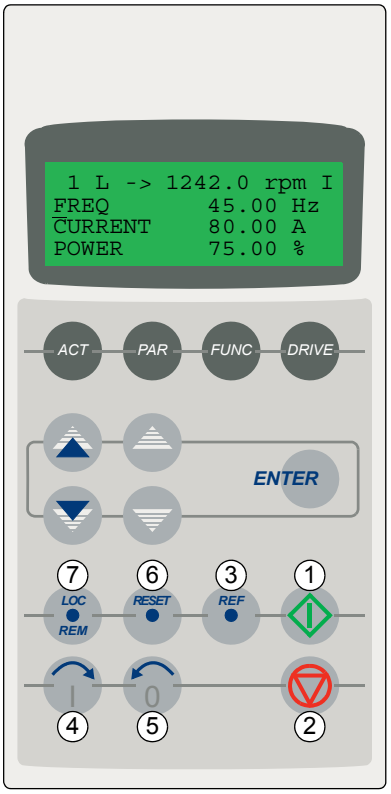
Control panel

Chapter overview

The chapter describes how to use the control panel CDP 312R.

The same control panel is used with all ACS800 series drives, so the instructions given apply to all ACS800 types. The display examples shown are based on the Standard Control Program; displays produced by other application programs may differ slightly.

Overview of the panel



The LCD type display has 4 lines of 20 characters.

The language is selected at start-up (parameter 99.01).

The control panel has four operation modes:

- Actual Signal Display Mode (ACT key)
- Parameter Mode (PAR key)
- Function Mode (FUNC key)
- Drive Selection Mode (DRIVE key)

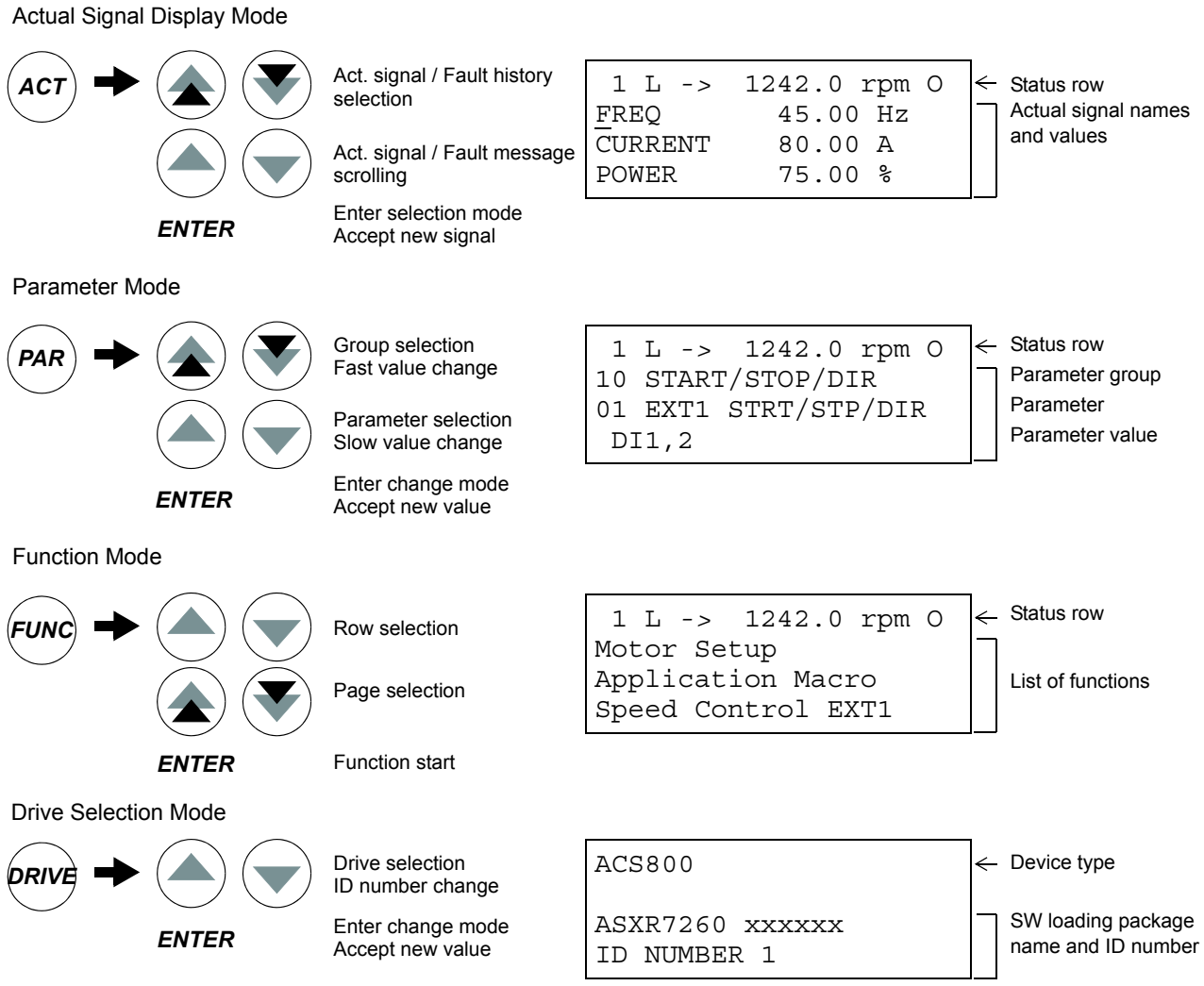
The use of single arrow keys, double arrow keys and ENTER depend on the operation mode of the panel.

