

8.2 Current Proportional Output Calibration

Introduction

Calibrate the controller so that the output provides the proper amount of current over the desired range. The controller can provide an output current range of from 0 to 21 milliamperes and can be calibrated at 4 mA for 0% of output and 20 mA for 100% of output or any other values between 0 and 21 mA.

Equipment needed

You will need a standard shop type milliammeter, with whatever accuracy is required, capable of measuring 0 to 20 milliamps.

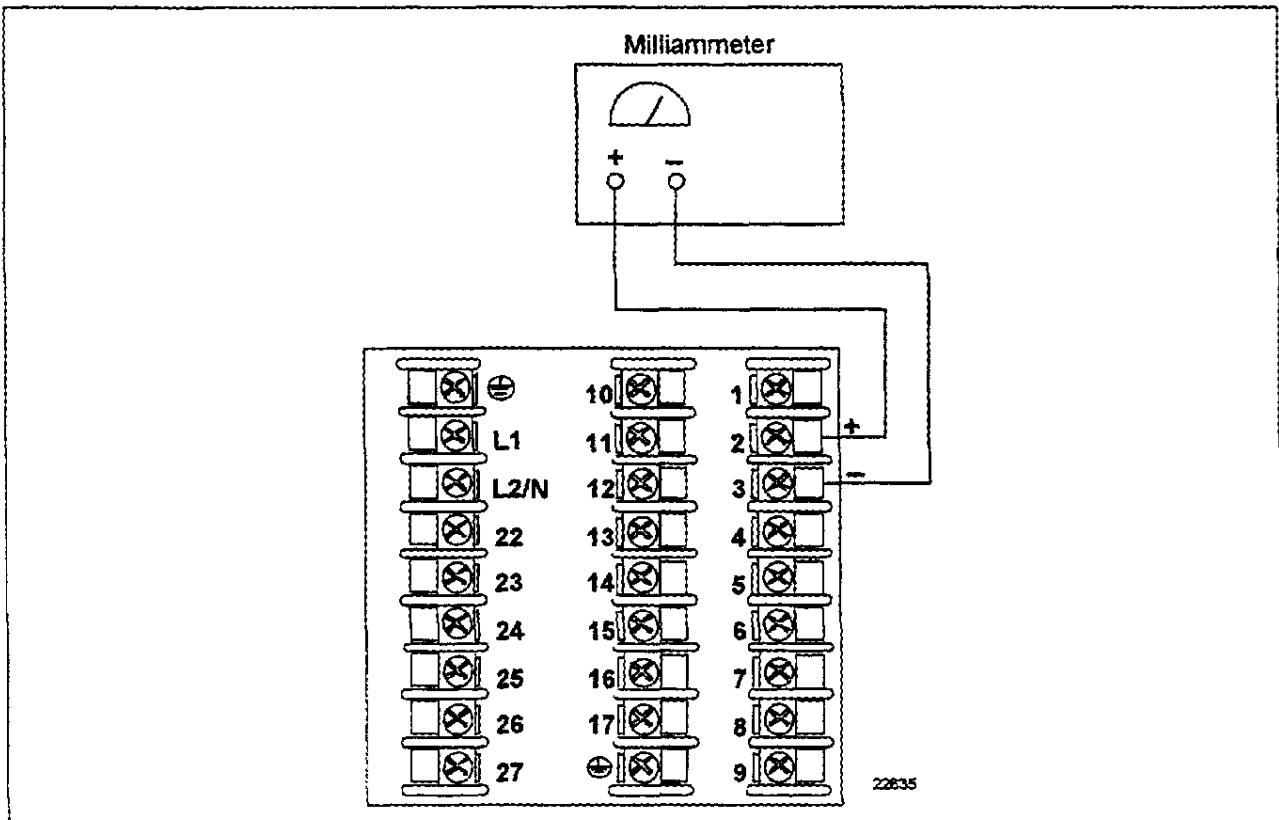
Calibrator connections

Referring to Figure 8-1, wire the controller according to the procedure given in Table 8-1.

Table 8-1 Set Up Wiring Procedure Current Proportional Output

Step	Action
1	Apply power and allow the controller to warm up 15 minutes before you calibrate.
2	Tag and disconnect the field wiring, at the rear of the controller, from terminals 2 (+) and 3 (-). See Figure 8-1.
3	Connect a milliammeter across these terminals.

Figure 8-1 Wiring Connections for Calibrating Current Proportional Output



Continued on next page

8.2 Current Proportional Output Calibration, Continued

Procedure

The procedure for calibrating the Current Proportional Output is listed in Table 8-2. Make sure LOCKOUT in the Tuning Set Up group is set to NONE. See Section 3 – Configuration.

Table 8-2 Current Proportional Output Calibration Procedure

Step	Description	Press	Action
1	Enter Calibration Mode	SET UP	until you see Upper Display CALIB Lower Display CURRENT
2	Calibrate 0%	FUNCTION LOOP 1/2	You will see: Upper Display <input type="text"/> ← a value between 1 and 2048 Lower Display ZERO VAL
		▲ or ▼	until the desired 0% output is read on the milliammeter. Use the values shown below depending on the action of your valve. 0 mA For 0 to 20 mA Direct Action* 20 mA For 0 to 20 mA Reverse Action 4 mA For 4 to 20 mA Direct Action 20 mA For 4 to 20 mA Reverse Action
3	Calibrate 100%	FUNCTION LOOP 1/2	This stores the 0% value and you will see: Upper Display <input type="text"/> ← a value between 1 and 2048 Lower Display SPAN VAL
		▲ or ▼	until the desired 100% output is read on the milliammeter. Use the values shown below depending on the action of your valve. 20 mA For 0 to 20 mA Direct Action 0 mA For 0 to 20 mA Reverse Action* 20 mA For 4 to 20 mA Direct Action 4 mA For 4 to 20 mA Reverse Action
4	Exit the Calibration Mode	FUNCTION LOOP 1/2	The controller will store the span value.
		LOWER DISPLAY or SET UP	To exit the calibration mode.

*When attempting to achieve 0 mA, always adjust the output to about 0.5 mA, and slowly decrease until the output just goes to zero. Further decrementing will not change the output current (since the circuit cannot produce negative current) but will affect the accuracy of the output by creating a dead zone where no current flows.