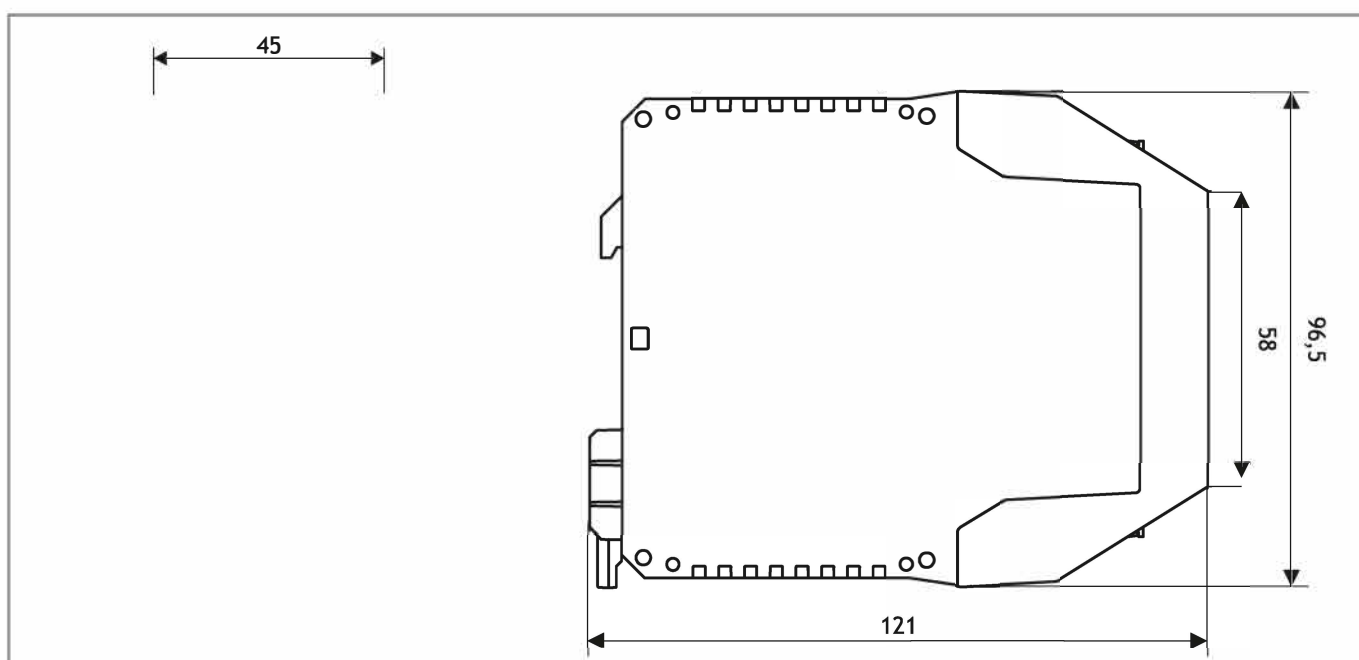
## TECHNICAL SPECIFICATIONS

POWER CIRCUIT	
OPERATING VOLTAGE RANGE	24 VDC -30%/+25%
NOMINAL POWER	3,5 W (Logic absorption)
INPUT CIRCUIT	
DIGITAL INPUTS	16 + 4 Configurable
INPUT VOLTAGE RANGE	15 VDC up to 30 VDC
NOMINAL CURRENT	2 mA
OUTPUT CIRCUIT	
DIGITAL OUTPUTS	4 + 4 Configurable
OUTPUT VOLTAGE RANGE	24 VDC
OUTPUT CURRENT $I_n$ PER OUTPUT	4 A ( $I_{sum}$ 16 A)
INTERFACE CIRCUIT	
ETHERNET INDUSTRIAL PROTOCOLS	Modbus TCP/IP
PROGRAM MEMORY	External (Mandatory pairing with SD WIELAND R1.190.1000.00)

## SAFETY FUNCTIONS

- ✓ Contactless operating selection function
- ✓ Control function of external contactors
- ✓ Contemporaneity button function
- ✓ Operation mode selection function
- ✓ Block restart function
- ✓ Bimanual function
- ✓ Safety function
- ✓ Access control function
- ✓ ON/OFF Delay timer

## MECHANICAL DIMENSIONS (mm)



# Ethernet switch MIEN2205

## INTRODUCTION

MIEN2205 is a standard (unmanaged) Ethernet switch with 5x10/100Base-T(X) ports. With its very compact size, it is easy to install and its rigid IP30 housing makes it suitable for diverse environments.

## MAIN FEATURES

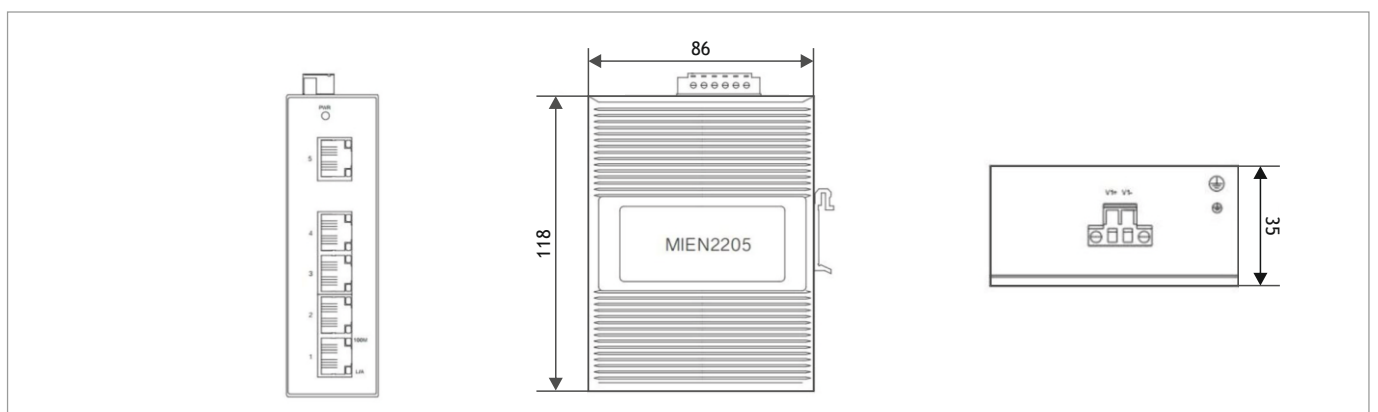
- Compact size for easy installation
- 5 ports 10/100base-T(X)
- Auto-negotiation and auto-MDI/MDI-X
- Store-and-Forward transmission
- Flow control
- DIN-rail and wall mounting



## TECHNICAL SPECIFICATIONS

PHISICAL PORTS	
10/100BASE-T(X) PORTS IN RJ45 AUTO MDI/MDIX	5
POWER	
INPUT POWER	Dual 12-48VDC and 24VAC on 4-pin terminal block
POWER CONSUMPTION	<3Watts, 12-48VDC: 0.10A-0.04A, 24VAC: 0.10A
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Present
OPERATING TEMPERATURE	From -40°C to 85°C

## MECHANICAL DIMENSIONS (mm)



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**CATALOGUE**  
**DIGITAL EDITION**

