

Motion Coordinated Shutdown Reset (MCSR)

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.

Use the Motion Coordinated Shutdown Reset (MCSR) instruction to reset all axes in a coordinate system. The MCSR instruction resets the axes from a shutdown state to an axis ready state. This instruction also clears any axis faults.

Important: Tags used for the motion control attribute of instructions should only be used once. Re-use of the motion control tag in other instructions can cause unintended operation. This may result in damage to equipment or personal injury.

Available Languages

Ladder Diagram



Function Block

This instruction is not available in function block.

Structured Text

```
MCSR(CoordinateSystem, MotionControl);
```

Operands

Ladder Diagram and Structured Text

Operand	Type	Format	Description
Coordinate System	COORDINATE_SYSTEM	Tag	Name of the axis, which provides the position input to the Output Cam. Ellipsis launches Axis Properties dialog.
Motion Control	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.

Coordinate System

The Coordinate System operand specifies the set of motion axes that define the dimensions of a Cartesian coordinate system. For this release the coordinate system supports up to three (3) primary axes. Only the axes configured as primary axes (up to 3) are included in the coordinate velocity calculations.

Motion Control

The following control bits are affected by the MCSR instruction.

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- Quick Start Steps
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 - Logix Designer Application Instruction Set
 - Interpret the Attribute Tables
 - Array Concepts
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 - Motion Configuration

Mnemonic	Description
.EN (Enable) Bit 31	The Enable bit is set when the rung transitions from false to true. It resets when the rung transitions from true to false.
.DN (Done) Bit 29	The Done bit sets when the coordinated shutdown reset is successfully initiated. It resets when the rung transitions from true to false.
.ER (Error) Bit 28	The Error bit sets when the reset of the coordinated shutdown fails to initiate. It resets when the rung transitions from false to true.

This is a transitional instruction:

- In relay ladder, toggle the Rung-condition-in from false to true each time the instruction should execute.
- In structured text, condition the instruction so that it only executes on a transition.

Affects Math Status Flags

No

Major/Minor Faults

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

Execution

Ladder Diagram

Condition/State	Action Taken
Prescan	The .EN, .DN, .ER, and .IP bits are cleared to false.
Rung-condition-in is false	The .EN bit is cleared to false if either the .DN or .ER bit is true.
Rung-condition-in is true	The .EN bit is set to true and the instruction executes.
Postscan	N/A

Structured Text

Condition/State	Action Taken
Prescan	See Prescan in the 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 the Ladder Diagram table.

MCSR Changes to Status Bits:

Status Bits provide a means for monitoring the progress of the motion instruction. There are three types of Status bits that provide pertinent information. They are: Axis Status bits, Coordinate System Status bits, and Coordinate Motion Status bits. When the MCS instruction initiates, the status bits undergo the following changes.

- ✓ [Motion Configuration Instructions](#)
- ▷ [Motion Event Instructions](#)
- ▷ [Motion Group Instructions](#)
- ▷ [Motion Move Instructions](#)
- ▷ [Motion State Instructions](#)
- ▲ [Multi-Axis Coordinated Motion Instructions](#)

[Master Driven Coordinated Control \(MDCC\)](#)

[Motion Calculate Transform Position \(MCTP\)](#)

[Motion Coordinated Change Dynamics \(MCCD\)](#)

[Motion Coordinated Circular Move \(MCCM\)](#)

[Motion Coordinated Transform with Orientation \(MCTO\)](#)

[Motion Coordinated Path Move \(MCPM\)](#)

[Motion Calculate Transform Position with Orientation \(MCTPO\)](#)

[Motion Coordinated Linear Move \(MCLM\)](#)

[Motion Coordinated Shutdown \(MCSD\)](#)

[Motion Coordinated Shutdown Reset \(MCSR\)](#)

[Motion Coordinated Stop \(MCS\)](#)

[Motion Coordinated Transform \(MCT\)](#)

[Speed, acceleration, deceleration, and jerk enumerations for coordinated motion](#)

[Status Bits for Motion Instructions \(MCLM, MCCM\) when MDCC Is Active](#)

[Change between master driven and time driven modes for Coordinated Motion instructions](#)

[Choose a Termination Type](#)

[Common Action Table for Slave Coordinate System and Master Axis](#)

[Input and Output Parameters Structure for Coordinate System Motion Instructions](#)

[Returned Calculated Data Parameter for Coordinated System Motion Instruction](#)
- file:///C:/program files (x86)/rockwell software/studio 5000/help/enu/v32/rs5000/15052.htm

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Axis Status Bits

Bit Name	Meaning
CoordinatedMotionStatus	No effect

Coordinate System Status Bits

Bit Name	Meaning
ShutdownStatus	Clears the Shutdown status bit.

Coordinated Motion Status Bits

Bit Name	Meaning
MovePendingStatus	Flushes instruction queue and clears status bit.
MovePendingQueueFullStatus	Flushes instruction queue an clears status bit.

Examples

Ladder Diagram



Structured Text

MCSR(myMcsrCoordinateSystem,myMcsrMotionControl);

See also

[Structured Text Syntax](#)

[Motion Error Codes \(.ERR\)](#)

[Multi-Axis Coordinated Motion Instructions](#)

[Common Attributes](#)

[Structured Text Syntax](#)

- ▷ [Logical and Move Instructions](#)
- ▷ [Program Control Instructions](#)
- ▷ [Sequencer Instructions](#)
- ▷ [Special Instructions](#)
- ▷ [Timer and Counter Instructions](#)
- ▷ [Trigonometric Instructions](#)
- ▷ [Process Control Instructions](#)
- ▷ [Select/Limit Instructions](#)
- ▷ [Sequential Function Chart \(SFC\) Instructions](#)
- ▷ [Statistical Instructions](#)
- ▷ [Safety Instructions](#)
- ▷ [Studio 5000 Logix Designer Glossary](#)