Technical instruction
ACS250 micro drives, 500-600 V
Using the display scaling function

Overview

In some applications, it can be desirable to scale the output display of the ACS250 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 value to be scaled can be selected between motor speed, motor current, or from an analog input coming into the drive. The analog input setting allows for feedback from various types of sensors to be displayed in relevant units on the drive display.

Parameters

3405 Display speed scaling source

3405 defines the initial value (variable) that will be used to scale and show user units on the drive display.

The selections for the source variable are shown in the table on the right.

3405 Setting	Source variable for scaling
0	Motor speed
1	Motor current
2	Analog input 2

3400 Display speed scaling factor

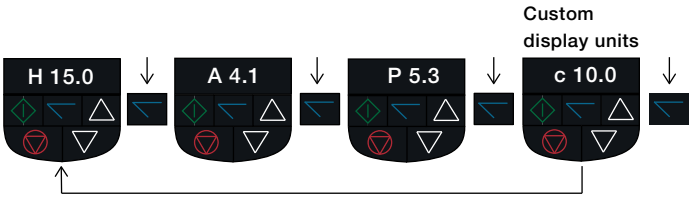
If this parameter is zero (0.000), the display scaling function is disabled.

If this parameter is greater than zero, the custom display scaling function is enabled, and operates as detailed in the following table on the next page.

Display scaling value	Display scaling source 3405	Motor rated speed 9908	Scaled display
Motor speed (Hz)	0	=0	Output frequency (Hz) x 3400
Motor speed (rpm)	0	>0	Motor rpm x 3400
Motor current	1	N/A	Motor current (A) x 3400
Analog input 2	2	N/A	Analog input 2 (%) x 3400

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 menu/enter key is used to scroll through the available display values. Provided a value has been entered in 3400 (3400<>0) 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 on the 7 segment LED display. The sequence when scrolling through the drive display is shown on the right.



Examples show source (3405) set to motor speed and scaling (3400) 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 9908.
- Calculate the value of 3400=1/gearbox ratio.
- E.g. gearbox ratio=10:1, 3400=1/10=0.1.
- Set 3400=0.1.
- 3400 remains at the value for motor speed (3405=0).

The scaled display will now show the gearbox output rpm.

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