LOW VOLTAGE AC DRIVES

# ABB general purpose drives

ACS550, 0.75 to 355 kW/1 to 500 hp

# All your energy saving needs covered from the start. ACS550 drives.

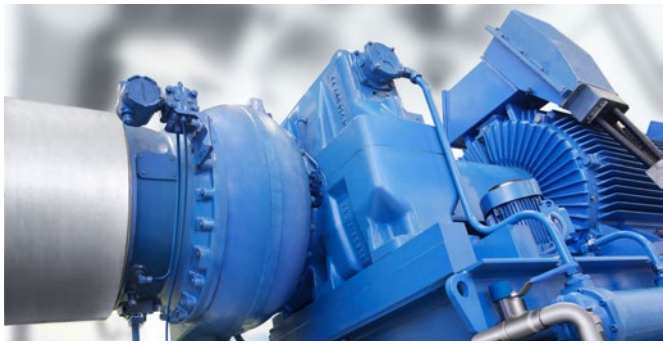
# Table of contents

# Introduction to ACS550

**ABB general purpose drives**
ABB general purpose drives are simple to buy, install, configure and use, saving considerable time. They are widely available through ABB channel partners. The drives have common user and process interfaces with fieldbuses, common software tools for sizing, commissioning, maintenance and common spare parts.

**Applications**
ABB general purpose drives can be used in a wide range of industries. Typical applications include pump, fan and constant torque use, such as conveyors. ABB general purpose drives are ideal in those situations where there is a need for simplicity to install, commission and use and where customizing or special product engineering is not required.

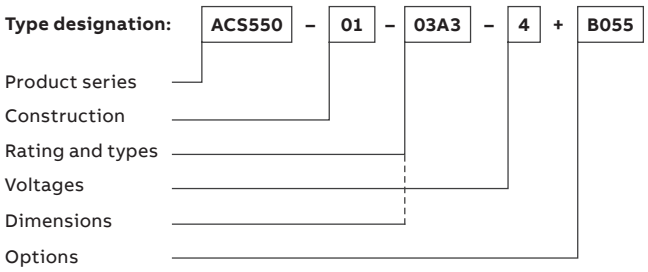
**Highlights**
- FlashDrop tool
- Intuitive use with assistant control panel
- Swinging choke for superior harmonic reduction
- Vector control
- Coated boards for harsh environments
- Built-in category C2 EMC filter (1st environment) as standard
- Flexible fieldbus system with built-in Modbus and numerous internally mountable fieldbus adapters
- UL, cUL, CE, C-Tick and GOST R approved
- RoHS compliant



| Feature | Advantage | Benefit |
|---|---|---|
| **Energy efficiency counters** | Several counters to illustrate saved energy (kWh), carbondioxide emissions ($CO_2$) and cost in local currency. | Shows direct impact on energy bill and helps control operational expenditure (OPEX). |
| **Load analyzer** | Load analyzer saves process data, such as current and torque values, which can be used to analyze the process and dimensioning of the drive and motor. | Optimized dimensioning of the drive, motor and process. |
| **FlashDrop tool** | Faster and easier drive setup and commissioning. | Patented, fast, safe and trouble-free parametrization method without electricity. |
| **Assistant control panel** | Two soft-keys, function of which changes according to the state of the panel.<br>Built-in help function via dedicated button.<br>Real-time clock, allows timed tracing of faults and setting of parameters to activate at various times of day.<br>Changed parameters -menu. | Easy commissioning.<br><br>Fast setup.<br>Easier configuration.<br>Rapid fault diagnosis.<br>Quick access to recent parameter changes. |
| **Commissioning assistants** | PID controller, real-time clock, serial communications assistant, drive optimizer, startup assistant. | Easy setup of parameters. |
| **Maintenance assistant** | Monitors consumed energy (kWh), running hours or motor rotation. | Takes care of preventative maintenance of drive, the motor or run application. |
| **Intuitive features** | Noise optimization.<br>Increases switching frequency of drive when drive temperature is reduced.<br>Controlled cooling fan: the drive is cooled only when necessary. | Considerable motor noise reduction.<br><br>Reduces inverter noise and improves energy efficiency. |
| **Choke** | Patented swinging choke – matches the right inductance to the right load, thereby suppressing and reducing harmonics. | Reduces total harmonic distortion (THD) emissions up to 25%. |
| **Vector control** | Improved motor control performance. | Enables wider range of applications. |
| **Built-in EMC filter** | Category C2 (1st environment) and category C3 (2nd environment) RFI filters as standard. | No need for additional external filtering. |
| **Brake chopper** | Built-in up to 11 kW. | Reduced cost. |
| **Connectivity** | Built-in Modbus using EIA-485.<br>Simple to install:<br>• Easy connection of cables<br>• Easy connection to external fieldbus systems through multiple<br>• I/Os and plug-in options | Reduced cost.<br>Reduced installation time.<br>Secure cable connections. |
| **Mounting template** | Supplied separately with unit. | Quick and easy to mark mounting screw holes on installation surface. |
| **RoHS compliant** | ACS550 drives comply with EU Directive RoHS 2002/95/CE restricting the use of certaing hazardous substances. | Environmentally friendly product. |

## Selecting and ordering your drive

Build up your own ordering code using the type code key below or contact your local ABB drives sales office and let them know what you want.



