

FAQ about SINAMICS DCM

Question:

How can I monitor the speed setpoint and actual value ($n_{\text{set}} = n_{\text{act}}$)?

Answer:

Refer also to the function diagrams in section 2 of the List Manual: sheets 3152, 6810, 8020, 2055.

Only a few parameter settings are necessary to implement an $n_{\text{set}} = n_{\text{act}}$ signal for the speed, which is particularly useful when retrofitting main spindle drives.

The setpoint upstream of the ramp function generator in the SINAMICS DCM is taken for comparison with the actual value. The ramp generator times should be set so that the actual speed is able to follow the generator output. If the ramp function generator is formed outside the SINAMICS DCM and the ramp generator times in the SINAMICS DCM are set to zero, the $n_{\text{set}} = n_{\text{act}}$ condition is always met in the SINAMICS DCM and it is not possible to implement a typical SINAMICS DCM signal.

Connector for the speed setpoint, sheet 3152; CO r52192 Ramp function generator (1) input (connector recommended for comparison)

Connector for the actual speed: CO r52167, sheet 6810(Speed controller (2))

The “setpoint/actual value deviation 2” signal is evaluated, sheet 8020: (Messages (1)), appears at BO r53025.2.

Settings:

p50596 = 52192

p50597 = 52167

p50376[D] = Magnitude of the setpoint/actual value deviation

p50377[D] = Hysteresis of the setpoint/actual value deviation

p50378[D] = ON delay time for the signal

If the deviation is less than the value set in p50376[D] as a percentage of the maximum speed for the time p50378[D], BO r53025.2 receives an H signal.

The binector BO r53025.2 signal output is high, e.g. at the binary output, terminal X177.20 has a high signal if the $n_{\text{set}} = n_{\text{act}}$ condition is met, see sheet 2055 (Digital outputs)

The BO whose signal state appears at terminal X177.20 is set in p50772.

Set p50772 = 53025.2.