



Catalog

ABB standard drives ACS550, 0.75 to 355 kW / 1 to 500 hp

Power and productivity
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Two ways to select your drive

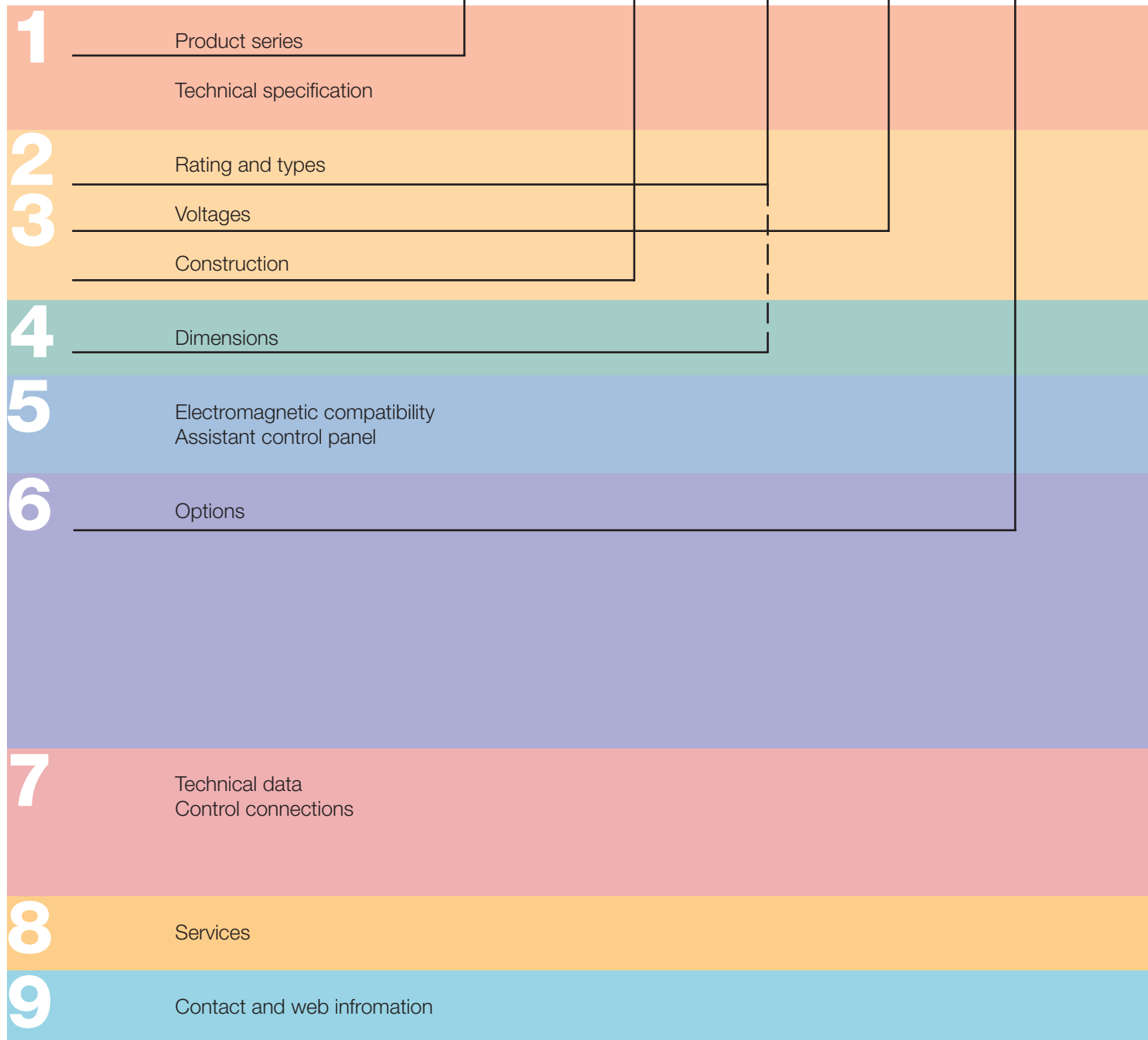
Choice 1: Simply contact your local ABB drives sales office (see page 15) and let them know what you want. Use page 3 as a reference section for more information.

