Chapter 12: Override (Selector) Control

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OVERRIDE CONTROL

Override control, also called selector control, exists whenever one process variable is the controlling variable in normal operation. During abnormal operation, however, another process variable assumes control to prevent some safety, process, or equipment limit from being exceeded.

A key element of an override control strategy is a selector switch, implemented either as a hardware device or a software function block. Depending on how it's configured, this switch passes the higher or lower of several input signals to its output. There are several ways of using selector switches in a control strategy. One is to select the higher or lower of several measurement signals to be passed on as the process variable to a feedback controller. For example, the highest of several process temperatures may be selected automatically to become the controlling temperature. As process conditions change, the location of the highest temperature may change also. The selector switch assures that, regardless of process conditions, the controlling point is the highest of the measured temperatures.

Placing a selector switch in the measurement side of a controller, though perhaps important from the vantage point of a particular process application, poses the highest of several process temperatures may be selected automatically to become the controlling temperature. As process conditions change, the location of the highest temperature may change also. The selector switch assures that, regardless of process conditions, the controlling point is the highest of the measured temperatures.

There are also selectors which select the middle of three inputs. These are used primarily in high-criticality applications, where the failure...

Products & Services

Pressure Transmitters

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Pressure transmitters translate the low level output of a sensor or transducer to a higher level signal suitable for transmission to a site where it can be further processed. These devices include pressure sensors, transducers, elements, and instruments.

Electrical Output:
- Analog Voltage (javascript:void(0);)
- Analog Current (javascript:void(0);)
- RS-232 / RS-485 (javascript:void(0);)
- HART Protocol (javascript:void(0);)
- PROFIBUS® (javascript:void(0);)

Sensor Technology:
- Mechanical Deflection (javascript:void(0);)
- Piezoelectric (javascript:void(0);)
- Strain Gauge (javascript:void(0);)
- Smart Senor (javascript:void(0);)

Control Valves

Control valves or proportional valves are power-operated devices used to modify fluid flow or pressure rate in a process system. Control valves can be used to meter, regulate, or control the flow of gases, liquids, and steam.

Flow Switches

Flow switches are devices that monitor flow and send a trip signal to other devices, like a pump, for protection. These switches can be used for the measurement of gases, liquids, and steam.

Electric Valve Actuators

Electric valve actuators mount on valves which, in response to a signal, automatically move to a desired position using an outside power source. Single-phase or three-phase AC or DC motors drive a combination of gears to generate the desired torque level.

HVAC Controllers

HVAC systems are used to monitor and control heating, ventilation, and air conditioning (HVAC) systems in buildings. They monitor indoor environmental factors such as temperature and humidity, and control heating and cooling to maintain desired levels.

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OVERVIEW Control loops are said to interact when movement of the final control element of one loop affects not only its own process variable but the process variable of one or more additional control...

Chapter 7.5.5 - Control Paradigms: Selector Control (http://www.globalspec.com/reference/13566/179909/chapter-7-5-5-control-paradigms-selector-control)
Selector Control Selector control can be viewed as the inverse of split range control. In split range there is one measured signal and several actuators. In selector control there are many measured...

In this section we illustrate how complex control systems can be built from simple components by using the paradigms we have discussed. The problem is quite complex. It involves selection of measured...

Chapter 4: Model Predictive Control (http://www.globalspec.com/reference/71851/203279/chapter-4-model-predictive-control)
4-1 Introduction Because Model Predictive Control (MPC) uses an experimental model it can create a future trajectory of the process response based on multiple measured process inputs. Unknown...

Control Systems Automatic control is required (1) for precise control of the process to produce more uniform and high quality product, (2) for processes which are too rapid for manual control and (3)...