■ Introduction

The wobble function is primarily used for synthetic yarn winding applications. The wobble option is to be installed in the VLT controlling the traverse drive. The traverse drive VLT will move the yarn back and forth in a diamond pattern across the surface of the yarn package. To prevent a buildup of yarn at the same points at the surface, this pattern must be altered. The wobble option can accomplish this by continuously varying the traverse velocity in a programmable cycle.

The wobble function is created by superimposing a delta frequency around a center frequency. To compensate for the inertia in the system a quick frequency jump can be included. Especially suitable for elastic yarn applications the option features a randomized wobble ratio.

NB!
Any change in settings of reference of parameters 702-709 during running will only take effect at the start of a new sequence (elapse of t_{wobble}, parameter 705).

■ Parameter description

The „Center Frequency" setting is no longer in Par. 701 and therefore also no longer limited to 120Hz.
The setting of „Center Frequency" now takes place via the normal reference handling parameters 200 to 205 (see manual MG.28.EX.YY).
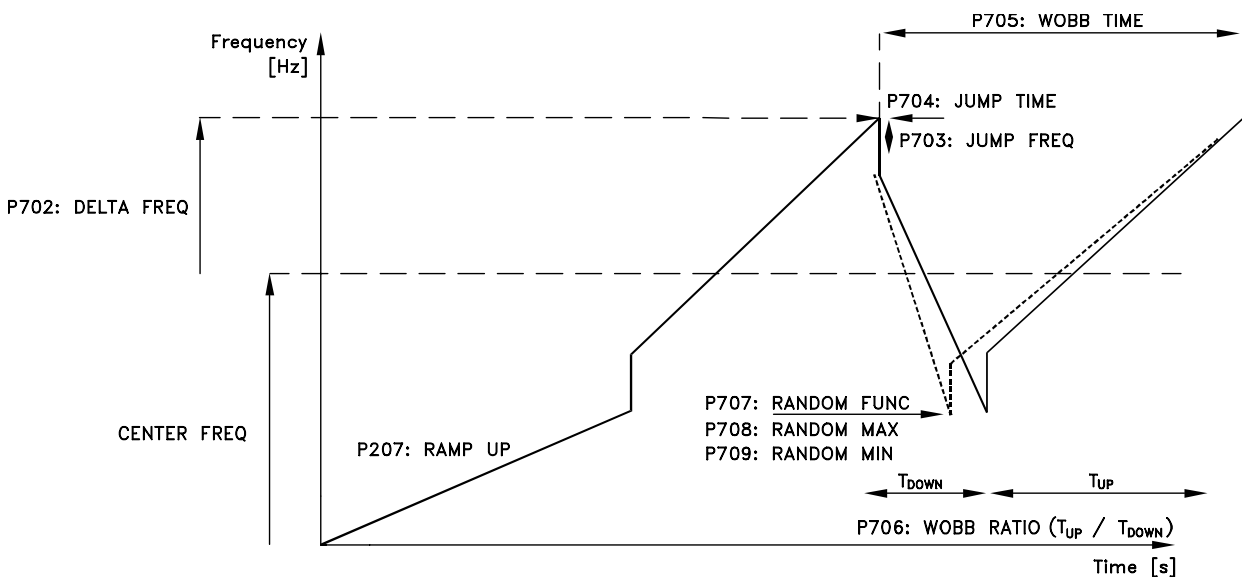
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100	Configuration (CONFIG. MODE)

Value:

✫	Speed regulation, open loop (SPEED OPEN LOOP)	[0]
	Speed regulation, closed loop (SPEED CLOSED LOOP)	[1]
	Process regulation, closed loop (PROCESS CLOSED LOOP)	[3]
	Torque regulation, open loop (TORQUE OPEN LOOP)	[4]
	Torque regulation, speed feedback (TORQUE CONTROL SPEED)	[5]

Function:
The parameter is used for selecting the configuration to which the VLT frequency converter is to be adapted. This parameter is identical to parameter 100 in the standard VLT2800 software.

Description of choice:
The wobble function can be active only by selecting *Speed, open loop mode* [0]. The wobble option parameters: 700 - 709 are still visible in the other modes, but not active.

