VS DRIVES

INSTRUCTION SHEET D-3967-1
Instrument Interface/Preset Speed Kit
Model 14C222

The equipment described below should be installed only by qualified electrical maintenance personnel familiar with the construction and operation of the equipment and the hazards involved.

DESCRIPTION

The MinPak Plus/FlexPak Plus can automatically follow a milliampere signal from a process control instrument if the optional Instrument Interface/Preset Speed Kit is installed. (Refer to Figure 1). Alternately, the Kit also permits the drive to run continuously at a preselected speed.

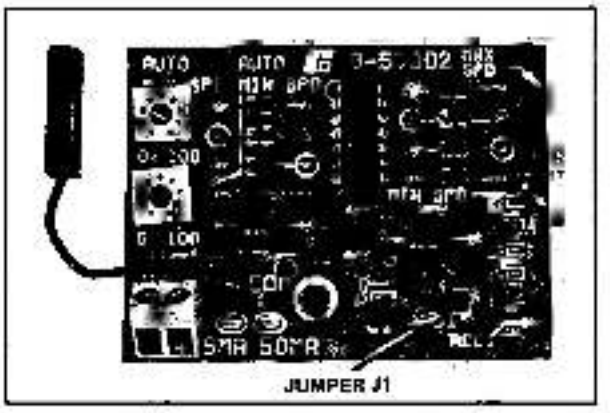

Figure 1 – Instrument Interface Kit

This modification kit was originally designed to be used with FlexPak/MinPak D-C drives and has been adapted to mount directly to the HR2000 Interface Kit (M/N 3HI2000). See D5-3039 Instruction Manual for instructions that are specific to the HR2000 Interface Kit.

The Instrument Interface Module accepts a 0 to 5, 1 to 5, 4 to 20 or 10 to 50 mA signal, which may be grounded or ungrounded. The maximum input is 50 mA.

Typical applications include cases where the drive motor's speed must be controlled and varied as a function of such process variables as temperature, weight, fluid flow and pressure.

The Auto Minimum Speed Potentiometer on the Module can be set so that the drive runs at a preset minimum speed (up to 50%) with a minimum output signal from the process instrument. The Auto Maximum Speed Potentiometer on the Module can be set so that the drive runs at 50% to base speed with a maximum output signal from the instrument. Other relationships within these parameters are also possible, and they allow operation over a larger speed range than the 5:1 range provided by the process controller.

The Kit contains a Module that has a jumper that must be connected by the user to select one of two maximum input signals: 5 mA or 50 mA. There is also a mounting screw. The Kit may be used alone to provide full, automatic drive control, or it may be used with an optional AUTO/MANUAL selector switch on the Operator Control Station. This switch may be used to manually override the external D-C signal. (In the MANUAL position, the drive follows the SPEED Potentiometer on the Station.) The user supplies the required lengths of specified signal wire.

A process instrument controller, or other transducer with a D-C milliampere output, is also required.

NOTE: If the Operator Control Station contains an AUTO/MANUAL selector switch, it is necessary to remove jumper J1 from the Instrument Interface Module and J4 on the Regulator Module. (Refer to Figures 1 & 3. Do this before placing the Module on the Regulator Module.)

INSTRUCTION INSTRUCTIONS

DANGER

DO NOT INSTALL THIS MODIFICATION KIT WITH POWER APPLIED TO THE CONTROLLER UNIT AND CABINET. DISCONNECT AND LOCK OUT INCOMING POWER BEFORE ATTEMPTING SUCH INSTALLATION. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

1. Open face plate cover and let it hang down.
2. Orient the Module over the dedicated area marked REFERENCE on the Regulator Module, just over the five pins. (Refer to Figure 2). Lower it so that the pins pass through the guides on the Module. Use the screw to secure it.
3. Connect the external reference signal wires to the terminal strip on the Module. Plus (+) is on the left, minus (–) on the right. Do not strip more than $^1/_8$ inch (3 mm) of insulation off since shorts could occur at exposed points. Maintain the twisted character as long as possible.

