TRIO
MOTION TECHNOLOGY

A MEMBER OF THE ESTUN GROUP

8" DISPLAY
USER DEFINED BUTTONS
LED'S
USB
KEY SWITCH

E-STOP
STYLUS

3 POSITION ENABLE SWITCHES

Run
Error
Motion
Process

Stop
Start

2nd

F1 F2 Mot Rob Jog F/B Step V- V+

QUICK START GUIDE
UNIPLAY TEACH PENDANT

P955

☀ 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.
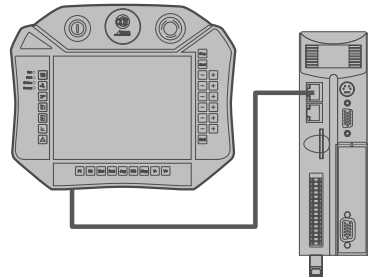
USING UNIPLAY

UNIPLAY HMIs work with the Trio 4xx and higher *Motion Coordinator* range. *Motion* Perfect is used to create operator HMI screens which are transferred to the Uniplay HMI by the *Motion Coordinator* at runtime.
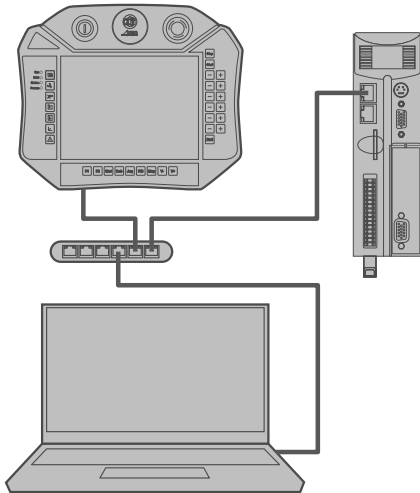
CONFIGURATION   **RUNNING**

To allow a laptop PC to be connected to the *Motion Coordinator* at the same time as the HMI, an Ethernet switch / hub is required.

📄 **Suggestion: use a USB powerred switch or an industrial Ethernet switch**

INTRODUCTOIN

Uniplay Teach Pendant allows creating and storing HMI screens for handling many of the functions involved with operating a machine. Teach Pendant screens can be created and linked to programs directly inside *Motion* Perfect. The Teach Pendant screens are stored with and loaded within the machine project on the *Motion Coordinator*.

REQUIREMENTS

The following versions are required:

1. *Motion* Perfect version 4.3.2 or greater.
2. Uniplay Teach Pendant device.
3. MC4XX or higher *Motion Coordinator* with system software 2.0296 or higher.

INSTALLATION

1. The *Motion Coordinator* default IP address is 192.168.0.250
2. The Teach Pendant default IP address is 192.168.0.251
3. The Teach Pendant must be aware of the *Motion Coordinator* IP address. If this is not at default use *Motion* Perfect *Tools->Setup Uniplay HMI device* screen to store the *Motion Coordinator* IP address into the panel.
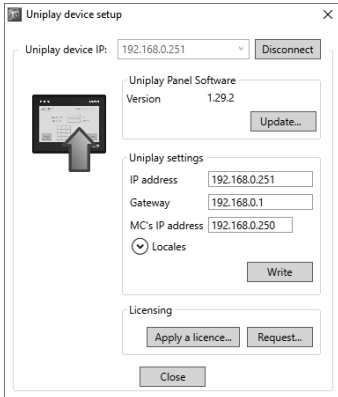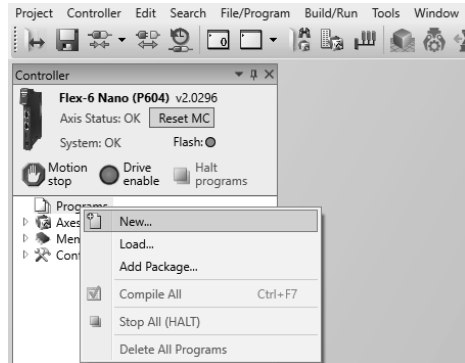

