

User's manual

ACS -BP-S basic control panel



List of related manuals

| Drive manuals and guides | Code (English) |
|--|---------------------------------|
| <i>ACS580-01 hardware manual</i> | 3AXD50000018826 |
| <i>ACS580-01 quick installation and start-up guide for frames R0 to R3</i> | 3UAU0000076332 |
| <i>ACS580-01 quick installation and start-up guide for frame R5</i> | 3AXD50000007518 |
| <i>ACS580-01 quick installation and start-up guide for frames R6 to R9</i> | 3AXD50000009286 |
| <i>ACS580-04 drive modules (200 to 500 kW) hardware manual</i> | 3AXD50000015497 |
| <i>ACS580-04 drive modules (200 to 500 kW) quick installation and start-up guide</i> | 3AXD50000015469 |
| <i>ACS380 hardware manual</i> | 3AXD50000029274 |
| Drive firmware manuals and guides | |
| <i>ACS580 standard control program firmware manual</i> | 3AXD50000016097 |
| <i>ACS380 machinery control program firmware manual</i> | 3AXD50000029275 |
| <i>ACS380 quick installation and start-up guide</i> | 3AXD50000018553 |
| <i>ACS380 user interface guide</i> | 3AXD50000022224 |

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Table of contents

| | |
|-------------------------|---|
| Table of contents | 1 |
|-------------------------|---|

1. Getting started

| | |
|---|---|
| Applicability | 1 |
| Safety | 1 |
| Related manuals | 1 |
| Attach and remove the control panel | 2 |

2. Start up and use

| | |
|--|---|
| Start up | 3 |
| Control panel use | 3 |
| Display | 4 |
| The Options menu | 4 |
| Start and stop the drive | 4 |
| Set the speed or frequency reference | 5 |
| Change the rotation direction | 5 |
| Set the drive parameters | 6 |
| Open Diagnostics | 6 |
| Back up data | 7 |



3. The Main menu structure

| | |
|---------------------|----|
| The Main menu | 9 |
| Submenus | 10 |

4. Troubleshooting

| | |
|---|----|
| Fault and warning messages | 13 |
| Drive and panel communication failure | 14 |
| Status light | 14 |

5. Technical data

| | |
|---------------------------------|----|
| Components | 15 |
| Weight and dimensions | 15 |
| Degree of protection | 15 |
| Dimensions | 16 |
| Materials | 16 |
| Environmental limits | 17 |
| Disclaimers | 17 |
| Generic disclaimer | 17 |
| Cyber security disclaimer | 17 |

Further information

| | |
|--|----|
| Product and service inquiries | 19 |
| Product training | 19 |
| Providing feedback on ABB Drives manuals | 19 |
| Document library on the Internet | 19 |





Getting started

Applicability

This manual is applicable with the ACS-BP-S basic control panel, the panel software version GPBPS v1.2 and later software versions.

The images and instructions are based on the use of the basic control panel with an ACS580 drive equipped with the Standard control program version 1.6. Note that there may be differences if you use the basic control panel with other equipment or program versions.

Safety

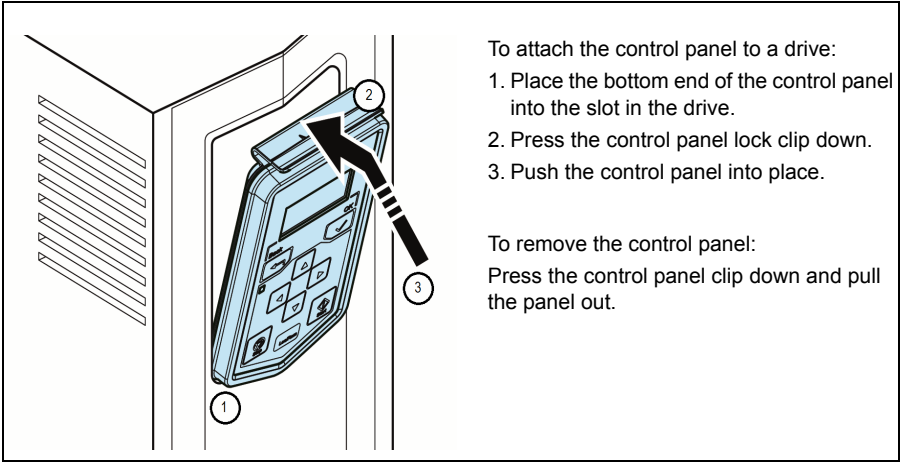
See the appropriate drive hardware manual.

