CPU modules

4

4.1 CPU module CPU555

4.1.1 Areas of application

CPU555 is a graphically freely configurable processor module, enabling the implementation of sophisticated highly dynamic control functions.

Use cases include:

- Roll nip controls
- Hydraulic positioning functions
- Strip cooling systems
- HVDCT control systems (high voltage DC transmission)

Note

Note the following for the CPU555:

- CPU555 can only be used in the rack UR6021. A maximum of eight CPU555 can be inserted in one UR6021.
- CPU555 can only be configured with a version V8.1 or higher of the D7-SYS automation software.
- The floating point unit used supports Floating Point data types, operations and exception handling as defined in IEEE Standard 754 (2008). Floating point numbers are calculated internally with 80 bits. This results in fewer rounding errors as compared to calculations with only 64 bits (CPU551).
- The CPU555 does not apply substitute values for invalid real values. This method provides higher performance. Typically, invalid real values result from corrupted data from external interfaces. Calculating with invalid real values can have unintended results. Checking the input values with the CHK_R function block is recommended. With the CHK_R function block, you can assign a substitute value for an error scenario.

Note

Note the following for operation with other CPUs:

- Operation of the CPU555 together with a CPU551 is **not** approved.
- Operation of the CPU555 together with a CPU550 is **not** approved.

Note

Note the following for operation with modules:

- Operation of the CPU555 with the CP5100 and CP50M0 modules that are being phased out is not possible.
- Use of a CP50M1 in combination with a CPU555 is only possible as of a firmware version ≥ 4
- Use of a CP51M1 in combination with a CPU555 is only possible as of a functional status ≥ 8
- Use of a CP52A0 with article number 6DD1660-0BH0 in combination with a CPU555 is only possible as of a functional status ≥ 9
- Use of a CP53M0 in combination with a CPU555 is only possible as of a functional status ≥ 9
- Use of an SM500 in combination with a CPU555 is only possible as of a functional status ≥ 13

4.1.2 Control and display elements

LED display

The processor number, states and faults are displayed using a 5x7 dot matrix LED array.

Acknowledge button S1

This button has two functions:

- Clearing the fault display:

  The acknowledge button can be used to clear sporadic or non-critical fault displays on the 5x7 dot matrix LED. An additional fault is displayed after the first one has been acknowledged.

- Digital signal input can be evaluated using the **ASI** function block.