

Addendum to 10260S HercuLine[®] Smart Actuator Installation, Operation and Maintenance Manual, #62-86-25-08

Overview of Additions and Changes to the Manual

This addendum documents changes to the *10260S HercuLine[®] Smart Actuator Installation, Operation and Maintenance Manual*, #62-86-25-08. These changes provide supplemental information and corrections to update the manual to the latest version. Specifically, the latest firmware release for the 10260S Actuators provides input signal characterization.

Using this addendum to update your manual

The pages of this addendum contain new and revised information to update the user manual. These addendum pages can be inserted with the existing pages in the manual. The page numbers in the headings of this addendum reference the pages in the manual where related information is presented.

This addendum updates Document #62-86-25-08, Release dated 4/01

Operating the Local Display at High Temperatures

page 10

The temperature limits for the actuator local display are listed as -30°C to $+50^{\circ}\text{C}$ (-20°F to $+122^{\circ}\text{F}$). The display is programmed to shut off automatically at operating temperatures above $+50^{\circ}\text{C}$.

At high temperatures, pressing the DISPLAY or SETUP keys will turn on the display. The display will remain on and then shut off again after 4 minutes if no keypad activity is detected and the temperature is still above $+47^{\circ}\text{C}$.

Input Set Up Group

LD CAL Group

page 35

Selecting COUT will restore the actuator output calibration to factory values **only** for the 4 – 20 mA output selection. Any other CUROUT selection will require you to perform an output calibration as described on page 55.

Current Out Set Up Group

page 40



ATTENTION

If you change the output signal range of the actuator, you must perform an output calibration. See *Calibrating Output*, page 55.

When selecting the output range of the actuator, the 4 – 20 mA selection is factory calibrated, therefore no calibration is necessary. If you change the CUROUT selection, you must perform an output calibration so that the values at the actuator output terminals agree with the CUROUT selection.

Additionally, if you change the CUROUT selection back to 4 – 20 mA from another selection, you must either perform an output calibration or perform a LD CAL function to the output (COUT) to restore the factory calibration values to the 4 – to 20 mA selection. The LD CAL function is in the INPUT set up group.

Calibrate Output

0/4-20 mA Output

page 55

Please note that the actuator output is factory calibrated for **only** the 4 – 20 mA output selection. Any other output selection will require you to perform an output calibration.

Table 23 Output Calibration Procedure

page 56

Please note the addition of the value in Step 3 of the procedure.

NOTE: Typically for a 20 mA output, the display will show a value of approximately 1981.

NCS Output Calibration

CAL NCSOUT Group

page 49

The CAL NCSOUT group allows the local display to indicate the output voltage of the non-contact sensor PWA. This group is used for two purposes:

1. To read the NCS output during calibration of the non-contact sensor. Calibration should be performed after the non-contact sensor is replaced or is found to be out of adjustment.
2. To verify that the non-contact sensor is operating and is adjusted properly.

Non-Contact Sensor Operation

page 67

The procedure below is used to verify that the non-contact sensor is operating and is adjusted properly.

Step	Action
1	Drive the motor to 50% position.
2	<p>Press SET UP key on the keyboard until the display reads CAL NCSOUT.</p> <p>Press FUNCTION key until the display reads DIS CALNCS.</p> <p>Press the π or θ keys until the display reads BEGN CALNCS.</p> <p>Press the FUNCTION key.</p> <p style="padding-left: 40px;"><i>Upper Display</i> = n.nnn (Output voltage of the non-contact sensor)</p> <p style="padding-left: 40px;"><i>Lower Display</i> = NCSOUT</p>
3	The display should read 2.500 + or – 0.100 Volts.*
4	<p>Press DISPLAY key and then drive the motor to zero position. Repeat Step 2.</p> <p>The display should read 1.600 + or – 0.100 Volts.*</p>
5	<p>Press DISPLAY key and then drive the motor to 100% position. Repeat Step 2.</p> <p>The display should read 3.400 + or – 0.100 Volts.*</p>
6	If the NCS needs adjustment, refer to the “Calibrate Non-Contact Sensor” procedure in Error! Reference source not found. in Section 4.

* The NCS is calibrated at the factory using a precision DVM. The voltage reading on the actuator local display shows an approximate value of the non-contact sensor output. Therefore, when checking the NCS output, a voltage reading on the display of + or – 0.100V is within acceptable operating values.

Correction to Replacement/Recommended Spare Parts

page 85

On page 85, the correct part number for the Display PWA Assembly Kit is 51451231-501.

Input Set Up Group

Table 1 lists revised choices for the Input Characterization parameter and they are available when the SET INPUT group is selected.