# Ratings, types, voltages and construction

| Ratings | | | | | | Type designation | Frame size |
|---|---|---|---|---|---|---|---|
| Normal use | | | Heavy-duty use | | | | |
| $P_N$ (kW) | $P_N$ (hp) | $I_{2N}$ (A) | $P_{hd}$ (kW) | $P_{hd}$ (hp) | $I_{2hd}$ (A) | | |
| **3-phase supply voltage 380 to 480 V Wall-mounted units** | | | | | | | |
| 1.1 | 1.5 | 3.3 | 0.75 | 1 | 2.4 | ACS550-01-03A3-4 | R1 |
| 1.5 | 2 | 4.1 | 1.1 | 1.5 | 3.3 | ACS550-01-04A1-4 | R1 |
| 2.2 | 3 | 5.4 | 1.5 | 2 | 4.1 | ACS550-01-05A4-4 | R1 |
| 3 | 4 | 6.9 | 2.2 | 3 | 5.4 | ACS550-01-06A9-4 | R1 |
| 4 | 5.4 | 8.8 | 3 | 4 | 6.9 | ACS550-01-08A8-4 | R1 |
| 5.5 | 7.5 | 11.9 | 4 | 5.4 | 8.8 | ACS550-01-012A-4 | R1 |
| 7.5 | 10 | 15.4 | 5.5 | 7.5 | 11.9 | ACS550-01-015A-4 | R2 |
| 11 | 15 | 23 | 7.5 | 10 | 15.4 | ACS550-01-023A-4 | R2 |
| 15 | 20 | 31 | 11 | 15 | 23 | ACS550-01-031A-4 | R3 |
| 18.5 | 25 | 38 | 15 | 20 | 31 | ACS550-01-038A-4 | R3 |
| 22 | 30 | 45 | 18.5 | 25 | 38 | ACS550-01-045A-4 | R3 |
| 30 | 40 | 59 | 22 | 30 | 45 | ACS550-01-059A-4 | R4 |
| 37 | 50 | 72 | 30 | 40 | 59 | ACS550-01-072A-4 | R4 |
| 45 | 60 | 87 | 37 | 60 | 72 | ACS550-01-087A-4 | R4 |
| 55 | 100 | 125 | 45 | 75 | 96 | ACS550-01-125A-4 | R5 |
| 75 | 125 | 157 | 55 | 100 | 125 | ACS550-01-157A-4 | R6 |
| 90 | 150 | 180 | 75 | 125 | 156 | ACS550-01-180A-4 | R6 |
| 110 | 150 | 205 | 90 | 125 | 162 | ACS550-01-195A-4 | R6 |
| 132 | 200 | 246 | 110 | 150 | 192 | ACS550-01-246A-4 | R6 |
| 160 | 200 | 290 | 132 | 200 | 246 | ACS550-01-290A-4 | R6 |
| **Free-standing units** | | | | | | | |
| 200 | 300 | 368 | 160 | 250 | 302 | ACS550-02-368A-4 | R8 |
| 250 | 400 | 486 | 200 | 350 | 414 | ACS550-02-486A-4 | R8 |
| 280 | 450 | 526 | 250 | 400 | 477 | ACS550-02-526A-4 | R8 |
| 315 | 500 | 602 | 280 | 450 | 515 | ACS550-02-602A-4 | R8 |
| 355 | 500 | 645 | 315 | 500 | 590 | ACS550-02-645A-4 | R8 |
| **3-phase supply voltage 208 to 240 V Wall-mounted units** | | | | | | | |
| 0.75 | 1.0 | 4.6 | 0.75 | 0.8 | 3.5 | ACS550-01-04A6-2 | R1 |
| 1.1 | 1.5 | 6.6 | 0.75 | 1.0 | 4.6 | ACS550-01-06A6-2 | R1 |
| 1.5 | 2.0 | 7.5 | 1.1 | 1.5 | 6.6 | ACS550-01-07A5-2 | R1 |
| 2.2 | 3.0 | 11.8 | 1.5 | 2.0 | 7.5 | ACS550-01-012A-2 | R1 |
| 4.0 | 5.0 | 16.7 | 3.0 | 3.0 | 11.8 | ACS550-01-017A-2 | R1 |
| 5.5 | 7.5 | 24.2 | 4.0 | 5.0 | 16.7 | ACS550-01-024A-2 | R2 |
| 7.5 | 10.0 | 30.8 | 5.5 | 7.5 | 24.2 | ACS550-01-031A-2 | R2 |
| 11.0 | 15.0 | 46.2 | 7.5 | 10.0 | 30.8 | ACS550-01-046A-2 | R3 |
| 15.0 | 20.0 | 59.4 | 11.0 | 15.0 | 46.2 | ACS550-01-059A-2 | R3 |
| 18.5 | 25.0 | 74.8 | 15.0 | 20.0 | 59.4 | ACS550-01-075A-2 | R4 |
| 22.0 | 30.0 | 88.0 | 18.5 | 25.0 | 74.8 | ACS550-01-088A-2 | R4 |
| 30.0 | 40.0 | 114 | 22.0 | 30.0 | 88.0 | ACS550-01-114A-2 | R4 |
| 37.0 | 50.0 | 143 | 30.0 | 40 | 114 | ACS550-01-143A-2 | R6 |
| 45.0 | 60.0 | 178 | 37.0 | 50 | 150 | ACS550-01-178A-2 | R6 |
| 55.0 | 75.0 | 221 | 45.0 | 60 | 178 | ACS550-01-221A-2 | R6 |
| 75.0 | 100 | 248 | 55.0 | 75 | 192 | ACS550-01-248A-2 | R6 |

**Type designation**
Drive's type designation (shown on the previous page and in column 7 of the tables on the left side) identifies your drive by construction, current rating and voltage range. Once you have selected the type designation, the frame size (column 8) can be used to determine the drives dimensions, shown on
the page 8.

**Voltages**
ACS550 is available in two voltage ranges:
**4** = 380 to 480 V
**2** = 208 to 240 V

Insert either "4" or "2", depending on your chosen voltage, into the type designation shown on the previous page.

**Construction**
"01" within the type designation varies depending on the drive mounting arrangement, and power rating.

**01** = wall-mounted
**02** = free-standing

Normal use vs heavy-duty use. For the majority of pump, fan and conveyor applications, select "Normal use" figures. For high overload requirements, select "Heavy-duty use" figures. If in doubt contact your local ABB sales office or your drives distributor.

$P_N$ for kW = Typical motor power in 400 V at normal use
$P_N$ for hp = Typical motor power in 460 V at normal use
$P_{hd}$ for kW = Typical motor power in 400 V at heavy-duty use
$P_{hd}$ for hp = Typical motor power in 460 V at heavy-duty use
$I_{2N}$ for A = Continuous rms current. 10% overload is allowed for one minute in ten minutes.
$I_{2hd}$ for A = Continuous rms current. 50% overload is allowed for one minute in ten minutes.

