Optidrive Applications Support Library

Application Note	AN-ODE-3-012
Title	Using Standby Mode
Related Products	Optidrive E3
Level **1**	1 – Fundamental - No previous experience necessary 2 – Basic – Some Basic drives knowledge recommended 3 – Advanced – Some Basic drives knowledge required 4 – Expert – Good experience in topic of subject matter recommended

Overview

Optidrive E3 three phase output drives features a built in "Standby Mode" function. This function disables the output of the inverter automatically when not required, and automatically enables it when required again. This can be used to save energy, and prevent damage to the connected motor.
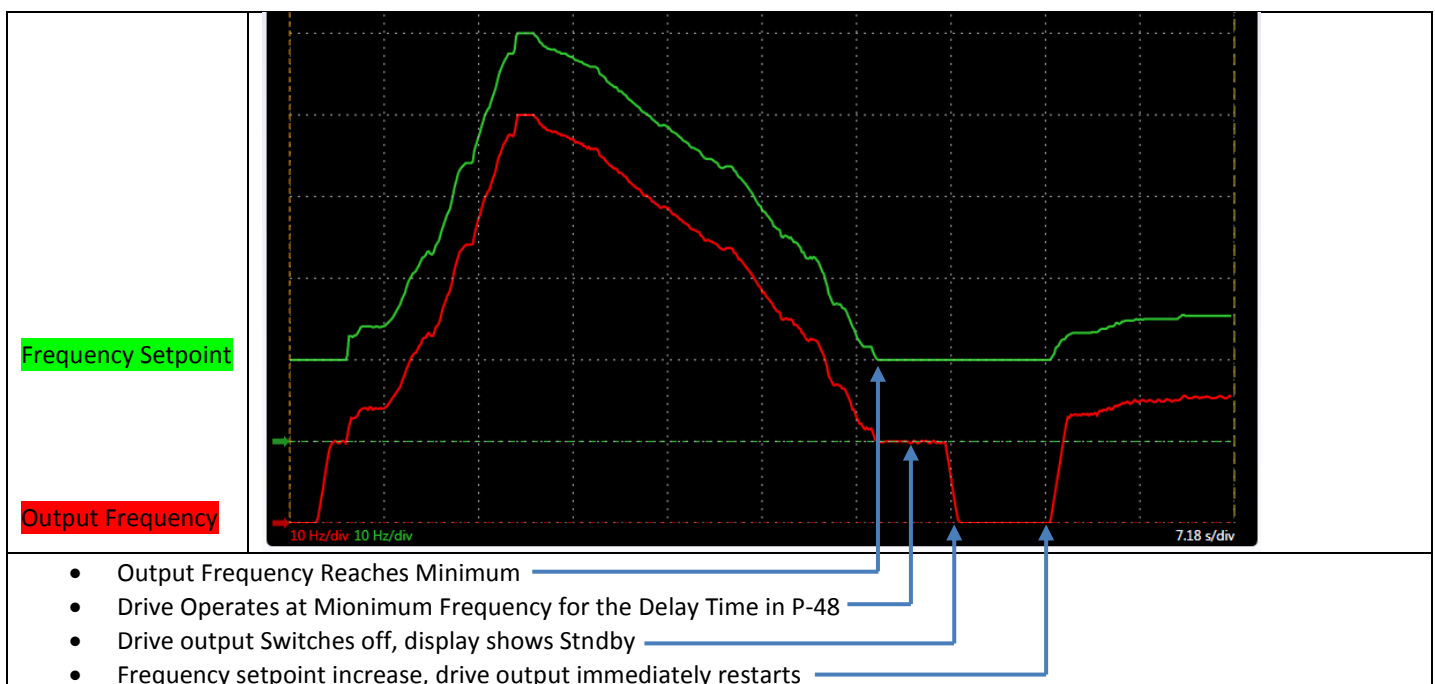
This document describes how to use this Standby function.
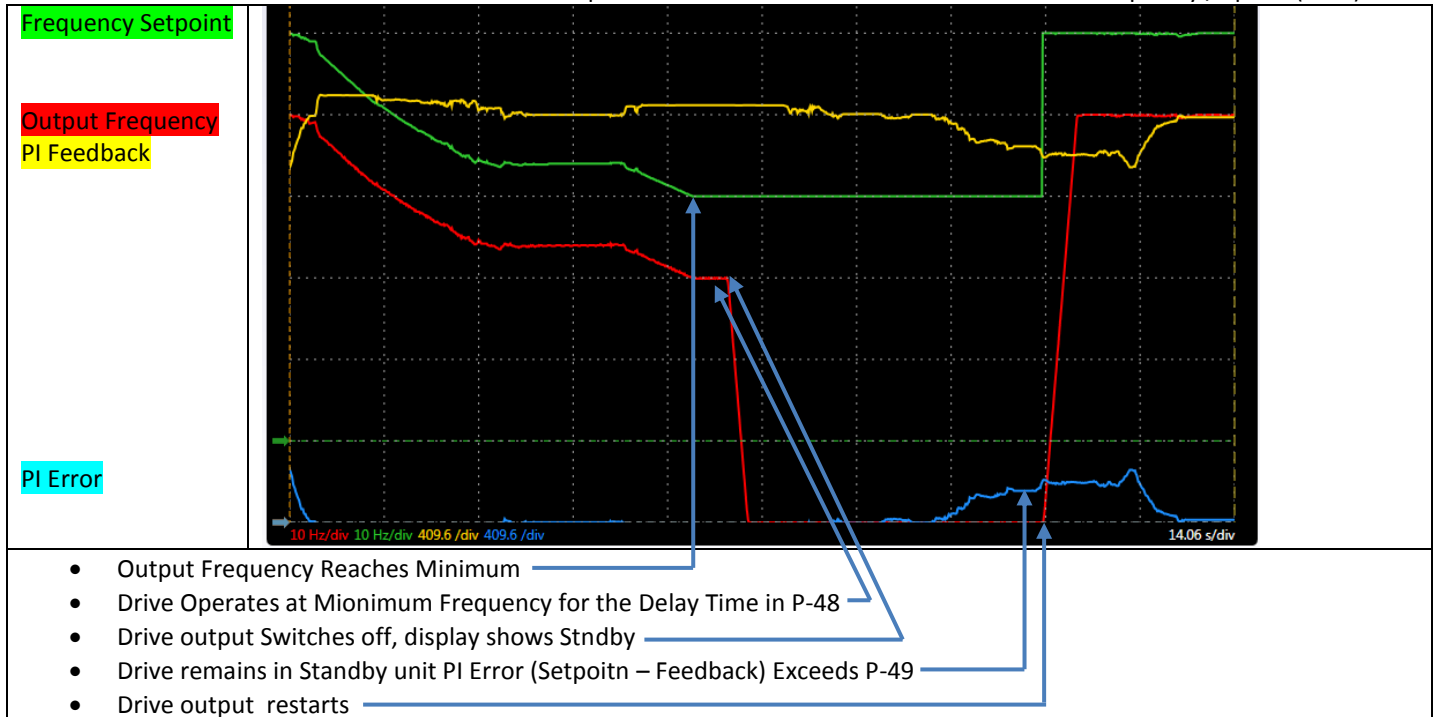
Standby Mode Operation

