

Technical instruction

ACS250 micro drives, 110-480 V

Programming the drive user relay



Overview

The ACS250 has an internal relay which can be programmed to open or close depending upon certain operating conditions within the drive. Other devices and controllers can then be integrated with the drive so that an action can be performed based upon the operating status of the drive.

This technical instruction shows the parameter settings for the relay and the drive terminal connections.

Parameters

1401 User relay output function select

The condition under which the output relay closes is programmed using this parameter.

When the relay is activated the normally open contact (T11) closes to the common contact (T10). The following options (table no.1) can be selected.

Table no. 1

1401	Function	Explanation
0	Drive enabled	The relay contacts close when the drive enable signal is present and the drive has gone to an enabled state (i.e. no trip or fault present).
1	Drive healthy	The relay contacts close when the drive is powered up and no fault exists. If the power is removed, or the drive trips, the relay contacts will open.
2	Motor at target speed	The relay contacts close when the drive output frequency matches the requested set point frequency.
3	Drive tripped	The relay contacts are open when the drive is powered up and no fault exists. If the drive trips the relay contacts will close.
4	Output frequency \geq limit	The relay contacts close when the output frequency of the drive is greater than the limit programmed in 3200 and reopens when the output frequency falls below the level programmed in 3200.
5	Motor current \geq limit	The relay contacts close when the output current of the drive is greater than the limit programmed in 3200 and reopens when the output current falls below the level programmed in 3200.
6	Output frequency $<$ limit	The relay contacts close when the output frequency of the drive is below the limit programmed in 3200 and reopens when the output frequency goes above the level programmed in 3200.
7	Motor current $<$ limit	The relay contacts close when the output current of the drive is below the limit programmed in 3200 and reopens when the output current goes above the level programmed in 3200.

3200 Relay adjustable threshold limit

This parameter is used to define the closing and opening level (limit) for the output relay where the switching point is a variable or adjustable value. The parameters are active when 1401 (user relay output function select) is set to a value between 4 and 7.

The adjustable threshold parameter is set as a percentage of the function selected in 1401. The percentage values set relate to the following drive values below (table no. 2).

Table no.2

1401	Function	3200 Settings
4	Output frequency \geq limit	3200 is set as a percentage of 2008 (motor maximum speed).
5	Motor current \geq limit	3200 is set as a percentage of 9906 (motor rated current).
6	Output frequency $<$ limit	3200 is set as a percentage of 2008 (motor maximum speed).
7	Motor current $<$ limit	3200 is set as a percentage of 9906 (motor rated current).

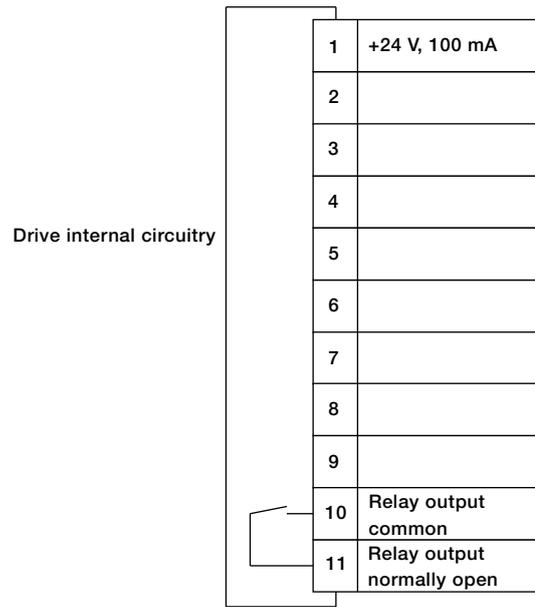
Example

If 1401 is set to '4' (output frequency \geq limit) then 3200 is set as a percentage of 2008 (motor maximum speed).

Assuming 2008=50 Hz, 3200=50.0 %, then relay contacts will close when the output frequency is equal or above 25.0 Hz, and reopens when the output frequency is less than 25.0 Hz.

Terminals configuration

The relay terminals on ACS250 are provided on the main 11 way control terminal block. The terminal connection for the ACS250 is illustrated below.



Note that when the drive is powered down, the contacts are always open.

Relay specifications

Terminal	Short name	Long name	Contact rating
10	RL-C	Relay output common	Relay contacts, 250 V AC, 30 V DC, 5 A
11	RL-NO	Relay output NO	Relay contacts, 250 V AC, 30 V DC, 5 A



For more information please contact your local ABB representative or visit:

www.abb.com/drives

© Copyright 2014 ABB. All rights reserved. Specifications subject to change without notice.