

Alarms

This section allows you to specify the alarm inputs and the response to these sensors.

The screenshot shows the Siemens STEP 7 HW Config software interface. The left sidebar contains a tree view of configuration options, with 'Inputs/Outputs/Sensors' expanded and 'Alarms' selected. The main workspace displays a table of sensor configurations. Annotations with yellow callouts and blue arrows provide a step-by-step guide:

- Specifying the desired port number:** Points to the 'Input Number' column in the sensor table.
- Saving changes:** Points to the 'Save' button (floppy disk icon) in the top right corner.
- Select the functionality of the specified port:** Points to the 'Sensor type' column in the sensor table.
- Activation field of the selected sensor:** Points to the 'Sensor name' column in the sensor table.

The sensor table contains the following data:

Sensor name	Input Number	Sensor type
Emergency Button	15	Normally closed
Shock Sensor	3	Normally opened
X: Servo driver ready	11	Normally closed
X2: Servo driver ready	12	Normally closed
Y: Servo driver ready	13	Normally closed
Z: Servo driver ready	0	Normally opened
A: Servo driver ready	0	Normally opened
B: Servo driver ready	0	Normally opened
C: Servo driver ready	0	Normally opened
Air Pressure	0	Normally opened
Gas Pressure	0	Normally opened
Oxygen Pressure	0	Normally opened
Coolant	0	Normally opened
Safety Switch	0	Normally closed
Motor Short Circuit	0	Normally opened
Spindle Driver Ready	0	Normally opened
Servo driver(s) Alarm	0	Normally opened

The selected sensor is activated by setting the “V” symbol in the corresponding field.

Sensors

Sensor name	Input Number	Sensor type
Emergency Button <input checked="" type="checkbox"/>	15	Normally closed
Shock Sensor <input type="checkbox"/>	3	Normally opened Normally closed
X: Servo driver ready <input type="checkbox"/>	11	Normally closed
X2: Servo driver ready <input type="checkbox"/>	12	Normally closed
Y: Servo driver ready <input type="checkbox"/>	13	Normally closed
Z: Servo driver ready <input type="checkbox"/>	0	Normally opened
A: Servo driver ready <input type="checkbox"/>	0	Normally opened

Saving changes

The input number on the controller board is set in the corresponding field "Inputs Number". Numbering of inputs can be found in the documentation for the selected window controller.

The screenshot shows the 'Sensor configuration' window with the following table:

Sensor name	Input Number	Sensor type
Emergency Button <input checked="" type="checkbox"/>	15	Normally closed
Shock Sensor <input type="checkbox"/>	3	Normally opened
X:Servo driver ready <input type="checkbox"/>	11	Normally closed
X2:Servo driver ready <input type="checkbox"/>	12	Normally closed
Y:Servo driver ready <input type="checkbox"/>	13	Normally closed
Z:Servo driver ready <input type="checkbox"/>	0	Normally opened
A:Servo driver ready <input type="checkbox"/>	0	Normally opened

A yellow callout box with the text 'Saving changes' and a blue arrow pointing to a floppy disk icon in the top right corner of the window.

The type of the sensor is specified in the corresponding field `""`. There are two types of input sensors.

Normally open - the sensor in the rest position has not closed contacts and in the course of operation the sensor contacts are closed. Normally closed - the sensor in the rest position has closed contacts and during the operation, the sensor contacts are opened.

Sensor name	Input Number	Sensor type
Emergency Button <input checked="" type="checkbox"/>	15	Normally closed
Shock Sensor <input type="checkbox"/>	3	Normally opened
X:Servo driver ready <input type="checkbox"/>	11	Normally closed
X2:Servo driver ready <input type="checkbox"/>	12	Normally closed
Y:Servo driver ready <input type="checkbox"/>	13	Normally closed
Z:Servo driver ready <input type="checkbox"/>	0	Normally opened
A:Servo driver ready <input type="checkbox"/>	0	Normally opened

Table of alarm sensors

Name of alarm sensor	Functional of sensor
Emergency Button	Emergency shutdown button. When the button is pressed, all machine actions will be stopped.
Shock sensor	Tool holding sensor. Usually, this sensor is installed directly in the place of attachment of the instrument and is designed to protect the tool against damage when the tool hits the obstacle.
X:Servo drive ready	The signal generator of the signal for readiness to move the drive along the X coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
X2:Servo drive ready	The signal generator of the signal for readiness to move the drive along the Y coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
Y:Servo drive ready	The signal generator of the signal for readiness to move the drive along the Z coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
Z:Servo drive ready	The signal generator of the signal for readiness to move the drive along the Z coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
A:Servo drive ready	The signal generator of the signal for readiness to move the drive along the A coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
B:Servo drive ready	The signal generator of the signal for readiness to move the drive along the B coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
C:Servo drive ready	The signal generator of the signal for readiness to move the drive along the C coordinate. As a rule, the source of the signal is directly the drive of the corresponding coordinate.
Air Pressure	A sensor for the availability of sufficient pressure or air flow in the system. Typically, this sensor is installed directly at the entrance to the machine.
Gas Pressure	A sensor for the availability of sufficient pressure or gas flow in the system. Typically, this sensor is installed directly at the entrance to the machine.
Oxygen Pressure	A sensor for the availability of sufficient pressure or oxygen flow in the system. Typically, this sensor is installed directly at the entrance to the machine.

Name of alarm sensor	Functional of sensor
Coolant	A sensor for the availability of sufficient pressure or the flow rate of cooling in the system. Typically, this sensor is installed directly at the entrance to the machine.
Safety swith	A safety switch is a sensor that does not seal the machine casing. As an option - a sensor for opening the door of the electrical cabinet.
Motor Short Circuit	The motor short-circuit sensor is a short-circuit sensor directly in the motor. This sensor is usually presented as an option when ordering an engine. If your engine does not have such a sensor, just do not activate this function.
Shpindle Driver Ready	The spindle driver is ready for operation. This sensor is usually installed directly in the spindle drive, but it can also be done on its own.
Servo Driver(s) Alarm	Accident of any of the drives installed on the machine. As a rule, the signal of an accident is directly the drive of the engine.

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