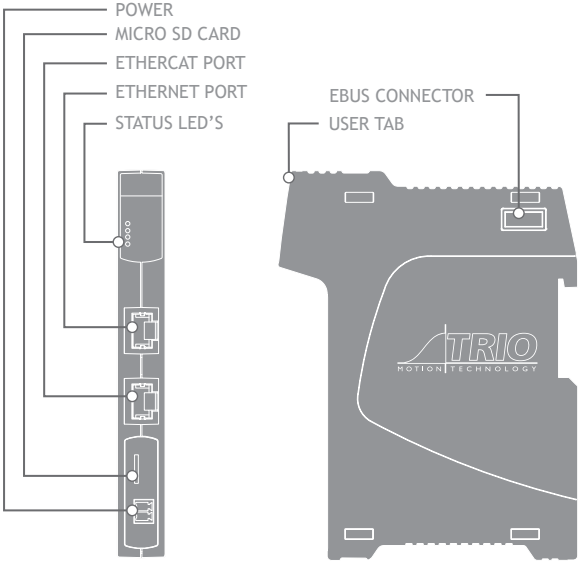
TRIO
MOTION TECHNOLOGY

A MEMBER OF THE ESTUN GROUP



QUICK START GUIDE
FLEX-6X NANO

P660 | P661 | P662 | P663 | P664 | P665

SAFETY WARNING

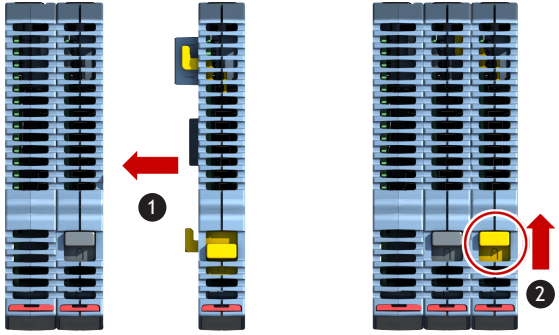
During the installation or use of control systems, users of Trio products must ensure that there is no possibility of injury to any person or damage to machinery.

Control systems, especially during installation, can malfunction or behave unexpectedly. Bearing this in mind, users must ensure that even in the event of a malfunction or unexpected behaviour, the safety of an operator or programmer is never compromised.

ASSEMBLING THE SYSTEM

One station consists of a P660 Flex-6X Nano and up to 16 Flexslice EtherCAT modules.

1. Align a Flexslice Module against the right hand side of the P660 Module.
2. Slide back the “click-to-lock” mechanism into position.



Removal of Flexslices is the opposite of this procedure.

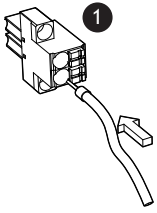
The complete assembly can be DIN rail mounted.

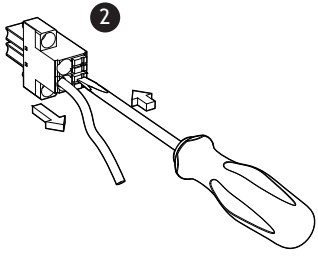
CONNECTORS

Power (24V) connector:

Note: Use ferrules on all wires for best connection.

1. Connection: Push wire into hole of connector. No tools are necessary.
2. Removal: Push screwdriver against coloured button to release wire and pull wire out.

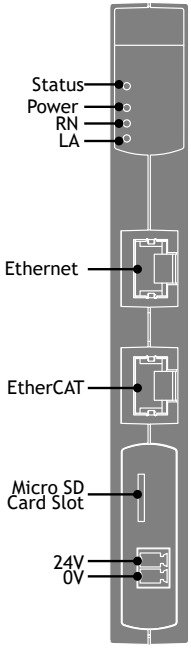




FLEX-6X NANO (P660)

The P660 Flex-6X Nano is a high specification programmable *Motion Coordinator* in a compact format for DIN rail mounting. It is expandable through the matching Flexslice range of Input, Output and Axis modules which can be easily added by clipping to the side of the Flex-6X Nano. In addition, there is one EtherCAT port (RJ45) for connection of EtherCAT slave devices including servo and stepper drives, I/O and other functionality that conforms to the EtherCAT standard.

A micro SD card slot is provided for memory expansion, software updates and application use. Programming and system commissioning is done by connecting a PC running *Motion* Perfect to the upper Ethernet socket.



CONNECTIONS

Power Supply	24V dc (±20%) Class 2 transformer or power supply, 0.8A min
Ethernet	RJ45
EtherCAT	RJ45
Recommended screened cable for EtherCAT; Cat5 SF/UTP	

LED'S

Status	Red LED	
Power	Green power LED	
RN	Green "RUN" LED	Off = Initial State Quick flash = Pre-operational Slow flash = Safe-Operational Steady = Operational
LA	Green EtherCAT Link/Act LED	

RJ45 ETHERNET CONNECTOR (TOP)

A standard Ethernet connector is provided for use as the primary programming interface.

The Trio programming software, *Motion* Perfect 5.2.3 or higher, must be installed on a Windows based PC that is fitted with an Ethernet connection.

The Standard Ethernet connection may also be used for Ethernet-IP, Modbus and other factory communications.