Related manuals

See the appropriate drive manuals. All manuals are available in pdf format at www.abb.com/drives/documents.

Attach and remove the control panel

You can attach the control panel directly to the drive, or use a separate mounting kit.



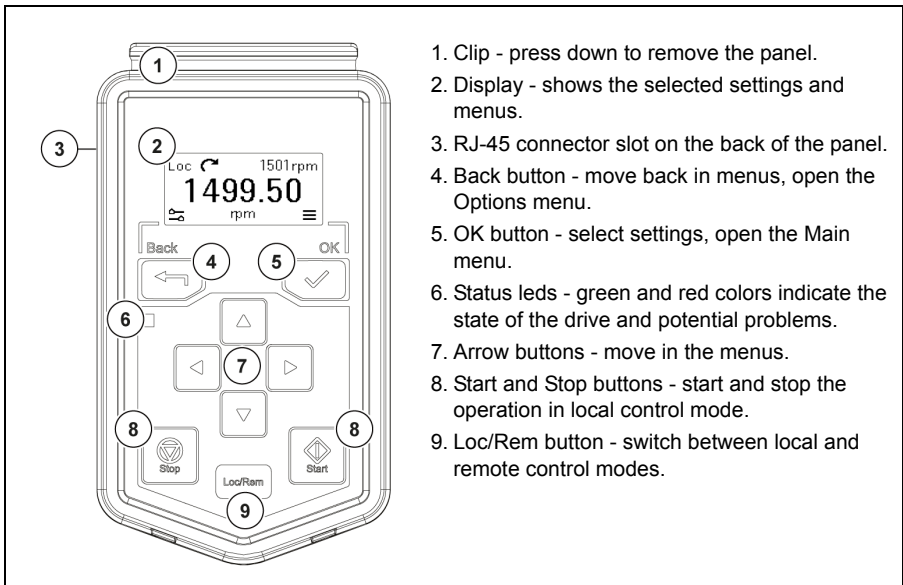
2

Start up and use

Start up


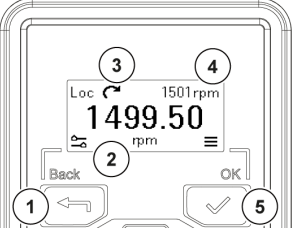

To start up the drive, you need to set the motor data, motor control, connection macro and drive parameters. See the relevant drive firmware manual for start-up details.

Control panel use

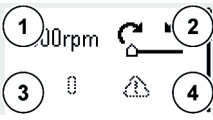


1. Clip - press down to remove the panel.
 2. Display - shows the selected settings and menus.
 3. RJ-45 connector slot on the back of the panel.
 4. Back button - move back in menus, open the Options menu.
 5. OK button - select settings, open the Main menu.
 6. Status leds - green and red colors indicate the state of the drive and potential problems.
 7. Arrow buttons - move in the menus.
 8. Start and Stop buttons - start and stop the operation in local control mode.
 9. Loc/Rem button - switch between local and remote control modes.
-

Display

| | | |
|--|---|--|
| <p>Options menu </p> |  | <p>Main menu </p> |
| <p>1. The Back button: opens the Options menu. 2. Currently monitored value: actual. 3. Rotation direction: forward or reverse. 4. Currently monitored value: reference.</p> | | <p>5. The OK button: opens the Main menu.</p> |

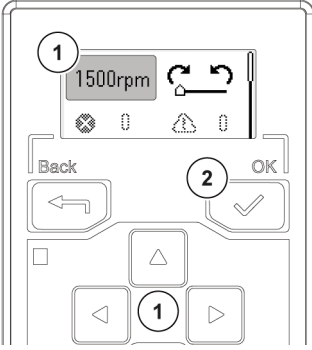
The Options menu


| | |
|---|---|
|  | <p>1. Reference speed or frequency 2. Rotation direction - forward or reverse 3. Active faults 4. Active warnings</p> |
|---|---|

Start and stop the drive

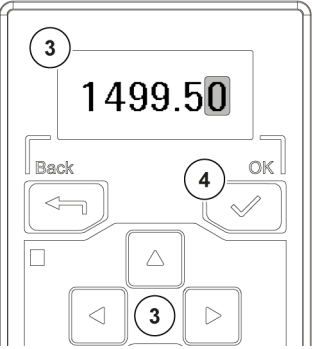
To start the drive, press the Start button on the basic control panel. To stop the drive, press the Stop button on the basic control panel.

