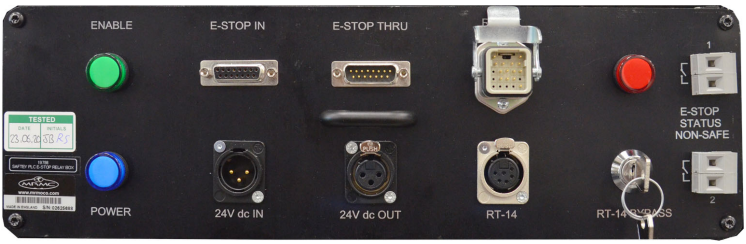
MARK ROBERTS MOTION CONTROL

UNIVERSAL E-STOP SYSTEM



QUICK START GUIDE

QSG Product Code: MRMC-2091-00
Product Covered: MRMC-2075-00

Universal E-stop System Quick Start Guide

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Contents

Chapter 1 **Quick start**

Important safety instructions

To ensure the best from the product, please read this manual carefully. Keep it in the safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit. No user serviceable parts inside. Refer servicing to qualified personnel.

Power and connections

- This unit must be connected to a 24V DC PSU supplied.
- Do not plug in or attempt to operate an obviously damaged unit.

General care

- Do not force switches or external connections.
- Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.
- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- Keep the equipment dry. The system has **not** been made weatherproof. Do not use with wet hands.
- Keep away from pets and children.

Location

Installation of this unit should be away from sources of excessive heat, vibration, and dust.

Intellectual property

This product includes confidential and/or trade secret property. Therefore, you may not copy, modify, adapt, translate, distribute, reverse engineer, or decompile contents thereof.

Overview

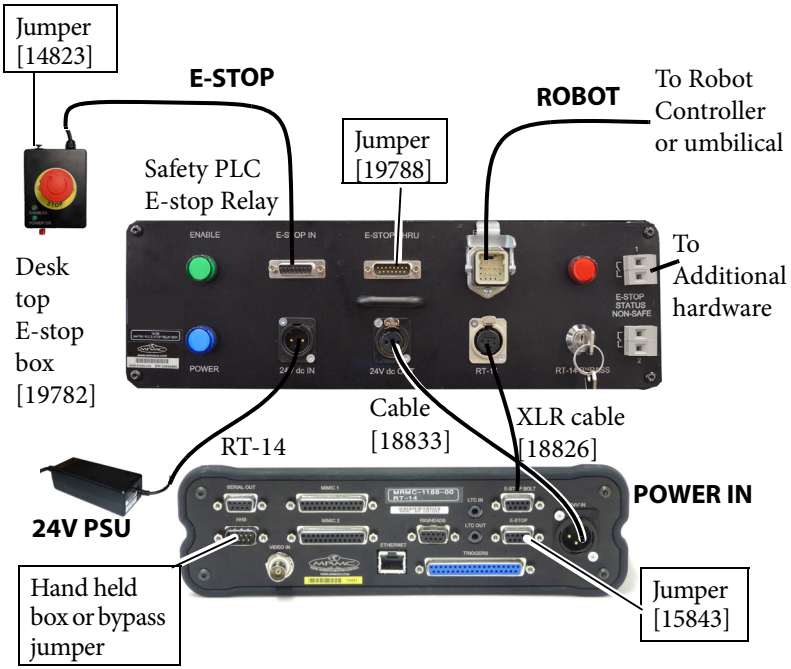
Thank you for using the Universal E-Stop System from Mark Roberts Motion Control (MRMC). The Universal E-Stop System is a safety relay PLC between RT-14 and MRMC Motion Control and Broadcast rigs and is fully integrated with the Flair Motion Control Software.

