

Syringe Pump Extension Cables

Overview

Teledyne ISCO syringe pump systems consist of a controller including the user interface and up to 4 individual pump modules. The pump module is connected to the controller through a cable attached to each pumping module.

In some applications, it may be advantageous to locate the controller remotely from the pump module(s). For example, the pump modules may be in a controlled environment that is inconvenient for user entry. In these cases, if the attached cable is not long enough an extension cable may be used.

Cable Requirements

The extension cable must meet the following requirements:

- The connectors must adhere to the DB-25 standard
- A male connector on one end, and a female connector on the opposite end.
- Connection wires must be 22 AWG (American Wire Gauge or .326 mm² minimum copper cross section area) or larger cross section (smaller AWG number)
- Wires are connected straight through; pin 1 connects to pin 1, pin 2 to pin 2, etc.
- Wires are individual, not twisted pairs
- Shielded cable
- Overall cable extension length may not exceed 15 m (50 feet) and can include no more than 2 connections (two 25 foot cables can be used, but not five 10 foot cables).
- Screw retainers to secure the cable connections are recommended.

Suggested Cable Source

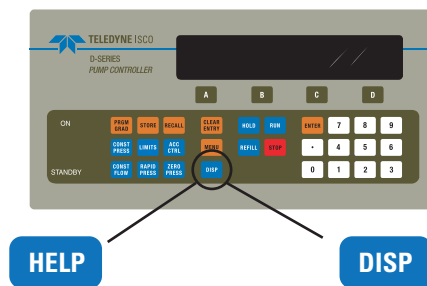
Teledyne ISCO offers a 3 m (10 foot) extension cable, #681020210

Cobra Firing Systems offers a 15 meter DB25 Slat Cable, Heavy Duty (which uses 22 AWG wire). This will require a Female to Female DB25 Adapter also available from the same company. The part may be found at:

https://www.cobrafiringsystems.com/db25_15m

Extension Cable Usage Procedure

This step is only needed on older controllers. The controller vintage can be determined by examining the front keypad beneath the display. If there is a help button in the middle, it needs the procedure. If it says DISP, it doesn't need the procedure.



Whenever the length of cable is changed on your Pump A output, your pump's +5 Vdc supply must be adjusted. However, the adjustment is not necessary if the length is changed on Pump B or Pump C. It is highly recommended that extension cables be only as long as necessary to prevent problems associated with propagation delays and increased conductor resistance. The following procedure applies:

1. Unplug the mains voltage from the instrument.
2. Remove the cover from the pump and the cover from the controller (4 screws each).
3. Connect a voltmeter between TP106 “+5 V” and TP134 (common) located on the controller circuit board.
4. Connect one end of the extension cable to pump A output and the other end to the pump cable.
5. Connect the mains voltage to the instrument.
6. Use an insulated screwdriver and adjust R133, located on the pump circuit board until the voltage reads $5.0 \pm .002$ Vdc.
7. Unplug the mains voltage and install the pump and controller covers.

Note: If the extension cable on pump A is removed and the regular pump cable is used, the +5Vdc adjustment must be made again.

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Teledyne ISCO is continually improving its products and reserves the right to change product specifications, replacement parts, schematics, and instructions without notice.