



UNIPLAY HMI

QUICK CONNECTION GUIDE

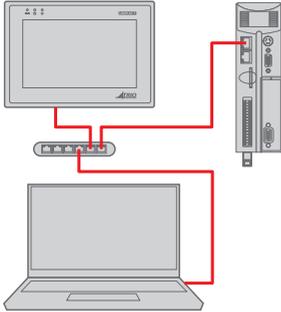
USING UNIPLAY

UNIPLAY HMI's work with the Trio 4xx *Motion Coordinator* range. *Motion Perfect* v3 and above is used to create operator HMI screens which are transferred to the **UNIPLAY** HMI by the *Motion Coordinator* at runtime.

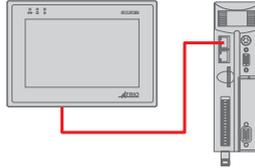


Trio recommend using a USB powered switch

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.

INTRODUCTION

UNIPLAY HMI is a whole new way of creating and storing HMI screens. HMI screens can be created and linked to programs directly inside *Motion Perfect*. The HMI screens are stored with and loaded with the machine project on the *Motion Coordinator*.

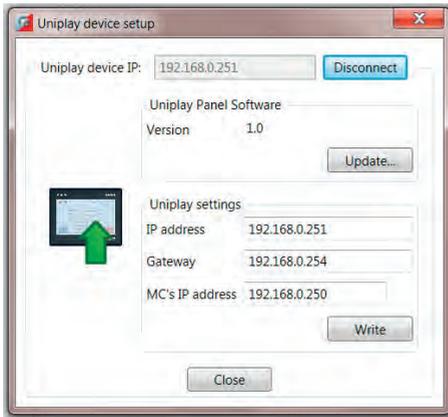
REQUIREMENTS

The following versions are required:

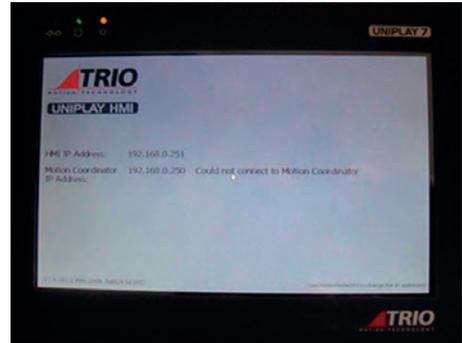
- 1 Trio Motion Technology *Motion Perfect* v3 version greater than 3.1.0.5544.
- 2 **UNIPLAY 7** or **UNIPLAY 10** HMI panel.
- 3 MC4XX *Motion Coordinator* with system software 2.0199 or higher.

INSTALLATION

- 1 The *Motion Coordinator* default IP address is 192.168.0.250
- 2 The **UNIPLAY** panel default IP address is 192.168.0.251
- 3 The HMI panel 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:



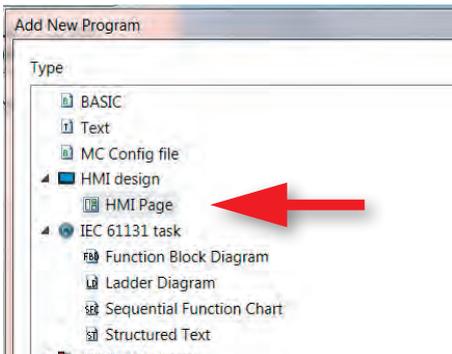
- ☰ If no HMI page exists, the **UNIPLAY** panel will display "invalid HMI page".

CREATING AN HMI PAGE

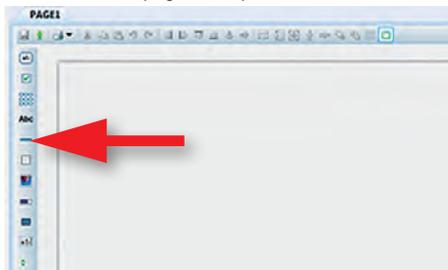
Right mouse click on “Programs” or use Program->New on the menu



