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# Motion Disarm Watch (MDW)

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 Disarm Watch (MDW) instruction to disarm watch-position event-checking for an axis. This instruction has the effect of clearing both the Watch Event Status and Watch Armed Status bits in the axis data structure. Executing this instruction also clears the In Process bit associated with the controlling Motion Arm Watch (MAW) instruction.

## Available Languages

## Ladder Diagram

Use the Motion Disarm Watch (MDW) instruction to disarm watch-position event-checking for an axis. This instruction has the affect of clearing both the Watch Event Status and Watch Armed Status bits in the axis data structure. Executing this instruction also clears the In Process bit associated with the controlling Motion Arm Watch (MAW) instruction.

## Function Block

This instruction is not available in function block.

## Structured Text

```
MDW(Axis,MotionControl);
```

## Operands

## Ladder Diagram and Structured Text

Operand	Type	Type	Format	Description
	<b>CompactLogix 5370, Compact GuardLogix 5370, Compact GuardLogix 5380, CompactLogix 5380, CompactLogix 5480</b>	<b>ControlLogix 5570, GuardLogix 5570, ControlLogix 5580, and GuardLogix 5580 controllers</b>		
Axis	AXIS_CIP_DRIVE	AXIS_CIP_DRIVE  AXIS_SERVO  AXIS_SERVO_DRIVE  AXIS_GENERIC_DRIVE  AXIS_GENERIC  <b>Tip:</b> 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.

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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 to true when the rung makes a false-to-true transition and remains set to true until the servo message transaction is completed and the rung goes false.
.DN (Done) Bit 29	It is set to true when the axis watch event checking has been successfully disarmed.
.ER (Error) Bit 28	It is set to true to indicate that the instruction detected an error, such as if you specified an unconfigured axis.

## Description

The MDW instruction cancels watch position event checking set up by a previous Motion Arm Watch (MAW). The Disarm Watch Position instruction requires no parameters; simply enter or select the desired physical axis.

If the targeted axis does not appear in the list of available axes, the axis has not been configured for operation. Use the Tag Editor to create and configure a new axis.

To successfully execute a MDW instruction, the targeted axis must be configured as either a Servo or Feedback Only axis. Otherwise, the instruction errs.

Important:

The instruction execution may take multiple scans to execute because it requires multiple coarse updates to complete the request. The Done (.DN) bit is not set immediately, 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, .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

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## 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.

## 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.

## Status Bits

### MDW Changes to Status Bits

Bit Name	State	Meaning
WatchEventArmedStatus	FALSE	The axis is not looking for a watch position event.
WatchEventStatus	FALSE	The previous watch event is cleared.

## Examples

When the input conditions are true, the controller disarms watch-position event-checking for axis1.

## Ladder Diagram



## Structured Text

```
MDW(Axis1,MDW_1);
```

## See also

[Motion Event Instructions](#)

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

[Common Attributes](#)

[Structured Text Syntax](#)

[MDW Flow Chart](#)