

[Anti-Jam Trigger Time] J E L E ★

Time to trigger an anti sequence when the pump has not been running.

This parameter can be accessed if **[Anti-Jam Auto Trig] J A E L** is set to **[Time] E , P E**.

Setting ()	Description
0...9,999 h	Setting range Factory setting: 24 h

[Anti-jam Torque] J E L L ★

Level of torque to trigger.

This parameter can be accessed if **[Anti-Jam Auto Trig] J A E L** is set to **[Torque] E r 9**.

Setting ()	Description
10...150%	Setting range Factory setting: 110%

[Anti-Jam Start Delay] J E L d ★

Delay to trigger when an overtorque is detected.

This parameter can be accessed if **[Anti-Jam Auto Trig] J A E L** is set to **[Torque] E r 9**.

Setting ()	Description
0...3,600 s	Setting range Factory setting: 10 s

[Anti-Jam Fwd Acc] J A E L ★

Anti-jam acceleration in forward.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E L** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E L** is not set to **[No] n a**.

Setting ()	Description
By default, with $\text{Inr} = 0.1$: 0.00...300.00 s	Setting range Factory setting: 3 s
If $\text{Inr} = 0.01$: 0.00...30.00 s	Setting range
If $\text{Inr} = 1$: 0.00...3000.00 s	Setting range

[Anti-Jam Fwd Dec] J d E L ★

Anti-jam deceleration in forward.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E L** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E L** is not set to **[No] n a**.

Setting ()	Description
By default, with $\text{Inr} = 0.1$: 0.00...300.00 s	Setting range Factory setting: 3 s
If $\text{Inr} = 0.01$: 0.00...30.00 s	Setting range
If $\text{Inr} = 1$: 0.00...3000.00 s	Setting range

[Anti-Jam Rv Acc] J A C r ★

Anti-jam acceleration in reverse.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
By default, with $inr = 0.1$: 0.00...300.00 s	Setting range Factory setting: 3 s
If $inr = 0.01$: 0.00...30.00 s	Setting range
If $inr = 1$: 0.00...3000.00 s	Setting range

[Anti-Jam Rv Dec] J d E r ★

Anti-jam deceleration in reverse.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
By default, with $inr = 0.1$: 0.00...300.00 s	Setting range Factory setting: 3 s
If $inr = 0.01$: 0.00...30.00 s	Setting range
If $inr = 1$: 0.00...3000.00 s	Setting range

[Anti-Jam Fwd Speed] J F d S ★

Anti-jam speed in forward.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
0.0...500.0 Hz	Setting range Factory setting: 0.0 Hz

[Anti-Jam Rv Speed] J r d S ★

Anti-jam speed in reverse.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
0.0...500.0 Hz	Setting range Factory setting: 0.0 Hz

[Anti-Jam Fwd Time] J F d t ★

Anti-jam time in forward.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
0...300 s	Setting range Factory setting: 1 s

[Anti-Jam Rv Time] J R U E ★

Anti-jam time in reverse.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
0...300 s	Setting range Factory setting: 1 s

[Anti-Jam Stop Time] J Z S E ★

Anti-jam time between forward and reverse.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
0...300 s	Setting range Factory setting: 0 s

[Anti-Jam Cycle Nb] J n b C ★

Anti-jam cycle number.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
1...100	Setting range Factory setting: 10

[Anti-Jam Max Seq] J A n n ★

Anti-jam maximum consecutive anti-jam sequence allowed.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
1...99	Setting range Factory setting: 2

[Anti-Jam Interval] J A n E ★

Anti-jam minimum time between 2 non-consecutive sequences.

This parameter can be accessed if:

- **[Anti-Jam Ext Trig] J E E C** is not set to **[No] n a**, or
- **[Anti-Jam Auto Trig] J A E C** is not set to **[No] n a**.

Setting ()	Description
0...3,600 s	Setting range Factory setting: 60 s

[Anti-Jam Error Resp] ЖПБ★

Anti-jam monitoring function response to a detected error.

This parameter can be accessed if:

- [Anti-Jam Ext Trig] ЖЕК is not set to [No] нә, or
- [Anti-Jam Auto Trig] ЖАЕК is not set to [No] нә.

Setting	Code / Value	Description
[Ignore]	нә	Detected error ignored
[Freewheel Stop]	ҮЕС	Freewheel stop Factory setting
[Per STT]	СЕТ	Stop according to [Type of stop] СЕТ parameter but without an error triggered after stop
[Fallback Speed]	ЛФФ	Change to fallback speed, maintained as long as the detected error persists and the run command has not been removed ⁽¹⁾
[Ramp stop]	рПР	Stop on ramp

Section 7.19

[Pump monitoring] - [Dry run]

[Dry run Monit] $\mathcal{D}r\mathcal{Y}r$ - Menu

Access

[Complete settings] → [Pump monitoring] → [Dry run Monit]

Dry Running Condition

A dry running condition occurs when the pump impeller is not totally submerged. Working in dry running during a long time can cause premature wear of the pump impeller.

