OPTIONS FOR ABB DRIVES

ACS-DCP-11 and ACH-DCP-11 Drive Connectivity Panel

User’s manual

List of related manuals

Tool and maintenance manuals	**Code (English)**
Drive composer PC tool user's manual	3AUA0000094606
Option manuals and guides	
ACx-AP-x Assistant control panels User’s manual	3AUA0000085685
ABB Ability™ Mobile Connect for drives User manual	3AXD50000558483
CDPI-01 communication adapter module User’s manual	3AXD50000009929
DPMP-01 mounting platform for ACP-AP control panel	3AUA0000100140
DPMP-02/03 mounting platform for ACP-AP control panel	3AUA0000136205

You can find manuals and other product documents in PDF format on the Internet. See section Document library on the Internet on the inside of the back cover. For manuals not available in the Document library, contact your local ABB representative.

Drivetune application

You can download and install the Drivetune application by scanning the QR code below:

Apple iOS mobile

Google play

User’s manual

ACS-DCP-11 and ACH-DCP-11 Drive Connectivity Panel

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1

Introduction to the manual

What this chapter contains

This chapter contains the applicability and compatibility information for the Drive Connectivity Panel. It also gives some general information for the user of this manual.

Applicability

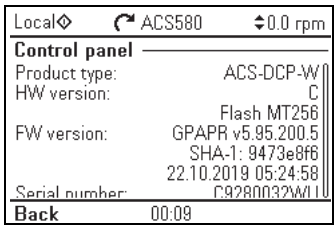
This manual applies to the following panel types and versions:

Drive Connectivity Panel	ACS-DCP-11, ACH-DCP-11
Hardware version	A or later
Software version	6.01 or later

ACS-DCP-11 and ACH-DCP-11 are Drive Connectivity Panel variants only for the EU countries.

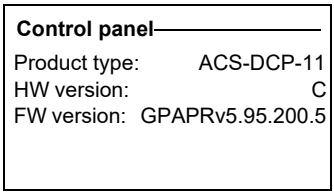
You can also view panel details in the panel itself using either of the two methods:

- With panel powered up, go to **Menu** → **System info** → **Control panel**.



or

- With the drive not powered, press and hold ? (**help**) button, then power up the drive and the control panel.



Note: The images and instructions in this manual are examples, each based on a specific control panel and drive type combination. The details may vary with different control panels or drive types.

Compatibility

The following drives are compatible with Drive Connectivity Panel.

Drive type	Compatible panel type	
	ACS-DCP-11	ACH-DCP-11
ACS380	x	
ACH480	x*	x
ACS480	x	
ACS530	x	
ACS560	x	
ACH580	x*	x
ACQ580	x*	x
ACS580	x	
ACS860	x	
ACS880	x	

x*: The drive is technically compatible with ACS-DCP-11 Drive Connectivity Panel, but not sold together.

Safety

Follow all safety instructions of the drive.

Intended audience

This manual is intended for persons who use the Drive Connectivity Panel and the related cloud services, such as Condition Monitoring and remote assistance services.

2

Installation and start-up

What this chapter contains

The chapter describes how to install and start-up the Drive Connectivity Panel for the first time.

Installation

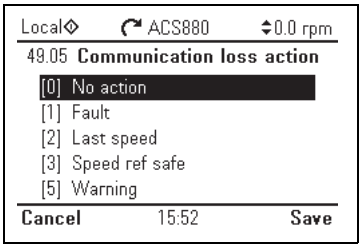
Attach the control panel directly to the drive or use a separate mounting kit (for example, for cabinet door mounting).

To attach the control panel,

1. Place its bottom end into the bottom of the slot in the drive (A).
2. Pivot the control panel and push the upper part (B) until you hear a click.

To detach the control panel,

1. Release the control panel by pressing the clip (B).
2. Pull the upper end of the control panel out of the slot in the drive.



Warning! ABB recommends to detach the control panel only when the drive is stopped or de-energized. If you must detach the control panel otherwise, make sure that it is safe, and it does not cause an unnecessary fault trip:

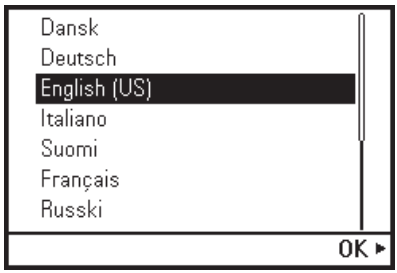
- Make sure that you can stop and control the motor with external control signals.
- Switch the drive in remote control mode (Loc/Rem key or Auto key). You cannot stop or control the motor with the control panel in remote mode. Use the external signals.
- Change the fault trip setting of the Communication loss monitoring function (parameter 49.05) to another value. Remember to restore the setting after you have attached the panel!

First start-up

To start-up the control panel for the first time, follow these instructions:

1. Obey all drive-specific safety precautions.
2. Install the control panel. See instructions in *Installation* (page *13*).
3. Power up the drive.

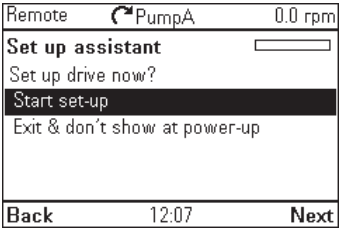
   The control panel start-up begins automatically. Wait until the control panel shows the language selection view.

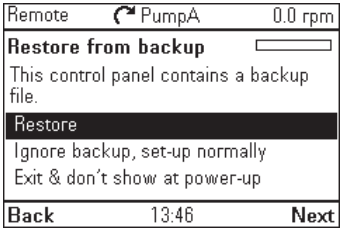


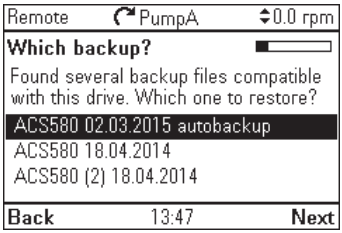
4. Use ▲ or ▼ to select a language.
5. Press ↵ to confirm your selection.

   Wait until the control panel completes uploading the language file. Its progress is indicated by a progress bar.

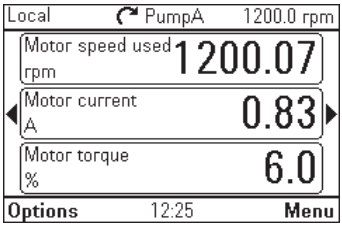
If there is a Basic set-up assistant in the drive, or if the control panel already contains a compatible backup (or backups) that could be copied to the drive, the control panel prompts to start a set-up assistant or download the settings from a backup file in the control panel (if it exists). Start the set-up and step through the set-up phases, or start the backup download.







Once you are in the **Home** view, the control panel is ready for use.



3

Control panel overview

What this chapter contains

The chapter contains a short feature description, and describes the display, keys and main parts of the Drive Connectivity Panel.

Overview of the features

The Drive Connectivity Panel has the very same basic features as the Assistant control panel used in most drive types as standard. In addition, the Drive Connectivity Panel has these connectivity features:

- The control panel includes a Narrowband IoT (NB-IoT) modem and SIM card. If NB-IoT network is available, it is possible to connect the drive to Internet.
- The control panel has a Bluetooth interface. If a mobile phone with Drivetune application is available, you can connect the drive to the mobile phone.

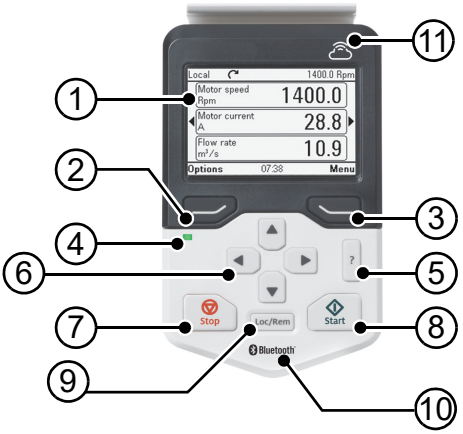
NB-IoT connection

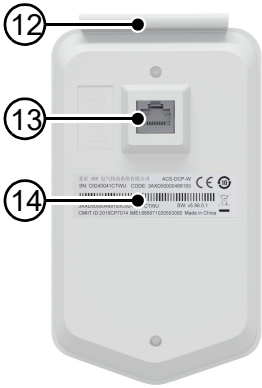
The NB-IoT connection allows the upload of drive data to ABB Ability™ Digital Powertrain service. User can monitor the data with a browser. See *Digital Powertrain service* on page *63*.

Bluetooth connection

The Bluetooth interface enables wireless connection to a mobile phone with the Drivetune application. As standard, the Drivetune simulates a drive control panel. If the phone has an Internet connection, it is possible to connect the drive to ABB Ability™ Mobile Connect and use the ABB remote assistance services. See *Mobile Connect* on page *71*.

Display, keys and parts



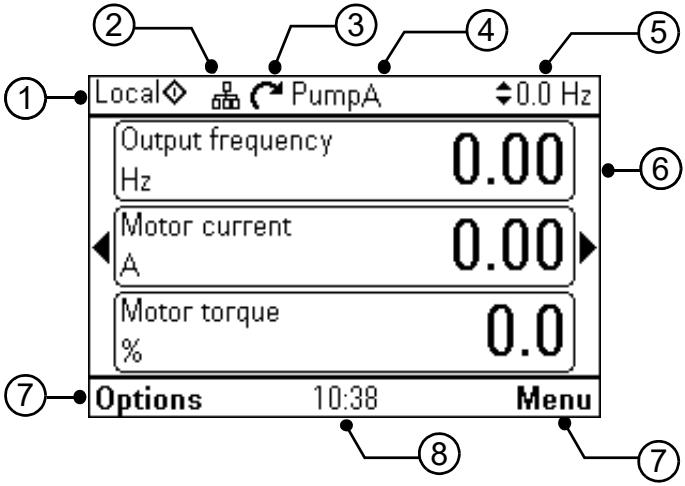


1	*Display*
2	*Left softkey*
3	*Right softkey*
4	*Status LED*
5	*Help*
6	*Arrow keys*
7	Stop (see *Start and Stop (ACS-DCP-11)*)

8	Start (see *Start and Stop (ACS-DCP-11)*)
9	Local/Remote (see *Loc/Rem (ACS-DCP-11)*)
10	Bluetooth symbol
11	NB-IoT symbol
12	Clip
13	*RJ-45 connector*
14	*Type designation label on the panel*

Display

In most views, the following control panel elements are shown on the display:



No.	Panel element	Function
1	Control location and related icons	Indicates how the drive is controlled: **No text**: The drive is in local control, but controlled from another device. The icons in the top pane indicate which actions are allowed. **Local**: The drive is in local control, that is, controlled from the control panel. **Remote**: The drive is in remote control, that is, controlled through I/O or fieldbus.
2	Panel bus	Indicates that there are more than one drive connected to this panel.To switch to another drive, go to **Options** → **Select drive**.

No.	Panel element	Function
3	Status icon	Indicates the status of the drive and the motor. The direction of the arrow indicates forward (clockwise) or reverse (counter-clockwise) active reference direction. **Note:** For non-rotating driven equipment, the numbers 1 and 0 are used to indicate that the drive is running or stopped, respectively.
4	Drive name	If a name is given, it is displayed at the top pane. By default, it is blank. You can change the name in the *Primary settings* (page *47*) or *Settings* menu (page *46*).
5	Reference value	Speed, frequency and so on, are shown with its unit. For information on changing the reference value, see *Setting the reference* (page *52*).
6	Content area	Displays the actual content of the view in this area. The content varies from view to view. The example view above is the main view of the control panel which is called the Home view.
7	Softkey selections	Displays the functions of the softkeys (and) in a given context.
8	Clock	Displays the current time. The time can be changed through the *Primary settings* (page *47*) or *Settings* menu (page *46*).