# Technical data

| **Mains connection** | |
|---|---|
| **Voltage and power range** | 3-phase, 380 to 480 V, +10/ -15%, 0.75 to 355 kW<br>3-phase, 208 to 240 V, +10/ -15%, 0.75 to 75 kW<br>Auto-identification of input line |
| **Frequency** | 48 to 63 Hz |
| **Power factor** | 0.98 |
| **Motor connection** | |
| **Voltage** | 3-phase, from 0 to $U_{supply}$ |
| **Frequency** | 0 to 500 Hz |
| **Continuous loading capability** (constant torque at a max ambient temperature of 40 °C) | Rated output current $I_{2N}$ |
| **Overload capacity** (at a max. ambient temperature of 40 °C) | At normal use 1.1 x $I_{2N}$ for 1 minute every 10 minutes<br>At heavy-duty use 1.5 x $I_{2hd}$ for 1 minute every 10 minutes<br>Always 1.8 x $I_{2hd}$ for 2 seconds every 60 seconds |
| **Switching frequency Selectable** | Default 4 kHz<br>1 kHz, 2 kHz, 4 kHz, 8 kHz, 12 kHz |
| **Acceleration time** | 0.1 to 1800 s |
| **Deceleration time** | 0.1 to 1800 s |
| **Speed control** | |
| Open loop | 20% of motor nominal slip |
| Closed loop | 0.1% of motor nominal speed |
| Open loop | < 1% s with 100% torque step |
| Closed loop | 0.5% s with 100% torque step |
| **Torque control** | |
| Open loop | < 10 ms with nominal torque |
| Closed loop | < 10 ms with nominal torque |
| Open loop | ± 5% with nominal torque |
| Closed loop | ± 2% with nominal torque |
| **Environmental limits** | |
| **Ambient temperature** | |
| -15 to 50 °C | No frost allowed. From 40 to 50 °C with derating. |
| **Altitude** | Rated current available at 0 to 1000 m. |
| Output current | In altitudes from 1000 to 4000 m (3300 to 13,200 ft) above sea level, the derating is 1% for every 100 m (330 ft). If the installation site is higher than 2000 m (6600 ft) above sea level, please contact your local ABB distributor or office for further information. |
| **Relative humidity** | 5 to 95%, no condensation allowed |
| **Degree of protection** | IP21 or IP54 (≤ 160 kW) |
| **Enclosure colour** | NCS 1502-Y, RAL 9002, PMS 420 C |
| **Contamination levels** | IEC 721-3-3 |
| | No conductive dust allowed |
| Transportation | Class 1C2 (chemical gases), Class 1S2 (solid particles) |
| Storage | Class 2C2 (chemical gases), Class 2S2 (solid particles) |
| Operation | Class 3C2 (chemical gases), Class 3S2 (solid particles) |

| **Programmable control connections** | |
|---|---|
| **Two analog inputs** | |
| Voltage signal | 0 (2) to 10 V, $R_{in}$ > 312 kΩ single-ended |
| Current signal | 0 (4) to 20 mA, $R_{in}$ = 100 Ω single-ended |
| Potentiometer reference value | 10 V ± 2% max. 10 mA, $R$ < 10 kΩ |
| Maximum delay | 12 to 32 ms |
| Resolution | 0.1% |
| Accuracy | ± 1% |
| **Two analog outputs** | 0 (4) to 20 mA, load < 500 Ω |
| Accuracy | ± 3% |
| **Auxiliary voltage** | 24 V DC ± 10%, max. 250 mA |
| **Six digital inputs** | 12 to 24 V DC with internal or external supply, PNP and NPN |
| Input impedance | 2.4 kΩ |
| Maximum delay | 5 ms ± 1 ms |
| **Three relay outputs** | |
| Maximum switching voltage | 250 V AC/30 V DC |
| Maximum switching current | 6 A/30 V DC; 1500 V A/230 V AC |
| Maximum continuous current | 2 A rms |
| **Serial communication** | |
| EIA-485 | Modbus protocol |

| **Product compliance** |
|---|
| Low Voltage Directive 2006/95/EC |
| EMC Directive 2004/108/EC |
| Quality assurance system ISO 9001 |
| Environmental system ISO 14001 |
| UL, cUL, CE, C-Tick and GOST R approvals |
| RoHS compliant |

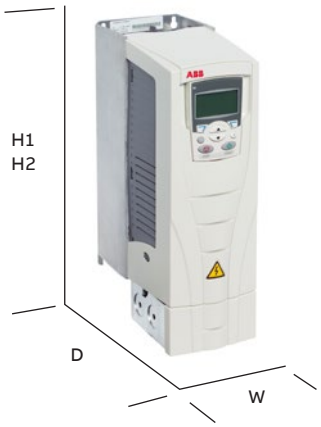
# Dimensions and weights

**Wall-mounted units**

| Frame size | IP21 / UL type 1 | | | | | IP54 / UL type 12 [2] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | H1 (mm) | H2 (mm) | W (mm) | D (mm) | Weight (kg) | H (mm) | W (mm) | D (mm) | Weight (kg) |
| R1 | 369 | 330 | 125 | 212 | 6.5 | 461 | 213 | 234 | 8 |
| R2 | 469 | 430 | 125 | 222 | 9 | 561 | 213 | 245 | 11 |
| R3 | 583 | 490 | 203 | 231 | 16 | 629 | 257 | 254 | 17 |
| R4 | 689 | 596 | 203 | 262 | 24 | 760 | 257 | 284 | 26 |
| R5 | 736 | 602 | 265 | 286 | 34 | 775 | 369 | 309 | 42 |
| R6 | 888[1] | 700 | 302 | 400 | 69 | 924[3] | 410 | 423 | 86 |

H1 = Height with cable connection box
H2 = Height without cable connection box
W = Width
D = Depth

[1] ACS550-01-246A-4 and ACS550-01-290A-4: 981 mm
[2] UL Type 12 not available for ACS550-01-290A-4
[3] ACS550-01-290A-4: 1119 mm

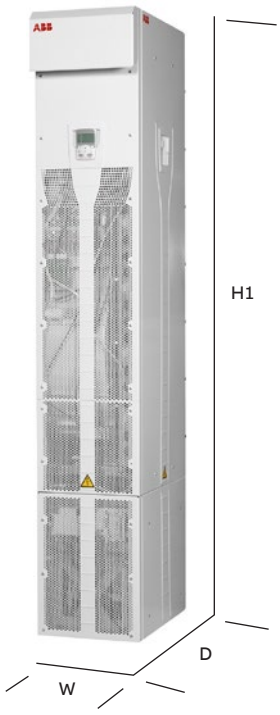



**Free-standing units**

| Frame size | IP21 / UL type 1 | | | | |
|---|---|---|---|---|---|
| | H1 (mm) | H2 (mm) | W (mm) | D (mm) | Weight (kg) |
| R8 | 2024 | n/a | 347 [1] | 617 [1] | 230 |

n/a = not applicablez

[1] The dimensions apply to bookshelf mounting. In flat type mounting the width and depth change places.