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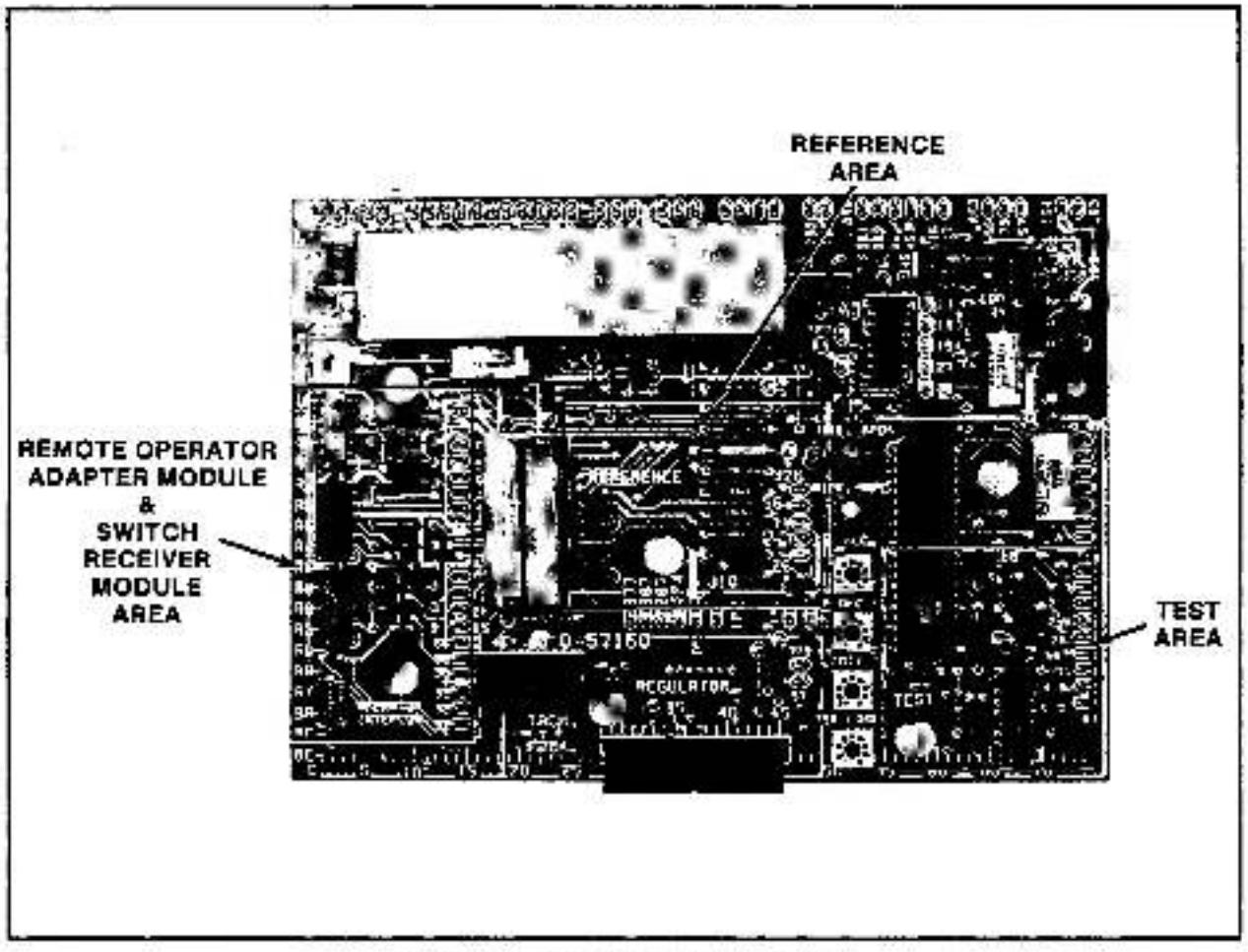


Figure 2 – Regulator Module Kit Locations

Instrument Interface Installation Only

When the Kit is to be used an an instrument interface, follow these Steps.