Status icon	Animation	Drive status
	-	Stopped
	-	Stopped, start inhibited
	Blinking	Stopped, start command given but start inhibited
	Blinking	Faulted
	Blinking	Running, at reference, but the reference value is 0
	Rotating	Running, not at reference
	Rotating	Running, at reference

You can adjust the display contrast and backlight functionality in the *Primary settings* (page *47*) or *Settings* menu (page *46*).

Keys

The keys of the control panel are described below.

Left softkey

The left softkey ( ) is usually used for exiting and canceling. Its function in a given situation is shown by the softkey selection in the bottom left corner of the display.

Holding down exits each view in turn until you are back in the Home view. This function does not work in special screens.

Right softkey

The right softkey () is usually used for selecting, accepting and confirming. The function of the right softkey in a given situation is shown by the softkey selection in the bottom right corner of the display.

Arrow keys

The up and down arrow keys ( and ) are used to highlight selections in menus and selection lists, to scroll up and down on text pages, and to adjust values when, for example, setting the time, entering a passcode or changing a parameter value.

The left and right arrow keys ( and ) are used to move the cursor left and right in parameter editing and to move forward and backward in assistants. In menus, and function the same way as  and  , respectively.

Help

The help key () opens a help page. The help page is context-sensitive, in other words, the content of the page is relevant to the menu or view in question. See *Help* (page *28*) for more information on the help page.

Start and Stop (ACS-DCP-11)

In local control, the start key () and the stop key () start and stop the drive, respectively.

Loc/Rem (ACS-DCP-11)

The local/remote key () is used to switch between local and remote control modes of the drive. In local control mode the control panel controls the drive. In remote control mode, external control signals (digital/analog inputs or fieldbus signals) control the drive. When switching from remote to local while the drive is running, the drive keeps running at the same speed. When switching from local to remote, external signals control the drive. For example, if external stop is on, the drive stops. See the drive-specific firmware manual for more details.

Off (ACH-DCP-11)

In Hand and Auto control, the Off key () is used to stop the drive.

Hand (ACH-DCP-11)

The Hand key () is used to start the drive when the local control location is selected. When the drive is running, if you press Auto key, the drive changes the control location to external. If the external stop signal is on, the drive stops.

Auto (ACH-DCP-11)

If local control location is selected, Auto key () switches the drive to external control location. Local control location: Control panel keys control the drive. External

control location: external signals (digital/analog inputs or fieldbus signals) control the drive.

Key shortcuts

The table below lists key shortcuts and combinations. Simultaneous key presses are indicated by the plus sign (+).

Shortcut	Available in...	Effect
+ +	any view	Save a screenshot. Up to fifteen images can be stored in the control panel memory.
+ , +	any view	Adjust backlight brightness.
+ , +	any view	Adjust display contrast.
or	Home view	Adjust reference.
+	parameter edit views	Revert an editable parameter to its default value.
+	any view	Show/hide parameter index and parameter group numbers.
(keep down)	any view	Return to Home view by pressing down the key until Home view is shown.

Status LED

The control panel has a status LED that indicates if there are any faults or warnings present. The table below shows the meaning of the LED indications. The continuous signal indicates drive status, the blinking pattern with certain interval on top of the continuous signal shows the connectivity status.

Cloud connectivity disabled		
Green, continuous		The drive is functioning normally.
Green, blinking		There is an active warning in the drive.
Red, continuous		There is an active fault in the drive.
Blue, blinking		Bluetooth interface is enabled.It is in discoverable mode and ready for pairing.
Blue, flickering		Data is transfered through the Bluetooth interface of the control panel.
Cloud connectivity enabled		
Green, continuous + Blue, blinking		The drive is functioning normally, and successfully connected to ABB Ability™ cloud backend.
Green, flickering + Blue, blinking		There is an active warning in the drive, and drive is successfully connected to ABB Ability™ cloud backend.
Red, continuous + Blue, blinking		There is an active fault in the drive, and drive is successfully connected to ABB Ability™ cloud backend.

Green, continuous + Yellow, blinking		The drive is functioning normally, and drive is not authenticated by ABB Ability™ cloud backend.
Yellow and Green blinking alternately		There is an active warning in the drive, and drive is not authenticated by ABB Ability™ cloud backend.

For further information on fault and warning indications, see *Identifying error and warning messages* (page *57*).

RJ-45 connector

The RJ-45 connector connects the control panel to the drive. Mechanical connection is secured with the clip on the top.

Type designation label on the panel

The type designation label on the panel contains revision information, ICCID, etc. See an example label below.

No.	Description	
1	Company name with address	
2	M/N	Type code
3	CODE	Factory material code
4	S/N	Serial number
5	Bar code	
6	Bar code in human readable text (Factory material code + serial number code)	
7	IMEI	International mobile equipment identification code
8	ICCID	SIM card identification number
9	EU1	Mobile operator identifier code
10	SW	SW version number
11	Made in China	Made in country
12	CE marking	

4

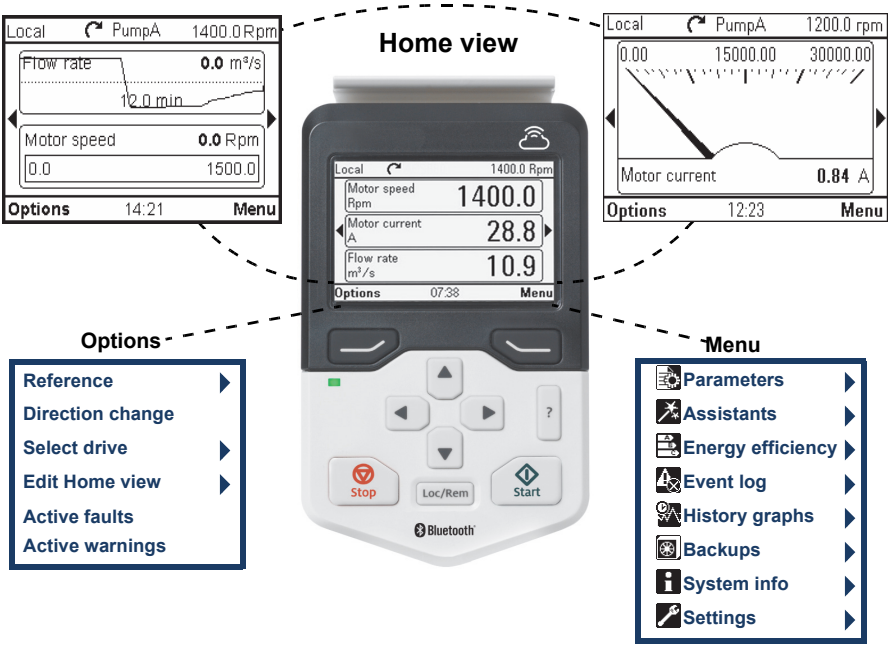
Basic operation

What this chapter contains

The chapter describes the basic operations and components of the user navigation interface. It also lists the common user tasks and provides instructions to complete the task.

Control panel navigation

Use the arrow keys and softkeys for navigation. Follow the choices on the screen.



The table and the image below represent the main components of the user navigation interface.

Component	Description
Home view	Used to monitor signals. See *Home view* (page *27*).
Menu	Access to most functions of the control panel. See the detailed description in chapter *Functions in the main Menu* (page *33*).
Options	Used to set a reference, change the motor direction, select the drive, edit Home view pages, and see the fault and warning status. See the detailed description in chapter *Functions in the Options menu* (page *51*).
Help	Provides information on the current view or menu or on possible problems associated with it. See *Help* (page *28*).
Faults and warnings	View faults and warnings when the drive or control panel experiences an error. See *Fault tracing* (page *57*).

Note: The menu shown is an example only. The Menu varies based on the drive/ device to which the panel is connected.

Navigation memory

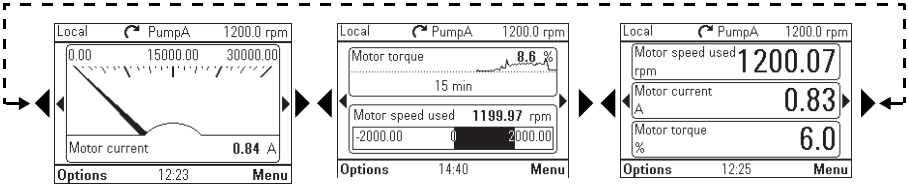
The Drive Connectivity Panel has a navigation memory that allows you to backtrack your steps through the user interface with the arrow keys ◄ and ►. The path you have last accessed remains in the memory for 10 minutes.

- The left arrow key (◄) moves you backwards in the menu structure. If you press ◄ repeatedly, you return back to the Home view.
- The right arrow key (►) moves you forward in the menu structure. If you press ► repeatedly, you move forward along the path in the menu structure you had previously accessed.

Home view

The main view of the control panel is called the **Home** view. In the **Home** view, you can monitor the status of the drive, such as its speed, torque or power. The **Home** view has one or more pages, each of which can display up to three signals.

The number of pages and the signals shown on each page are customizable, and the Home view configuration is saved to the drive whenever you change it. The maximum total number of signals displayed varies from 9 to 21, depending on the drive. In the example below, three Home view pages are used, showing different display formats.



Each application macro and user set has a default Home view configuration. When you select an application macro or restore a user set, the Home view configuration changes accordingly. There is a default Home view configuration in each drive, which can be restored in the *Primary settings* (page *47*) or *Settings* (page *46*) menu.

The **Home** view opens automatically when you power up the drive. The **Home** view is also displayed from the **Options** menu or the main **Menu** if no key is pressed for 10 minutes.

Tip: You can return to the **Home** view from any view except special screens by holding down the left softkey ⊂.

Navigating in the Home view

- Use ◄ and ► to move between the different pages of the **Home** view. The page numbers are shown while you scroll between pages.
- Use ▲ or ▼ to adjust the reference (visible in the top right corner). See also *Setting the reference* (page *52*).
- Press (**Menu**) to open the main **Menu** (see *Functions in the main Menu* on page *33*).
- Press (**Options**) to open the **Options** menu (see *Functions in the Options menu* on page *51*).

Help

You can open a context-sensitive help page in all menus and views by pressing ?. The help page provides information on the use of the current view or menu, or on possible problems associated with it.

On the help page, you can press ? again or press (**Exit**) to exit.

Using ?, you can also view details of control panel type and version in the panel itself. See instructions in section *Applicability* (page *9*).

Common user tasks

The following tables list common user tasks and describes how to complete the task. See chapters *Functions in the main Menu* (page *33*) and *Functions in the Options menu* (page *51*) for detailed descriptions of functions in the menus.

Note: The Menu options varies based on the drive/device to which the control panel is connected.

Basic operation of the drive

Task	***Actions***
Start and stop the drive.	In local control, press to start the drive and to stop the drive.
Set the reference (for example, speed) in the **Home** view.	In local control, go to **Options > Reference**. Set the reference with the arrow keys. For detailed instructions, see *Setting the reference* (page *52*).
Switch between local and remote control.	Press Loc/Rem.
Change the direction of motor rotation.	In local control, go to **Home** view, press (**Options**) to open the **Options** menu and select **Direction change**.