Set the speed or frequency reference



1. In the Options menu , move to the speed or frequency reference item with the arrow buttons.

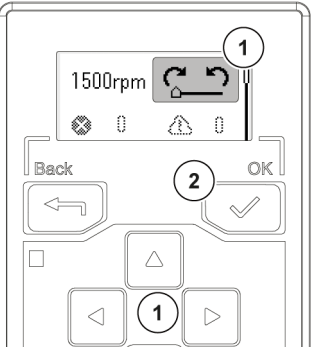
2. Press the OK button to open the item.




3. Press the arrow buttons to set the speed or frequency.

4. Press the OK button to confirm the change.

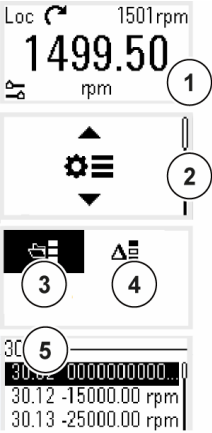
Change the rotation direction




1. In the Options menu , move to the rotation direction item with the arrow buttons.

2. Press the OK button to change the rotation direction.

Set the drive parameters

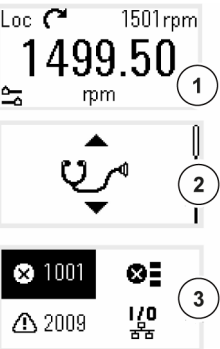


The screenshot shows the drive parameter settings interface. At the top, it displays 'Loc' with a refresh icon and '1501 rpm'. Below this is a large digital display showing '1499.50 rpm'. A gear icon with a list symbol is visible below the display. Below that are two buttons: one with a list icon and another with a list icon and a triangle. At the bottom, there are two rows of parameter values: '30.12 -15000.00 rpm' and '30.13 -25000.00 rpm'. Numbered callouts 1 through 5 point to the gear icon, the gear icon with a list symbol, the list icon button, the list icon with triangle button, and the parameter values respectively.


1. Open the Main menu  from the Home view.
2. Scroll to Parameters and press the OK button to open the submenu.
3. Select the complete parameters list, *or*
4. Select the modified parameters list with the arrow button and press the OK button.
5. The parameters are shown in respective groups. The first two digits of the parameter represent the parameter group. For example, parameters starting with 30 are in the Limits group.

See the relevant drive firmware manual for the related parameters.

Open Diagnostics

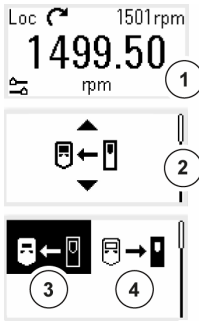



The screenshot shows the drive diagnostics interface. At the top, it displays 'Loc' with a refresh icon and '1501 rpm'. Below this is a large digital display showing '1499.50 rpm'. Below the display is a gear icon with a list symbol. Below that is a button with a list icon and a triangle. At the bottom, there are two rows of diagnostic codes: '1001' and '2009'. Numbered callouts 1 through 3 point to the gear icon, the gear icon with a list symbol, and the diagnostic codes respectively.

1. Open the Main menu  from the *Home* view.
2. Scroll to Diagnostics and press the OK button to open the submenu.
3. Select the warning or fault list with the arrow button and press the OK button.

See the relevant drive firmware manual for the related warnings and faults.

Back up data










1. Open the Main menu  from the Home view.
2. Scroll to Backup and press the OK button to open the submenu.
3. Select to back up from the drive to the panel, *or*
4. Select to restore the backup from the panel to the drive.
A progress view is shown during the backup.

3

The Main menu structure


The Main menu

| | | |
|---|---|--|
|  | 1 | 1. Motor data - motor parameters |
|  | 2 | 2. Motor control - motor behavior settings |
|  | 3 | 3. Control macros - presetting for I/O settings and fieldbus |
|  | 4 | 4. Diagnostics - faults, warnings, fault log and connection status |
|  | 5 | 5. Energy efficiency - energy savings |
|  | 6 | 6. Backup and restore |
|  | 7 | 7. Parameters |

■ Submenus

The Main menu items have submenus where you can change settings and set actions. Some submenus also contain menus and/or option lists. The content of the submenu depends on the drive type.