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# Electromagnetic compatibility

The EMC product standard (EN 61800-3:2004 + Amendment A1:2012) covers the specific EMC requirements stated for drives (tested with motor and cable) within the EU. EMC standards such as EN 55011, or EN 61000-6-3/4, apply to industrial and household equipment and systems including drive component inside. Drive units complying with requirements of EN 61800-3 are always complient with comparable categories in EN 55011 and EN 61000-6-3/4, but not necessarily vice versa. EN 55011 and EN 61000-6-3/4 do not specify cable length nor require a motor to be connected as a load. The emission limits are comparable according to the following table, EMC standards.

| **EMC according to EN61800-3** |
|---|
| 1st environment restricted distribution for frame sizes R3, R4 with 75 m motor cables and for rame sizes R1, R2, R5, R6 with 100 m motor cables as standard with default switching frequency. |
| 2nd environment unrestricted distribution for frame sizes R1 to R4 with 300 m motor cables and for frame sizes R5 to R8 with 100 m motor cables as standard with default switching frequency. |
| These cable lengths are for EMC purposes only. Operational cable lengths are available in the output choke selection table on page 11. For longer motor cable lengths, external EMC filters are available on request. |

| **EMC standards in general** | | |
|---|---|---|
| **EN 61800-3/A11 (2000), product standard** | **EN 61800-3 (2004) + A1:2012 product standard** | **EN 55011, product family standard for industrial, scientific and medical (ISM) equipment** |
| 1st environment, unrestricted distribution | Category C1 | Group 1 Class B |
| 1st environment, restricted distribution | Category C2 | Group 1 Class A |
| 2nd environment, unrestricted distribution | Category C3 | Group 2 Class A |
| 2nd environment, restricted distribution | Category C4 | Not applicable |

# Assistant control panel

The assistant control panel, which is delivered as standard, features a multilingual alphanumeric display for easy drive programming. The control panel has various assistants and a built-in help function to guide the user. It includes a real time clock, which can be used during fault logging and in controlling the drive, such as start/stop. The control panel can be used for copying parameters for back up or for downloading them to another drive. A graphical display and soft keys make it extremely easy to navigate.


# Options
## Control interfaces

### Panel mounting kits
To attach the control panel to the outside of a larger enclosure, two panel mounting kits are available. A simple and costefficient installation is possible with the ACS/H-CP-EXT kit, while the OPMP-01 kit provides a more user-friendly solution, including a panel platform that enables the panel to be removed in the same way as a drive-mounted panel. The panel mounting kits include all hardware required, including 3 m extension cables and installation instructions.

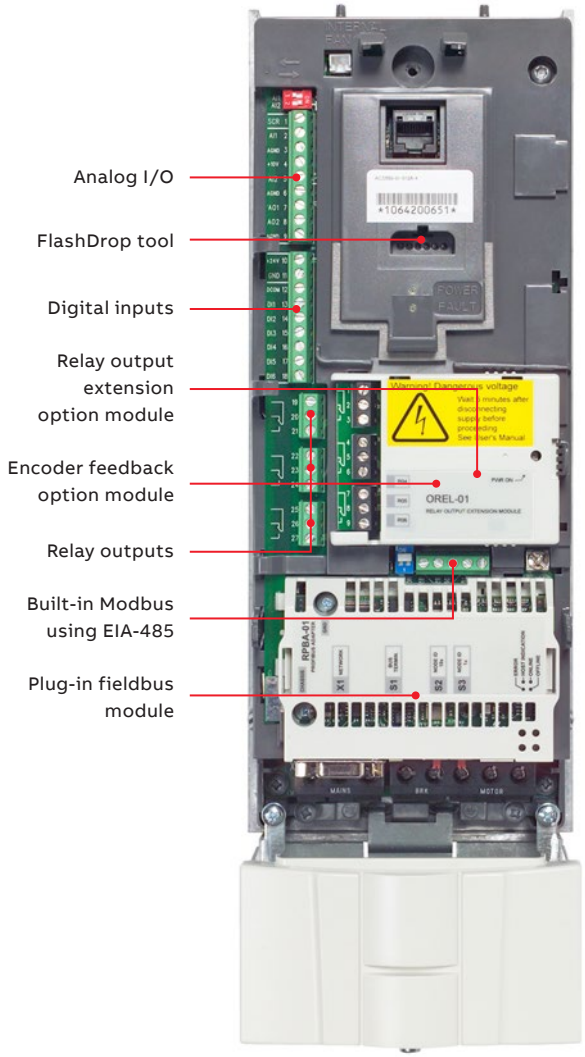

### How to select options
The options shown in the table are available within the ACS550 range. Most of them have an associated 4-figure option code, which is shown in the table. It is this code that replaces B055 in the type code above. External options require a separate order line and material or type code number.

| Available options | | |
|---|---|---|
| **Protection class** | | |
| B055 | IP54 | |
| **Control panel** | | |
| 0J400 | If no control panel is required | – |
| J404 | Basic control panel | ACS-CP-C |
| –[1] | Panel mounting kit | ACS/H-CP-EXT |
| –[1] | Panel holder mounting kit | OPMP-01 |
| –[1] | Panel mounting kit IP66 | ACS/H-CP-EXT-IP66 |
| **I/O options**[2] | | |
| L511 | Relay output extension | OREL-01 |
| **Control option**[2] | | |
| –[1] | Encoder | OTAC-01 |
| **Fieldbus**[3] | | |
| K451 | DeviceNet™ | RDNA-01 |
| K452 | LonWorks® | RLON-01 |
| K454 | PROFIBUS DP | RPBA-01 |
| K457 | CANopen® | RCAN-01 |
| K462 | ControlNet | RCNA-01 |
| K466 | Modbus TCP | RETA-01 |
| K466 | EtherNet/IP™ | RETA-01 |
| K467 | Modbus TCP | RETA-02 |
| K467 | PROFINET IO | RETA-02 |
| –[1] | POWERLINK | REPL-02 |
| –[1] | EtherCAT® | RECA-01 |
| **Tools** | | |
| –[1] | FlashDrop | MFDT-01 |
| –[1] | DriveWindow Light and USB serial adapters | DriveWindow Light |
| **Remote monitoring** | | |
| –[1] | Ethernet adapter | SREA-01 |

[1] Ordering with a separate material code number.
[2] One slot available for relay or encoder.
[3] One slot available for fi eldbus adapter. Modbus built-in as standard.