Parameters

Task	*Actions*
Choose parameters displayed on the Favorites list.	Go to **Menu** → **Parameters** → **Favorites** → **Edit**. See also *Editing the list of favorites* (page 35).
View/edit parameters.	Go to **Menu** → **Parameters** → **Complete list** to view parameters. See *Editing parameters* (page 36) for instructions on editing parameters.
Add parameters to the Home view.	See *Editing the contents of the Home view* (page 52).
Show/hide parameter index and group numbers.	Press ◄ + ►.
Restore parameter default value.	In the editing mode, press ▲ + ▼. To save the default value, press ⌐ (**Save**).
View parameters that differ from Application Macro defaults.	Go to **Menu** → **Parameters** → **Modified**.

System information and help

Task	*Actions*
How to get help.	Press ? to open the context-sensitive help.
To view drive information.	Go to **Menu** → **System info** → **Drive**.
To view control panel version.	Go to **Menu** → **System info** → **Control panel**.
To view application program license.	Go to **Menu** → **System info** → **Licenses**.
To view Product application information.	Go to **Menu** → **System info** → **Product application**.
To view Connectivity settings.	Go to **Menu** → **System info** →**Connectivity settings**.

Faults and warnings

See *Fault tracing (page 57)* for detailed information on faults and warnings.

Task	*Actions*
Hide/view an active fault.	Faults are automatically displayed. If you hide a fault by pressing (**Hide**), it automatically reappears after 60 seconds of no key presses. You can also view the fault through **Options > Active faults**.
Open help page on a fault.	Press ? to view the help page.
Reset an active fault.	Press (**Reset**) to reset an active fault.
View tripping faults.	Go to **Menu** → **Event log** → **Faults**.
Hide/view an active warning.	Warnings are automatically displayed. If you hide a warning by pressing (**Hide**), it automatically reappears if the warning is still active after 60 seconds of no key presses.
Open help page on a warning.	Press (**How to fix**) or ? to view the help page.
Reset an active warning.	Warnings disappear automatically once the condition that has triggered it goes away.
View past warnings and faults.	Go to **Menu** → **Event log** → **Other events**.

Basic settings and assistants

Task	*Actions*
Adjust backlight brightness.	Press and hold , and press ▲ or ▼.
Adjust display contrast.	Press and hold , and press ▲ or ▼.
Change language.	Go to **Menu** → **Settings** → **Language**.
Change time and date, and related settings.	Go to **Menu** → **Settings** → **Date & time**.
Launch an assistant.	Go to **Menu** → **Assistants** and select an assistant to launch.

Backups

Task	*Actions*
Create a backup.	See *Creating a parameter backup* (page 42).
Restore a backup.	See *Restoring a parameter backup* (page 43).

Control panel firmware update

Task	*Actions*
Download new firmware	Go to **Menu** → **System info** → **Connectivity settings**→ **Firmware upgrade**→ **Download new firmware**.
Download and install new firmware	Go to **Menu** → **System info** → **Connectivity settings**→ **Firmware upgrade**→ **Download and install new firmware**.
Install new firmware	Go to **Menu** → **System info** → **Connectivity settings**→ **Firmware upgrade**→ **Install new firmware**.

For more information about control panel firmware update, see *Panel firmware update* on page *68*.

5

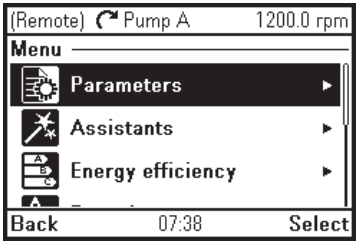
Functions in the main Menu

What this chapter contains

The chapter describes the functions in the main **Menu**.

Menu

All functions of the control panel are accessed through the **Menu** which is the main menu of the user interface. The sub-menus of the **Menu** are listed below and they are described in more detail in the subsequent sections. The sub-menus depend on the product that is controlled with the control panel.



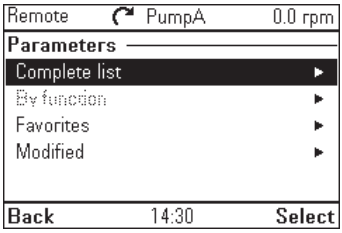
Sub-menu	Function	See page...
Parameters	View and edit parameters.	*34*
Assistants	Launch an assistant.	*34*
Energy efficiency	Use energy-saving features.	*40*
Event log	View information on faults and warnings.	*40*
History graphs	View the load profile.	*41*
Backups	Save settings in the control panel memory and restore them to the drive.	*42*
System info	View information on the drive and options.	*44*
Settings	View and change time and date settings, language, display and other settings, and edit texts.	*44*
Primary settings	View and change settings related to motor, PID, fieldbus, advanced functions, clock, region, and display.	*47*

Sub-menu	Function	See page...
I/O	Provides terminal name, number, electrical status and logical meaning of the drive.	*48*
Diagnostics	Provides faults and warnings information and helps to resolve potential problems.	*48*

Navigating in the Menu

- Use ▲ or ▼ to select a menu item.
- Use ◄ or ⌐ (**Exit**) to go back to the **Home** view.
- Use ► or ¬ (**Select**) to enter the selected sub-menu.

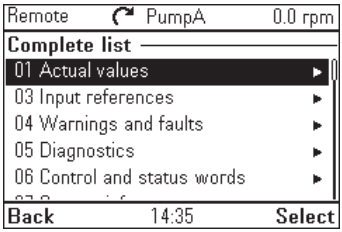
Parameters



In the **Parameters** menu, you can view and edit parameters. There are four sub-menus through which you can access the parameters. In each sub-menu, the grouping principle of the parameters is different.

In each sub-menu, you can edit a parameter by highlighting it and pressing ¬ (**Edit**). Counter parameters and certain number, text and bit field parameters are read-only and can be viewed by pressing ¬ (**View**).

Complete list

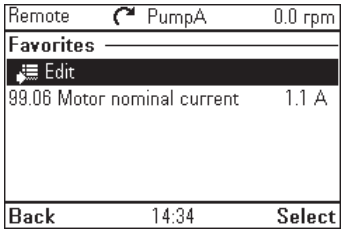


In the **Complete list** sub-menu, all parameter groups are listed in numerical order. If you select a parameter group, all parameters in that group are listed and you can view and edit the parameters. Parameter numbers are always displayed in this sub-menu.

By function

This functionality is available in a future release.

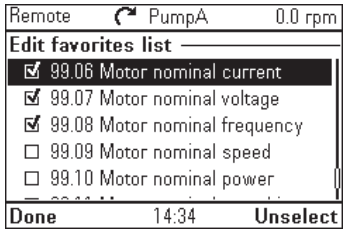
Favorites



In the **Favorites** sub-menu, only user-selected parameters are listed. The order is determined by the parameter number.

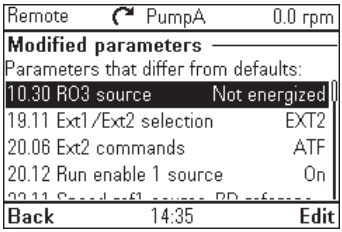
Editing the list of favorites

1. Select **Edit**.
2. Check parameters you want to show on the list by pressing (**Select**).
3. Press (**Done**) to exit and save changes.



Modified

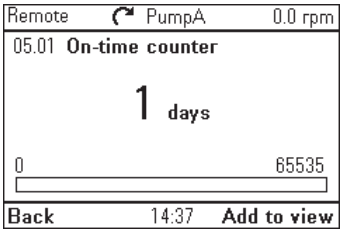
In the **Modified** sub-menu, only the parameters whose values differ from the Application Macro defaults are listed. The order is determined by the parameter number.



Adding parameters to the Home view

When you view a read-only parameter in the **Parameters** menu, you can add the parameter to the **Home** view.

- Press (**Add to view**) to open the Home view in the editing mode then you can add the parameter to an empty display slot or replace an existing parameter with it.
- Press (**Back**) to go back to the parameter view.



Editing the **Home** view functions are described in more detail in *Editing the contents of the Home view* (page *52*).

Editing parameters

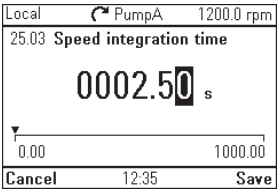
1. Press (**Select**) to select the desired parameter from the list.
2. Press (**Edit)**.
3. Use and to change the value.
4. Press (**Save**) to save the value, or press (**Cancel**) to exit the parameter view and discard any changes.
5. Press + to restore the default value of the parameter (this does not save it).

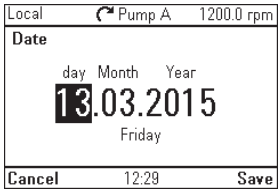
See the sections below for more information on editing specific parameter types.

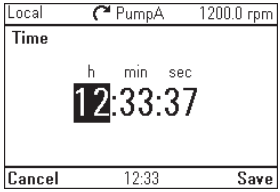
Editing numeric parameters

Numeric parameters include parameters with linear numeric values, passcodes, time and date parameters, durations and exception dates. For numeric parameters with linear values, the minimum and maximum values are displayed in the bottom left and right corners of the content area, respectively.

- Use and to highlight digits.
- Use and to change the value.
- Press (**Save**) to save the value and exit the view.
- To cancel and exit, press (**Cancel**).



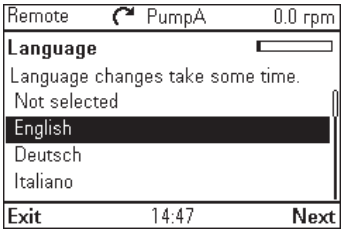




Editing selection list parameters

A selection list consists of mutually exclusive options, such as the language selection list.

- Use and to move the cursor.
- Press (**Save**) to select and save the highlighted option.
- To cancel and exit, press (**Cancel**).

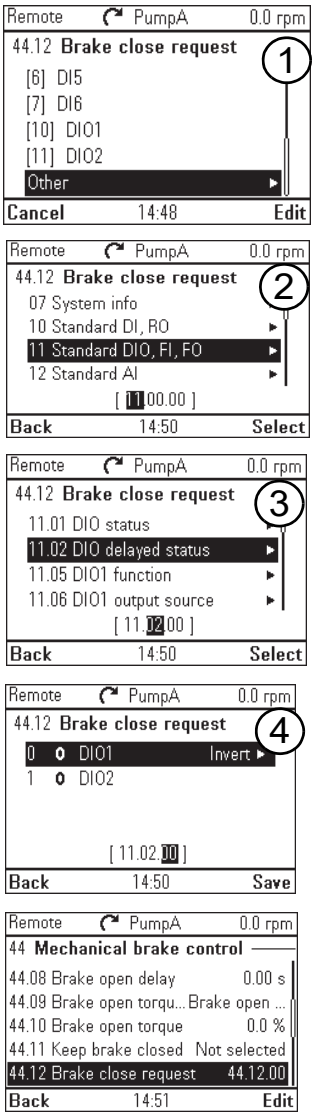


Some selection list parameters allow you to choose another parameter as its value. In addition to a preset list of options, you can select a parameter freely, represented by the selection **Other** in the list.