Motor Data



| | | | |
|---|-------|--------|----|
| 1 | AsynM | Scalar | 2 |
| 3 | 75kW | 1.90A | 4 |
| 5 | 30.0V | 50.0Hz | 6 |
| 7 | 30rpm | 50.0N | 8 |
| 9 | V W | Cosφ | 10 |
| | | 0.00 | |

1. Motor type - AsynM, PMSM
2. Control mode - Scalar, Vector
3. Motor nominal power
4. Motor nominal current
5. Motor nominal voltage
6. Motor nominal frequency
7. Motor nominal speed
8. Motor nominal torque
9. Phase order - U V W, U W V
10. Cos Φ

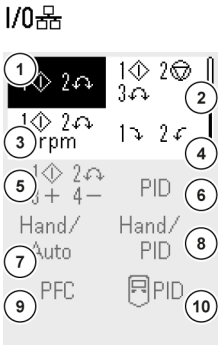
Motor Control



| | | | |
|---|-------|-------|---|
| 1 | | | 2 |
| 3 | 5.0s | 5.0 | 4 |
| 5 | Max | Max | 6 |
| | 30rpm | 3.40A | |
| 7 | Min | | |
| | rpm | | |

1. Start mode - Automatic, Flying start
2. Stop mode - Coast, DC hold, Ramp
3. Acceleration time
4. Deceleration time
5. Maximum allowed speed/ frequency
6. Maximum allowed current
7. Minimum allowed speed/ frequency

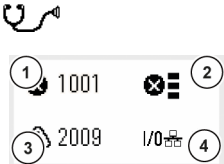
Connection macros



The connection macros available depends on the drive type.

1. ABB Standard (2-wire)
2. 3-wire
3. ABB Standard Vector
4. Alternate
5. Motor potentiometer
6. PID
7. Hand / Auto
8. Hand / PID
9. PFC
10. Panel/PID

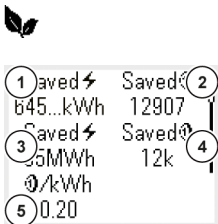
Diagnostics



1. Active Fault - if there is an active fault, the fault code is displayed
2. Fault History - list of latest fault codes (newest first)
3. Active Warnings - if there is an active warning, the warning code is displayed
4. I/O status - I/O settings

For information about the fault and warning codes, see the drive firmware manual.

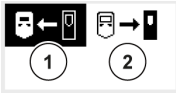
Energy Efficiency



1. Saved energy in kWh
2. Saved money
3. Saved energy in MW
4. Saved money x 1000
5. Cost of electricity per kWh

Energy savings are calculated using a direct-on-line motor connection as comparison.

Backup data



1. Back up from the drive to the control panel.
2. Restore the backup from the control panel to the drive.
A progress view is shown during the backup.

For information about the backup, see the drive firmware manual.

Parameters



1. Complete parameter list - Complete list of parameters, grouped according to their functions
2. Modified parameter list - Shows all parameters that differ from the default values

For information about the parameters, see the drive firmware manual.

4

Troubleshooting

Fault and warning messages

A fault message

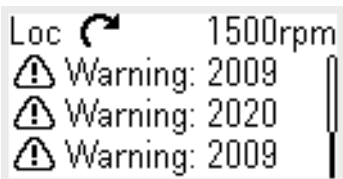


The display shows a fault message code if a problem has been detected. A fault message needs your immediate attention.

When a fault message code is displayed:

1. Identify and eliminate the cause. The fault codes are listed in the drive firmware manual.
2. Press Reset in the Fault view.

Warning messages





The display shows a warning message code if a problem has been detected. Identify and eliminate the cause.

To view the warning messages list:




1. Open the Main menu.
2. Select Diagnostics and open the warning messages list. The warning codes are listed in the drive firmware manual.

For information on fault and warning messages, see the relevant drive firmware manual.

Drive and panel communication failure

| | |
|---|--|
|  | <p>There is a general communication failure, e.g., the drive does not respond to the panel commands.</p> |
|  | <p>The drive and panel are not compatible, e.g., the drive does not support the basic panel.</p> |

Status light

| | | |
|--------------------------|---|---|
| <p>Green, continuous</p> |  | <p>The drive is functioning normally.</p> |
| <p>Green, blinking</p> |  | <p>There is an active warning in the drive.</p> |
| <p>Red, continuous</p> |  | <p>There is an active fault in the drive.</p> |



Technical data

Components

| COMPONENT | DATA | DETAILS |
|-----------|---------------------------|--|
| Connector | RJ-45 female connector. | <p>If a cable is used for the drive connection, the maximum length is 100 meters (328 ft.).</p> <p>When using cables over 10 meters (33.8 ft) long, it is recommended to use the CDPI-01 with termination switch on.</p> |
| Display | 128x64 pixel LCD display. | Monochrome, white backlight. |