ETHERCAT PORT

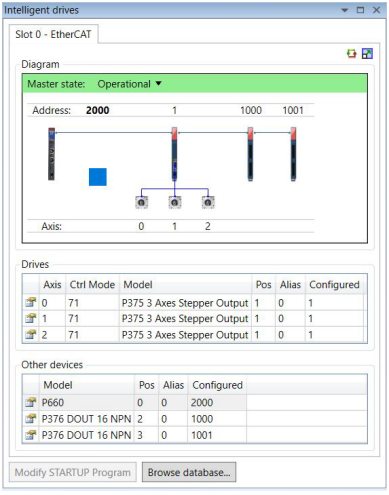
The Flex-6X Nano acts as an EtherCAT master. EtherCAT drives and I/O devices are normally connected in a chain.

Ethernet standard pin assignment:

Pin	Signal	Description
1	TD+	Transmission data +
2	TD-	Transmission data -
3	RD+	Receive data +
6	RD-	Receive data -

Straight through (patch) or cross-over cables can be used between EtherCAT devices. Minimum CAT 5 shielded SF/UTP cable is recommended.

ETHERCAT NETWORK DETECTION



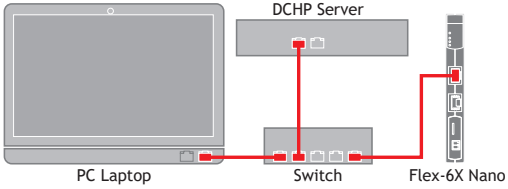
EtherCAT Intelligent drives Window in Motion Perfect.

NETWORK SETUP

NETWORK CONNECTION

Set IP_ADDRESS in Flex-6X Nano to an available unused address. The default IP_ADDRESS = 192.168.0.250. It **MUST** match the subnet in use. Set the PC to use DHCP server.

The Flex-6X Nano always has a fixed IP address.

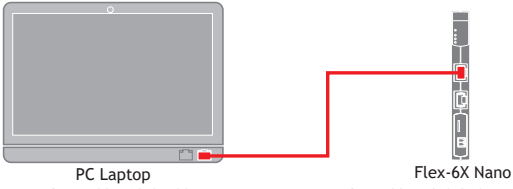


POINT-TO-POINT OR CLOSED NETWORK

(No DHCP server)

The PC MUST be set to a fixed IP_ADDRESS.

The first 3 "octets" **MUST** be the same as the Flex-6X Nano and the last **MUST** be different, but not 000, 254 or 255.



Example : 192.168.0.100 Example : 192.168.0.250

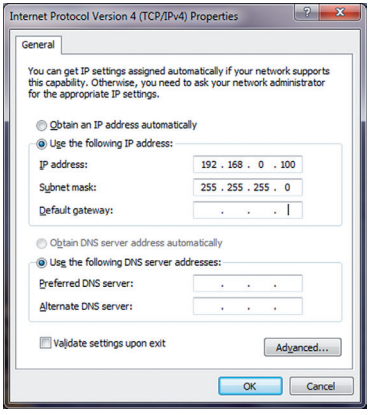
SETTING A FIXED IP ADDRESS

In Windows 10.

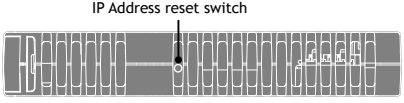
Open “Network & Internet” then change “Adapter Options”.

Select the properties of the Local Area Network and the IPv4 properties.

The IP Address is set to 192.168.0.100 with subnet mask set to 255.255.255.0. Assuming that the Flex-6X Nano has IP_ ADDRESS=192.168.0.250 or similar.



IP ADDRESS RESET



Locate the reset button on the top of the module between the ventilation slots. Hold down the button using a small screwdrive or similar, while at the same time powering up the Flex-6X Nano. The IP Address will be set to 192.168.0.250.

EXPANDING THE FLEXSLICE SYSTEM

The Flexslice system makes available a selection of digital and analogue I/O terminals as well as motion modules with pulse + direction outputs designed for precise positioning of stepper and servo motors via suitable drive technology. The digital I/O modules have high-speed functionality and can sample each EtherCAT cycle, or use distributed clocks for greater accuracy. In addition, analogue modules and axis modules may be fitted to make a superbly tailored system that can be placed remotely from the master if needed.

All Flexslice modules support automatic addressing with the master able to automatically detect and configure the modules on startup. The Flex-6X Nano supports up to 16 input/output modules which have a positive mechanical lock and bus connector, making a reliable “back-bone” style connection (EBUS). The complete assembly can be DIN rail mounted.

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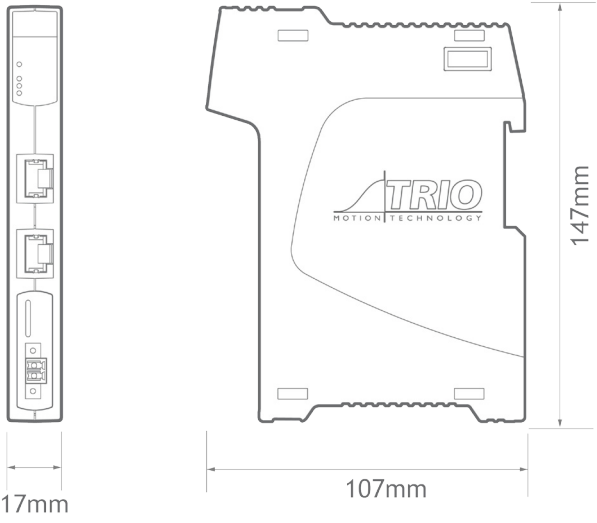
DIMENSIONS



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CAD data Drawings to aid packaging and mounting are available in various formats from the Trio web site. Products should be wired by qualified persons. Specifications may change without notice. E & OE

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