



Optidrive Applications Support Library

Application Note	AN-ODE-2-011
Title	Using the Display Scaling Function
Related Products	Optidrive E2
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

In some applications, it can be desirable to scale the output display of the Optidrive E2 to show different units that are more useful or applicable to the application being performed. E.g. where the motor drives a load via a gearbox, the user may wish to display the output speed of the gearbox rather than that of the motor shaft. This can be done by using the display scaling function.

The custom display value is always scaled from the output motor speed.

Parameters

P-40 Display speed scaling factor

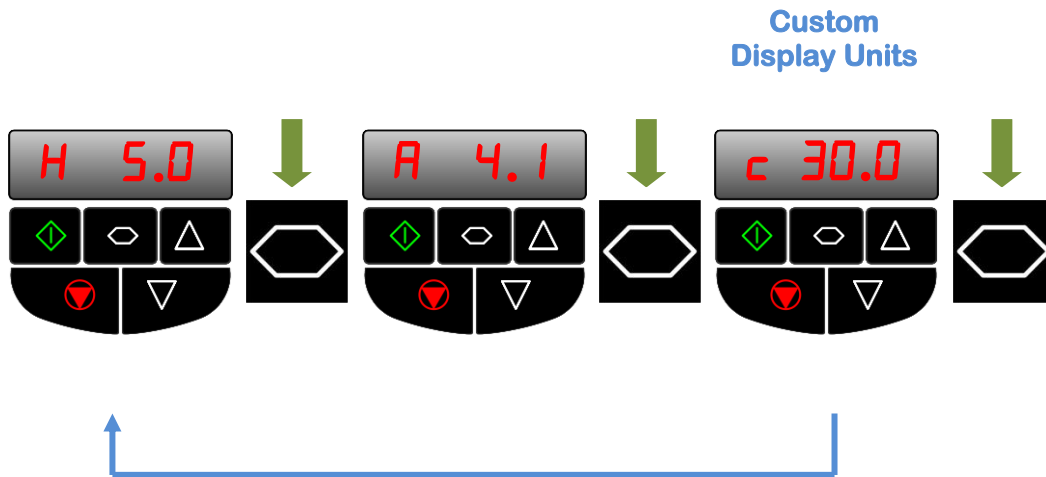
If this parameter is zero (0.000), the display-scaling function is disabled.

If this parameter is > 0, the custom display scaling function is enabled, and operates as details in the following table.

Display Scaling Value	Motor Rated Speed P-10	Scaled Display
Motor Speed (Hz)	= 0	Output Frequency (Hz) x P-40
Motor Speed (Rpm)	> 0	Motor Rpm x P-40

Showing Custom Units on the Drive Display

The scaled display value can be viewed as one of the main real-time values of the drive display whenever the drive is running. The <navigate> key is used to scroll through the available display values. Provided a value has been entered in P-40 then the custom user units display will form one of the options scrolled to using the navigate key. A lower case character 'c' will be displayed on the display to distinguish the scaled value from the other real-time values. The sequence when scrolling through the drive display is shown below.



Example shows scaling (P-40) set to 2.000

When the drive is turned on it will power up with the same display units as shown on the display when the unit was powered off. Hence if custom units are shown on the drive display at power off, then they will be retained on the display at power on.

Example – Displaying Gearbox Output Rpm

If the controlled motor is connected to a gearbox and it is desired to display the gearbox output shaft speed rather than the motor shaft speed, this can be achieved in the following way

Enter the **Motor** nameplate speed into P-10

Calculate the value of $P-40 = 1 / \text{Gearbox Ratio}$

E.g. Gearbox ratio = 10:1, $P-40 = 1/10 = 0.1$

Set P-40 = 0.1

The scaled display will now show the gearbox output Rpm.

Appendix

Revision History			
Issue	Comments	Author	Date
01	Document Creation	JP	08/02/12
02	Corrected motor rated speed parameter (P1-10 to P-10)	JW	10/06/13
03	Revised to new format	KB	24/04/14