### Basic control panel
The basic control panel features a single line numeric display. The panel can be used to control the drive, set the parameter values or copy them from one drive to another.

# Options
## Plug-in options




**FlashDrop tool**
ACS550 drives have an interface for a FlashDrop tool. FlashDrop is a powerful palm sized tool for fast and easy parameter selection and setting of an unpowered drive. The user can hide each parameter/group from the drive's display, which protects the drive and connected machinery. For more information on the FlashDrop tool, please see page 14.

**Relay output extension option module**
This plug-in option offers three additional relay outputs. They can be used, for example, in pump and fan control or many supervisory functions. All the relays can be programmed to on/off by using the assistant control panel's clock. Alternatively, fieldbus can be used to control any external components in the system.

**Encoder feedback option module**
The general purpose drives can accommodate an encoder module. Using an encoder for speed feedback is a straight forward way to increase motor control in many applications.

**Plug-in fieldbus module**
The plug-in fieldbus options bring connectivity to major automation systems. A single twisted pair avoids large amounts of conventional cabling, thereby reducing cost and increasing system reliability.

ACS550 supports the following fieldbus options:
- DeviceNetTM
- LonWorks®
- PROFIBUS DP
- CANopen®
- ControlNet
- Modbus TCP
- EtherNet/IPTM
- PROFINET IO
- POWERLINK
- EtherCAT®

For type codes see page 12.

# Options
## External options

—
01 FlashDrop tool
—
02 SREA-01
Ethernet adapter
—
03 DriveWindow Light

**FlashDrop tool**
FlashDrop is a powerful palm sized tool for fast and easy parameter selecting and setting. It gives the possibility to hide selected parameters to protect the machine. Only the parameters needed in the application are shown. The tool can copy parameters between two drives or between a PC and a drive. All the above can be done without a power connection to the drive. The interface for FlashDrop is available in all wallmounted units.

**DrivePM**
DrivePM (drive parameter manager) is a tool to create, edit and copy parameter sets for the FlashDrop tool. For each parameter/group the user has a possibility to hide it, which means that the drive user does not see the parameter/group at all.

**FlashDrop package includes**
- FlashDrop tool
- DrivePM software
- User's manual (hardcopy and PDF)
- RS232 cable for connection between PC and the FlashDrop tool
- Battery charger

**SREA-01 Ethernet adapter**
SREA-01 Ethernet adapter with remote monitoring access can send process data, data logs and event messages independently, without a PLC or a dedicated on-site computer. It has an internal web server for configuration and drive access.

**DriveWindow Light**
DriveWindow Light is an easy-to-use startup and maintenance tool for ACS550 drives. It can be used in an offline mode, which enables parameter setting at the office even before going to the actual site. The parameter browser enables viewing, editing and saving of parameters. The parameter comparison feature makes it possible to compare parameter values between the drive and the file. With the parameter subset you can create your own parameter sets. Controlling of the drive is naturally one of the features in DriveWindow Light. With this software tool, you can monitor up to four signals simultaneously. This can be done in both graphical and numerical format. Any signal can be set to stop the monitoring from a predefined level.

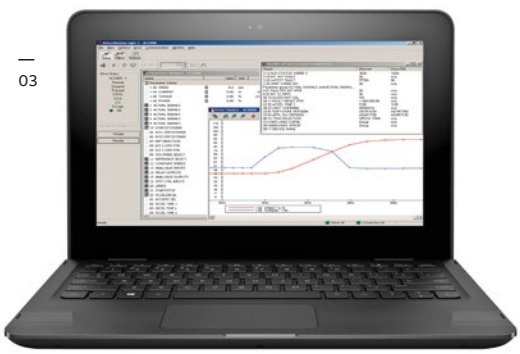
**Startup wizards**
Startup wizards make the setting of parameters easy. Simply launch the wizard, select an appropriate assistant eg, for setting analog outputs, and all parameters related to this function are shown together with help pictures.

**Highlights**
- Editing, saving and downloading parameters
- Graphical and numerical signal monitoring
- Drive control
- Startup wizards

—
01

—
02


—
03

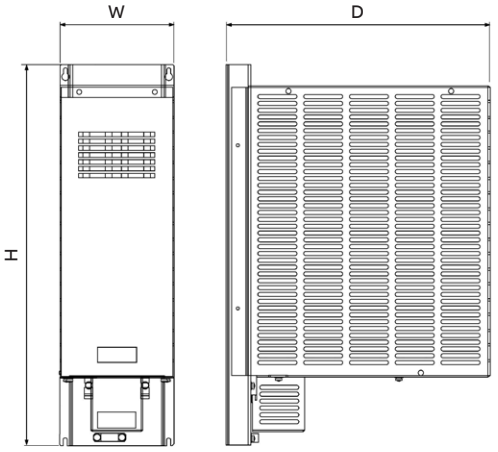


### Brake units and choppers

Frame sizes R1 to R2 are delivered with integrated brake choppers as standard. Other units can use the compact-sized brake units which include brake chopper and resistor. For more information please refer to the ACS-BRK brake units installation and startup guide.

**Brake units technical data**

| Frequency converter input voltage | Resistor (ohm) | Continuous output (W) | Max. output 20 s (W) | Brake unit type code |
|---|---|---|---|---|
| 200 to 240 V AC | 32 | 2000 | 4500 | ACS-BRK-C |
| 380 to 480 V AC | | | 12000 | |
| 200 to 240 V AC | 10.5 | 7000 | 14000 | ACS-BRK-D |
| 380 to 480 V AC | | | 42000 | |




**Dimensions**

| Width = W (mm) | Height = H (mm) | Depth = D (mm) | Weight (kg) | Brake unit type code |
|---|---|---|---|---|
| 150 | 500 | 347 | 7.5 | ACS-BRK-C |
| 270 | 600 | 450 | 20.5 | ACS-BRK-D |

### Output chokes

Output chokes are used when motor cables above normal length are required. Cable can be roughly 1.5 times standard cable length, see below.