Table 1 Input Set Up Group Parameters

Lower Display Prompt	Upper Display Selections or Range of Setting	Parameter Definition
CHAR	LINR <i>[default]</i> SQRT CUST **	<p>INPUT CHARACTERIZATION— Selects a characterization type that causes the actuator to characterize a linear input signal to represent a non-linear input.</p> <p>Linear— Provides linear characterization of the input signal.</p> <p>Square Root— Provides square root characterization of the input signal.</p> <p>Custom— Custom characterization. Selecting custom allows you to create a twentieth order characteriization of input value (x) and associated shaft position (y).</p> <p>NOTE: Selecting CUST input characterization provides a sample characterization approximating an equal percentage valve characterisitic. See following page.</p>
Xn VAL ** <i>n = 0 to 20</i>	0 to 100.0	<p>INPUT VALUE— Allows entry of input values as a percentage of range, when custom characterization is selected.</p>
Yn VAL ** <i>n = 0 to 20</i>	0 to 100.0	<p>SHAFT POSITION— Allows entry of shaft position values as a percentage of range, when custom characterization is selected.</p>

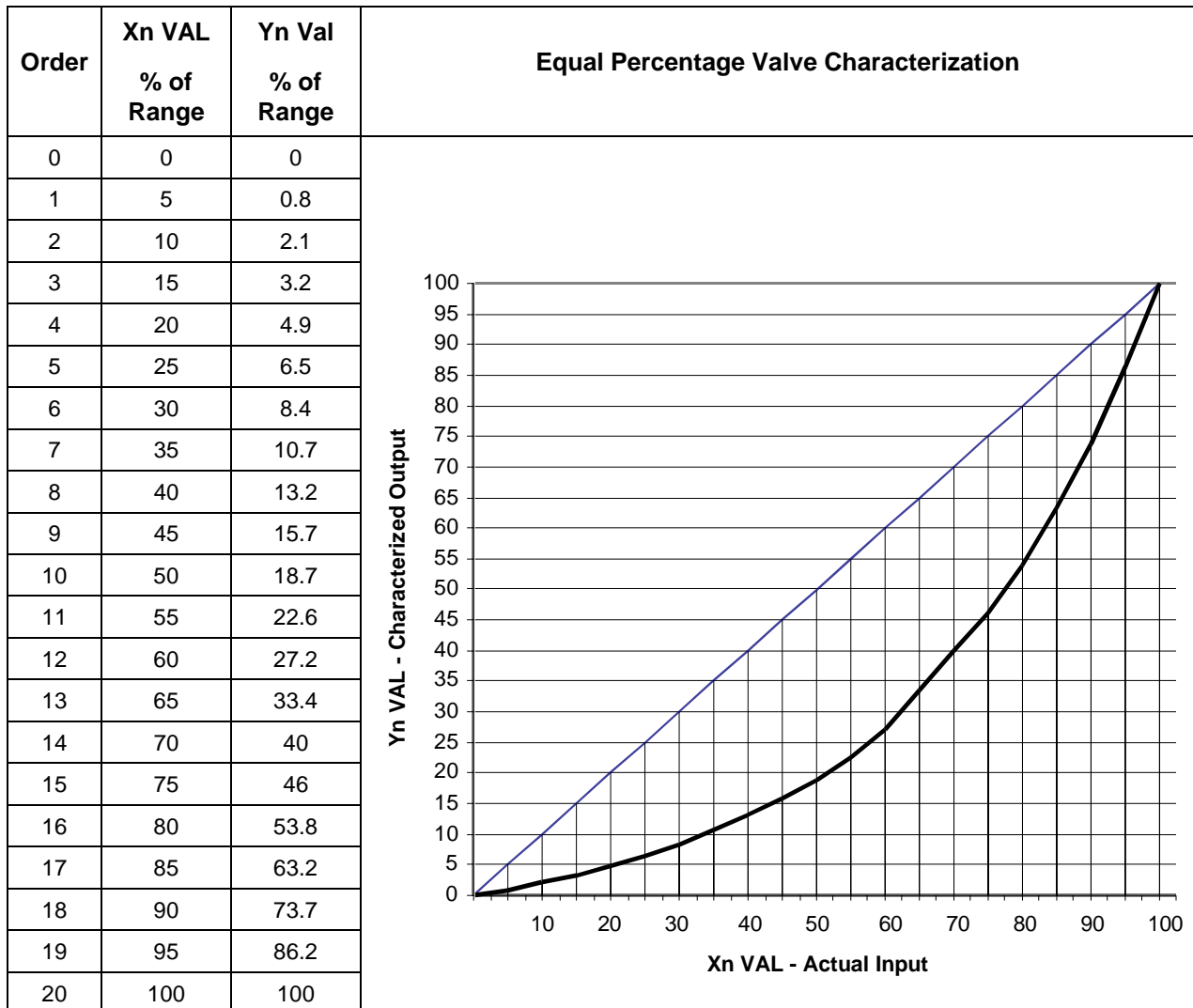
NOTE: Two characterization valve samples are shown in tables on the following pages.

Equal Percentage Valve Characteristic

Table 2 contains sample values that approximate an equal percentage valve characteristic in the actuator. When CUST input characterization is selected, the values in Table 2 can be entered into the actuator configuration to produce the characteristic as presented in the graph, (see NOTE). The Xn VAL is the input value as a percentage of range and Yn VAL is the characterized output (actuator shaft position) as a percentage of range.

NOTE: The values in Table 2 are entered automatically when CUST input characterization is selected for the first time.

Table 2 Equal Percentage Valve Characteristic Table



Quick Opening Valve Characteristic

Table 3 contains sample values that approximate the characteristic of a quick opening control valve. When CUST input characterization is selected, the values in Table 3 can be entered into the actuator configuration to produce the characteristic as presented in the graph. The Xn VAL is the input value as a percentage of range and Yn VAL is the characterized output (actuator shaft position) as a percentage of range.

Table 3 Quick Opening Valve Characteristic Table