Dry run occurs when there is excessive air in the suction pipe:

- Because the pump is not primed, or
- Due to excessive air leak in the suction line.

This significantly may reduce the bearings and seal life time due to high temperature raise and poor lubrication.

About This Menu

This function prevents the pump from operating in dry condition.

The dry running function monitors the flow using:

- a flow switch, or
- a set of 2 points (speed; power) for a flow estimation.

When using a flow switch, the dry running condition occurs when the switch is at a high level.

NOTE: It is recommended to use a flow switch that is open in case of a low flow and to use a digital input active at low level (DIxL). This allows you to stop the pump in case of a broken wire of the flow switch.

During the function setup, it is necessary to perform measurements at no-flow but with water in the system.

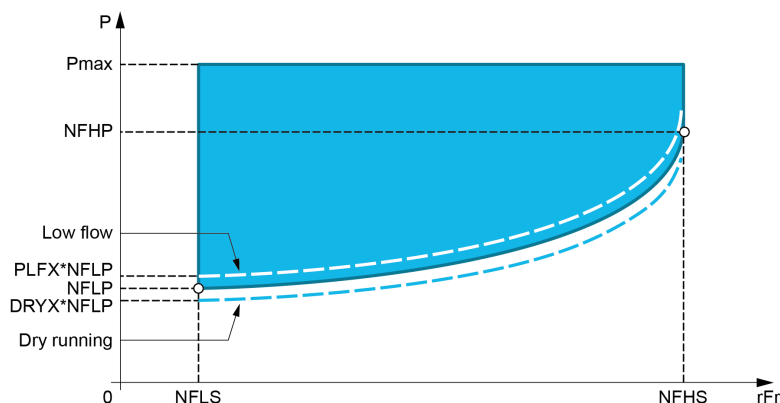
When using the flow estimation, the dry running condition occurs if the estimated flow is lower than the no-flow power curve by **[Dry Run Factor] $\mathcal{D}r\mathcal{Y}X$** .

The no-flow power curve is defined by a set of 2 points:

- Minimum speed **[Low Speed] $\mathcal{N}FLS$** ; Power at minimum speed **[Low Power] $\mathcal{N}FLP$**
- Maximum speed **[High Speed] $\mathcal{N}FHS$** ; Power at maximum speed **[High Power] $\mathcal{N}FHP$**

This no-flow power curve is also used by the pump low flow monitoring function.

NOTE: The no-flow power curve characterization shall be done after setting the motor control type.



In case of dry running conditions, this function will:

- Trigger a warning **[Drive Running Warning] $\mathcal{D}r\mathcal{Y}H$** if the dry running condition is present.
- Trigger an error **[Dry Run Error] $\mathcal{D}r\mathcal{Y}F$** if the dry running condition is present for a time longer than **[DryRun Error Delay] $\mathcal{D}r\mathcal{Y}d$** . After the error has been triggered, even if the detected error has been cleared, it is not possible to restart the pump before the end of the **[DryRun Restart Delay] $\mathcal{D}r\mathcal{Y}r$** .

NOTE: The detected error is not saved in case of a drive power OFF.

[DryRun Mode] *drYN*

Dry running mode.

Setting	Code / Value	Description
[No]	<i>no</i>	Not activated
[Switch]	<i>SWt</i>	Using sensor switch
[Power]	<i>Pwr</i>	Using the sensorless estimation

[Switch Select] *drYW*★

Dry running switches select.

This parameter can be accessed if **[DryRun Mode] *drYN*** is set to **[Switch] *SWt***.

Setting	Code / Value	Description
[No]	<i>no</i>	Not assigned Factory setting
[DI1]...[DI6]	<i>L , I ... L , I 6</i>	Digital input DI1...DI6
[DI11]...[DI16]	<i>L , I I ... L , I 16</i>	Digital input DI11...DI16, if VW3A3203 I/O extension module has been inserted

[Power Estim Value] *oPrW*★

Motor mechanical power estimation

This parameter can be accessed if **[DryRun Mode] *drYN*** is set to **[Power] *Pwr***.

Setting	Description
-327.68...327.67 kW	Setting range Factory setting: _

[Low Power] *nFLP*★

No-flow low power.

This parameter can be accessed if **[DryRun Mode] *drYN*** is set to **[Power] *Pwr***.

Setting ()	Description
0.00...327.67 kW	Setting range Factory setting: 0.00 kW

[Low Speed] *nFLS*★

No-flow low speed.

This parameter can be accessed if **[DryRun Mode] *drYN*** is set to **[Power] *Pwr***.

Setting ()	Description
0.00...500.0 Hz	Setting range Factory setting: 0.0 Hz

[High Power] *nFHP*★

No-flow high power.

This parameter can be accessed if **[DryRun Mode] *drYN*** is set to **[Power] *Pwr***.

Setting ()	Description
0.00...327.67 kW	Setting range Factory setting: 0.00 kW