4. Whilst attempting to connect to the *Motion Coordinator* the panel displays a page:
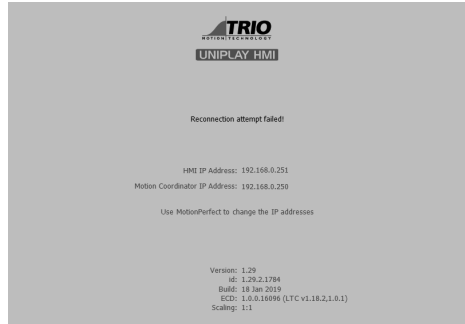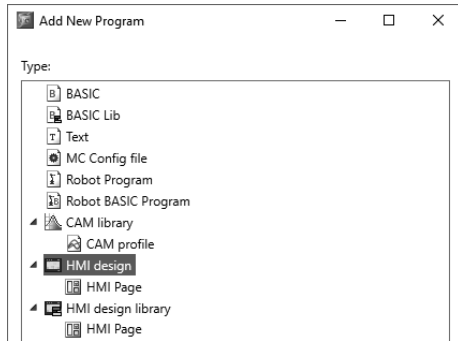

📄 **If no Teach Pendant page exists, the UNIPLAY Teach Pendant will display "Invalid HMI page"**
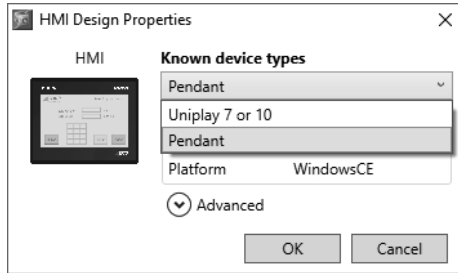
CREATING A TEACH PENDANT DESIGN

Right mouse click on "*Programs*" or use "*file- >Program->New*" from the menu:

Select HMI design under *Add New Program* and give the design a name:
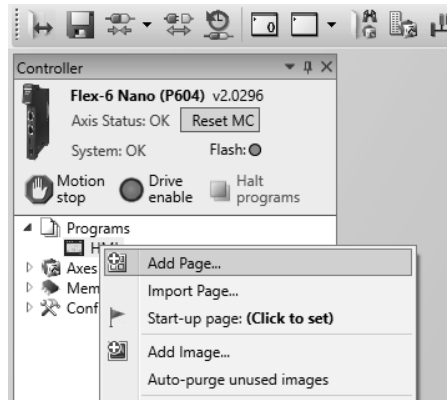

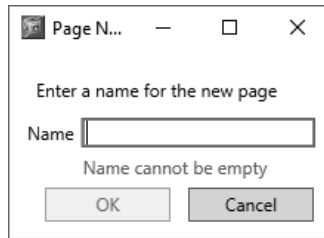
Select Pendant design and click OK:
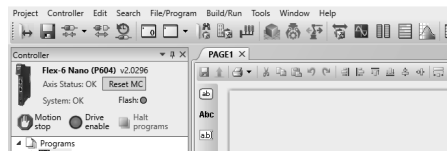

CREATING A TEACH PENDANT PAGE

Right mouse click on HMI design->*Add Page* from the menu:

Give the page a name and click OK:

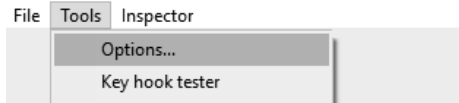The new blank page will open in the editor:

TEACH PENDANT SIMULATOR

A Teach Pendant simulator can be used for an easier project development and debug. To launch it, the HMI simulator icon has to be pressed:
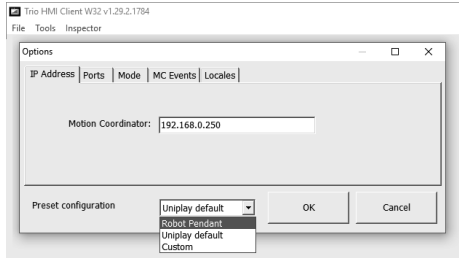

Trio HMI simulator will be opened as Uniplay HMI panel. To select Uniplay Teach Pendant simulator click on *Tools->Options* from the top panel:

In the options window, select *Robot Pendant* in Pre-set configuration menu. Click OK and wait until HMI simulator restarts:

LINKING KEYHOOKS WITH EVENTS

To link the keypad buttons to a desired event, the key code of every button must be identified. To know that, a key hook tester application has been designed to capture the keys while they are pressed. This application can be found in *Tools->Key hook tester* from the top menu. In the case of the real device, this menu will be shown or hidden by clicking

over TRIO logo. After opening the key hook tester, press any keypad button to view the associated key code:
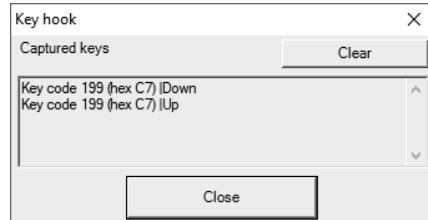
In *Motion* Perfect Uniplay editor, right clicking on the page will open the menu for adding key hook events:
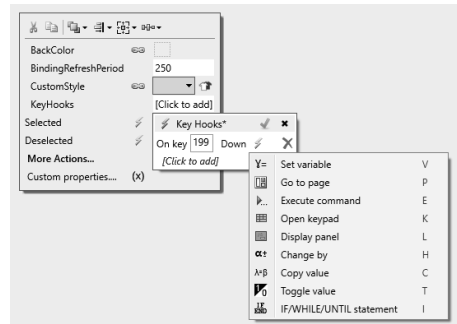
Add the desired event and program the actions to be performed. To view the changes and test the key pad buttons press save. Upload the program using the green arrow icon:

SOFTWARE INSTALLATION

The Uniplay Teach Pendant device software runs on the Windows operating system installed on the Teach Pendant. No additional software installation is required to use the Uniplay Teach Pendant system. Installation of any additional software on the device by users will invalidate the warranty.
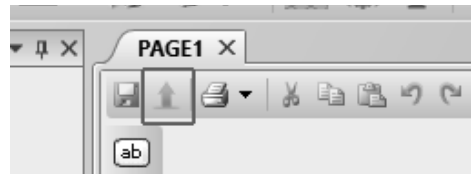
INSTALLATION ENVIRONMENT

Tor industrial use, the temperature operating range is 0 to 50°C. It may not be suitable for using in certain outdoor applications.

IP RATING

Water resistant to wash down but not immersion.

ELECTRICAL ENVIRONMENT

Conforms to European CE requirements. The circuitry is designed to resist the effects of electrical noise. This does not guarantee noise immunity in severe cases. Correct wire routing and grounding will ensure proper operation.

MECHANICAL ENVIRONMENT

Avoid installing units in environments where severe mechanical vibration or shocks are present.

ENVIRONMENTAL CONSIDERATIONS

- The Uniplay Teach Pendant is to be used indoors. Make sure that it is installed correctly and that the operating limits are followed.
- Do not operate the unit in areas subject to explosion hazards due to flammable gases, vapours or dusts.
- The unit should not be installed where large temperature variations and/or high humidity is present. This will cause condensation in the device.
- Do not install it in environments with inflammable gases.

POWER REQUIREMENTS

The Uniplay Teach Pendant is powered by d.c. power only. The specified voltage range is 24±20% Volts d.c. This ensures compatibility with most controller d.c. systems.

FUSING REQUIREMENTS

If the display does not come on within 5 seconds of power up, switch off the power. An internal fuse will prevent damage if the polarity of the d.c. power is incorrect. Check wiring to ensure proper connections and try to power up again.

HIGH VOLTAGE

An Internal fuse will guard against damage from some over voltage conditions. D.c. voltage sources should isolated from any mains a.c. power and similar hazards.

SUPPLY VOLTAGE CONDITION

Do not power the Uniplay Teach Pendant and inductive d.c. loads, or input circuitry from the same power supply.

WIRE ROUTING

Wire lengths should be minimized (Maximum length: 500m shielded, 300m unshielded).

Wires should be run in pairs with a common paired signal line.

If wiring is to be exposed to lightning or surges, use appropriate surge suppression devices.

Keep a.c., high energy, and rapidly switching d.c. wiring separate from the signal wires.

Fit ungrounded d.c. supplies with a resistor and capacitor in parallel to earth ground. This provides a path for static and high frequency dissipation. Typical values to use are 1MΩ and 4700pF.

📄 **To prevent the Uniplay Teach Pendant from becoming damaged or having noise output issues, after turning the device off, please wait 10 seconds before turning on the device again.**

CONNECTION TO BREAKOUT BOX

To make a connection, strip about 10mm of insulation off the end of the wire, insert the wire and push all the way in. Use a small screw driver to help the connector open a gap. Connect positive d.c. line to the +24V terminal and the d.c. ground to the 0V terminal.