Step 1 – Determine whether the maximum input signal is between 0 to 5 mA or 5 to 50 mA. Locate the black pig-tail jumper on the Module. (Refer to Figure 3). Carefully place it on the directly corresponding pin, both of which are clearly marked.

Step 2 – This Step assumes that the complete drive system, including the controller, has been successfully started up and debugged. (Refer to your Controller Instruction Manual, start up section, if this has not been accomplished). It is now necessary to carry out a power-on test. Place the controller in the AUTO mode, if it is so equipped. Set the process instrument controller for minimum output. Locate the Auto Minimum Speed Potentiometer on the Interface Module. Using a small insulated screwdriver, adjust it for the desired minimum motor speed. (CCW decreases speed.)

Step 3 – Set the process instrument controller for maximum output. Locate the Auto Maximum Speed Potentiometer. Adjust it for the desired maximum motor speed. (CW increases speed.)

Step 4 – Since there is some interaction between these two potentiometers, at times it may be necessary to work back and forth to achieve precise adjustments.

Preset Speed Installation Only

When the Kit is to be used as a simple preset speed device, follow these Steps.

Step 1 – This Step assumes that the complete drive system, including the controller, has been successfully started up and debugged. (Refer to your Controller Instruction Manual, start up section if this has not been accomplished.)