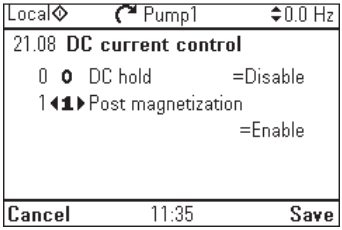
To select a parameter, follow the instructions:

1. Select **Other** to move to a list of parameter groups.
2. Select a parameter group to move to a list of parameters.
3. Depending on the parameter you are editing, you must select a parameter or an individual bit, or you may choose either of the two.
   - If the right softkey label is **Select**, you must select an individual bit as the value of the parameter you are editing. Press (**Select**) to move to a bit selection list.
   - If the right softkey label is **Save**, you can select that parameter as the value of the parameter you are editing. Press (**Save**) to save the selection.
   - If the right softkey label is **Save** and there is also an arrow on the right hand side of the selection, you can choose an individual bit or all the bits in that parameter. Press ▶ to move to a bit selection list. If you want select all the bits in the parameter, press (**Save**) instead.
4. Select a bit if applicable (see the previous step). Press ▶ to invert the selected bit and press (**Save**) to save the selection.

The parameter or bit is now selected as the parameter value.



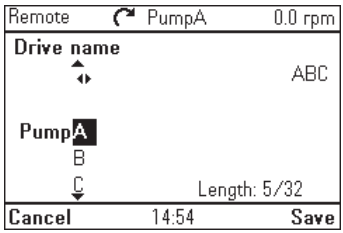
Editing bit-field parameters



A bit-field parameter is a bit word whose individual bits can be edited. The labels describe the function of each bit, and the current state of the bit is shown as 1 or 0.

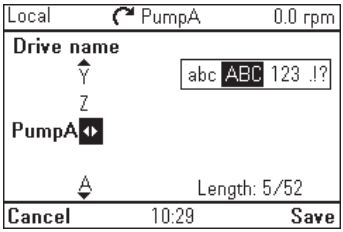
- Use ▲ and ▼ to select a bit.
- To change a bit value, press ◀ or ▶.
- To save the bit values and exit, press (**Save**).
- To cancel and exit, press (**Cancel**).

Editing texts



Texts that you can edit with the control panel include parameter display names in the Home view and their units, drive names, fault and warning names, and other customizable notes or names.

- To select the character mode ((lower case / upper case / numbers / special characters), press ▲ unit symbol ◆ is highlighted and then select the mode with ◀ and ▶. Now you can start adding characters. The mode remains selected until you select another one.
- To add a character, highlight it with ▲ ▼and then press ▶.
- To remove a letter, press ◀.
- Press (Save) to accept the new setting, or press (Cancel) to go back to the previous view without making changes.



Note: The current software version supports only the English character set (a...z).

Resetting counters

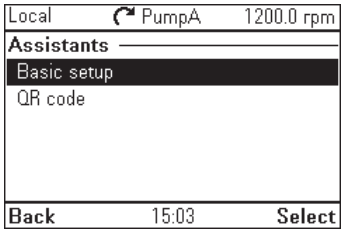
Counters are parameters that measure incremental quantities associated with the use of the drive such as runtime or energy consumption. Counters are updated automatically and cannot be edited, but it is possible to reset a counter to zero by pressing down (**Reset**) for three seconds.

Note: If a trigger value is defined for the counter, the counter's progress from zero to the trigger value is shown as a bar graph.

Assistants

In the **Assistants** menu, you can launch an assistant, which is a sequence of steps that help you to complete a task, such as setting up the control panel to use with the drive and the motor, or fixing a fault. You can also generate a QR code, which is an optical code containing information of the drive. The code can be read with ABB application and mobile device.

Launching an assistant



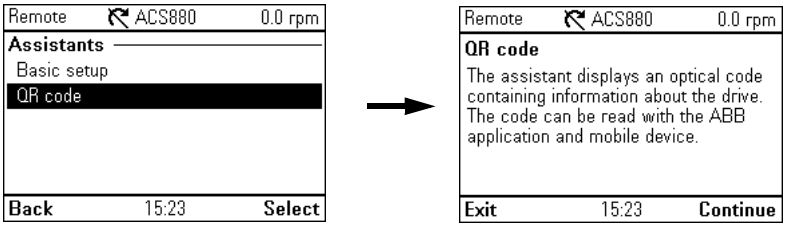
1. Use ▲ and ▼ to highlight the desired assistant.
2. Press (**Select**).
3. Follow the instructions on the screen to complete the task defined by the assistant:
   - Use ▲ and ▼ to select settings.
   - To edit a setting, press (**Edit** or **Select**).
   - Use ▶ and ◀ to move between the pages of the assistant. The progress bar on the upper right corner of the screen indicates the progress.
   - To exit the assistant, press (**Exit**).

Most settings accessed in assistant steps can also be accessed through the main **Menu** or the **Parameters** menu, but the steps the assistants are more user-friendly.

Note: If you used the **Assistants** menu, complete all steps to save the changes, otherwise the changes are canceled.

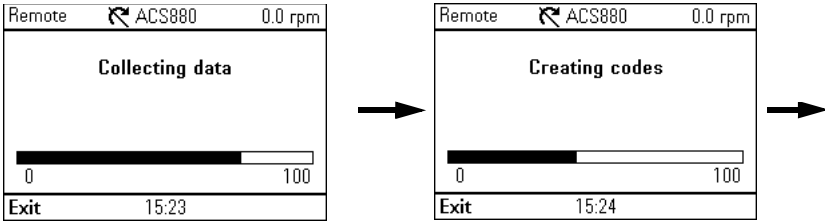
Generating a QR code

1. In the Assistants menu, select QR code using ▲ and ▼ and press (**Select**).



2. Press (**Continue**).

The control panel collects data and generates the code.



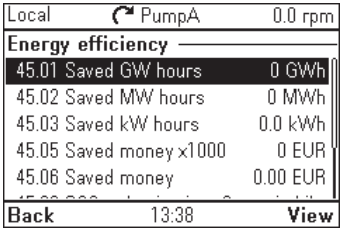
3. Press << or >> to navigate to the next screen.

Drive information can be generated to QR code, which can be easily read by mobile App for registration.

You can also generate QR code from **Menu** → **System info** → **QR code**.

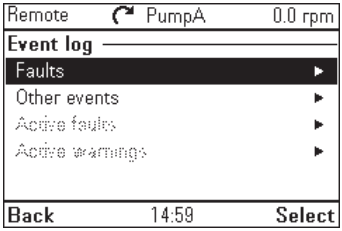
Energy efficiency

In the Energy efficiency menu, you can view and configure parameters related to energy savings, such as kWh counters.



Event log

In the **Event log** menu, you can view information collected on faults and warnings. Events are

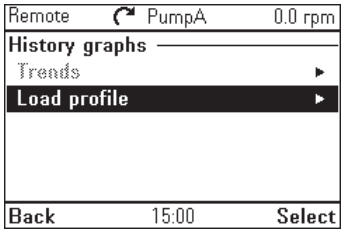


automatically logged. See *Fault tracing* (page *57*) for more information on faults and warnings.

- **Faults** sub-menu displays the faults that are tripped the drive.
- **Other events** sub-menu displays all other faults, and warnings and their details.
- **Active faults** and **Active warnings** sub-menu displays the faults and warnings which are active.

History graphs

The History graphs menu contains Trends and Load profile sub-menu.

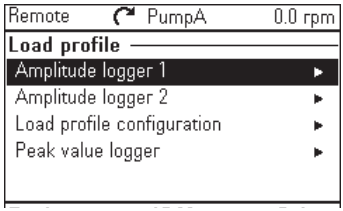


Trends

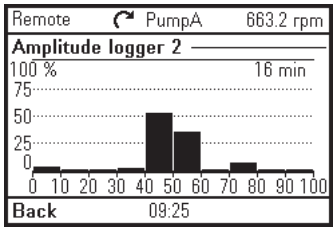
This functionality is available in a future release.

Load profile

In the **Load profile** submenu, you can view and configure load profiles. The menu contains the following sub-menus:

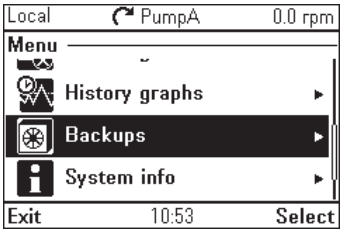


- **Amplitude logger 1**: Opens a Histogram view, which displays the motor current as a distribution histogram. This logger cannot be reset.
- **Amplitude logger 2**: Opens a Histogram view, which displays the contents of an amplitude logger as a distribution histogram. You can select the signal to be monitored.
- **Load profile configuration**: Select the signal to be monitored in Amplitude logger 2.
- **Peak value logger**: Select a signal to be monitored by a peak value logger.



For more information on load profiles, see the appropriate firmware manual.

Backups



In the **Backups** menu, you can save parameter settings in the control panel memory and restore parameter settings from a backup to the drive. You can store up to two backup files on the control panel.

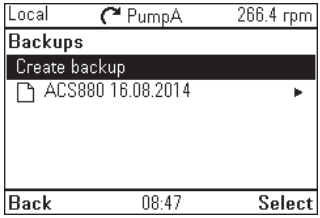
The assistant panel has a dedicated space for one automatic backup. An automatic backup is created two hours after the last parameter change. After completing the backup, the panel waits for 24 hours before checking if there are additional parameter changes. If there are, it creates a new backup overwriting the previous one.

You can copy backup files to and from a PC with any file manager application (example, Windows Explorer).

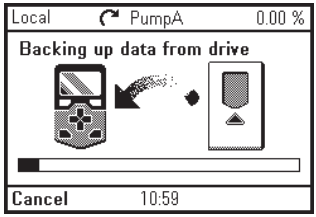
Some of the Backup icons are listed below:

Backup	Icon
Automatic backup	
Compatible backup	
Incompatible backup	
Partly compatible	

Creating a parameter backup



1. In the **Backups** menu, select **Create backup**.
   If there is a free backup slot in the control panel, the following step is skipped.
2. Use ▲ and ▼ to select one of the existing backup files, and press **Replace**.
3. Wait until the backup is completed. An animation is shown on the control panel during the backup process. The control panel automatically returns to the **Backups** menu.

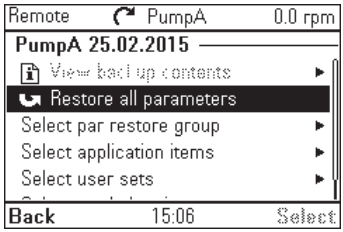


Note: If the backup process is canceled or interrupted, the previously saved backup file is not deleted or damaged. Thus, if you accidentally start a backup process, you can safely cancel it before its completion.

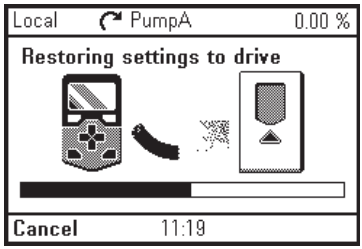
Restoring a parameter backup

1. In the **Backups** menu, select the backup file you want to restore.
2. Select **View backup contents** and check that it is the correct backup file and that it is suitable for restoring.

