

Example data event type trigger conditions

The following examples show different conditions for a data event trigger.

Example: Greater than and Tolerance Range

For a data event trigger using the **Greater than** condition, the trigger will execute every time the device variable is greater than the defined value. You can use the **On Edge** option with a corresponding **Tolerance Range** to limit the overall condition being met to include the concept of resetting the event condition.

The screenshot shows the 'Trigger Event' configuration window with the following settings:

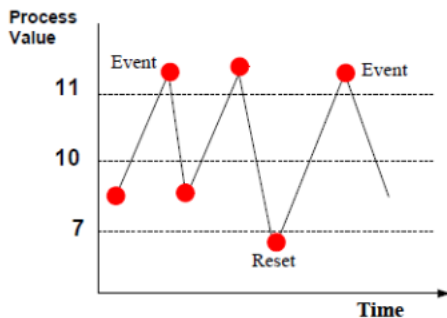
- Event: Local Variables
- Static Variables: Static Variables
- Settings: Settings
- Details: Details
- Trigger Event Type: Data
- Variable Name: Local CPU 1.D[5]
- Priority (ms):
- Variable Type: INT2
- Condition: Greater than
- Value: 10
- Tolerance Range: 3
- Deadband Range:
- On Edge: ☒

Example: The condition is **Greater than**, the value is 10, and a tolerance range of 3.

Explanation:

- The trigger will execute when the condition is true, Local CPU 1.D[5] > 10.
- Since a tolerance range is used, the trigger will not execute again until it is reset.
- The trigger will reset when the Local CPU 1.D[5] reaches the condition value minus the tolerance range value, which in this case is 7 (10 minus 3).

The following illustrates **Greater than**, the value is 10, and a tolerance range of 3:



Where:

- ● are sampled values of Local CPU 1.D[5].
- Event indicates the trigger will execute.
- Reset indicates the trigger event condition has been reset and the trigger will execute again when Local CPU 1.D[5] > 10.

If you do not specify a Tolerance Range or a Deadband Range with the **Greater than** condition, the trigger will execute every time the variable is greater than the defined value.

Example: Less than and Tolerance Range

For a data event trigger using the **Less than** condition, the trigger will execute every time the device variable is less than the defined value. You can use the **On Edge** option with a corresponding **Tolerance Range** to limit the overall condition being met to include the concept of resetting the event condition.

Event: Local Variables | Static Variables | Settings | Details

Trigger Event Type: Data

Variable Name: Local CPU 1.D[5] Priority (ms):

Variable Type: INT2

Condition: Less than

Value: 10

Tolerance Range: 3

Deadband Range:

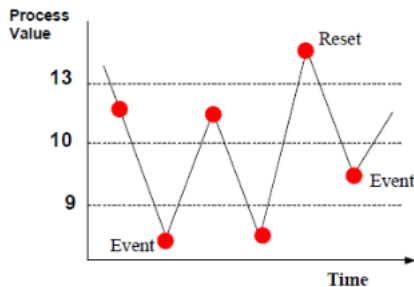
On Edge: ☒

Example: The condition is **Less than**, the value is 10, and a tolerance range of 3.

Explanation:

- The trigger will execute when the condition is true, $\text{Local CPU 1.D[5]} < 10$.
- Since a tolerance range is used, the trigger will not execute again until it is reset.
- The trigger will reset when the Local CPU 1.D[5] reaches the condition value plus the tolerance range value, which in this case is 13 (10 plus 3).

The following illustrates **Less than**, the value is 10, and a tolerance range of 3.



Where:

- ● are sampled values of Local CPU 1.D[5].
- Event indicates the trigger will execute.
- Reset indicates the trigger event condition has been reset and the trigger will execute again when $\text{Local CPU 1.D[5]} < 10$.

If you do not specify a Tolerance Range or a Deadband Range with the **Less than** condition, the trigger will execute every time the variable is less than the defined value.

Example: Equal to

For a data event trigger using the **Equal to** condition, the trigger will execute every time the device variable is equal to the defined value.

Event: Local Variables | Static Variables | Settings | Details

Trigger Event Type: Data

Variable Name: Local CPU 1.D[5] Priority (ms):

Variable Type: INT2

Condition: Equal to

Value: 10

Tolerance Range:

Deadband Range:

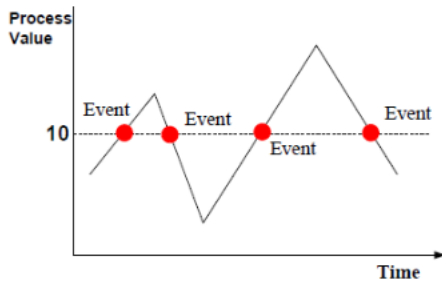
On Edge: ☐

Example: The condition is **Equal to** and the value is 10.

Explanation:

- In the case of an **Equal to** condition, the event condition will be reset on either side of the condition.
- Note that **On Edge** is always on when the condition is set to **Equal to**.

The following illustrates **Equal to** and the value is 10.



Where:

- are sampled values of Local CPU 1.D[5].
- Event indicates the trigger will execute.
- The condition resets when D[5] = 10.

Example: Greater than and Deadband Range

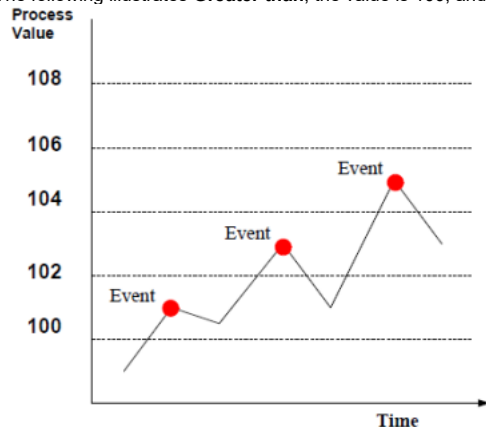
For a data event trigger using the **Greater than** condition, the trigger will execute every time the device variable is greater than the defined value. You can use the **On Edge** option with a corresponding **Deadband Range** to limit the overall condition being met to include the concept of resetting the event condition.

Example: The condition is **Greater than**, the value is 100, and a deadband range of 2.

Explanation:

- If Local CPU 1.D[5] = 101, then the trigger will execute since the condition is true.
Then if Local CPU1.D[5] assumes another value where current Local CPU 1.D[5] - previous Local PU 1.D[5] > 2, the trigger will execute.

The following illustrates **Greater than**, the value is 100, and a deadband range of 2.



If you specify a **Deadband Range** value instead of a **Tolerance Range** value, the trigger will execute if the difference between any 2 successive values exceeds the deadband range value. The deadband range value is an absolute value and not a percentage.