The Universal E-Stop System has the following main features:

- Can be used as a safety PLC for a single robot. Multiple robots using the Universal E-stop can be easily "daisy-chained" to create a global E-stop system
- An arbitrary number of additional E-stop buttons can be attached and deployed in the customer setup

Connecting the cables

Universal E-stop System with a Single Robot

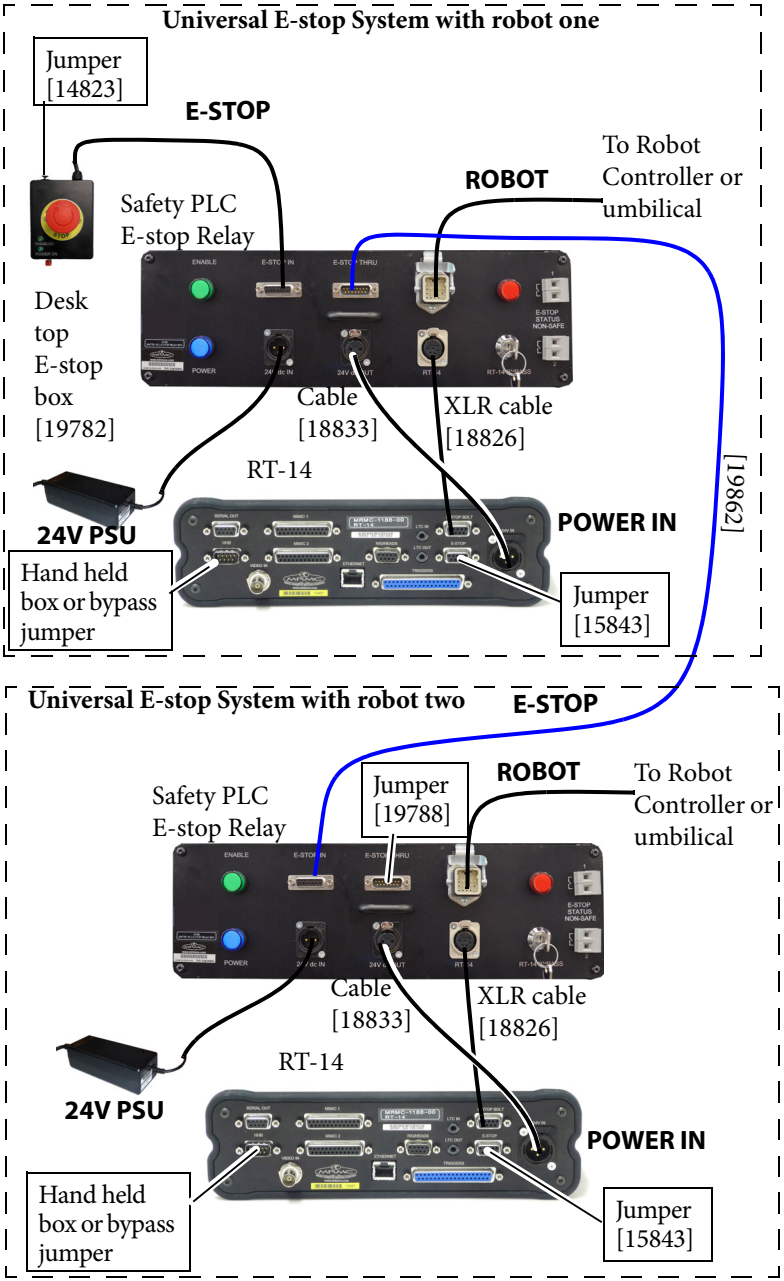


The two **E-stop Status Non-safe** connectors provide Auxiliary relay output and can be connected to additional non-MRMC or custom device. Any hardware that is plugged with these two connectors will be stopped when the E-stop button connected with the Universal E-stop system is pressed but the reverse is not true. In other words, the Universal E-stop System will not accept any feedback from such devices.

