1 GENERAL

This instruction manual contains important information regarding the installation, maintenance and troubleshooting of the Jamesbury Cycle Timer Board for EU/ER SE Electric Actuators. Please read these instructions carefully and save them for future reference.

1.1 WARNING

SHUT OFF POWER AND DISCONNECT ELECTRICAL CONNECTIONS BEFORE REMOVING COVER.

1.2 Caution

Whenever an actuator is removed from the valve and then remounted, the limit switch settings must be checked to make sure the valve is making the proper travel. Reference IMO-515 (EU) or IMO-516 (ER) for limit switch and cam adjustment.

When servicing a valve/actuator assembly, the best practice is to remove the entire assembly from the process line.

2 DESCRIPTION

Jamesbury's EU/ER cycle timer option is a printed circuit board that controls periodic cycling of a valve for draining, blow down, flushing or sampling of a system. Available IC chip sets (see Tables 1 and 2) allow a wide choice of cycle times and adjustment intervals.

3 INSTALLATION (See Figure 1 and 2)

1. Remove cover.
2. Disconnect wires from terminal strip.
3. Remove screw (2) that holds terminal strip to base of unit and remove the screw closest to the conduit entry.
4. Install cycle timer board using the two screws just removed in previous step.
5. Connect the black wire from the motor to terminal 3 on the cycle timer board (1).

6. Connect the wire coming from the com. lead on the bottom (Closed) limit switch to terminal 4 on the cycle timer board (1).

7. Connect the wire coming from the com. lead on the second from bottom limit switch (Open) to terminal 5 on the cycle timer board (1).

8. Remove and discard the wires connected to the NC lead on each standard limit switch.

4 PROGRAMMING THE CYCLE TIMER BOARD

Unless otherwise specified, the valve and actuator are shipped in the closed position. The timer opens the valve for the programmed time ON and then closes the valve for the programmed time OFF. The OFF time is the total cycle time minus the ON time. The EU/ER units are programmed by closing (on) or opening (off) a series of 12 DIP switches located on the cycle timer board (1). Switches 1 through 6 control the TOTAL cycle time and switches 7 through 12 control the ON time. The ON time includes the travel time. Thus, if the ON time setting is 25 seconds, and the actuator takes 10 seconds to open the valve, the valve will be fully open for an additional 15 seconds.

To set the desired TOTAL cycle time, in minutes, push the appropriate switches to the closed (on) position (see Table 1). **NOTE:** Push the switch levers with the tip of a pencil. When the lever is up, across from the word ON, the switch is closed. To set the desired ON time, follow the same procedure on switches 7 through 12 (see Table 2).

**CAUTION:** Do Not use any ON time of less than 15 seconds because the actuator will stop without completing a cycle. At least one of the switches 7-12 must be closed (ON) for the actuator to cycle.

### PARTS LIST
- Cycle timer board with bracket
- Label
- Wire Tie

### TOOLS REQUIRED
- Wire crimp tool
- Small instrument type screw driver
- T-20 torx driver
5 ELECTRIC CONNECTION TO THE CYCLE TIMER BOARD

1. Remove the cover.

2. Strip the white and black wires of the power cable back 1/4" (6.35 mm). Connect the black lead to Terminal 1 and the white lead to terminal 2 on the terminal strip of the cycle timer board.

3. Route the power cable so that it does not interfere with any cams or switches.

4. Connect the power cable to the AC line. The actuator will immediately open the valve for the programmed ON time.

NOTE: If indication of when the actuator reaches the full open or full closed position is needed; wire directly to the NC side of the two limit switches.

6 LIMIT SWITCH ADJUSTMENTS

If adjustment of limit switches is needed please see primary actuator IMO. IMO-515(EU) and IMO-516 (ER).

7 OPTIONAL REMOTE RESET CONTROL

To provide a remote reset feature, wire a normally open momentary push button to terminals 6 and 7. Depressing the button causes the actuator to open for the programmed ON time and then close and reset for the TOTAL time. If the valve is open when the button is pressed, the motor will not turn, but the TOTAL time will be reset. The valve will close after the programmed ON time and the full TOTAL time will be reset.

8 MAINTENANCE

CAUTION: Use the correct parts. Failure to do so could result in improper operation or personal injury. Contact your Metso Automation distributor for authentic Jamesbury replacement parts.

These actuators require no lubrication, and under normal operating conditions only periodic observation is needed to see that they are functioning properly. Maintenance or adjustments other than those described herein, should be referred to Metso Automation for service.

9 REPAIR KITS/SPARE PARTS

For further information on spare parts and service or assistance visit our web-site at www.jamesbury.com.