The drive control keys are:

No.	Use
1	Start
2	Stop
3	Activate reference setting
4	Forward direction of rotation
5	Reverse direction of rotation
6	Fault reset
7	Change between Local / Remote (external) control

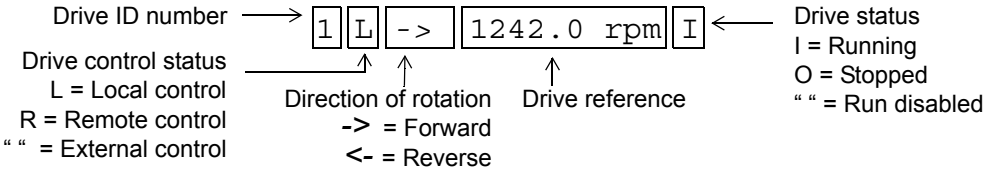
Panel operation mode keys and displays

The figure below shows the mode selection keys of the panel, and the basic operations and displays in each mode.



Status row

The figure below describes the status row digits.



Drive control with the panel

The user can control the drive with the panel as follows:

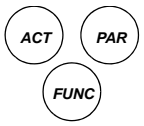
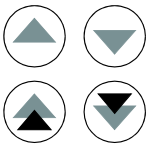
- start, stop, and change direction of the motor
- give the motor speed reference or torque reference
- give a process reference (when the process PID control is active)
- reset the fault and warning messages
- change between local and external drive control.

The panel can be used for control of the drive control always when the drive is under local control and the status row is visible on the display.

How to start, stop and change direction

Step	Action	Press Key	Display
1.	To show the status row.	ACT PAR FUNC	1 ->1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
2.	To switch to local control. (only if the drive is not under local control, i.e. there is no L on the first row of the display.)	LOC REM	1 L ->1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
3.	To stop		1 L ->1242.0 rpm O FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
4.	To start		1 L ->1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
5.	To change the direction to reverse.	0	1 L <-1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
6.	To change the direction to forward.		1 L ->1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %

How to set speed reference

Step	Action	Press Key	Display
1.	To show the status row.		1 ->1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
2.	To switch to local control. (Only if the drive is not under local control, i.e. there is no L on the first row of the display.)		1 L ->1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
3.	To enter the Reference Setting function.		1 L ->[1242.0 rpm]I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
4.	To change the reference. (slow change) (fast change)		1 L ->[1325.0 rpm]I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
5.	To save the reference. (The value is stored in the permanent memory; it is restored automatically after power switch-off.)	***ENTER***	1 L -> 1325.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %

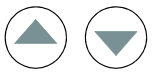
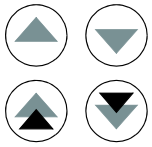
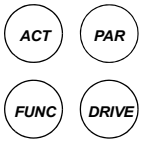
Actual signal display mode

In the Actual Signal Display Mode, the user can:

- show three actual signals on the display at a time
- select the actual signals to display
- view the fault history
- reset the fault history.

The panel enters the Actual Signal Display Mode when the user presses the ***ACT*** key, or if he does not press any key within one minute.

How to select actual signals to the display

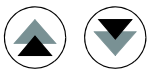
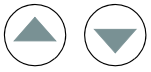
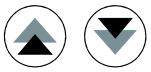
Step	Action	Press key	Display
1.	To enter the Actual Signal Display Mode.		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
2.	To select a row (a blinking cursor indicates the selected row).		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
3.	To enter the actual signal selection function.	***ENTER***	1 L -> 1242.0 rpm I 1 ACTUAL SIGNALS 04 CURRENT 80.00 A
4.	To select an actual signal. To change the actual signal group.		1 L -> 1242.0 rpm I 1 ACTUAL SIGNALS 05 TORQUE 70.00 %
5.a	To accept the selection and to return to the Actual Signal Display Mode.	***ENTER***	1 L -> 1242.0 rpm I FREQ 45.00 Hz TORQUE 70.00 % POWER 75.00 %
5.b	To cancel the selection and keep the original selection. The selected keypad mode is entered.		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %

How to display the full name of the actual signals

Step	Action	Press key	Display
1.	To display the full name of the three actual signals.	**Hold** 	1 L -> 1242.0 rpm I FREQUENCY CURRENT POWER
2.	To return to the Actual Signal Display Mode.	**Release** 	1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %

How to view and reset the fault history

Note: The fault history cannot be reset if there are active faults or warnings.

Step	Action	Press key	Display
1.	To enter the Actual Signal Display Mode.		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
2.	To enter the Fault History Display.		1 L -> 1242.0 rpm I 1 LAST FAULT +OVERCURRENT 6451 H 21 MIN 23 S
3.	To select the previous (UP) or the next fault/warning (DOWN). To clear the Fault History.	 	1 L -> 1242.0 rpm I 2 LAST FAULT +OVERVOLTAGE 1121 H 1 MIN 23 S 1 L -> 1242.0 rpm I 2 LAST FAULT H MIN S
4.	To return to the Actual Signal Display Mode.		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %

Function mode

In the Function Mode, the user can:

- start a guided procedure for adjusting the drive settings (assistants)
- upload the drive parameter values and motor data from the drive to the panel.
- download group 1 to 97 parameter values from the panel to the drive. [1)]
- adjust the contrast of the display.

The panel enters the Function Mode when the user presses the ***FUNC*** key.

[1)] The parameter groups 98, 99 and the results of the motor identification are not included by default. The restriction prevents downloading of unfit motor data. In special cases it is, however, possible to download all. For more information, please contact your local ABB representative.

Step	Action	Press Key	Display
8.	To cancel and exit. **Note:** 1 x ACT returns to the first display of the task.	***2 x ACT***	1 L -> 0.0 rpm O FREQ 0.00 Hz CURRENT 0.00 A POWER 0.00 %

How to upload data from a drive to the panel

Note:

- Upload before downloading.
- Ensure the firmware of the destination drive is the same (e.g. standard firmware).
- Before removing the panel from a drive, ensure the panel is in remote operating mode (change with the LOC/REM key).
- Stop the drive before downloading.

Before upload, repeat the following steps in each drive:

- Setup the motors.
- Activate the communication to the optional equipment. (See parameter group 98 OPTION MODULES.)