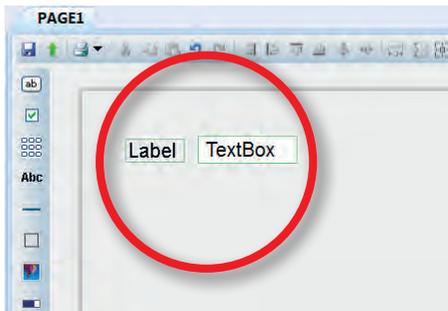
Select HMI Page under “Add New Program”, and give the page a name:



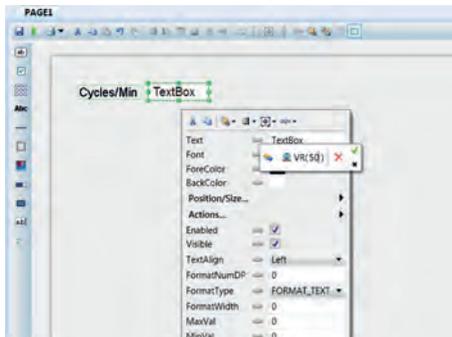
The new blank page will open in the editor:



The components on the left hand column can be dragged and dropped on the page. The top border tools are used to edit and align pages. In the simple example below a “Label” and a “TextBox” component have been dragged onto the HMI page:

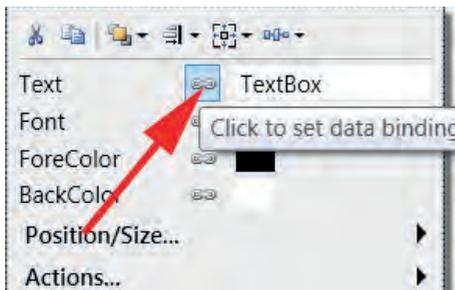


The properties of each component can be edited by a menu brought up using a right mouse click:

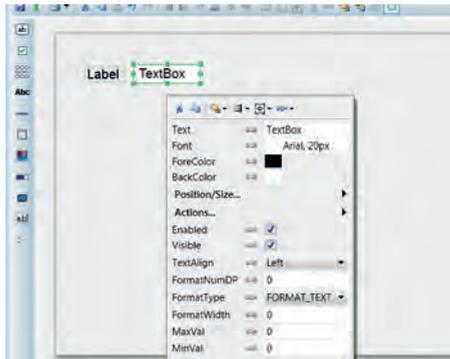


LINKING PROPERTIES TO CONTROLLER DATA

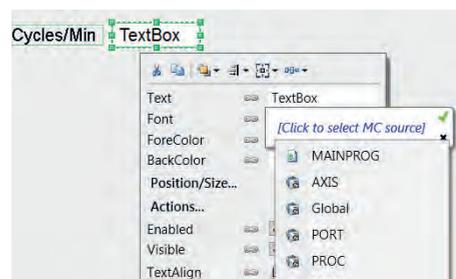
The properties of each component can be fixed or linked to controller data. To link a component property to controller data click on the small "chain" bitmap alongside each property.



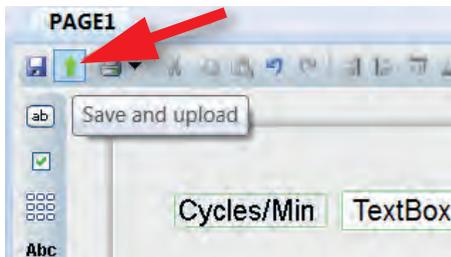
The menu then lets you choose what type of controller data to link to. This can be a program variable, for example in the program "MAINPROG" below, or VR, or other controller data types.



In this example we link the textbox "text" property to VR(50) in the controller. Click on the green tick to complete the link and the chain like "link" icon will turn blue.



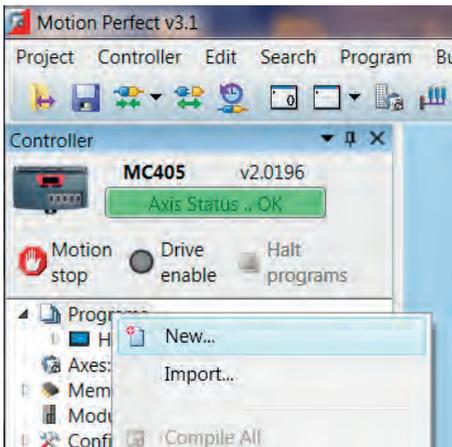
To see the screen run live on the **UNIPLAY** HMI simply click the green “upload” button:



The HMI page(s) are automatically saved with the project and will be displayed on any connected **UNIPLAY** HMI.

