

Parameters described in this page can be accessed by:

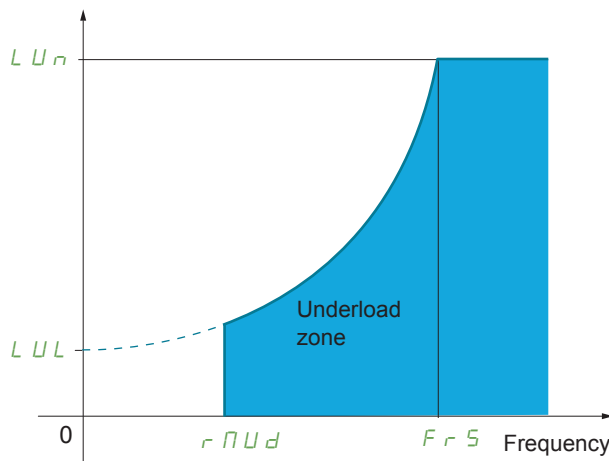
DRI- > CONF > FULL > FLT -

Process underload detected fault

A process underload is detected when the next event occurs and remains pending for a minimum time **[Unld T. Del. Detect.] (uL t)**, which is configurable:

- The motor is in steady state and the torque is below the set underload limit (**[Unld. Thr. 0. Speed.] (L u L)**, **[Unld. Thr. Nom. Speed.] (L u n)**, **[Unld. Freq. Thr. Det.] (r n u d)** parameters).
- The motor is in steady state when the offset between the frequency reference and motor frequency falls below the configurable threshold **[Hysteresis Freq. Att.] (S r b)**.

Torque as a % of the rated torque



Between zero frequency and the rated frequency, the curve reflects the following equation:

$$\text{torque} = L u L + \frac{(L u n - L u L) \times (\text{frequency})^2}{(\text{rated frequency})^2}$$

The underload function is not active for frequencies below **[Unld. Freq. Thr. Det.] (r n u d)**.

A relay or a logic output can be assigned to the signaling of this detected fault in the **[INPUTS / OUTPUTS CFG] (i - o -)** menu.

Code	Name / Description	Adjustment range	Factory setting
FLt -	[FAULT MANAGEMENT] (continued)		
uL d -	[PROCESS UNDERLOAD]		
uL t	[Unld T. Del. Detect.] Underload detection time delay. A value of 0 deactivates the function and makes the other parameters inaccessible.	0 to 100 s	0 s
L u n ★ ()	[Unld. Thr. Nom. Speed.] Underload threshold at rated motor frequency ([Rated motor freq.] (F r 5) page 86), as a % of the rated motor torque.	20 to 100%	60%
L u L ★ ()	[Unld. Thr. 0. Speed.] Underload threshold at zero frequency, as a % of the rated motor torque.	0 to [Unld. Thr. Nom. Speed.] (L u n)	0%
r n u d ★ ()	[Unld. Freq. Thr. Det.] Minimum frequency underload detection threshold.	0 to 599 Hz	0 Hz
S r b ★ ()	[Hysteresis Freq. Att.] Maximum deviation between the frequency reference and the motor frequency, which defines steady state operation.	0.3 to 599 Hz	0.3 Hz

Parameters described in this page can be accessed by:

DRI- > CONF > FULL > FLT - > DCI-

Code	Name / Description	Adjustment range	Factory setting
<p>u d L</p> <p>★</p> <p>no YES r n P F S t</p>	<p>[Underload Managmt.]</p> <p>Behavior on switching to underload detection.</p> <p>[Ignore] (no): Detected fault ignored [Freewheel] (YES): Freewheel stop [Ramp stop] (r n P): Stop on ramp [Fast stop] (F S t): Fast stop</p>		<p>[Freewheel] (YES)</p>
<p>F t u</p> <p>★</p> <p>(↻)</p>	<p>[Underload T.B. Rest.]</p> <p>This parameter cannot be accessed if [Underload Mangmt.] (u d L) is set to [Ignore] (no). Minimum time permitted between an underload being detected and any automatic restart. In order to allow an automatic restart, the value of [Max. restart time] (t R r) page 252 must exceed this parameter by at least one minute.</p>	0 to 6 min	0 min

★ These parameters only appear if the corresponding function has been selected in another menu. When the parameters can also be accessed and adjusted from within the configuration menu for the corresponding function, their description is detailed in these menus, on the pages indicated, to aid programming.

(↻) Parameter that can be modified during operation or when stopped.