Before upload, do the following in the drive from which the copies are to be taken:

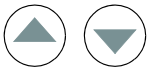
- Set the parameters in groups 10 to 97 as preferred.
- Proceed to the upload sequence (below).

Step	Action	Press Key	Display
1.	Enter the Function Mode.	FUNC	1 L -> 1242.0 rpm O Motor Setup Application Macro Speed Control EXT1
2.	Enter the page that contains the upload, download and contrast functions.	▼	1 L -> 1242.0 rpm O UPLOAD <=<= DOWNLOAD =>=>= CONTRAST 4
3.	Select the upload function (a flashing cursor indicates the selected function).	▲ ▼	1 L -> 1242.0 rpm O UPLOAD <=<= DOWNLOAD =>=>= CONTRAST 4
4.	Enter the upload function.	***ENTER***	1 L -> 1242.0 rpm O UPLOAD <=<=
5.	Switch to external control. (No L on the first row of the display.)	LOC REM	1 -> 1242.0 rpm O UPLOAD <=<= DOWNLOAD =>=>= CONTRAST 4

Step	Action	Press Key	Display
6.	Disconnect the panel and reconnect it to the drive into which the data will be downloaded.		

How to download data from the panel to a drive

Consider the notes in section *How to upload data from a drive to the panel* on page *36*.

Step	Action	Press Key	Display
1.	Connect the panel containing the uploaded data to the drive.		
2.	Ensure the drive is in local control (L shown on the first row of the display). If necessary, press the ***LOC/REM*** key to change to local control.		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %
3.	Enter the Function Mode.		1 L -> 1242.0 rpm O Motor Setup Application Macro Speed Control EXT1
4.	Enter the page that contains the upload, download and contrast functions.		1 L -> 1242.0 rpm O UPLOAD <=<= DOWNLOAD =>=> CONTRAST 4
5.	Select the download function (a flashing cursor indicates the selected function).		1 L -> 1242.0 rpm O UPLOAD <=<= DOWNLOAD =>=> CONTRAST 4
6.	Start the download.	***ENTER***	1 L -> 1242.0 rpm O DOWNLOAD =>=>

Drive selection mode

In normal use the features available in the Drive Selection Mode are not needed; the features are reserved for applications where several drives are connected to one panel link. (For more information, see the *Installation and Start-up Guide for the Panel Bus Connection Interface Module, NBCI*, [3AFY58919748 (English)].

In the Drive Selection Mode, the user can:

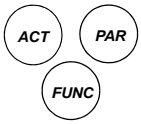
- Select the drive with which the panel communicates through the panel link.
- Change the identification number of a drive connected to the panel link.
- View the status of the drives connected on the panel link.

The panel enters the Drive Selection Mode when the user presses the ***DRIVE*** key.

Each on-line station must have an individual identification number (ID). By default, the ID number of the drive is 1.

Note: The default ID number setting of the drive should not be changed unless the drive is to be connected to the panel link with other drives on-line.

How to select a drive and change its panel link ID number

Step	Action	Press key	Display
1.	To enter the Drive Selection Mode.		ACS800 ASAAA5000 xxxxxx ID NUMBER 1
2.	To select the next drive/view. The ID number of the station is changed by first pressing ***ENTER*** (the brackets round the ID number appear) and then adjusting the value with arrow buttons. The new value is accepted with ***ENTER***. The power of the drive must be switched off to validate its new ID number setting. The status display of all devices connected to the Panel Link is shown after the last individual station. If all stations do not fit on the display at once, press the double-arrow up to view the rest of them.		ACS800 ASAAA5000 xxxxxx ID NUMBER 1 1↻ Status Display Symbols: ↻ = Drive stopped, direction forward ↰ = Drive running, direction reverse F = Drive tripped on a fault
3.	To connect to the last displayed drive and to enter another mode, press one of the mode selection keys. The selected mode is entered.		1 L -> 1242.0 rpm I FREQ 45.00 Hz CURRENT 80.00 A POWER 75.00 %