Optidrive E3 Standby Mode operates as follows:-
- When operating in any control mode except PI Control Mode (P-12 = any setting except 5 and 6)
  - Standby Mode can be enabled by setting parameter P-48 > 0.0 seconds
  - The drive will switch to Standby when the output frequency remains at Minimum Frequency / Speed (P-02) for a time period equal to or greater than the time set in P-48.
  - The drive will restart normal operation immediately when the frequency setpoint rises above minimum frequency.

The graph below shows the operation :-

- Output Frequency Reaches Minimum
- Drive Operates at Mionimum Frequency for the Delay Time in P-48
- Drive output Switches off, display shows Stndby
- Frequency setpoint increase, drive output immediately restarts

- When operating in PI Control Mode (P-12 = 5 or 6)
  - Standby Mode can be enabled by setting parameter P-48 > 0.0 seconds
  - The drive will switch to Standby when the output frequency remains at Minimum Frequency / Speed (P-02) for a time period equal to or greater than the time set in P-48.
  - When the drive enters Standby Mode, the Output of the PI Controller is set to zero.
  - The PI Controller will restart when the PI error (difference between the Setpoint and Feedback) exceeds the threshold level set in parameter P-49 PI Control Error Wake Up Level.
  - The drive will restart when the output of the PI controller exceeds the Minimum Frequency / Speed (P-02)

Frequency Setpoint

Output Frequency
PI Feedback

PI Error

10 Hz/div 10 Hz/div 409.6 /div 409.6 /div   14.06 s/div

- Output Frequency Reaches Minimum
- Drive Operates at Mionimum Frequency for the Delay Time in P-48
- Drive output Switches off, display shows Stndby
- Drive remains in Standby unit PI Error (Setpoitn – Feedback) Exceeds P-49
- Drive output restarts

Appendix

Revision History			
Issue	Comments	Author	Date
01	Document Creation	KB	30/10/15