

ABB industrial drives,
ACS800

Control Panel Operation



eLearning



Welcome to the ACS800 control panel operation training module.

If you need help navigating this module, please click the Help button in the top right corner. To view the presenter notes as text, please click the Notes button in the bottom right corner.

Objectives

**Upon the completion of this module,
you will be able to**

- Control the drive with the control panel
- Read and select the actual values on the display
- Set up parameters with the panel
- Read alarm and fault messages



Upon the completion of this module, you will be able to:

- Control the drive with the control panel,
- read and select the actual values on the display,
- set up parameters with the panel, and
- read alarm and fault messages

Control panel CDP 312R

- The CDP 312 R control panel is fully compatible with the previous control panel version - CDP 312
- The functionality of the panel depends on the Drive SW version and the control panel itself
- Full functionality is achieved when the combination of ACS800 and CDP 312R is used



The CDP 312 R control panel is fully compatible with the previous version (CDP 312).

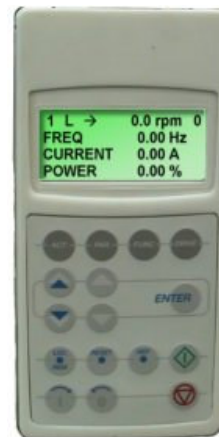
The drive assistants and adaptive programming are features of the CDP 312 R, which the CDP 312 panel does not support.

Adaptive programming and drive assistants are also software dependent.

Full functionality is achieved when the ACS800 and the CDP 312 R are used together.

Controlling the Drive

- Device used for controlling and programming
- Can be attached directly to the module or door of the cabinet
- The keys are flat, labeled push-buttons
- LCD display: 4x20 characters



Controlling the Drive:

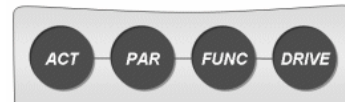
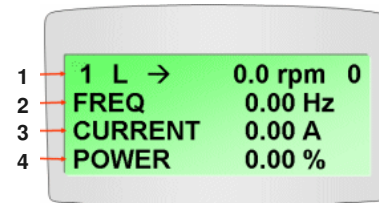
- The Control Panel is the device used for controlling and programming the ACS800.
- The panel can be attached directly to the module or door of the cabinet.
- The keys on the Control Panel are flat, labeled push-buttons.

The display and function keys are described in the following slides.

Display

■ Row 1: Drive status

- ID Number of the selected Drive
- Panel Status:
 - L = Local
 - R = Remote
- Rotational Direction:
 - → = Forward
 - ← = Reverse
- Value of the reference
- Run status:
 - I = Run
 - 0 = Stop
 - '' = No start permission.



■ Rows 2-4: Actual Signal names and values

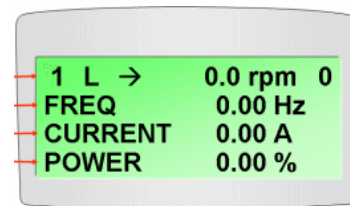


The first row of the display shows the drive status, and the other rows the actual signals.

The display changes according to what mode is currently active. E.g. pressing ACT changes the mode to the Actual value display

Operation Mode Keys

- Operation mode keys
 - **Actual** (for displaying operational data or Actual Signals)
 - **Parameter** (to display and edit parameter names and values)
 - **Function** (to enter assistants and Upload/Download parameters)
 - **Drive** (for assigning Drive ID Numbers on a network)



Operation Mode Keys:

- The **Actual** key is used to display operational data and the actual signals,
- **parameter** to display and edit parameters,
- **function** to launch assistants and upload or download parameters, and
- **drive** to assign Drive ID numbers on a network.

Drive Control Keys

- Drive Control keys
 - **Start** - used to start the Drive
 - **Stop** - used to stop the Drive
 - **REF** - used to set drive reference value from keypad
 - **Forward** and **Reverse** keys - used to change the rotational direction of the motor
 - **LOC/REM** - used to change drive control location between Local at the keypad and the Remote control
 - **RESET** - used to reset a fault of the drive



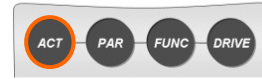
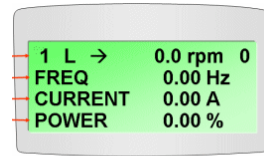
The ABB logo, consisting of the letters 'ABB' in a bold, red, sans-serif font.

The Control Panel has keys to:

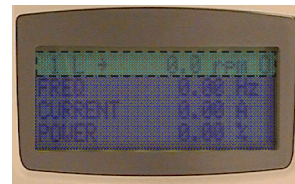
- Start and stop the drive,
- set the reference value,
- change the direction of the motor,
- change between local and remote control modes, and
- reset the drive if a fault occurs,

Reading Actual Values

- This mode contains two displays, the **Actual Signal Display** and the **Fault History Display**
- The Actual Signal Display is shown first whenever the Actual Signal Display Mode is entered
- The actual display shows the following information:
 - Status row
 - Three selectable actual signals



Status row
Actual signals

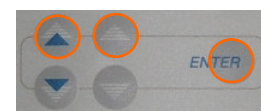
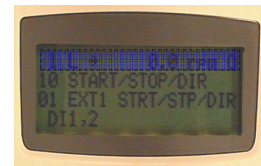
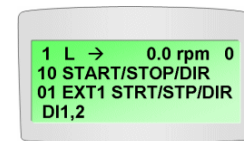


Reading Actual Values.