CREATING FURTHER HMI PAGES

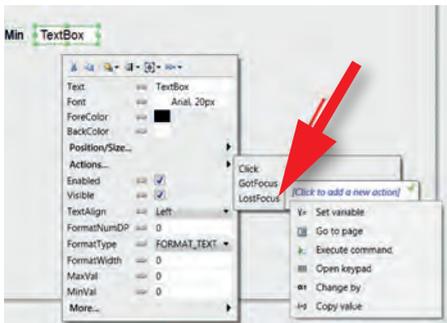
Further pages are made in the same way as the first page by right-clicking “Programs”. Note how one HMI screen is set to be the “Start-up page”. This is the first page that will be displayed and is highlighted in bold in the program tree. You can select a different page to be the Start-up Page using the right-click menus.



LINKING ACTIONS

In addition to having properties and being linked to controller data, components can have “Actions” which will be performed, for example when a component such as a button is clicked. To set an action select “Actions...” on the right-click menu then click the “lightening” symbol alongside the action type. A further

menu level then allows you to set the action such as “Go to page”, “Set variable” or even “Execute command” which will execute a line of BASIC. The BASIC line can include colon “:” separators to allow some multi-line sequences to be executed.



USING CHINESE FONTS WITH UNIPLAY

The **UNIPLAY** panel runs Win CE and has Microsoft JhengHei font installed both in standard and bold thickness. These fonts should also be selected in *Motion Perfect* so that they can be correctly rendered on both the **UNIPLAY** HMI and the PC. If other fonts are selected they may render in the editor on the PC but will not appear on the **UNIPLAY**.

SOFTWARE INSTALLATION

The **UNIPLAY** HMI device software runs on the Windows CE operating system installed on the panel. No additional software installation is required to use the **UNIPLAY** HMI system. Installation of any additional software on the device by users will invalidate the warranty.

INSTALLATION ENVIRONMENT

The **UNIPLAY** is designed for industrial use. The temperature operating range is 0 to 50°C It may not be suitable for using in certain outdoor applications.

NEMA I/P Rating

The **UNIPLAY** front bezel is NEMA 4/IP65 rated. When installed properly in a NEMA 4/IP64 panel, the NEMA 4 rating of the panel will not be compromised. This means that fluids will not enter the panel during wash downs.

Electrical Environment

The **UNIPLAY** 7 / 10 has been tested to conform to European CE requirements. This means that 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 insure proper operation.

Mechanical Environment

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

Environmental Considerations

- The **UNIPLAY** are to be used indoors as built in displays. Make sure that the display are 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 **UNIPLAY** in environments where have inflammable gases.

MOUNTING

Care should be taken when locating equipment behind the unit to ensure that a.c. power wiring, PLC output modules, contactors, starters and relays, and any other source of electrical interference are located away from the back of the unit. Particular note should be taken to the position of variable speed drives and switching power supplies. Their input and load cables should be screened to a central star earth point.

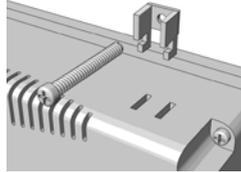
Making a NEMA-4 Mounting Panel Details

The unit can be mounted into panels with a depth of 105mm. It is recommended that the unit be mounted on the front panel of a steel enclosure, through an appropriate opening.

Allow a clearance of 25mm around the sides of the unit for mounting hardware. Allow clearance for cable connections to the back of the unit. Unit depth may vary according to cable type used. Typically, plan a depth to accommodate at least 105mm behind the panel.

This device should be mounted in the vertical position on a flat surface of the enclosure.

NEMA-4 Mounting



Put the unit through the panel cut out (See drawings at the back of this guide). Slide the clamps (packed with product) into the 4 holes provided around the case.

