EcoStruxure™

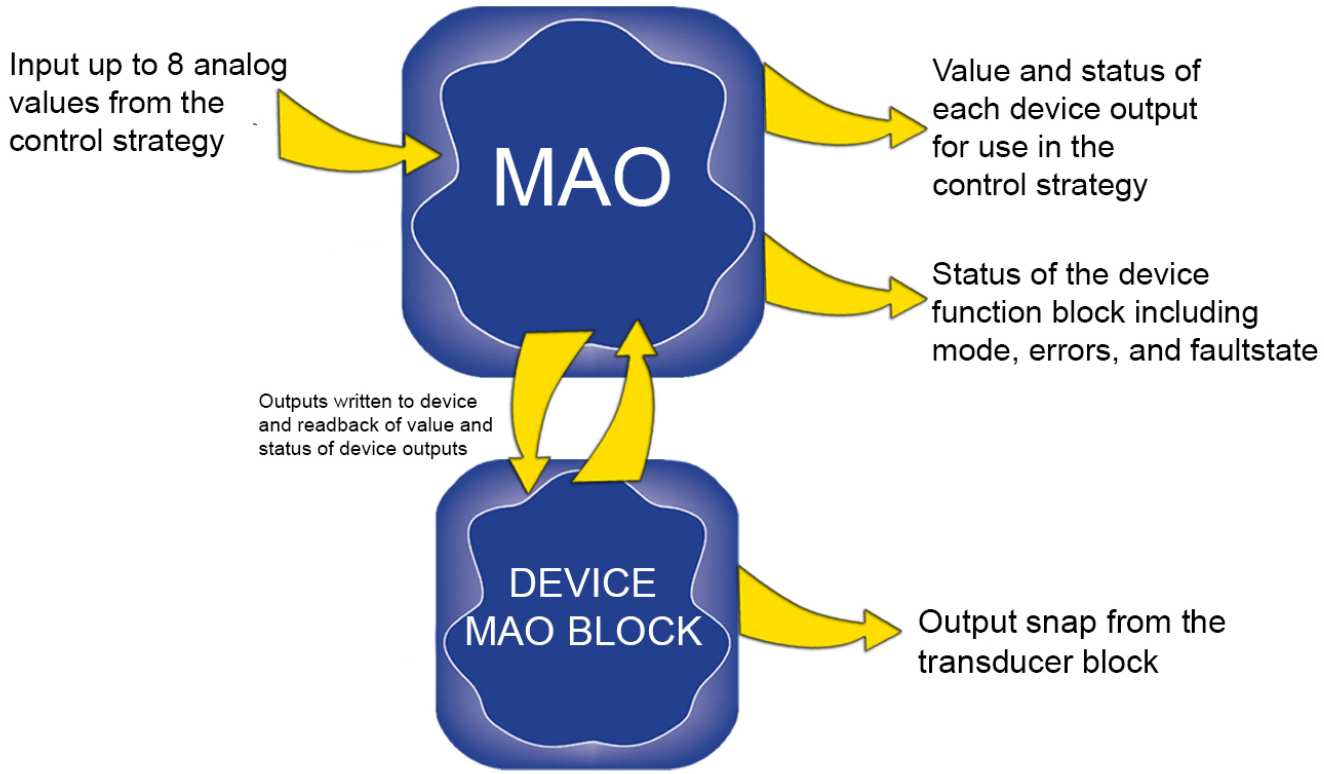
Foxboro™ DCS

Multiple Analog Output (MAO) Block

PSS 41S-3MAO

Product Specification

May 2019



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Legal Information

Overview

The Multiple Analog Output (MAO) block enables the control strategy to write up to eight analog values to an MAO device function block operating in a Foundation fieldbus™ H1 device.

Multiple Analog Output (MAO) provides an interface between a Foxboro™ DCS control station and a remote indicator and other Foundation fieldbus H1 devices that support multiple analog outputs. The MAO block is linked to a multiple analog output function block operating in the H1 device (the device function block). The MAO block is supported on the Field Control Processor 280 (FCP280) when the H1 device is connected to the control station by a Foundation fieldbus Redundant Interface Module (FBM228).

The MAO block integrates the linked device function block into Foxboro DCS. On initialization, user-configured parameters in the MAO block are written to key configurable parameters in the device function block, including permitted and target modes, and faultstate behavior.

During normal operation, the MAO block receives up to up to eight different analog values from the control system. This input can be from an MAI block reading values from a Foundation fieldbus remote I/O system.

The MAO block writes the values to the *IN*_n (where *n* is 1 through 8) parameters of the device function block, which in turn sends them to the configured transducer block channel for output to the device.

The device outputs are then read back to MAO block IN_*n* and INST*n* parameters, which hold the value and status, respectively, of the device *IN*_n parameters.

When the block is in simulation mode, the output values are not written to the device function block, but the value of each output is updated as if it had been read back from the device, and the status of each output is set to Good, Non-Cascade.

In addition to providing outputs to the device function block, the MAO block provides access to a variety of operational and diagnostic information via client/server connections with the parameters that are included in Views 1, 2, and 4 of the device block. The values read from these parameters are displayed in the block detail displays and are available for connection to other Foxboro DCS blocks.

Features

The MAO block provides the following features:

- Writes up to eight analog values to the linked device function block
- Acquires the value and status of the device block outputs
- Time stamps value and status changes
- Accesses the parameters in the device function block's View 1, View 2 and View 4 using change-driven and periodic client/server connections
- Helps ensure that changes in a device's process values and error conditions are continuously available for display and connection to the control strategy
- Provides for the configuration of device block parameters from Foxboro DCS and management of the device configuration in the control database
- Enables users to set the mode of the device function block to Automatic or Out of Service (OOS)
- Supports the device function block faultstate handling, with configuration of the faultstate behavior, value, and timing for each device output individually
- Provides alarm detection and reporting for Bad I/O
- Supports simulation of device block output within the control station

Principal Parameters

Inputs

- Eight analog values from the control system for output to the H1 device
- Mode switches to change the device function block mode to OOS

Outputs

- Up to eight analog values output to the device function block
- Value and status from each of eight analog output read back from the H1 device
- Time stamp for each of the eight analog outputs
- Device function block operational status including mode, block errors, alarm conditions, and faultstate

Device Function Block Configuration

- Parameters set in the MAO block are downloaded to H1 device to set the block tag and description, transducer channel, permitted and target modes, strategy description, and faultstate options, values and time

Support

The MAO block is supported on the FCP280 when the H1 device is connected to the control station by an FBM228. Refer to following product specification sheets for details:

- *Field Control Processor 280 (FCP280)* (PSS 41H-1FCP280)
- *FBM228 FOUNDATION Fieldbus Module for Control in the Field Applications* (PSS 41H-2S228)

The MAO block is configured using the Block Configurator in Foxboro DCS Control Editor as described in *Implementing Foundation Fieldbus in the Foxboro DCS Process Automation System* (B0750DA) or with the I/A Series Configuration Component (IACC) software as described in *Implementing Foundation Fieldbus on the I/A Series System* (B0700BA).

WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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