GROUND REQUIREMENTS

The d.c. ground is not directly coupled to Earth ground

internally. It is not advisable to ground the d.c. negative return to chassis ground as poor site earthing can introduce noise into a system. If necessary, an earth connection should be made from the power supply return point to the central star earth point. Ground conductors should be as short and as wide in size as possible.

The conductors must always be large enough to carry the maximum short circuit current of the path being considered. Ground conductors should be connected to a tree from a central star earth ground point. This ensures that no ground conductor carries current from any other branch.

CE REQUIREMENTS

To make a UNIPLAY comply with EMC directives, and to reduce susceptibility to electrical interference, a separate #14 AWG ground wire should be taken to the chassis ground terminal of the power connector. This ground connection should be run directly to the central star earth connection point.

SAFETY GUIDELINES

The system designer should be aware that devices in Controler systems could fail and thereby create an **unsafe** condition. Furthermore, electrical interference in an operator interface, such as a Uniplay Teach Pendant, can lead to unintended equipment start-up, which could result in property damage and/or physical injury to the equipment operator.

ETHERNET COMMUNICATION

The Ethernet communication port is located on the breakout box provided.

CAT 6 shielded cable is recommended.

ENABLING SWITCH

The Uniplay Teach Pendant is equipped with two enabling switches, positioned on the left and right of the device. This allows a left and right hand operation of the enabling switch. The enabling switch consists of a 3-position operating element.

A feature of the Uniplay Teach Pendant is the two-channel circuit beginning from the actuating elements and contacts up to the Breakout box.

The enabling switches can be in the following three positions:

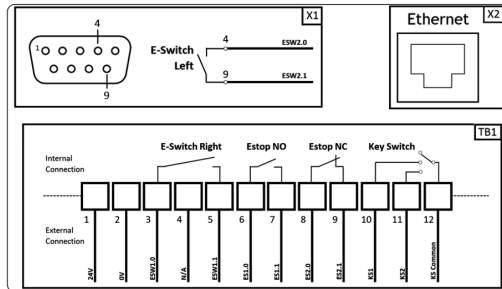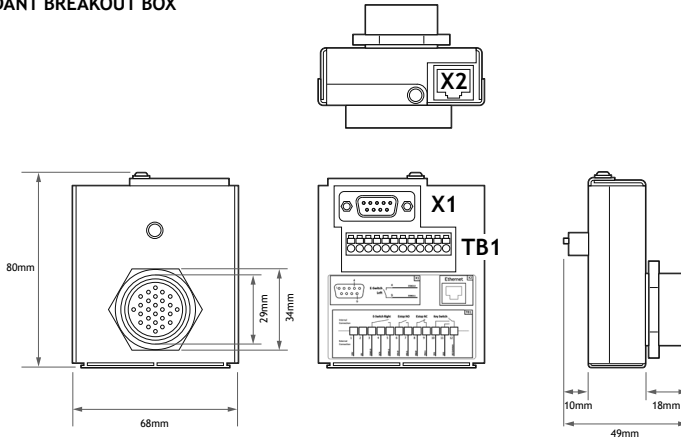| Position	Function	Enabling switch	Contacts
1	Home position	Is not pressed	Enabling output are open
2	Enabling	Is pressed	Enabling output are close
3	Panic	Is pressed hard	Enabling output are open

EMERGENCY STOP

The EMERGENCY STOP should be hard wired in any system using a Uniplay Teach Pendant to comply with ICS Safety Recommendations. Two normally closed and two normally open terminals are provided in the breakout box.

KEY SWITCH

Three contacts key switch gives the possibility of three different status secured with its physical key. The user should hard wire the contacts to the motion coordinator or machine to have access to this feature.

TEACH PENDANT BREAKOUT BOX

				E-Switch Right		Estop NO		Estop NC		Key Switch		
1	2	3	4	5	6	7	8	9	10	11	12	
24V	0V	ESW1.0	N/A	ESW1.1	ES1.0	ES1.1	ES2.0	ES2.1	KS1	KS2	KS Common	

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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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