| Type designation | Frame size | Nominal current $I_{2N}$ (A) | Output choke type code [1] | Choke thermal current $I$ (A) | Max. cable length without choke [2] (m) | Max. cable length with choke [3] (m) |
|---|---|---|---|---|---|---|
| **$U_N$ = 380 to 480 V (380, 400, 415, 440, 460, 480 V)** | | | | | | |
| ACS550-01-03A3-4 | R1 | 3.3 | NOCH-0016-6X | 19 | 100 | 150 |
| ACS550-01-04A1-4 | R1 | 4.1 | NOCH-0016-6X | 19 | 100 | 150 |
| ACS550-01-05A4-4 | R1 | 5.4 | NOCH-0016-6X | 19 | 100 | 150 |
| ACS550-01-06A9-4 | R1 | 6.9 | NOCH-0016-6X | 19 | 100 | 150 |
| ACS550-01-08A8-4 | R1 | 8.8 | NOCH-0016-6X | 19 | 100 | 150 |
| ACS550-01-012A-4 | R1 | 11.9 | NOCH-0016-6X | 19 | 100 | 150 |
| ACS550-01-015A-4 | R2 | 15.4 | NOCH-0016-6X | 19 | 200 | 250 |
| ACS550-01-023A-4 | R2 | 23 | NOCH-0030-6X | 41 | 200 | 250 |
| ACS550-01-031A-4 | R3 | 31 | NOCH-0030-6X | 41 | 200 | 250 |
| ACS550-01-038A-4 | R3 | 38 | NOCH-0030-6X | 41 | 200 | 250 |
| ACS550-01-045A-4 | R3 | 45 | NOCH-0070-6X | 112 | 200 | 300 |
| ACS550-01-059A-4 | R4 | 59 | NOCH-0070-6X | 112 | 200 | 300 |
| ACS550-01-072A-4 | R4 | 72 | NOCH-0070-6X | 112 | 200 | 300 |
| ACS550-01-087A-4 | R4 | 87 | NOCH-0070-6X | 112 | 300 | 300 |
| ACS550-01-125A-4 | R5 | 125 | NOCH-0120-6X | 157 | 300 | 300 |
| ACS550-01-157A-4 | R6 | 157 | FOCH-0260-70 | 289 | 300 | 300 |
| ACS550-01-180A-4 | R6 | 180 | FOCH-0260-70 | 289 | 300 | 300 |
| ACS550-01-195A-4 | R6 | 205 | FOCH-0260-70 | 289 | 300 | 300 |
| ACS550-01-246A-4 | R6 | 246 | FOCH-0260-70 | 289 | 300 | 300 |
| ACS550-01-290A-4 | R6 | 290 | FOCH-0320-50 | 445 | 300 | 300 |
| ACS550-02-368A-4 | R8 | 368 | FOCH-0320-50 | 445 | 300 | 300 |
| ACS550-02-486A-4 | R8 | 486 | FOCH-0610-70 | 720 | 300 | 300 |
| ACS550-02-526A-4 | R8 | 526 | FOCH-0610-70 | 720 | 300 | 300 |
| ACS550-02-602A-4 | R8 | 602 | FOCH-0610-70 | 720 | 300 | 300 |
| ACS550-02-645A-4 | R8 | 645 | FOCH-0610-70 | 720 | 300 | 300 |

[1] The last digit of the output choke type defi nes the degree of protection; X stands for 2 = IP22 or 5 = IP54, 0 = IP00.

[2] Cable lengths according to 4 kHz switching frequency.

[3] Maximum switching frequency to be used with du/dt fi lter is 4 kHz.

Note: An output choke does not improve the EMC performance of the drive. To fulfil local EMC requirements use suffi cient RFI filtering. For more information refer to the ACS550 User's manual/ Technical reference.

# Cooling

**Cooling air flow 380 to 480 V units**

| Type designation | Frame size | Heat dissipation | | Air flow | |
|---|---|---|---|---|---|
| | | (W) | (BTU/Hr) | ($m^3$/h) | ($ft^3$/min) |
| ACS550-01-03A3-4 | R1 | 40 | 137 | 44 | 26 |
| ACS550-01-04A1-4 | R1 | 52 | 178 | 44 | 26 |
| ACS550-01-05A4-4 | R1 | 73 | 249 | 44 | 26 |
| ACS550-01-06A9-4 | R1 | 97 | 331 | 44 | 26 |
| ACS550-01-08A8-4 | R1 | 127 | 434 | 44 | 26 |
| ACS550-01-012A-4 | R1 | 172 | 587 | 44 | 26 |
| ACS550-01-015A-4 | R2 | 232 | 792 | 88 | 52 |
| ACS550-01-023A-4 | R2 | 337 | 1151 | 88 | 52 |
| ACS550-01-031A-4 | R3 | 457 | 1561 | 134 | 79 |
| ACS550-01-038A-4 | R3 | 562 | 1919 | 134 | 79 |
| ACS550-01-045A-4 | R3 | 667 | 2278 | 134 | 79 |
| ACS550-01-059A-4 | R4 | 907 | 3098 | 280 | 165 |
| ACS550-01-072A-4 | R4 | 1120 | 3825 | 280 | 165 |
| ACS550-01-087A-4 | R4 | 1440 | 4918 | 280 | 165 |
| ACS550-01-125A-4 | R5 | 1940 | 6625 | 350 | 205 |
| ACS550-01-157A-4 | R6 | 2310 | 7889 | 405 | 238 |
| ACS550-01-180A-4 | R6 | 2810 | 9597 | 405 | 238 |
| ACS550-01-195A-4 | R6 | 3050 | 10416 | 405 | 238 |
| ACS550-01-246A-4 | R6 | 3260 | 11134 | 405 | 238 |
| ACS550-01-290A-4 | R6 | 3850 | 13125 | 405 | 238 |
| ACS550-02-368A-4 | R8 | 6850 | 23394 | 1220 | 718 |
| ACS550-02-486A-4 | R8 | 7850 | 26809 | 1220 | 718 |
| ACS550-02-526A-4 | R8 | 7600 | 25955 | 1220 | 718 |
| ACS550-02-602A-4 | R8 | 8100 | 27663 | 1220 | 718 |
| ACS550-02-645A-4 | R8 | 9100 | 31078 | 1220 | 718 |