Safety Relay PLC LEDs

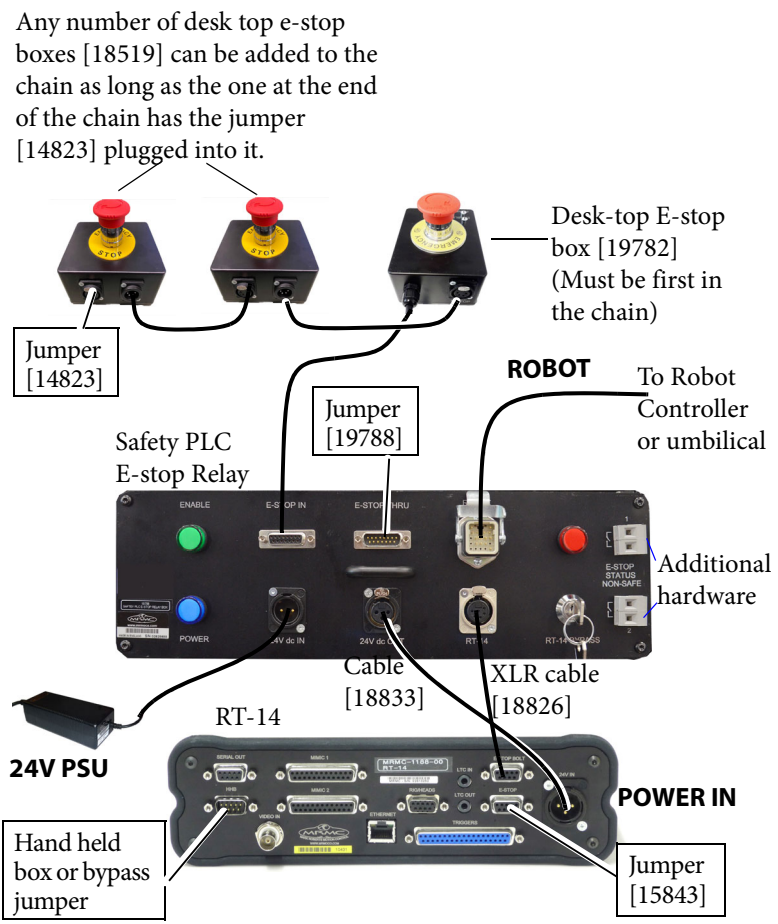
LED/Key	Description
Blue	On indicates that the Safety Relay has power.
Green	On indicates that the E-stop is enabled and the robot can be engaged. Off indicates that the E-stop is pressed and robot is disengaged and cannot be re-engaged.
Red	On indicates that the RT-14 Bypass key is in horizontal position and RT-14 is bypassed. In this condition both the software E-Stop (from Flair) and the HHB E-stop have no effect. For safety reasons, always ensure that this LED is off unless RT-14 is bypassed temporarily on purpose.

Universal E-stop System with Multiple Robots



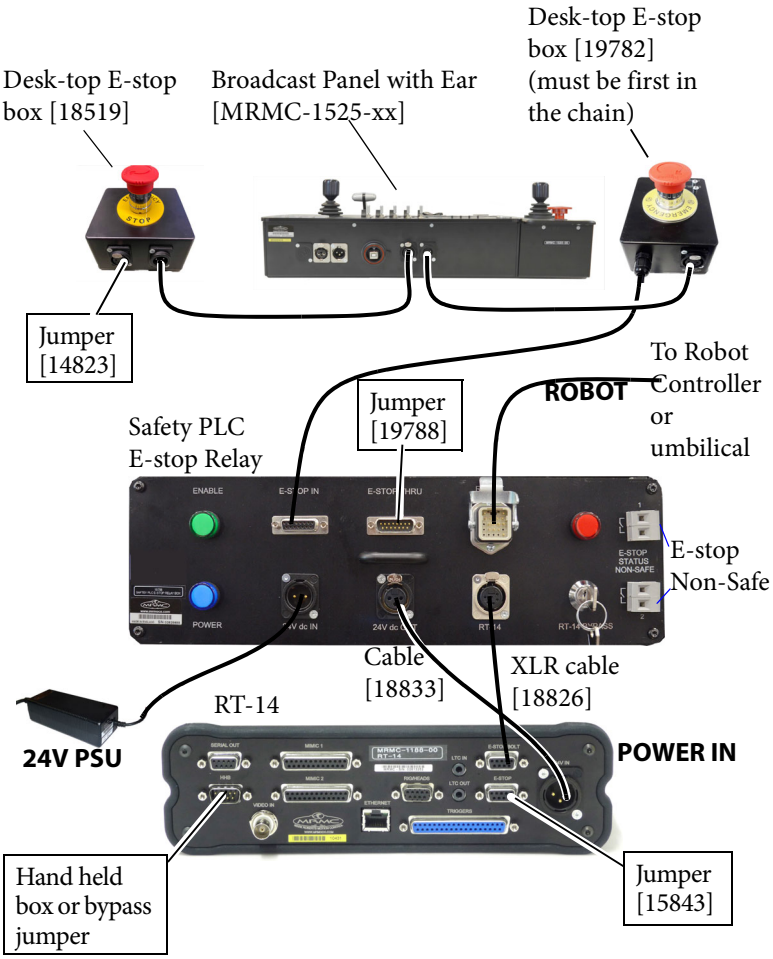
Any number of Universal E-stop Systems can be added to the chain as long as the one at the beginning of the chain has the Desk top E-stop box plugged into **E-Stop In** and the one at the end of the chain has a jumper plugged into **E-stop Thru** connector.