   Note: This functionality is available in a future release.
3. Select one of the restore options:

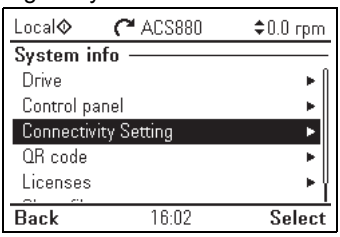


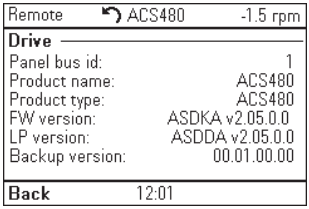
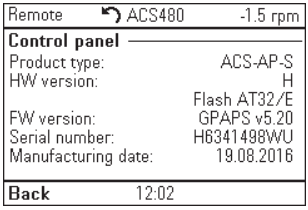
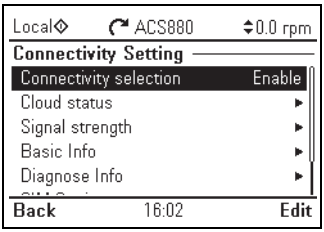
   - To restore all settings, select **Restore all parameters**.
   - To restore a set of parameters, select **Select par restore group** and select the desired parameters from the list, and then select **Restore**.
   - To select application parameters, select **Select application items** and select the desired parameters from the list and then select **Restore**.
   - To select user parameters sets, select **Select user sets** and select the desired user set from the list and then select restore.
   - To select production data items, select **Select prod. data items** and select the desired production data and then select restore.
4. Wait until the restore is completed. An animation is shown on the control panel during the restoring process.The control panel automatically returns to the **Backups** menu.

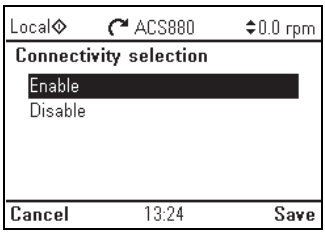
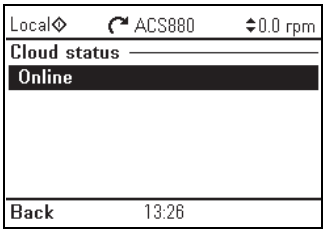
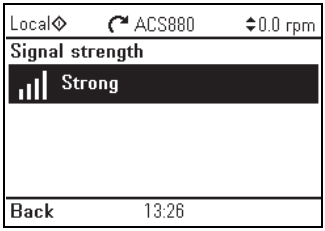
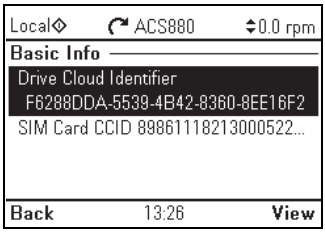
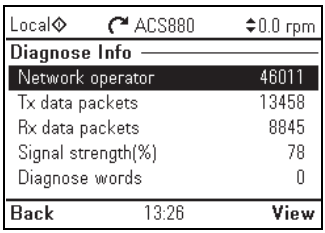


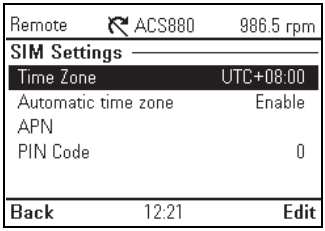
System info

In the **System info** menu, you can view information about the drive, control panel, connectivity setting, fieldbus and any installed option modules. You can also generate a QR code that contains the drive information which you can scan and quickly register your drive.



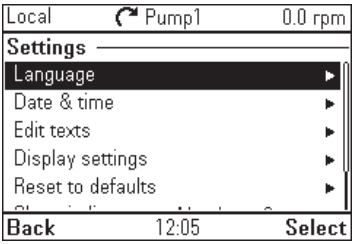
Sub-menu	Function
Drive	Shows information on the selected component, such as firmware version, serial number, type code, device ID number or date of manufacture. **Note**: The content of the view varies between different drive types. 
Control panel	Shows information on the hardware and software version of the control panel. 
Connectivity setting function	Shows connectivity selection, Cloud status, Signal strength, Basic information, Diagnose information and SIM Setting. 

Sub-menu	Function
Connectivity selection	Enable or disable the NB-IoT connectivity. **Note:** • By default NB-IoT is disabled. • NB-IoT connectivity must be enabled in order to send drive data to cloud. • NB-IoT connectivity must be disabled before Bluetooth can be activated. 
Cloud status	Show the status of cloud connectivity: online or offline. When the cloud status is online, LED connectivity status light blinks with blue color. This means drive is now connected to the cloud, drive subscription is valid and data is ready to be visualized in cloud portal. 
Signal strength	Show the signal strength of the network coverage based on modem measurements. There are four states: strong, weak, medium and no signal. 
Basic information	Show the cloud digital twin ID number (GUID) and built-in SIM CCID information for SIM provision and diagnosis. 
Diagnose information	Show the status of cloud connectivity, including network operator, total transmitted / received packet counters, signal strength (%) and diagnose words in case of cloud connectivity failure. 

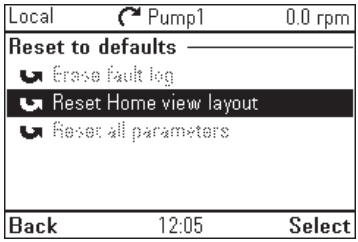
Sub-menu	Function
SIM Setting	Set time zone, APN and PIN code. **Note:** In EU release firmware, APN is pre-configured. Do not change this settings unless instructed by ABB. By default, there is no need to enter any PIN code. 
QR code	Shows an optical code containing information of the drive. The code can be read with ABB application and mobile device for easy registration. To generate the QR code, press (**Continue**). 

Settings

The **Settings** menu has the following sub-menus:



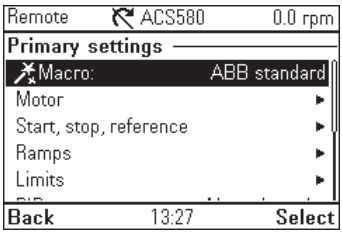
Sub-menu	Function
Language	Select different language in the control panel.
Date & time	When the panel is powered on, the time is obtained from the network and synchronized with the time server. You also can set date and time manually, and select their display settings and whether the control panel automatically adjusts the time for daylight savings changes. The time and date display setting determines how time stamps are formatted.
Edit texts	Customize editable user interface texts, such as the drive name.
Display settings	Set backlight power save on/off and adjust display contrast and brightness.

Sub-menu	Function
Reset to defaults	Reset settings to their default values. **Erase fault log:** This functionality is available in a future release. **Reset Home view layout:** Default Home view settings are restored. **Reset all parameters:** This functionality is available in a future release. 
Show in lists	Show or hide the numeric IDs of: • parameters and groups • option list items • bits • devices in **Options** → **Select drive**.
Pass code	Enter pass codes into this parameter to activate further access levels (for example additional parameters).

Primary settings

The **Primary settings** menu has the following sub-menus.

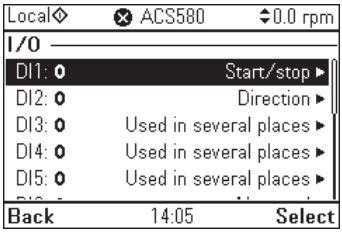
Note: The contents displayed may vary based on the drive/device to which the panel is connected. The menu shown is only an example.



Sub-menu	Function
Macro	Set up drive control and reference source by selecting from a set of predefined wiring configurations.
Drive	Adjust drive related settings, such as control location, run permissions, ramps, limits, constants speeds, flying starts references.
Motor	Adjust motor-related settings, such as control mode, nominal values, ID run or thermal protection. Note that the settings that are visible depend on other selections, for example vector or scalar control mode, used motor type or selected start mode.
Loop controller	Set up loop controller settings and actual values. Loop controller is only used in remote control.
Pump and fan control	Controls one motor connected to the drive and up to 3 auxiliary motors.

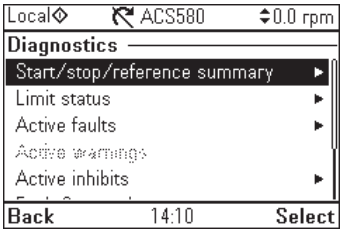
Sub-menu	Function
Communication	Use the drive with a fieldbus.
Start, stop, reference	Set up start/stop commands, reference, and related features, such as constant speeds or run permissions.
Ramps	Set up acceleration and deceleration settings.
Limits	Set the allowed operating range. This function is intended to protect the motor, connected hardware and mechanics. The drive stays within these limits, no matter what reference value it gets.
PID	Set up the settings and actual values for the process PID controller. PID is only used in remote control.
Fieldbus	To make the protocol configurations easier.
Advanced options/ functions	Contains settings for advanced functions, such as triggering or resetting faults through I/O, or switching between entire set of settings.
Clock, region, display	Contains settings for language, date and time, display (such as brightness) and settings for changing how information is displayed on screen.
Reset to defaults	Enables you to reset the Home view to its original factory state.

I/O



In the **I/O** menu, each row provides terminal name, number, electrical status and logical meaning of the drive. Each row also provides a sub-menu that provides further information on the menu item and allow you to make changes to the I/O connections.

Diagnostics



The **Diagnostics** menu provides diagnostic information, such as faults and warnings and helps you to resolve potential problems. Use the menu to make sure that the drive setup is functioning correctly.

Note: The contents displayed may vary based on the drive/device to which the panel is connected, and the menu shown is only an example.

Sub-menu	Function
Start, stop, reference, summary	Shows where the drive is currently taking its start, stop commands and reference. The view is updated in real time. If the drive is not starting or stopping as expected, or runs at undesired speed, use this view to find out where the control comes from.
Limit status	Describes any limits currently affecting operation. If the drive is running at undesired speed, use this view to find out if any limitations are active.

Sub-menu	Function
Active faults	Shows the currently active faults and provides instructions on how to fix and reset.
Active warnings	Shows the currently active warnings and provides instructions on how to fix and reset.
Active inhibits	Shows the currently active inhibits. The drive cannot start. Drive is not parameterized correctly.
Fault & event log	Lists the faults, warnings and other events that have occurred in the drive.
Fieldbus	Provides status information and sent and received data from fieldbus for troubleshooting.
Load profile	Provides status information of load distribution (that is, drive running time spent on each load level) and peak load levels.

6

Functions in the Options menu

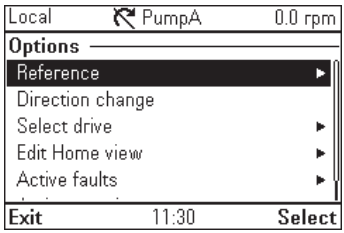
What this chapter contains

The chapter describes functions in the **Options** menu.

Options menu

In the **Options** menu, you can control the settings related to the **Home** view.

Note: The contents displayed may vary based on the drive/device to which the panel is connected. The menu shown is only an example.



The **Options** menu has the following sub-menus:

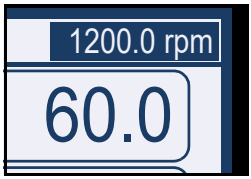
Sub-menu	Function
Reference	Set the reference value by using ▲ and ▼. The changes take place when you save them with a key press ⏎. See *Setting the reference* (page *52*).
Direction change	Change the direction of the motor rotation in local control mode.
Select drive	Enable or disable the panel bus. If enabled, view the status of drives in the panel bus and select which drive to control with the control panel.
Edit Home view	Edit the contents of the **Home** view. See *Editing the contents of the Home view* (page *52*).
Active faults	View an active faults. See chapter *Fault tracing* (page *57*).
Active warnings	View an active warnings. See chapter *Fault tracing* (page *57*).

Setting the reference

You can change the reference when the drive is in the local control mode. You can also change the reference in remote control mode if the drive configuration permits it. Changes take effect when saved with a key press.

1. Press Loc/Rem to switch to the local control mode, if the text in the top left corner of the display reads **Remote**.
2. In the **Options** menu, select **Reference**.
3. Change the reference by using the following keys:
   - Use ◄ or ► to select a digit to edit.
   - Use ▲ and ▼ to change the value of the selected digit.
4. Press (**Save**) to save the reference value, or (**Cancel**) to discard the changes. The control panel returns to the **Home** view.