OR

Choice 2: Build up your own ordering code using the simple 6-step approach below. Each step is accompanied by a reference to a page that is filled with useful information.

Type code:

ACS550 - 01 - 03A3 - 4 + B055



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ABB standard drives, ACS550

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ABB standard drives



ACS550 - 01 - 03A3 - 4 + B055

ABB standard drives

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

Applications

ABB standard drives can be used in a wide range of industries. Typical applications include pump, fan and constant torque use, such as conveyors. ABB standard 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
- Inbuilt category C2 EMC filter (1st environment) as standard
- Flexible fieldbus system with inbuilt Modbus and numerous internally mountable fieldbus adapters
- UL, cUL, CE, C-Tick and GOST R approved
- RoHS compliant *)

| Feature | Advantage | Benefit |
|---------------------------------|--|--|
| FlashDrop tool | Faster and easier drive set up 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 Inbuilt help-button Real-time clock, allows timed tracing of faults and setting of parameters to activate at various times of day Changed parameters -menu | Easy commissioning Fast set-up Easier configuration Rapid fault diagnosis Quick access to recent parameter changes |
| Commissioning assistants | PID controller, real-time clock, serial communications assistant, drive optimizer, start-up assistant | Easy set up 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 optimisation Increases switching frequency of drive when drive temperature is reduced Controlled cooling fan: the drive is cooled only when necessary | Considerable motor noise reduction 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 |
| Inbuilt EMC filter | Category C2 (1 st environment) and category C3 (2 nd environment) RFI filters as standard | No need for additional external filtering |
| Fieldbus | Inbuilt Modbus using RS 485 | Reduced cost |
| Brake chopper | Inbuilt up to 11 kW | Reduced cost |
| Connectivity | Simple to install: Easy connection of cables Easy connection to external fieldbus systems through multiple I/Os and plug-in options | Reduced installation time 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 the EU's RoHS 2002/95/CE Directive restricting the use of certain hazardous substances | Environmentally friendly product |

*) Check availability with your local ABB.

Technical specification



ACS550 - 01 - 03A3 - 4 + B055

| Mains connection | |
|--|---|
| Voltage and power range | 3-phase, 380 to 480 V, +10/-15%, 0.75 to 355 kW 3-phase, 208 to 240 V, +10/-15%, 0.75 to 75 kW 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 <small>(constant torque at a max ambient temperature of 40 °C)</small> | Rated output current I_{2N} |
| Overload capacity <small>(at a max. ambient temperature of 40 °C)</small> | At normal use $1.1 \times I_{2N}$ for 1 minute every 10 minutes At heavy-duty use $1.5 \times I_{2nd}$ for 1 minute every 10 minutes Always $1.8 \times I_{2nd}$ for 2 seconds every 60 seconds |
| Switching frequency | Default 4 kHz |
| Standard | 0.75 to 110 kW 1 kHz, 4 kHz, 8 kHz, 12 kHz |
| Selectable | up to 355 kW 1 kHz, 4 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 40 °C | No frost allowed |
| 40 to 50 °C | f_{switch} 4 kHz, derating please contact supplier |
| Altitude | Rated current available at 0 to 1000 m reduced by 1% per 100 m over 1000 to 2000 m |
| Output current | |
| Relative humidity | lower than 95% (without condensation) |
| Degree of protection | IP21 or IP54 (≤ 110 kW) |
| Enclosure colour | NCS 1502-Y, RAL 9002, PMS 420 C |
| Contamination levels | IEC 721-3-3 |
| Transportation | No conductive dust allowed 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, $R_{in} > 312 \text{ k}\Omega$ single-ended |
| Current signal | 0 (4) to 20 mA, $R_{in} = 100 \Omega$ single-ended |
| Potentiometer reference value | 10 V ± 2% max. 10 mA, $R < 10 \text{ k}\Omega$ |
| Maximum delay | 12 to 32 ms |
| Resolution | 0.1% |
| Accuracy | ±1% |
| Two analog outputs | |
| Accuracy | 0 (4) to 20 mA, load < 500 Ω ±3% |
| Auxiliary voltage | 24 V DC ±10%, max. 250 mA |
| Six digital inputs | |
| Input impedance | 12 to 24 V DC with internal or external supply, PNP and NPN 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 | |
| RS 485 | Modbus protocol |
| Protection limits | |
| Overvoltage trip limits | |
| Running V DC | 842 (corr. to 595 V input) |
| Start inhibit V DC | 661 (corr. to 380 - 415 V input), 765 (corr. to 440 - 480 V input) |
| Undervoltage trip limits | |
| Running V DC | 333 (corr. to 247 V input) |
| Start inhibit V DC | 436 (corr. to 380 - 415 V input), 505 (corr. to 440 - 480 V input) |
| Product compliance | |
| Low Voltage Directive 73/23/EEC with supplements | |
| Machinery Directive 98/37/EC | |
| EMC Directive 89/336/EEC with supplements | |
| Quality assurance system ISO 9001 and Environmental system ISO 14001 | |
| UL, cUL, CE, C-Tick and GOST R approvals | |
| RoHS directive*) | |

