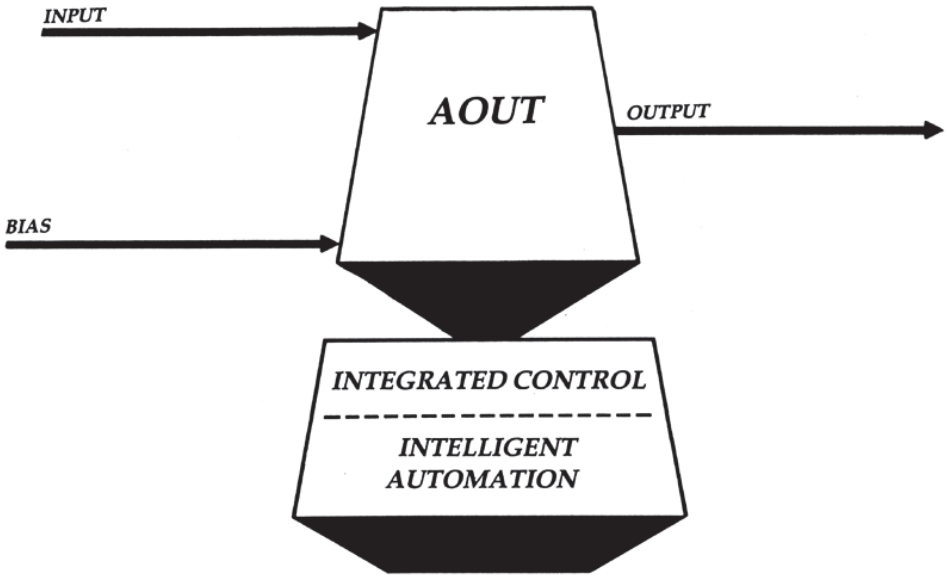
Foxboro Evo™ Process Automation System

Product Specifications

Foxboro® by Schneider Electric

PSS 31S-3AOUT

Analog Output (AOUT) Block



The Analog Output (AOUT) block is a single channel analog output block for scaling an analog output to a field device.

OVERVIEW

The real input (Figure 1) is summed with the bias parameter, and the resultant value is converted to raw counts according to a user-specified signal conditioning index. The output is clamped within the range defined between the high and low output limits ± output span variance. The block updates the Fieldbus Module on a change-driven basis, and the Fieldbus Module converts the output count value to analog via a 12-bit digital-to-analog conversion.

Bad detection of a Fieldbus Module output point is based on the Fieldbus Module status. If the Fieldbus Module is in error, the raw counts are not written to the Fieldbus Module and the quality tag of the output (bad point parameter) is activated.

The raw counts, read back from the Fieldbus Module, are converted back to engineering units, using the inverse conversion algorithm of the specified signal conditioning index. This value is used as part of the back calculation of the input. This parameter normally sources the connection to an upstream “back-calculation-input'' parameter of a control block in a cascaded scheme to provide bumpless transfer of control.

An AOUT detail display provides the output value as well as other block information for operator interface to the block.

SUPERVISORY CONTROL

Supervisory Control (SSC) allows a user's application program to perform supervisory control over the AOUT block's measurement. SSC can be enabled/disabled by an operator, or enabled by the supervisory application program at a control block group or control block level. If SSC is enabled in the control block, the back calculated value status requests the application program initialization. The application program must send the supervisory measurement to the block periodically. While SSC is enabled, the control block parameters associated with local setpoint are not settable by the operator. If the operator asserts fallback or if a supervisory application program failure is detected, the control block falls back to a configured fallback mode (Manual or Auto).

STANDARD FEATURES

- Auto/Manual control of the output
- Initialization and back-calculation parameters for proper coordination of cascaded schemes
- Bad output point detection and readback
- Bias and gain scaling of input
- Output bounded between user-specified limits.

OPTIONS

- Bias tracking when in manual
- Output clamping in manual
- Auto/Manual override
- Bad point alarming
- Selectable signal conditioning:

Conditioning Index	Signal Conditioning
0	No conditioning
1	0 to 64,000 counts linear
2	1,600 to 64,000 counts linear (0 to 10 V dc)
3	12,000 to 64,000 counts linear (4 to 20 mA)

- Workstation lock access allows write access to only the Display Manager which owns the lock.
- Loop identifier allows the user to identify the loop or process unit that contains the block.
- Supervisory Control (SSC) of the block's measurement.

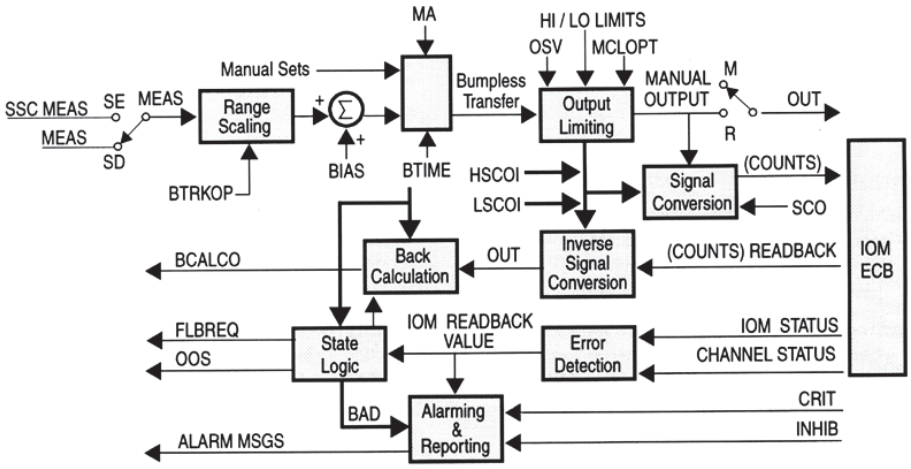


Figure 1. AOUT Block Signal Flow Diagram

ADDITIONAL FEATURES

- Delayed alarming. A configurable timer delays alarm detection or return-to-normal messages for a specific alarm to reduce the number of alarm messages generated when a block parameter crosses back and forth over an alarm limit.
- Detection of fail-safe mode in the FBM, during which the block switches its input to a user-selected source for safety.

Foxboro®

by Schneider Electric

Invensys Systems, Inc
10900 Equity Drive
Houston, TX 77041
United States of America
http://www.invensys.com

Global Customer Support
Inside U.S.: 1-866-746-6477
Outside U.S.: 1-508-549-2424
Website: https://support.ips.invensys.com

MB 031 0914