- The panel will automatically return to the Actual Signal Display Mode (from the other modes) if no keys are pressed within one minute (exception: Fault Display Mode).
- In the Actual Signal Display Mode, three Actual Signals can be monitored at one time.
- Fault History Display will be discussed later on.

Setting Up Parameters

- The Parameter Mode is used for changing the ACS800 parameters
- The display panel will show the following information:
 - Status row
 - Group number and name
 - Parameter number and name
 - Parameter value
- Changing parameters
 - Group can be changed with double arrows
 - Number can be changed with single arrows
 - Value can be changed using the arrows and ENTER key



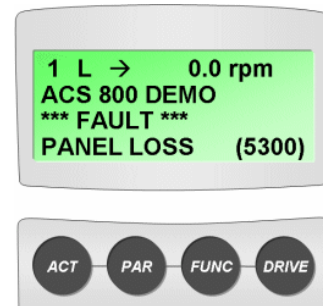
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Setting Up Parameters:

- When the Parameter mode is entered for the first time after Power Up, the display will show the first parameter of the first group. The next time the Parameter Mode is entered, the previously selected parameter is shown.
- When pressing the ENTER key for the first time, brackets will appear around the value and when accepting the value with the ENTER key the brackets will disappear.

Reading Alarm & Fault Messages

- When a fault or warning occurs the Fault Display appears
- The panel display will show the following information:
 - Status row
 - Drive Type
 - FAULT or WARNING message
 - Name and number of Warning or Fault.
- Fault can be resetted with RESET button or with a PC Tool

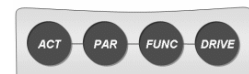
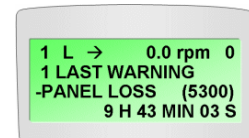


Reading Alarm & Fault Messages:

- When a fault or warning occurs in the Drive, a message will be displayed, except in the Drive Selection Mode.
- The fault or warning text remains displayed as long as the fault exists and no keys are pressed.
- From the Fault Display, it is possible to change to other displays without resetting the fault.

Fault History Display

- Select **Fault History Display** by pressing ACT button and then double- arrow button
- The display panel will show the following information:
 - Sequential number of the event, 1 being the most recent event
 - Name of warning or fault
 - Event sign
 - + indicates that the event is active
 - indicates that the event is deactivated
 - Total Power On time
- By pressing the arrow keys you can scroll the Fault History of the drive



Select Fault History Display by pressing the ACT button and then the double arrow button.

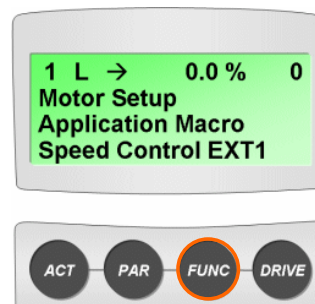
The display panel will show the following information:

- The sequential number of the event, 1 being the most recent event.
- The name of the warning or fault.
- The event status where:
 - A Plus (+) indicates that the event is active, and
 - a Minus (-) indicates that the event is deactivated, and
- the total power-on time.

By pressing the arrow keys you can scroll through the Fault History.

Function Mode

- The Function Mode is used to select special functions
 - Drive assistants (only in single drives)
With drive assistants the user can start a guided procedure for adjusting the drive settings
 - Parameter Upload / Download
 - Setting the contrast of the Control Panel display
- Selecting a function
 - Page can be changed with double arrows
 - Row can be changed with single arrows
 - Function can be selected using the ENTER key when cursor on the line

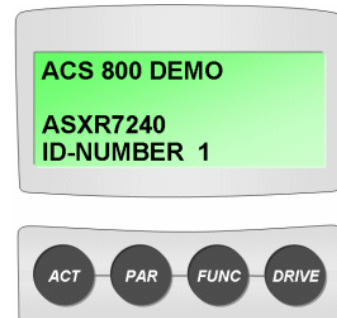


The Function Mode is used to select special functions, such as:

- Drive assistants (only in single drives),
- parameter upload or download, and
- setting the contrast of the Control Panel display.

Drive Mode

- Drive mode display contains basic information of the drive:
 - Drive type
 - Drive software version and test date
 - Drive ID-number
- Status Display symbols
 - ⏹ Drive stopped, direction forward
 - ⏴ Drive running, direction reverse
 - ⚡ Drive has tripped due to a fault
- For normal use, the functions available in the Drive Selection Mode are not needed



The Drive mode display contains basic information of the drive, such as

- the Drive type,
- the software version and test date,
- the drive ID number, and
- drive status symbols.

The functions available in the Drive Selection Mode are not needed during normal usage.

- These functions are reserved for applications where several drives are connected to a Panel Link. A Panel Link is a communication link connecting the Control Panel with the ACS800.
- When a Panel Link is used, each on-line station must have an individual identification number (ID). By default, the ID number of the ACS800 is 1. The default ID number setting of the ACS800 should not be changed, unless it will be connected to the Panel Link with other drives on-line.
- The power of the ACS800 must be switched off to validate its new ID number setting (the new value is not displayed until the power is switched off and on again).
- The Control Panel will display the status of all devices connected to the Panel Link when an arrow key is pressed and a station change to the arrow direction in the Panel Link is not possible.



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Thank you for your attention. You may now go ahead and move on to the next unit.