*) Check availability with your local ABB.

Ratings, types, voltages and construction



ACS550 - 01 - 03A3 - 4 + B055

Type code

This is the unique reference number (shown above and in column 7, right) that clearly identifies your drive by power rating and frame size. Once you have selected the type code, the frame size (column 8) can be used to determine the drives dimensions, shown on the next page.

Voltages

The ACS550 is available in two voltage ranges:

4 = 380 - 480 V

2 = 208 - 240 V

Insert either “4” or “2”, depending on your chosen voltage, into the type code shown above.

Construction

“01” within the type code (shown above) 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 - see page 15.

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

3-phase supply voltage 380-480 V Wall-mounted units

| Ratings | | | | | | Type code | 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 | | |
| 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 208-240 V Wall-mounted units

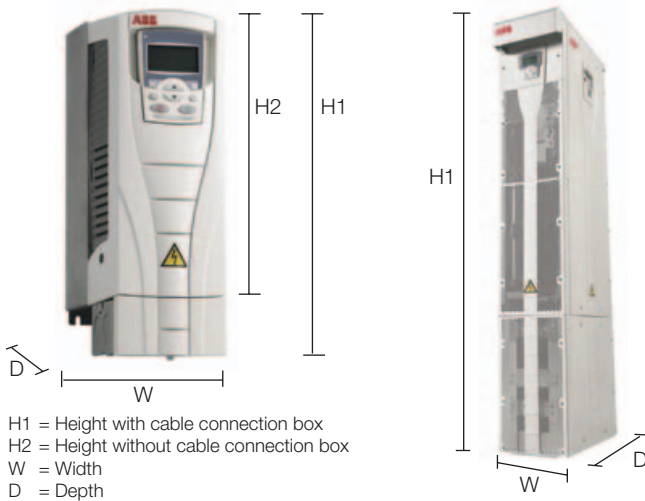
| Ratings | | | | | | Type code | Frame size |
|-------------|-------------|---------------|----------------|----------------|----------------|------------------|------------|
| Normal use | | | Heavy-duty use | | | | |
| P_N kW | P_N hp | I_{2N} A | P_{hd} kW | P_{hd} hp | I_{2hd} A | | |
| 0.75 | 1.0 | 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 |