Tip: To adjust the reference from the **Home** view, press ▲ or ▼ and the reference changes immediately. The reference value is highlighted when you are changing it. If you hold down the arrow key, the rate at which the value changes accelerates.

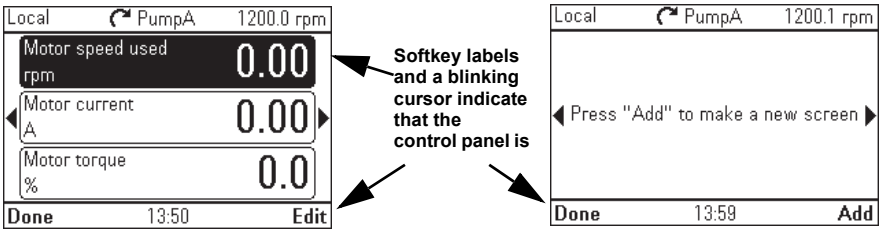


Editing the contents of the Home view

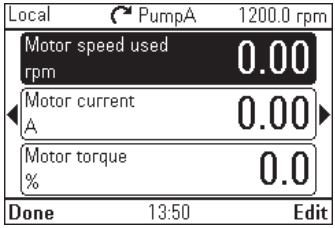
1. In the **Options** menu, select **Edit Home view**. This opens the **Home** view in the editing mode.
2. In the editing mode, you can add, edit and delete the displayed parameters.

After editing the contents, press (**Done**) to confirm the changes and to exit the editing mode and return to the **Home** view.

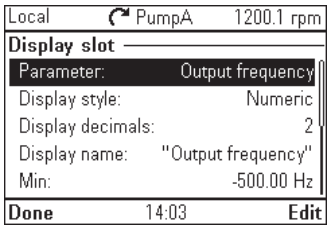
Two-signal page in editing mode ***Empty page in editing mode***



3. In the editing mode, use ◄ and ► to move between the different pages of the **Home** view.
   - To add a new page, navigate to the page that reads Press **Add** to make a new screen.
   - To edit, add or delete parameters on an existing page, navigate to that page.
4. Use ▲ and ▼ to move the cursor highlight.
   - To add a new parameter to an existing page, highlight an area above, between or below an existing parameter.
   - To edit or remove an existing parameter, highlight that parameter.



5. Press (**Edit**) to open the **Display Slot** menu.



6. Choose a parameter, its display settings and scaling.

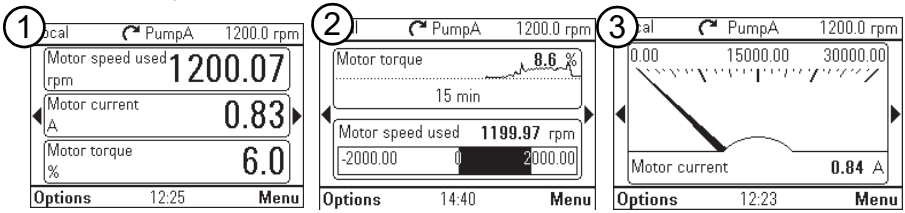
   Note: Parameters whose values have textual representations (such as the names of bit states) or contain characters other than numbers (such as dates or durations) are automatically displayed as text. For these parameters, Display style and selections pertaining to numeric parameters are not available.

- **Parameter**: Select the parameter to show in the selected slot. The most commonly used parameters are listed as presets.

  For bit field parameters, you can select either a single bit or the full bit field to add to the **Home** view. With individual bits, the bit state is displayed. Full bit fields are shown in either hexadecimal or binary format.

Note: If **Empty** is selected, the parameter is removed from the **Home** view.

- **Display style**: Select how the signal values are displayed. It is possible to use different display types on the same page.
  - **Numeric**: The parameter values are displayed as numbers (see figure 1 below). If there is only one parameter on the page, a bar graph is also displayed.
  - **Gauge/bar**: When there is one parameter on the page, the parameter value is shown as a dial gauge (see picture 3 below). When there are two or three parameters on the same page, the value is displayed as a bar graph (see the slots in figure 2 below).
  - **Graph** 15 minutes, 30 minutes, 1 hour or 24 hours: The parameter value is displayed as a graph within the selected time frame (see the bottom slot in picture 2).



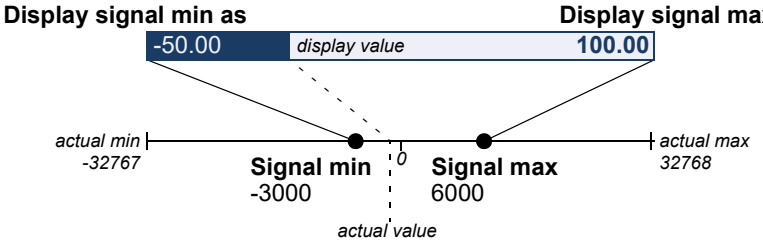
Note: The data shown in the graph is not stored in the drive memory, that is, if you remove or restart the control panel, the data is lost.

- **Display decimals**: Specifies how many decimals are shown.
- **Display name**: Enter a custom label to show in the **Home** view instead of the parameter name.
- **Min** and **Max**: This function depends whether **Scale value range** is selected or not:
  - **Scale value range** not selected: Select the minimum and maximum signal values that are shown on graph displays.
  - **Scale value range** selected: Select the actual values of the parameter that correspond to **Display min as** and **Display max as** (see below).
- **Scale value range:** Select if you want to specify the value range.
  - **Display min as** and **Display max as:** Select the minimum and maximum values shown in the **Home** view.

    This feature allows application-specific scaling to be applied.

If the parameter value is below the minimum or above the maximum, the text *Off the scale* is displayed. In the graph format, small arrows are shown instead to indicate values off the scale.

Scaling with Display signal min/max as and Signal min/max



- **Display unit:** Customize the unit shown in **Home** view when scaling is used.

7

Fault tracing

What this chapter contains

This chapter describes how to identify different fault and warning messages that are shown on the control panel and how to solve problem situations.

Identifying error and warning messages

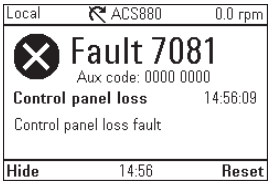
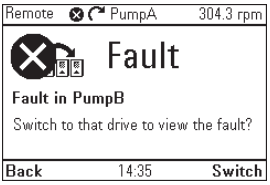
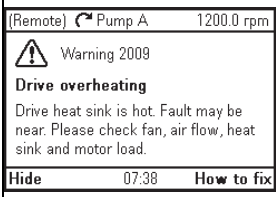
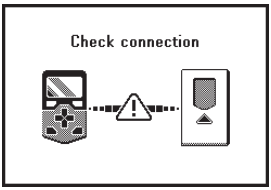
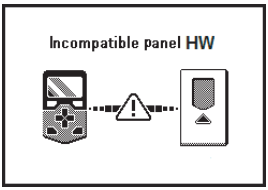
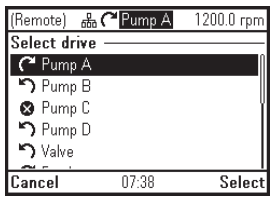
Faults and warnings are drive states that occur when the drive detects a problem in its operation. The display message, backlight and LED indications help you to identify the problem.

Some of the fault and warning icons and their descriptions are mentioned below.

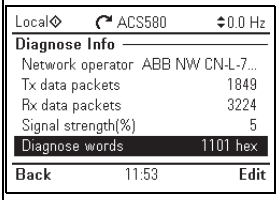
Event	Icon
Fault activate	
Fault reset	
Warning activate	
Warning deactivate	
Pure event activate	
Pure event deactivate	

Faults and warnings when disable cloud connection

Refer to the table below to identify faults and warnings.

Display	LED	Type
	continuous red	See *Faults* (page *59*).
	blinking red	Faults of this type require stopping and restarting the drive before it continues to function normally. See *Faults* (page *59*).
	continuous red	A fault has occurred in another drive in the panel bus.
	blinking green	See *Warnings* (page *60*).
	continuous green	The connection between the control panel and the drive is faulty. Check that the connection cable is properly attached.
	continuous green	The control panel type is not compatible with the drive you attempt to use it with. See *Compatibility* (page *10*).
	continuous green	The connection between the control panel and the drive has been lost. Check the control panel network connections. Select another drive.

Faults and warnings when enable cloud connection

Display	LED	Type
	continuous green + blinking yellow	The drive is functioning normally, and cloud connection has fault. When the cloud connection has fault, go to **System info → Connectivity setting→Diagnose info → Diagnose words** to find the fault code。 Fault code and reason, see *Connectivity panel faults words* (page *60*).

For more details about status lights, see the section *Status LED* in chapter *Control panel overview*.

Faults

Faults are problems that stop the motor and require your attention before you start the drive again.

Solve the fault situation:

1. Identify and eliminate the cause of the fault. In the **Fault** view, you can see the fault code. Refer to the relevant firmware manual for more information on the fault.
2. Reset the fault by pressing (**Reset**) in the **Fault** view.

In the **Fault** view, the keys have the following functions:

- Press (**Hide**) or any of the arrow keys to temporarily hide the fault and go back to the previous view. If there is also an active warning, it is displayed instead. The fault view reappears after 60 seconds if no keys have been pressed.
- Press (**Reset**) to reset the fault and return to the previous view.
- Press the ? key to open the context-sensitive help. The help page has a shortcut to the Fault Diagnostics Assistant which helps you solve the fault situation.

Warnings

Drive warnings

Warnings mean that a possible problem has been detected and may need attention, and the drive can still run. A warning message disappears once the condition that triggered it goes away.

- Press (**Hide**) to hide the warning message and go back to the previous view. If the warning is still active after 60 seconds of no key presses, the **Warning** view reappears automatically.
- Press the ? key to open the context-sensitive help.

Note: If multiple warnings are active, the total number of active warnings is displayed. Use ▲ and ▼ to scroll through the warnings.

Connectivity panel faults words

Code (hex)	Fault	Cause	What to do
1101	Simcard Fault	Simcard error	Contact your local ABB representative.
1102	Simcard Fault	Simcard PIN error	Contact your local ABB representative.
1103	Simcard Fault	Simcard PUK error	Contact your local ABB representative.
1104	Simcard Fault	Simcard lock	Contact your local ABB representative.
2101	Operator Fault	Registering failed	Contact your local ABB representative.
2102	Operator Fault	Modem register timeout	Contact your local ABB representative.
2103	Operator Fault	Modem cmd timeout	Contact your local ABB representative.
2104	Operator Fault	Modem cmd failed	Contact your local ABB representative.
2105	Operator Fault	Response not expected	Contact your local ABB representative.
2106	Operator Fault	NITZ error	Contact your local ABB representative.
3101	Modem Fault	No signal/Weak signal	Contact your local ABB representative.
3102	Modem Fault	Modem firmware version error	Contact your local ABB representative.
4101	Server Fault	TCP connection fault	Contact your local ABB representative.
4102	Server Fault	Not supported drive type	Contact your local ABB representative.
4103	Server Fault	DPS server problem	Contact your local ABB representative.
4104	Server Fault	IOT hub server problem	Contact your local ABB representative.
4105	Server Fault	ABBA server problem	Contact your local ABB representative.
5000	Unknow Fault	Unknown diagnose	Contact your local ABB representative.

8

Service and maintenance

What this chapter contains

This chapter describes the service and maintenance tasks of the Drive Connectivity Panel.