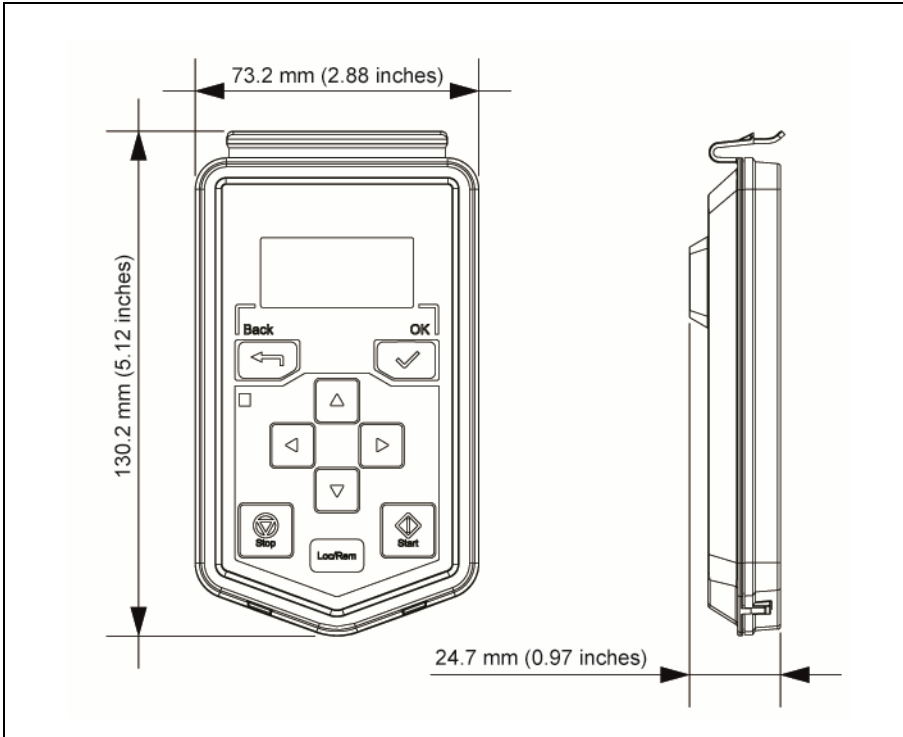
Weight and dimensions

| | |
|-----------|-----------------------|
| Weight | 88g |
| Length | 130.2mm [5.12 inches] |
| Width | 73.2mm [2.88 inches] |
| Thickness | 24.7mm [0.97 inches] |

Degree of protection

| | |
|--|------|
| Attached to a drive | IP55 |
| Separately | IP20 |
| Control panel as stand-alone connected to RJ45 cable | IP20 |
| Control panel mounted to DPMP-01 | IP55 |
| Control panel mounted to DPMP-02 or -03 | IP65 |

Dimensions



Materials

| | |
|-----------|---|
| Enclosure | PCB/ABS |
| Packaging | Cardboard |
| Screen | Polycarbonate |
| Disposal | Do not dispose of the control panel in municipal waste. Check local regulations for disposal of electronic products. |

Environmental limits

| | <i>Operation</i> | <i>Storage</i> | <i>Transportation</i> |
|---|--|---------------------------------------|---|
| Installation site altitude | max 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) | | |
| Contamination levels (IEC 60721-3-3, IEC 60721-3-2, IEC 60721-1-3-1) | 3C3 | | |
| Sinusoidal vibration | 61800-5-1 ed 2. EN 60082-2-6 test Fc (1g) | | class 2M3 in acc. with EN 60082-2-6 |
| Shock | class 3M4 in acc. with EN 60062-2-27 | | class 2M2 in acc. with EN 60082-2-27 |
| Free fall | IEC-60068-2-31, drop height 1 m. (3.3 ft.) | | |
| EMC compliance | EN 61800-3:2004 + A1:2012 | | |

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.

■ Cyber security disclaimer

This product is designed to be connected to and to communicate information and data via a network interface. It is Customer's sole responsibility to provide and continuously ensure a secure connection between the product and Customer network or any other network (as the case may be). Customer shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc) to protect the product, the network, its system and the interface against 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.

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 www.abb.com/searchchannels.

Product training

For information on ABB product training, navigate to www.abb.com/drives and select *ABB University*.

Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome. Go to www.abb.com/drives and select *Drives document library – Manuals feedback form (LV AC drives)*.

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