**Cooling air flow 208 to 240 V units**

| Type designation | Frame size | Heat dissipation | | Air flow | |
|---|---|---|---|---|---|
| | | (W) | (BTU/Hr) | ($m^3$/h) | ($ft^3$/min) |
| ACS550-01-04A6-2 | R1 | 55 | 189 | 44 | 26 |
| ACS550-01-06A6-2 | R1 | 73 | 249 | 44 | 26 |
| ACS550-01-07A5-2 | R1 | 81 | 276 | 44 | 26 |
| ACS550-01-012A-2 | R1 | 118 | 404 | 44 | 26 |
| ACS550-01-017A-2 | R1 | 161 | 551 | 44 | 26 |
| ACS550-01-024A-2 | R2 | 227 | 776 | 88 | 52 |
| ACS550-01-031A-2 | R2 | 285 | 973 | 88 | 52 |
| ACS550-01-046A-2 | R3 | 420 | 1434 | 134 | 79 |
| ACS550-01-059A-2 | R3 | 536 | 1829 | 134 | 79 |
| ACS550-01-075A-2 | R4 | 671 | 2290 | 280 | 165 |
| ACS550-01-088A-2 | R4 | 786 | 2685 | 280 | 165 |
| ACS550-01-114A-2 | R4 | 1014 | 3463 | 280 | 165 |
| ACS550-01-143A-2 | R6 | 1268 | 4331 | 405 | 238 |
| ACS550-01-178A-2 | R6 | 1575 | 5379 | 405 | 238 |
| ACS550-01-221A-2 | R6 | 1952 | 6666 | 405 | 238 |
| ACS550-01-248A-2 | R6 | 2189 | 7474 | 405 | 238 |

**Free space requirements**

| Enclosure type | Space above (mm) | Space below (mm) | Space on left/right (mm) |
|---|---|---|---|
| Wall mounted | 200 | 200 | 0 |
| Free standing | 200 | 0 | 0 |

### Cooling

ACS550 is fitted with cooling air fans. The cooling air must be free from corrosive materials and not above the maximum ambient temperature of 40 °C (50 °C with derating). For more specific environmental limits see page 7.

# Fuses

**Recommended input protection fuses for 380 to 480 V units**

| Type designation | Frame size | IEC fuses | | UL fuses | |
|---|---|---|---|---|---|
| | | (A) | Fuse type *) | (A) | Fuse type |
| ACS550-01-03A3-4 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-04A1-4 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-05A4-4 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-06A9-4 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-08A8-4 | R1 | 10 | gG | 15 | UL Class T |
| ACS550-01-012A-4 | R1 | 16 | gG | 15 | UL Class T |
| ACS550-01-015A-4 | R2 | 16 | gG | 20 | UL Class T |
| ACS550-01-023A-4 | R2 | 25 | gG | 30 | UL Class T |
| ACS550-01-031A-4 | R3 | 35 | gG | 40 | UL Class T |
| ACS550-01-038A-4 | R3 | 50 | gG | 50 | UL Class T |
| ACS550-01-045A-4 | R3 | 50 | gG | 60 | UL Class T |
| ACS550-01-059A-4 | R4 | 63 | gG | 80 | UL Class T |
| ACS550-01-072A-4 | R4 | 80 | gG | 90 | UL Class T |
| ACS550-01-087A-4 | R4 | 125 | gG | 125 | UL Class T |
| ACS550-01-125A-4 | R5 | 160 | gG | 175 | UL Class T |
| ACS550-01-157A-4 | R6 | 200 | gG | 200 | UL Class T |
| ACS550-01-180A-4 | R6 | 250 | gG | 250 | UL Class T |
| ACS550-01-195A-4 | R6 | 250 | gG | 250 | UL Class T |
| ACS550-01-246A-4 | R6 | 250 | gG | 250 | UL Class T |
| ACS550-01-290A-4 | R6 | 315 | gG | 315 | UL Class T |
| ACS550-02-368A-4 | R8 | 400 | gG | 400 | UL Class T |
| ACS550-02-486A-4 | R8 | 500 | gG | 500 | UL Class T |
| ACS550-02-526A-4 | R8 | 630 | gG | 630 | UL Class T |
| ACS550-02-602A-4 | R8 | 630 | gG | 630 | UL Class T |
| ACS550-02-645A-4 | R8 | 800 | gG | 800 | UL Class T |

*) According to IEC-60269 standard

**Recommended input protection fuses for 380 to 480 V units**

| Type designation | Frame size | IEC fuses | | UL fuses | |
|---|---|---|---|---|---|
| | | (A) | Fuse type *) | (A) | Fuse type |
| ACS550-01-04A6-2 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-06A6-2 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-07A5-2 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-012A-2 | R1 | 16 | gG | 15 | UL Class T |
| ACS550-01-017A-2 | R1 | 25 | gG | 25 | UL Class T |
| ACS550-01-024A-2 | R2 | 25 | gG | 30 | UL Class T |
| ACS550-01-031A-2 | R2 | 40 | gG | 40 | UL Class T |
| ACS550-01-046A-2 | R3 | 63 | gG | 60 | UL Class T |
| ACS550-01-059A-2 | R3 | 63 | gG | 80 | UL Class T |
| ACS550-01-075A-2 | R4 | 80 | gG | 100 | UL Class T |
| ACS550-01-088A-2 | R4 | 100 | gG | 110 | UL Class T |
| ACS550-01-114A-2 | R4 | 125 | gG | 150 | UL Class T |
| ACS550-01-143A-2 | R6 | 200 | gG | 200 | UL Class T |
| ACS550-01-178A-2 | R6 | 250 | gG | 250 | UL Class T |
| ACS550-01-221A-2 | R6 | 315 | gG | 300 | UL Class T |
| ACS550-01-248A-2 | R6 | 315 | gG | 350 | UL Class T |