Tighten the clamping screws in an even pattern until the unit is secured in the panel. Screw torque: 0.29 - 0.39 Nm. This ensures a waterproof seal and prevents the panel from being deformed.

VESA Mounting

The **UNIPLAY 7** has 4 holes on back panel for attaching a VESA mount. 4 x M4 screws of length shorter than 8.0mm required. Screw torque: 0.29 Nm.



DO NOT OVER TIGHTEN MOUNTING CLAMPS!



To seal to NEMA-4 specifications, all supplied mounting clamps must be used and panel cannot flex more than 0.253mm.

POWER CONNECTIONS

Make sure that all local and national electrical standards are met when installing the unit.

Contact your local authorities to determine which codes apply.

Power Requirements

The **UNIPLAY** is powered by d.c. power only. The specified voltage range is $24 \pm 20\%$ Volts d.c. This insures compatibility with most controller d.c. systems.

The power conditioning circuitry inside the unit is accomplished by a switching power supply. The peak starting current can be as high as 2A.

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 insure proper connections and try to power up again.

High Voltage

An Internal fuse will prevent damage for over voltage condition however it is not guaranteed.

D.c. voltage sources should provide proper isolation from main a.c. power and similar hazards.

Emergency Stop

A Hard-wired EMERGENCY STOP should be fitted in any system using a UNIPLAY to comply with ICS Safety Recommendations.

Supply Voltage Condition

Do not power the **UNIPLAY** and inductive d.c. loads, or input circuitry to the controller, with the same power supply.



The 24 Vd.c. output from some controllers may not have enough current to power the **UNIPLAY**.

Wire Routing

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

Wires should be run in pairs with a neutral or common paired with a 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 3 signal wires.

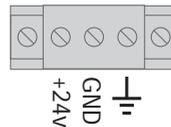
Fit ungrounded d.c. supplies with a resistor and capacitor in parallel to earth ground. This provides a path for static and high frequency dissipation. Typical values to use are $1M\Omega$ and $4700pF$.



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

Connection

To make a connection, strip about 10mm of insulation off the end of the wire, turn the connector screw counterclockwise until the gap is wide open, insert the wire all the way in, and turn the screw clockwise until tight. Connect positive d.c. line to the +24V terminal and the d.c. ground to the 0V terminal.



GROUNDING REQUIREMENTS



A CHASSIS GROUND MUST BE USED.

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, but 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 Controller systems could fail and thereby create an unsafe condition. Furthermore, electrical interference in an operator interface, such as a **UNIPLAY**, can lead to equipment start-up, which could result in property damage and/or physical injury to the equipment operator.

COMMUNICATION CONNECTIONS

The communication ports are located on the underside of the **UNIPLAY**. COM1, COM2, USB

host, USB client and SD card ports are not used.

Ethernet:

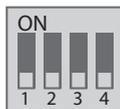
A 1:1 or cross-over Ethernet cable may be used to connect the **UNIPLAY** screen to a *Motion Coordinator* or Ethernet switch.

Speaker:

An external speaker / buzzer may be used for greater keypress feedback. Connection is via a 3.5mm mono jack plug.

DIP SWITCH SETTINGS:

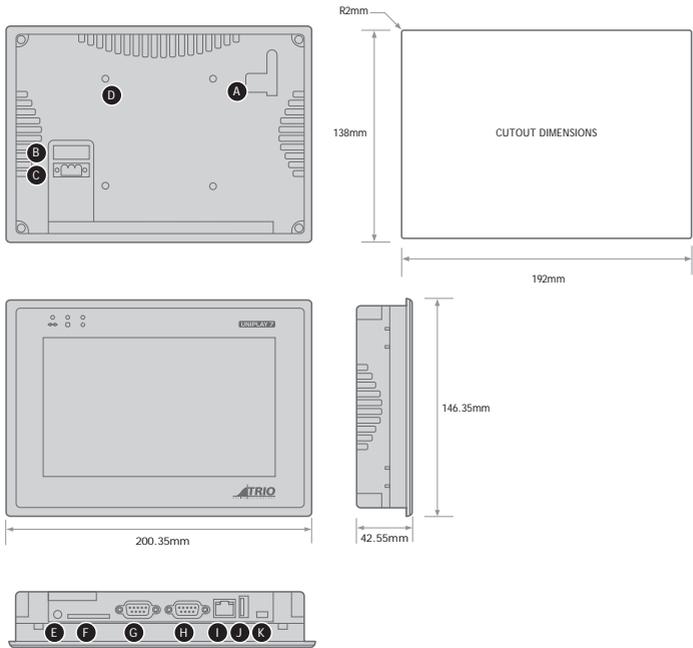
SW1	SW2	SW3	SW4	Mode
ON	OFF	OFF	ON	Touch Screen Calibrate mode
OFF	ON	OFF	ON	Hide HMI System Setting Bar
OFF	OFF	ON	ON	Boot Loader mode
OFF	OFF	OFF	ON	Normal
OFF	OFF	OFF	OFF	Not Supported



