Motion Axis Fault Reset (MAFR)

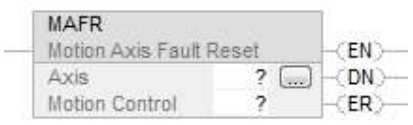
This information applies to the CompactLogix 5370, ControlLogix 5570, Compact GuardLogix 5370, GuardLogix 5570, Compact GuardLogix 5380, CompactLogix 5380, CompactLogix 5480, ControlLogix 5580, and GuardLogix 5580 controllers. Controller differences are noted where applicable.

Use the Motion Axis Fault Reset (MAFR) instruction to clear all motion faults for an axis. This is the only method for clearing axis motion faults.

Important: The MAFR instruction removes the fault status, but does not perform any other recovery, such as enabling servo action. In addition, when the controller removes the fault status, the condition that generated the fault(s) may still exist. If the condition is not corrected before using the MAFR instruction, the axis immediately faults again.

Available Languages

Ladder Diagram



Function Block

This instruction is not available in function block.

Structured Text

MAFR(Axis,MotionControl);

Operands

Ladder Diagram and Structured Text

Operand	Type **CompactLogix 5370, Compact GuardLogix 5370, Compact GuardLogix 5380, CompactLogix 5380, CompactLogix 5480**	Type **ControlLogix 5570, GuardLogix 5570, ControlLogix 5580, and GuardLogix 5580 controllers**	Format	Description
Axis	AXIS_CIP_DRIVE	AXIS_CIP_DRIVE AXIS_GENERIC AXIS_GENERIC_DRIVE AXIS_SERVO AXIS_SERVO_DRIVE **Tip:** AXIS_GENERIC is supported by the ControlLogix 5570 and the GuardLogix 5570 controllers only.	Tag	Name of the axis to perform operation on

Motion Control	MOTION_INSTRUCTION	MOTION_INSTRUCTION	Tag	Structure used to access instruction status parameters.

See Structured Text Syntax for more information on the syntax of expressions within structured text.

MOTION_INSTRUCTION Structure

Mnemonic	Description
.EN (Enable) Bit 31	It is set when the rung makes a false-to-true transition and remains set until the servo message transaction is completed and the rung goes false.
.DN (Done) Bit 29	It is set when the axis' servo action has been successfully disabled and the drive enable and servo active status bits have been cleared.
.ER (Error) Bit 28	It is set to indicate that the instruction detected an error, such as if you specified an unconfigured axis.

Description

The MAFR instruction directly clears the specified fault status on the specified axis. It does not correct the condition that caused the error. If the condition is not corrected prior to executing the MAFR instruction the axis could immediately fault again giving the appearance that the fault status was not reset.

This instruction is most commonly used as part of a fault handler program, which provides application specific fault action in response to various potential motion control faults. Once the appropriate fault action is taken, the MAFR instruction can be used to clear all active fault status bits.

Important: The .DN bit is not set immediately. It will be set once the appropriate Motion Module or Drive has completed its required resets, which could take up to several seconds. Once set the axis is in the Ready state, but only after the request is completed.

In this transitional instruction, the relay ladder, toggle the Rung-condition-in from cleared to set each time the instruction should execute.

Affects Math Status Flags

No

Major/Minor Faults

None specific to this instruction. See *Common Attributes* for operand-related faults.

Execution

Ladder Diagram

Condition/State	Action Taken
Prescan	The .EN, .DN, and .ER are cleared to false.

Rung-condition-in is false	The .EN bit is cleared to false if the .DN or .ER bit is true.
Rung-condition-in is true	The .EN bit is set to true and the instruction executes. If the EN bit is set to false, then there is no action taken,
Postscan	N/A

Structured Text

Condition/State	**Action Taken**
Prescan	See Prescan in Ladder Diagram table
Normal execution	See Rung-condition-in is false, followed by rung is true in the Ladder Diagram table.
Postscan	See Postscan in Ladder Diagram table.

Error Codes

See *Motion Error Codes (.ERR)* for Motion Instructions.

Extended Error Codes

Extended Error Codes provide additional instruction specific information for the Error Codes that are generic to many instructions. See *Motion Error Codes (.ERR)* for Motion Instructions.

MAFR Changes to Status Bits

None

Examples

When the input conditions are true, the controller clears all motion faults for myAxis.

Ladder Diagram

Structured Text

MAFR(myAxis,myMotionControl);

See also

Common Attributes

Structured Text Syntax

Motion Error Codes (.ERR)

MAFR Flow Chart

How are we doing?