Dimensions

ACS550 - 01 - 03A3 - 4 + B055

Wall-mounted drives Free-standing drives



Wall-mounted units

| Frame size | Dimensions and weights | | | | | | | | |
|------------------|------------------------|-----|-----|-----|--------|-------------------|-----|-----|--------|
| | IP21 / UL type 1 | | | | | IP54 / UL type 12 | | | |
| | H1 | H2 | W | D | Weight | H | W | D | Weight |
| R1 | 369 | 330 | 125 | 212 | 6.5 | 449 | 213 | 234 | 8.2 |
| R2 | 469 | 430 | 125 | 222 | 9 | 549 | 213 | 245 | 11.2 |
| R3 | 583 | 490 | 203 | 231 | 16 | 611 | 257 | 253 | 18.5 |
| R4 | 689 | 596 | 203 | 262 | 24 | 742 | 257 | 284 | 26.5 |
| R5 | 739 | 602 | 265 | 286 | 34 | 776 | 369 | 309 | 38.5 |
| R6 | 880 | 700 | 300 | 400 | 69 | 924 | 410 | 423 | 80 |
| R6 ¹⁾ | 986 | 700 | 302 | 400 | 73 | 1119 | 410 | 423 | 84 |

Free-standing units

| | | | | | |
|----|------|-----|-------------------|-------------------|-----|
| R8 | 2024 | n/a | 347 ²⁾ | 617 ²⁾ | 230 |
|----|------|-----|-------------------|-------------------|-----|

¹⁾ The dimensions and weights apply to ACS550-01-246A-4 and ACS550-01-290A-4

²⁾ The dimensions apply to bookshelf mounting.
In flat type mounting the width and depth change places.
n/a = not applicable

Electromagnetic compatibility

The EMC product standard (EN 61800-3 + Amendment A11(2000)) covers the specific EMC requirements stated for drives (tested with motor and cable) within the EU. The new revision of 61800-3 (2004) product standard can be applied from now on, but latest from 1st October 2007. EMC standards such as EN 55011, or EN 61000-6-3/4, apply to industrial and household equipments and systems including drive component

inside. Drive units complying with requirements of EN 61800-3 are always compliant 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 frame sizes R1, R2, R5, R6 with 100 m motor cables as standard.

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.

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), product standard | EN 55011, product family standard for industrial, scientific and medical (ISM) equipment |
|--|-------------------------------------|--|
| 1 st environment, unrestricted distribution | Category C1 | Group 1 Class B |
| 1 st environment, restricted distribution | Category C2 | Group 1 Class A |
| 2 nd environment, unrestricted distribution | Category C3 | Group 2 Class A |
| 2 nd environment, restricted distribution | Category C4 | Not applicable |



Assistant control panel

ACS550 - 01 - 03A3 - 4 + B055

The assistant control panel, which is delivered as standard, features a multilingual alphanumeric display, (EN, DA, DE, ES, FI, FR, IT, NL, PT, SE, US) or alternatively with code J416 (EN, DE, CZ, HU, PT, RU, TR) for easy drive programming. The control panel has various assistants and an inbuilt 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 large graphical display and soft keys make it extremely easy to navigate.



Options Control interfaces

ACS550 - 01 - 03A3 - 4 + B055

Panel mounting kits

To attach the control panel to the outside of a larger enclosure, two panel mounting kits are available. A simple and cost-efficient 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.



Available options

| | | |
|------------------------------------|---------------------------------|---------------------|
| Protection class | | |
| B055 | IP54 | |
| Control panel | | |
| OJ400 | 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 |
| I/O options²⁾ | | |
| L511 | Relay output extension | OREL-01 |
| Control option²⁾ | | |
| - 1) | Encoder | OTAC-01 |
| Fieldbus³⁾ | | |
| K451 | DeviceNet | RDNA-01 |
| K452 | LonWorks | RLON-01 |
| K454 | Profibus-DP | RPBA-01 |
| - 1) | CANOpen | RCAN-01 |
| - 1) | ControlNet | RCNA-01 |
| - 1) | Ethernet | RETA-01 |
| External options | | |
| - 1) | FlashDrop | MFDT-01 |
| - 1) | DriveWindow Light 2 | DriveWindow Light 2 |

¹⁾ Ordering with a separate material code number.

²⁾ One slot available for relay or encoder.

³⁾ One slot available for fieldbus adapter. Modbus inbuilt as standard.

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.

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

ACS550 - 01 - 03A3 - 4 + B055

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 10.

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 standard drives can accommodate an encoder module. Using an encoder for speed feedback is a straight forward way to increase motor control in many applications.