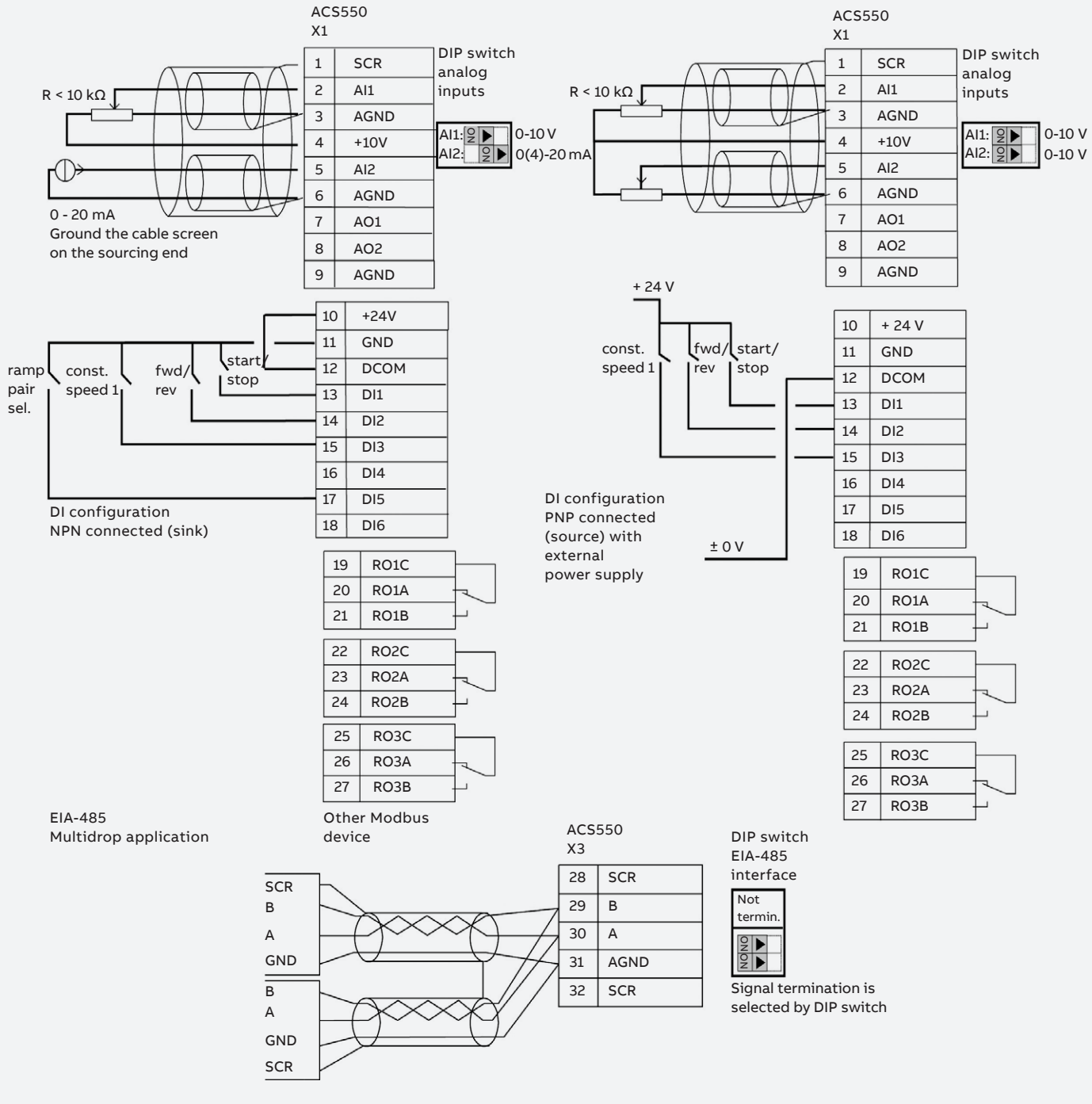
*) According to IEC-60269 standard

### Fuse connections

Standard fuses can be used with ABB general purpose drives. For input fuse connections see tables.

# Control connections

These connections are shown as examples only.
Please refer to the ACS550 User's manual, chapter Installations, for more detailed information.



# Services to match your needs

Your service needs depend on your operation, life cycle of your equipment and business priorities. We have identified our customers' four most common needs and defined service options to satisfy them. What is your choice to keep your drives at peak performance?

## Is uptime your priority?

Keep your drives running with precisely planned and executed maintenance.

**Example services include:**
- ABB Ability Life Cycle Assessment
- Installation and Commissioning
- Spare Parts
- Preventive Maintenance
- Reconditioning
- ABB Drive Care agreement
- Drive Exchange

**Operational efficiency**

## Is rapid response a key consideration?

If your drives require immediate action, our global network is at your service.

**Example services include:**
- Technical Support
- On-site Repair
- ABB Ability Remote Assistance
- Response time agreements
- Training

**Rapid response**

# Drives service
## Your choice, your future

**The future of your drives depends on the service you choose.**
Whatever you choose, it should be a well-informed decision. No guesswork. We have the expertise and experience to help you find and implement the right service for your drive equipment. You can start by asking yourself these two critical questions:
- Why should my drive be serviced?
- What would my optimal service options be?

From here, you have our guidance and full support along the course you take, throughout the entire lifetime of your drives.

**Your choice, your business efficiency**
ABB Drive Care agreement lets you focus on your core business. A selection of predefined service options matching your needs provides optimal, more reliable performance, extended drive lifetime and improved cost control. So you can reduce the risk of unplanned downtime and find it easier to budget for maintenance.

### Need to extend your assets' lifetime?

Maximize your drive's lifetime with our services.

**Example services include:**
- ABB Ability Life Cycle Assessment
- Upgrades, Retrofits and Modernization
- Replacement, Disposal and Recycling

**Life cycle management**

### Is performance most critical to your operation?

Get optimal performance out of your machinery and systems.

**Example services include:**
- ABB Ability Remote Services
- Engineering and Consulting
- Inspection and Diagnostics
- Upgrades, Retrofits and Modernization
- Workshop Repair
- Tailored services

**Performance improvement**

# A lifetime of peak performance

You're in control of every life cycle phase of your drives. At the heart of drive services is a four-phase product life cycle management model. This model defines the services recommended and available throughout drives lifespan.

Now it's easy for you to see the exact service and maintenance available for your drives.

**ABB drives life cycle phases explained:**


| | Full range of life cycle services and support | | Limited range of life cycle services and support | Replacement and end-of-life services |
|---|---|---|---|---|
| **Product** | Product is in active sales and manufacturing phase. | Serial production has ceased. Product may be available for plant extensions, as a spare part or for installed base renewal. | Product is no longer available. | Product is no longer available. |
| **Services** | Full range of life cycle services is available. | Full range of life cycle services is available.<br>Product enhancements may be available through upgrade and retrofit solutions. | Limited range of life cycle services is available.<br>Spare parts availability is limited to available stock. | Replacement and end-of-life services are available. |

**Keeping you informed**
We notify you every step of the way using life cycle status statements and announcements.

Your benefit is clear information about your drives' status and precise services available. It helps you plan the preferred service actions ahead of time and make sure that continuous support is always available.

## Step 1

**Life Cycle Status Announcement**
Provides early information about the upcoming life cycle phase change and how it affects the availability of services.

## Step 2

**Life Cycle Status Statement**
Provides information about the drive's current life cycle status, availability of product and services, life cycle plan and recommended actions.

**Additional information**
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3AFE64792857 REV S EN 17.09.2018