Control panel software updates

If the control panel software needs to be updated, please refer to *Control panel firmware update* on page *31*.

Recycling instructions and environmental information

See the drive related Recycling instructions and environmental information.

9

Digital Powertrain service

What this chapter contains

The chapter describes the Digital Powertrain service enabled by Drive Connectivity Panel. It also describes how to access the service.

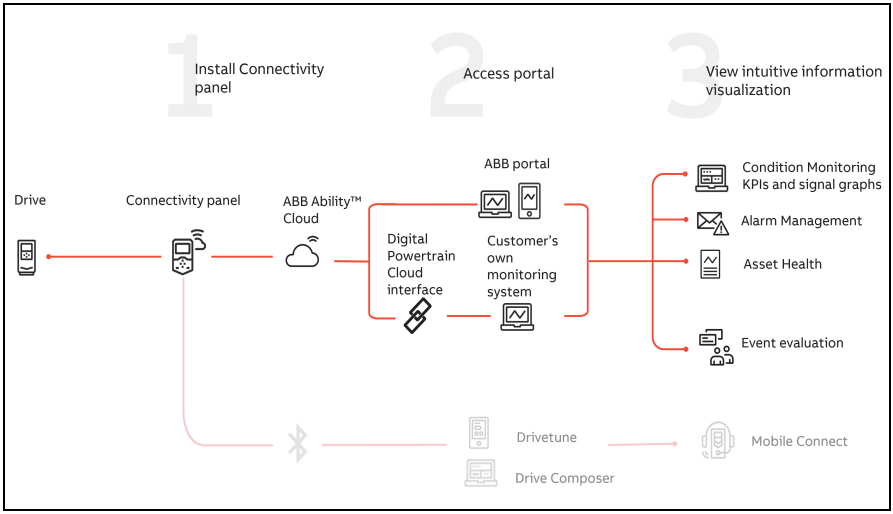
Digital Powertrain overview

The ABB Ability™ Digital Powertrain is a suite of digital technologies to improve the performance, reliability and efficiency of all components within the powertrain: from drives and motors, to pumps, fans and other applications.

It helps customers to make better decisions to keep processes running smoothly, with lower downtime and increased energy efficiency.

Digital Powertrain service subscription need to be purchased separately. For the use of Mobile Connect, please consult local partner and ABB sales representative.

Diagram of Digital Powertrain service



For more information about Digital Powertrain, see: https://new.abb.com/drives/digital-powertrain-monitoring.

Access to Digital Powertrain portal

To be able to access the Digital Powertrain portal, see the descriptions in the *DCP-11 and ACH-DCP-11 Drive Connectivity Panel user guide (EU version)*.

You can also scan the QR code below:

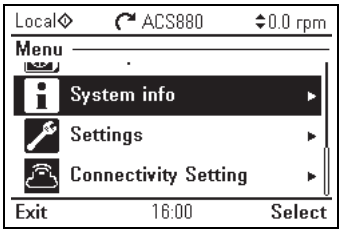
Configuration of Drive Connectivity Panel

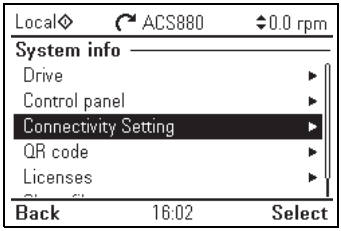
This section uses the ACS880 drive as an example.

Enabling the NB-IoT connection

1. Go to the main menu view, press the **Menu** key, use ▲ and ▼ to move the cursor until the **System information** menu is highlighted, and press the Select key to enter the **System information** menu.

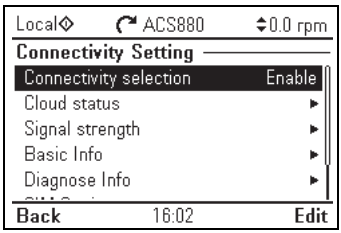
   In the **System information** view, press the Select key to enter the **Connectivity setting** menu. All the settings related to NB-IoT connectivity can be found under this menu.

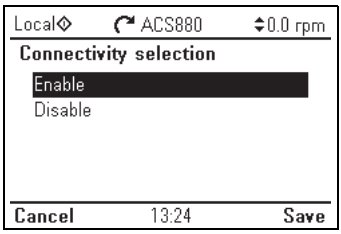




Note: For ACS880, you can also directly enter the **Connectivity setting** menu under the main menu.

2. In the **Connectivity setting** view, select the **Connectivity selection**, press the **Edit** key to enter the **Connectivity selection** option, set Connection control to **Enable,** and press the Save key to activate the connection.





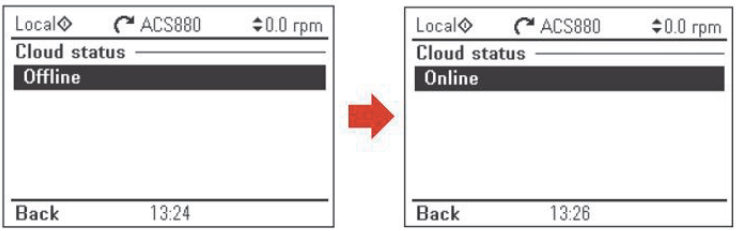
Note: NB-IoT connectivity is disabled by default. Activate NB-IoT by selecting **Enable**. Bluetooth can be activated only when the NB-IoT radio link is disabled.

After enabling the connectivity, the control panel starts communicating with the Digital powertrain portal via NB-IoT network.

Cloud status checking

Go to the **Connectivity setting** view, and press the Select key to enter the **Cloud status** option to check the cloud status.

Cloud status will show **Online** once drive data is successfully received by Digital Powertrain service.



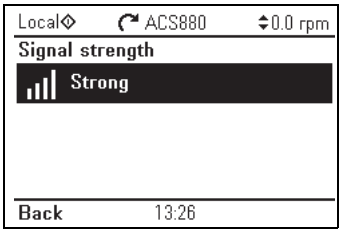
Note: During the first connection, it can take a while for the initial connection.

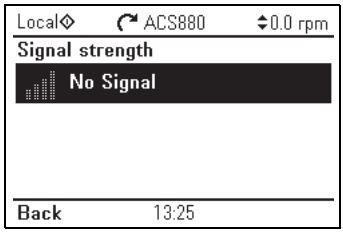
Note: Cloud status will not turn to Online in case of configuration error or network issues.

Signal strength checking

Go to the **Connectivity setting** view, and press the Select key to enter the **Signal strength** option to check the strength of the cloud connection signal.

The signal strength indicates the current NB-IoT signal strength level. Strong/ Medium/ Weak/ No Signal can be displayed here.





Note: Panel can operate normally even under weak signal conditions.

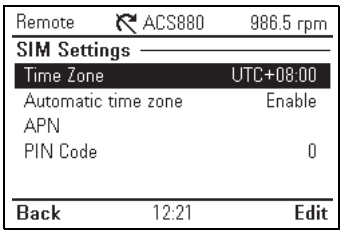
Time zone setting

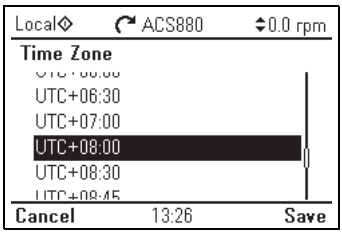
Go to the **Connectivity setting** view, and press the Select key to enter the **SIM Setting** option to set Time Zone, APN and PIN.

Time Zone information can be automatically synchronized from mobile network, or manually selected time zone. APN is pre-configured during production. Do not change APN unless instructed by ABB.

- For EU1 fleets: abb.eu-drives.m2m.ch

Note: Users do not need to set PIN.

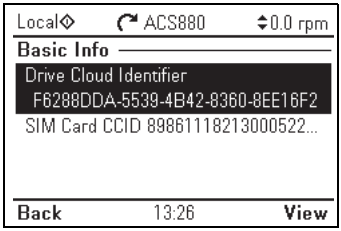


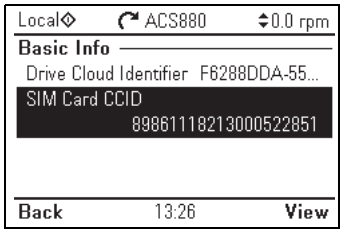


Basic information

Go to the **Connectivity setting** view, and press the Select key to enter the **Basic info** option to check GUID and SIM identification information.

CCID of SIM is used for activating / deactivating each SIM card from SIM management platform, tracking data usage of each SIM etc.

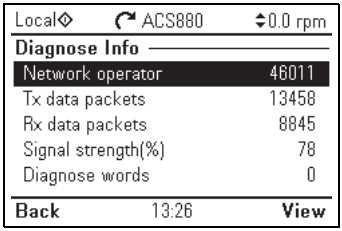




Diagnose information

Go to the **Connectivity setting** view, and press the Select key to enter the **Diagnose info** option to check related information.

- Mobile Network Operator code is displayed.
- Transmitted / Received packet counters shows data traffic through NB-IoT.
- Signal strength is displayed in percentage.
- Diagnose words decryption can be found in the chapter *Fault tracing*.



Panel firmware update

Go to the **Connectivity setting** view, and press the Select key to enter the **Firmware upgrade** option to upgrade firmware.

Downloading and installing the latest firmware can be separately executed, according customer's needs.

Download new firmware

On the **Download new firmware** page:

- **Start** - Download the firmware immediately;
- **Auto Start** -The control panel will automatically check and download latest firmware available online, if yes, it will automatically download it.
- **Stop** - Stop the download operation in progress immediately.

Note: Downloading new firmware only downloads the latest firmware and does not install it.

Download and install new firmware

On the **Download and install new firmware** page:

- **Start** - Download and install the firmware immediately;
- **Auto Start** - The control panel will automatically check and download latest firmware available online, if yes, it will automatically download and install it.
- **Stop** - Stop the download and install operation in progress immediately.

Note: Selection **Start** starts the installation automatically after the new firmware is downloaded successfully.

Install new firmware

On the **Install new firmware** page:

- **Start** - Search and start firmware download if newer version available; A message *Firmware package parse failure* will be shown when there is no newer version.
- **Stop** - Stop the install operation in progress immediately.

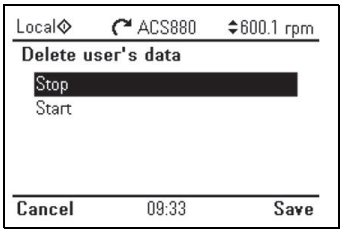
Delete user's data

Warning! If you delete user's data, all the drive data in the Drive Powertrain service, and the related connectivity configuration data in the panel are removed permanently. You cannot restore the data later. NB-IoT connectivity capability will be permanently removed from this control panel! The panel will be no longer able to connect to cloud.

User can terminate data upload service and delete all user related data:

- Disables cloud connection
- Deletes certificates and private keys
- Deactivates data upload capability
- Removes Connectivity settings menu.

Go to the **Connectivity setting** view, and press the Select key to enter the **Delete user's data** option. This feature is used for deleting connectivity related data, including user data, registration data and certificates etc.



Access the drive data in the Digital Powertrain service

Use your ABB account to log into the Digital Powertrain. Both PC and mobile browsers are supported.

URL of Digital Powertrain service: https://powertrain.abb.com/.

For more information about Digital Powertrain service, refer to online help file:

https://remotemonitoring.drives.abb.com/help/en/index.html.

10

Mobile Connect

What this chapter contains

This chapter gives an overview of the Mobile Connect platform.