Figure 3 - Jumper J1, mA Pins

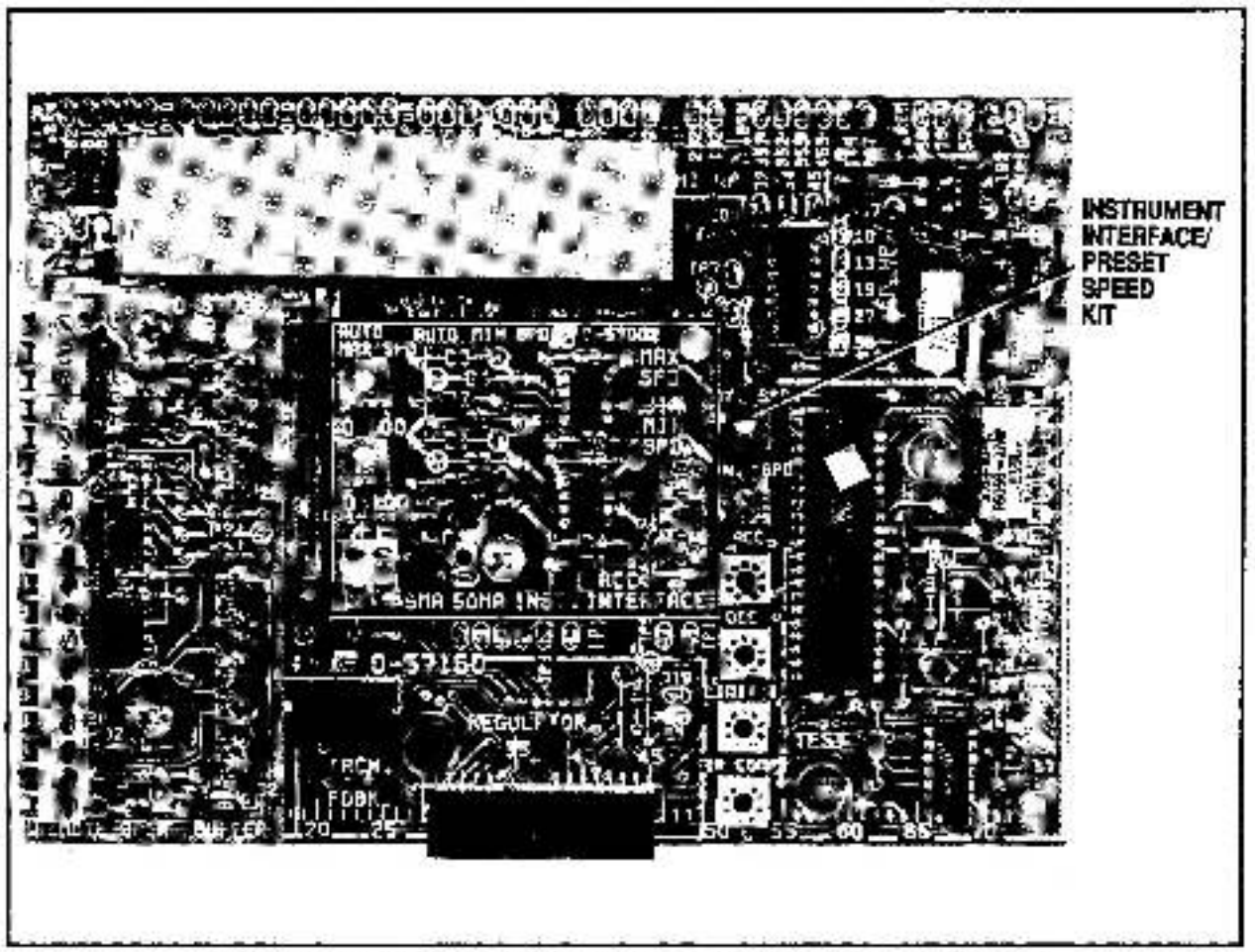


Figure 4 - Instrument Interface/Preset Speed Kit Mounted to Regulator Module

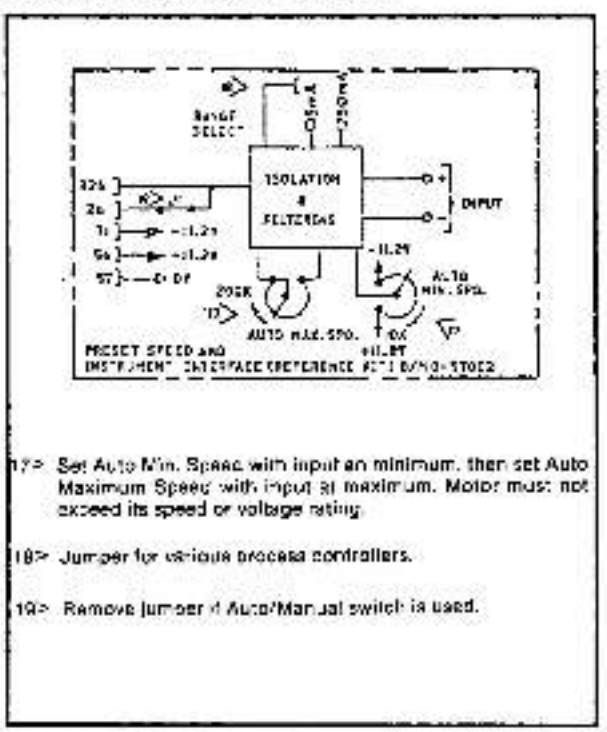
Step 2 – Connect the black, pig-tail jumper on the Interface Module to the 50 mA pin. (Refer to Figure 3)

Step 3 – Locate the Auto Minimum Speed Potentiometer on the Interface Module. Turn it CW to the third dot which represents a one-third turn.

Step 4 – Place the controller in the AUTO mode, if so equipped. Locate the Auto Maximum Speed Potentiometer. Adjust it to obtain the desired preset speed. (CW increases speed, CCW decreases it.)

Step 5 – Tighten all connections that may have come loose during kit installation.

Step 6 – Close face plate and tighten screws.



(17) Set Auto Min. Speed with input at minimum, then set Auto Maximum Speed with input at maximum. Motor must not exceed its speed or voltage rating.

(18) Jumper for various process controllers.

(19) Remove jumper if Auto/Manual switch is used.

Figure 5 – Instrument Interface/Preset Kit Schematic

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