700   Wobble mode (WOBB MODE)

Value:

✶ Wobble mode OFF (OFF)	[0]
Wobble mode ON (ON)	[1]

Function:

The standard speed open loop mode set in parameter 100 is extended with a wobble function. In this parameter it is possible to select or deselect the wobble function. Deselecting the wobble function makes the drive operate in the standard speed open loop mode.

Description of choice:

Select *OFF* [0] to disable the wobble function. The speed open loop mode acts as in the standard VLT2800 software.
Select *ON* [1] to enable the wobble function.

NB!
The "Center Frequency" setting is no longer in Par. 701 and therefore also no longer limited to 120 Hz. The setting of "Center Frequency" now takes place via the normal reference handling parameters 200 to 205 (see manual MG.28.EX.XX).

702 Delta frequency (DELTA FREQ)

Value:

0.0 - 20.0 Hz	✶ 5.0Hz

Function:

The delta frequency is determining the magnitude of the wobble frequency. The delta frequency is superimposed on the center frequency. Parameter 702 is selecting both the positive and negative delta frequency. Parameter 702 *can* be set higher than the setting of the center frequency, but in this case the system will automatically limit the par. 702 setting to the level of the center frequency.
The initial ramp up time from standstill until the wobble sequence is running is determined by parameter 207.
The delta frequency can also be controlled by analog input. If „Wobbler Delta Freq." is selected as analog input (Par. 308 or Par. 314, see manual MG.28.EX.YY), the value selected in Par. 702 equals 100% analog input.
Ex. analog input = 4-20mA, Delta freq. Par. 702 = 5 Hz => 4mA = 0 Hz and 20mA = 5 Hz.

Description of choice:

The frequency is specified in Hertz.

703   Jump frequency (JUMP FREQ)

Value:

0.0 - 25.0 Hz	✶ 0.0Hz

Function:

The jump frequency is used to compensate for the inertia in the traverse system.
If a jump in the output frequency is required in the top and in the bottom of the wobble sequence, the frequency jump is set in this parameter.
If the traverse system has a very high inertia a high jump frequency may create a torque limit warning or trip (warning/alarm 12) or an over voltage warning or trip (warning/alarm 7).

Description of choice:

The frequency is specified in Hertz and can be set to a max. of 2x delta frequency. if set higher, the system will automatically limit the setting to 2x delta frequency.

704 Jump time (JUMP TIME)

Value:

1 - 50 ms	✶ 1 ms

Function:

This parameter determines the slope of the jump ramp at the maximum and minimum wobble frequency.

Description of choice:

The time is specified in milliseconds.

705 Wobble time (WOBB TIME)

Value:

1.0 - 1000.0 s	✶ 10.0 s

Function:

This parameter determines the wobble sequence period.
Wobble time = t_{up} + t_{down}

Description of choice:

The time is entered in seconds.

706   Wobble ratio (WOBB RATIO)

Value:

0.1 - 10   ✷ 1

Function:

The ratio between the up time versus the down time of the wobble sequence is specified in this parameter.
Wobble ratio = t_{up}/t_{down},

Description of choice:

If the ratio *0.1* is selected:
t_{down} is 10 times greater than t_{up}.
If the ratio*10* is selected:
t_{up} is 10 times greater than t_{down}.

707 Random function (RANDOM FUNC)

Value:

✷ FIXED (FIX)   [0]
   RANDOM (RANDOM)   [1]

Function:

This parameter enables a randomized wobble ratio function. The wobble ratio in parameter 706 is not active if the random function is enabled.

Description of choice:

Select *FIX* [0] to disable the random function and use the wobble ratio set in parameter 706.

708   Random ratio max (RANDOM MAX)

Value:

0.1 - 10   ✷ 10.0

Function:

This parameter determines the maximum wobble ratio which the random function is allowed to choose.

Description of choice:

Enter the maximum allowed wobble ratio.

709 Random ratio min (RANDOM MIN)

Value:

0.1 - 10   ✷ 0.1

Function:

This parameter determines the minimum wobble ratio which the random function is allowed to choose.

Description of choice:

Enter the minimum allowed wobble ratio.