E-stop Button Expansion



Only one main E-stop box [19782] is used per safety relay box, which is plugged to the **E-stop In** connector.

When using multiple desk top E-stop boxes, E-stop Extension Cable [18466] is used to 'chain' the E-stop boxes.



You can even use Broadcast Panel with Ear [MRMC-1525-xx] for robot operation and emergency stops as well. Again any number of Broadcast Panel with Ear and desk top E-stop boxes [18519]'s can be added to the chain in any order as long as the unit at the end of the chain has jumper [14823] plugged into it.

Universal E-stop Bypass Operation

Bypass E-stop button [20529]

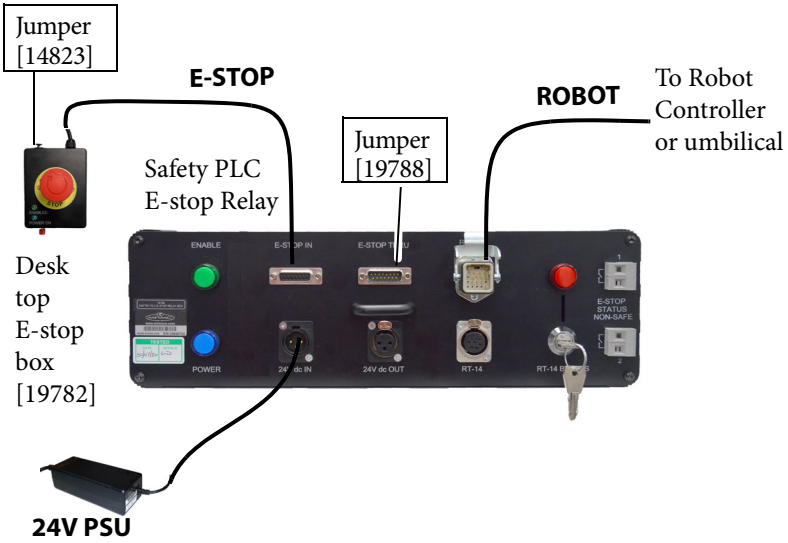
E-stop Robot Cable via Umbilical

To Robot Controller

Bypassing the Universal E-stop System is for temporary use only. Robot will enable as soon as E-stop button is reset. This will also bypass the software E-stop and any other hardware E-stops and the robot will have no controlled E-stop action.

RT-14 Bypass Operation

By setting the key in the horizontal position, you can bypass the RT-14. In this mode the E-stop can be enabled even if the RT-14 is not connected or not loaded, or Flair is not running, or the HHB is unplugged. The red led indicates that this mode is active.



Bypassing RT-14 will make the safety circuit IGNORE the software E-stop and the HHB E-stop that is plugged into RT-14. This should be used only temporarily and the key put back in vertical position soon after.

Notes

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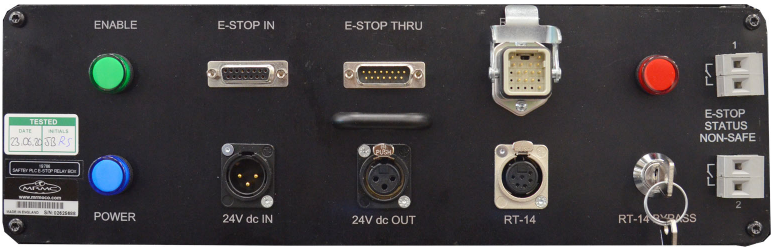

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