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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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1 Notes about this Documentation

1.1 Copyright

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1.2 Symbols

 **DANGER**

Personal Injury!

Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **DANGER**

Personal Injury Caused by Electric Current!

Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING**

Personal Injury!

Indicates a moderate-risk, potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION**

Personal Injury!

Indicates a low-risk, potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Damage to Property!

Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

NOTICE

Damage to Property Caused by Electrostatic Discharge (ESD)!

Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

Note

Important Note!

Indicates a potential malfunction which, if not avoided, however, will not result in damage to property.



Information

Additional Information:

Refers to additional information which is not an integral part of this documentation (e.g., the Internet).

1.3 Number Notation

Table 1: Number notation

Number code	Example	Note
Decimal	100	Normal notation
Hexadecimal	0x64	C notation
Binary	'100' '0110.0100'	In quotation marks, nibble separated with dots (.)

1.4 Font Conventions

Table 2: Font conventions

Font type	Indicates
<i>italic</i>	Names of paths and data files are marked in italic-type. e.g.: <i>C:\Programme\WAGO-I/O-CHECK</i>
Menu	Menu items are marked in bold letters. e.g.: Save
>	A greater-than sign between two names means the selection of a menu item from a menu. e.g.: File > New
Input	Designation of input or optional fields are marked in bold letters, e.g.: Start of measurement range
“Value”	Input or selective values are marked in inverted commas. e.g.: Enter the value “4 mA” under Start of measurement range .
[Button]	Pushbuttons in dialog boxes are marked with bold letters in square brackets. e.g.: [Input]
[Key]	Keys are marked with bold letters in square brackets. e.g.: [F5]

2 **WagoLibCpuUsage.lib**

This library enables you to determine the CPU load (usage).

2.1 CPU_Usage

The CPU_Usage function block enables you to determine CPU usage. This is determined in one-second intervals.

Current processor usage is displayed at the SYS-LED and using device diagnostics (WBM), even without employing the WagoLibCpuUsage.lib block in a CODESYS project.

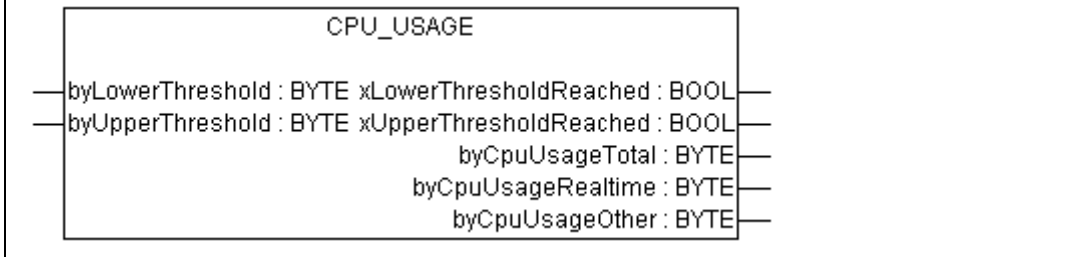
Indication by SYS-LED:

- Usage < 80 %: Green
- Usage > 80 % and < 90 %: Yellow
- Usage > 90 %: Red

Category	Utility
Name	CPU_Usage
Type	Function block
Name of library	WagoLibCpuUsage.lib
Required libraries	---
Applicable to	750-820x

Input parameter		
Name	Data type	Description
byLowerThreshold	BYTE	Limit for transition from "low" to "medium" usage (standard default value: 80%).
byUpperThreshold	BYTE	Limit for transition from "medium" to "high" usage (standard default value: 90%).

Output parameter		
Name	Data type	Description
xLowerThreshold Reached	BOOL	Indicates whether the usage level has exceeded the lower limit (standard default value: 80%).
xUpperThreshold Reached	BOOL	Indicates whether the usage level has exceeded the upper limit (standard default value: 90%).
byCpuUsageTotal	BYTE	Total usage as a percentage (sum of realtime and other)
byCpuUsageRealtime	BYTE	Usage by realtime processes in percent
byCpuUsageOther	BYTE	Usage by non-realtime processes in percent

Graphical illustration**Description**

Only the value for `byCpuUsageRealtime` is taken into account on indication at the SYS-LED and limit violation, as this is the significant value for a system with priority-controlled preemption.

(As a rule of thumb, all deadlines can usually be guaranteed with a usage level below 80%).

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