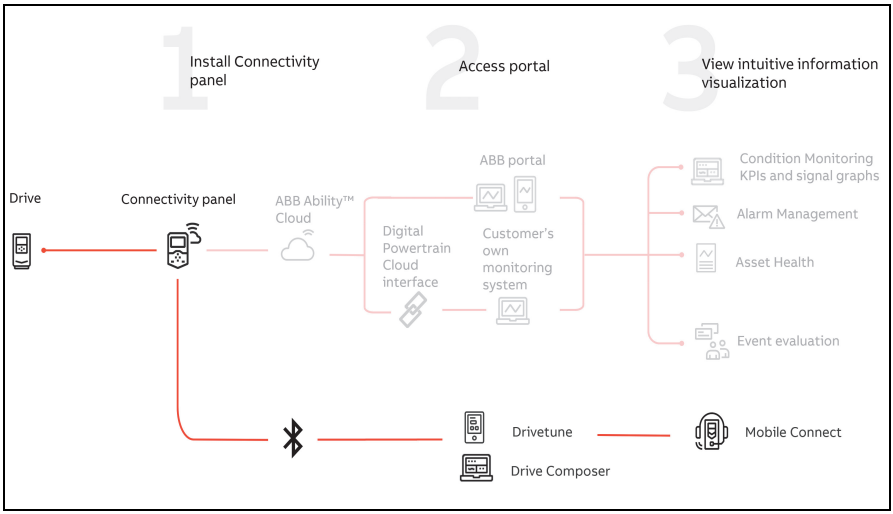
Mobile Connect overview

Mobile Connect is a platform for remote drive support to help commission and troubleshoot ABB drives remotely. The platform includes a web portal for the support user and a mobile application for the user who needs drive support. The Mobile Connect platform allows information exchange between the portal and the mobile device.

- End user, is the mobile application user requesting drive support.
- Support user, is the drive expert providing remote support through Mobile Connect web portal.

When end user requests for drive support, the support user creates a support case with a unique case ID in the Mobile Connect portal. The end user accesses the support case via Mobile Connect in the Drivetune mobile application. If a remote support session is established, the support user and the end user can exchange information about the case by chatting, exchanging voice messages, videos, and pictures. The users can also share Parameter backups and support packages. In addition, the support user can directly access parameters and events, if the end user allows access to the drive via his/her mobile phone using the Bluetooth function supported in the control panel.

Diagram of Mobile Connect service



Additional user guides

This Drive Connectivity Panel supports these services/tools via the Bluetooth connection:

- Drivetune
- Mobile Connect
- Drive Composer: https://new.abb.com/drives/software-tools/drive-composer

You can download and read the related additional user guides by scanning the QR code below:

Drivetune user guide

Mobile Connect user guide

11

Technical data

What this chapter contains

This chapter contains the technical details of the Drive Connectivity Panel.

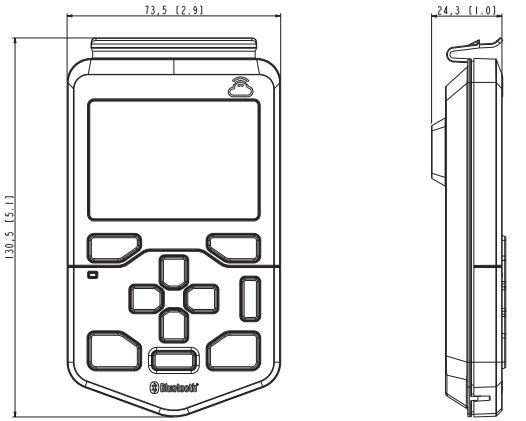
Connectors

Connector	Purpose
RJ-45 female connector	Used for connecting the panel to drive. If cable is used: • Maximum length is 100 meters (328 ft.). • On a panel bus, the combined maximum length of the panel bus cables is 100 meters (328 ft.). **Note:** Drive data collection over panel bus is not yet supported. At present, one panel supports data collection for one drive, and does not support multiple drives. • Use CAT 4 Ethernet cable or better.

Display

The control panel has a monochrome, 240 x 160 pixel resolution LCD display with adjustable backlight and display contrast.

Dimensions and weight

Weight	124 g
Height, width and depth mm [in.]	

Degrees of protection

Control panel, attached to a drive	IP55
Control panel connected with cable to drive	IP20
Control panel mounted to DPMP-01	IP55
Control panel mounted to DPMP-02 or 03	IP65
Control panel mounted to DPMP-04/05	IP66; UV resistance and IK07 impact protection rating.

Materials

Enclosure	PC/ABS
Packaging	Cardboard
Screen	Polycarbonate
Disposal	Do not dispose the control panel with municipal waste. Check the local regulations for disposal of electronic products. See also, drive related Recycling instructions and environmental information.

LCD specification

LCD type	FSTN
Operating temperature	-20°C to +70°C (-4 °F to 158 °F)
Storage temperature	-40°C to +80°C (-40 °F to 176 °F)
Transportation temperature	-40°C to +80°C (-40 °F to 176 °F)
Drive IC	UC1698U
RoHS	Compliant

Note: Response time of LCD display is slow at/below 0 °C (32 °F).

Environmental limits

	Operation	*Storage*	*Transportation*
Installation site altitude	4000 m (13123 ft.)	-	-
Air temperature	-20 °C to +55 °C (-4 °F to 131 °F)	-40 °C to +70 °C (-40 °F to 158 °F)	-40 °C to +70 °C (-40 °F to 158 °F)
Relative humidity	95% (non-condensing)		
Temperature inside the panel	-20 °C to +70 °C (-4 °F to 158 °F)	-25 °C to +70 °C (-13 °F to 158 °F)	-

Note: The accuracy of the real-time clock affected by the working environment temperature is as follows:

acc = K x $(T-T0)^2$, where:

- T0 = 25°C ± 5°C
- K = -0.032 ppm/$°C^2$

Compliance in Europe

EN 300 328 v2.2.2	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonized Standard for access to radio spectrum.
EN 301 908-1 V13.1.1	IMT cellular networks; Harmonized Standard for access to radio spectrum; Part 1: Introduction and common requirements.
EN 55032:2012 + AC:2013	Electromagnetic compatibility of multimedia equipment – Emission requirements
EN 55035:2017	Electromagnetic compatibility of multimedia equipment – Immunity requirements
EN 301 489-1 V1.9.2	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 62368-1:2014 + A11:2017	Audio/video, information and communication technology equipment – Part 1: Safety requirements

EN 50566:2017	Product standard to demonstrate the compliance of wireless communication devices with the basic restrictions and exposure limit values related to human exposure to electromagnetic fields in the frequency range from 30 MHz to 6 GHz: handheld and body mounted devices in close proximity to the human body
EN 62479:2010	Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)
EN 62311:2008	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)
EN 301 908-13 V13.1.1	IMT cellular networks; Harmonized Standard for access to radio spectrum; Part 13: Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE)
EN 55032:2015	Electromagnetic compatibility of multimedia equipment – Emission requirements
EN 301 489-1 V2.2.3	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonized Standard for ElectroMagnetic Compatibility
EN 301 489-17 V3.2.2	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems
EN 301 489-52 V1.1.0	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular Communication Mobile and portable radio and ancillary equipment; Harmonized Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
EN 62209-2:2010	Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)
EN 50663:2017	Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Bluetooth interface

Bluetooth standard	Bluetooth 4.0 Dual mode (smart ready), Bluetooth classic, Bluetooth LE (low energy)
Certification	Bluetooth® Qualified Design
Antenna type	Internal inverted-F on PCB
Operating frequency	2.4000...2.4835 GHz
Antenna Gain	Maximum 1.7 dBi

NB-IoT interface

3GPP Standard	LTE CAT-NB1
Work mode	CAT-NB1 single mode
Data speed	Single-Tone: Upload: 16.7kbps, download: 25.5kbps Multi-Tone: Upload: 62.5kbps, download: 25.5kbps
FW upgrade	DFOTA (Differential FW Over The Air)
Antenna type	LDS Loop antenna on carrier
Antenna Gain	Maximum 2.2dBi
Antenna efficiency	>=55% from 824MHz to 960MHz; >=25% from 1710MHz to 2170MHz
RF output power	Maximum 23dBm ± 2dB
Body-worn SAR testing	Body-worn SAR testing has been carried out at a separation distance of 5 mm. To meet RF exposure guidelines during body-worn operation, the device should be positioned at least this distance away from the body: • SAR 10g Limit: 2.0 W/Kg, • Body SAR Value: 0.355 W/Kg (Max. 5 mm distance)

EU declaration of conformity

EU Declaration of Conformity

We
Manufacturer: ABB Oy
Address: Hiomotie 13, 00380 Helsinki, Finland.
Phone: +358 10 22 11

Declare under our sole responsibility that the following product

Drive Connectivity Panel

ACS-DCP-11

is in conformity with the relevant requirements of European Union Directives, which have been notified in this single declaration that consists of individual Declarations of conformity, provided that the equipment is selected, installed and used according to given instructions.

The harmonised standards and other standards, which have been applied, are specified on the individual Declarations of conformity for particular EU directive.

EU Directives		
RoHS Directive	2011/65/EU 2015/863	RoHS
Radio Equipment Directive	2014/53/EU	RED

Individual EU Declaration of Conformity:

Product	RoHS	RED
ACS-DCP-11	[3AXD10001208157]	[3AXD10001208156]

Helsinki, 17 August 2020

Signed for and on behalf of:

Tuomo Tarula
Vice President, ABB Oy

Vesa Tuomainen
Product Engineering Manager,
ABB Oy

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[3AXD10001208158] Rev. [A]
IMS template code: 3AFE012018 Rev. B

Disclaimers

Generic disclaimer

The manufacturer shall have no obligation hereunder with respect to any product which (i) has been improperly repaired or altered; (ii) has been subjected to misuse, negligence or accident; (iii) has been used in a manner contrary to the Manufacturer's instructions; or (iv) has failed as a result of ordinary wear and tear.

Cybersecurity disclaimer

This product is designed to communicate information and data through the authorized band network of mobile operator. Mobile operator shall protect its network, system and the interface through any appropriate measures to prevent any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

Secure communication

Only the outbound communications necessary for proper operation of the device are used. All unsolicited inbound connections are denied. Here is a list of ports that the Connectivity control panel uses:

Port	Function	Description
8883	Drive parameters and event monitoring	Based on X.509/TLS V1.2 handshake and encryption, cryptographically strong mutual authentication secure communication is created between IoT panel and cloud. Above to secure channel, MQTT with port 8883 is used to package application layer data, meanwhile these application layer data are encrypted.
443	Panel firmware upgrade	HTTPs with port 443 is used to connect to file download server and update IoT panel firmware.
443	Certificate renewal	SCEP is utilized to manage certificate renewal. SCEP payload must be packaged in HTTP/HTTPs. With regards to IoT panel, HTTPs with port 443 is used for certificate renewal communication.
123	Backup time source	NTP protocol is used as a backup time source for the control panel. This is useful in regions where time is not available from cellular operator via NITZ. Please note that NTP is not a secure time source. It is not advised to set panel as the time source for the drive (96.20) if the application is using timed functions. Other options should be considered instead e.g. built-in RTC, Fieldbus, D2D.

Further information

Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to abb.com/searchchannels.

Product training

For information on ABB product training, navigate to new.abb.com/service/training.

Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome. Navigate to new.abb.com/drives/manuals-feedback-form.

Document library on the Internet

You can find manuals and other product documents in PDF format on the Internet at abb.com/drives/documents.

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abb.com/drivespartners

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