Direct vs. Indirect acting output action

This white paper was written to help in the decision of how to configure the controller's outputs by defining the control terms: Direct acting (cool) control vs. Indirect acting (heat) control.

When using On/Off control with a Direct acting output means the output turns on above setpoint. With Proportional outputs the output power will increase as the process increases. This is used for cooling applications. As the temperature decreases, the output turns off or decreases in power. With Direct acting outputs, the output power response is in the same direction of the temperature change so that as the temperature increases the output power increases.

When using On/Off control with an Indirect acting output means the output turns off above setpoint. With Proportional outputs the output power will decrease as the process increases. This is used for heating applications. As the temperature increases, the output power turns off or decreases in power. With Indirect acting outputs, the output power response is opposite of the temperature change. Indirect action is also referred to as Reverse action.

1241 Bundy Blvd
Winona, MN 55987
Telephone (507) 494-5656