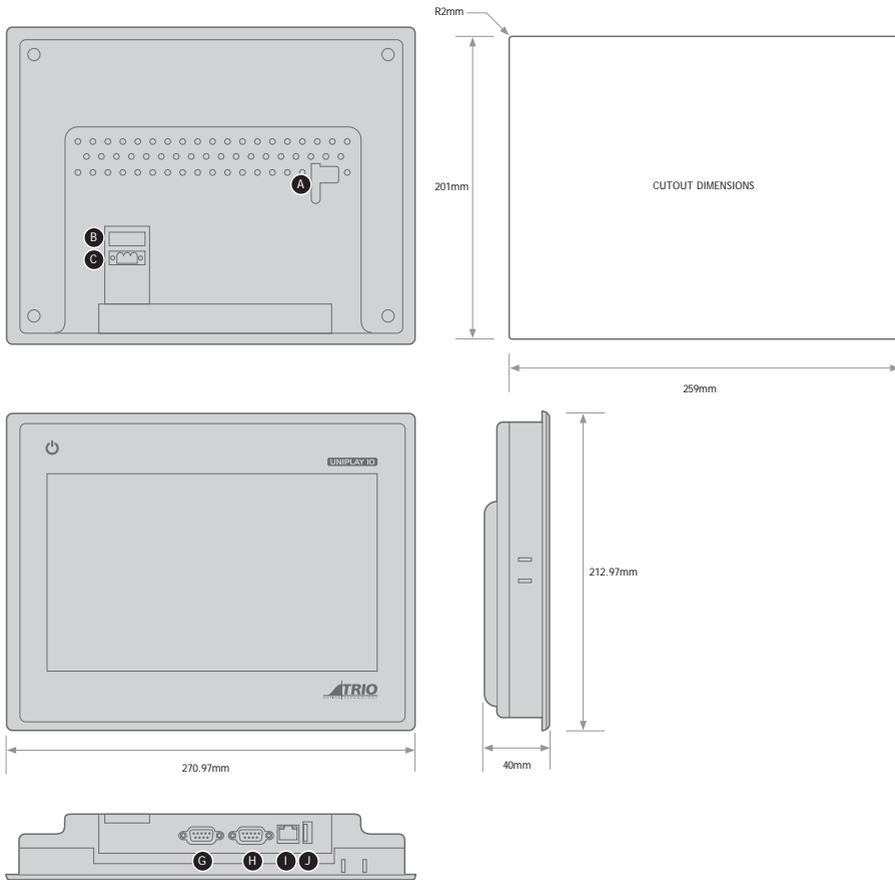
 SW4 is used for adjusting LCD parameters, please keep it in the manufacturer default position, otherwise incorrect screen display may be occurred.

DIMENSIONS AND PORTS

- | | | | |
|---|---------------------------|---|------------------------------------|
| A | DIP switch & reset button | G | Com1 RS485, Com3 RS485, Com3 RS232 |
| B | Fuse | H | Com1 RS232, Com2 RS232 |
| C | Power connector | I | Ethernet port |
| D | VESA 75mm screw holes | J | USB Host port |
| E | Line out | K | USB Client port |
| F | SD card slot | | |



UNIPLAY 7



UNIPLAY 10

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