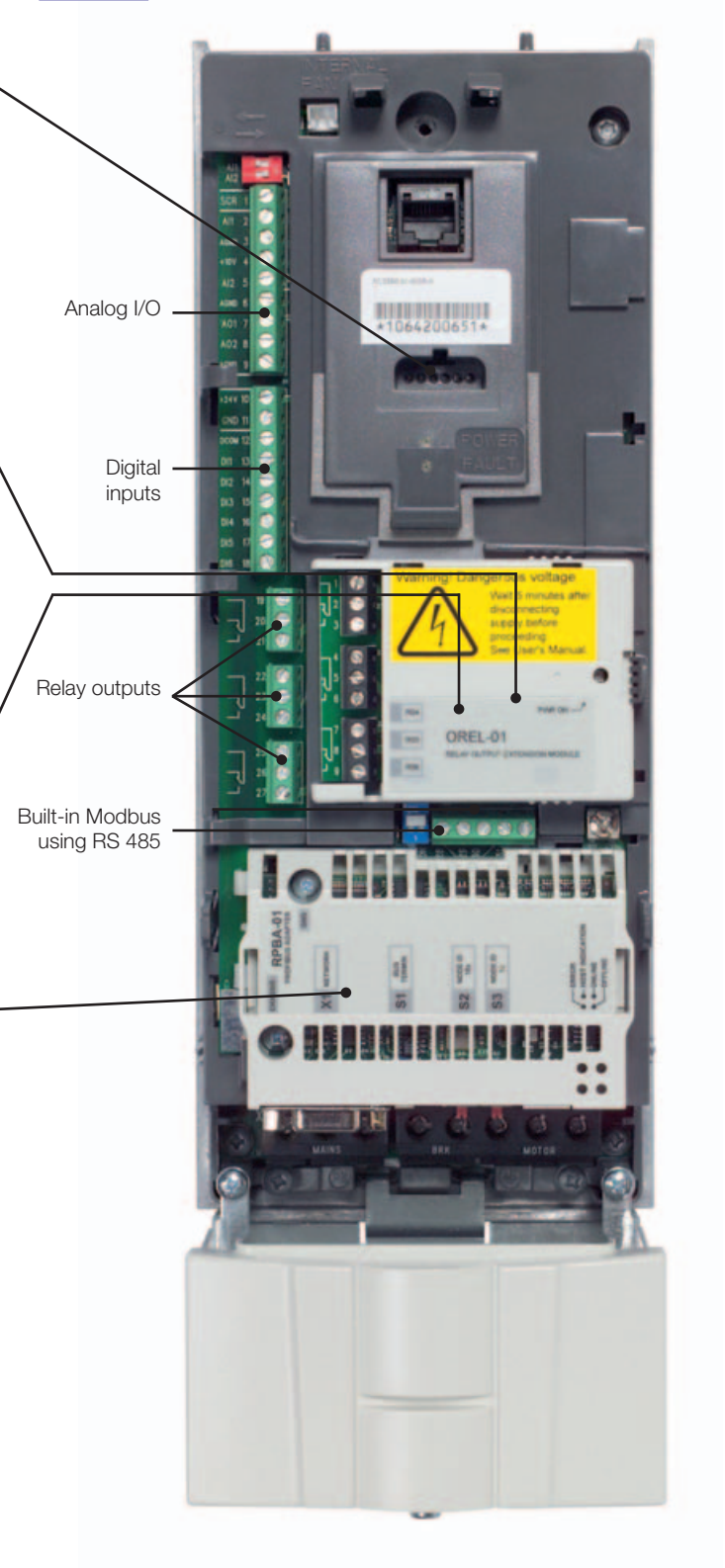
Plug-in fieldbus module

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:

- DeviceNet
- LONWORKS®
- PROFIBUS DP
- CANopen
- ControlNet
- Ethernet

For type codes see page 8





Options

External options

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 wall-mounted 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.

DrivePM requirements

- Windows 2000/XP
- Free serial port from a PC

FlashDrop package includes:

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



DriveWindow Light 2

DriveWindow Light 2 is an easy-to-use start-up 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.

Start-up wizards

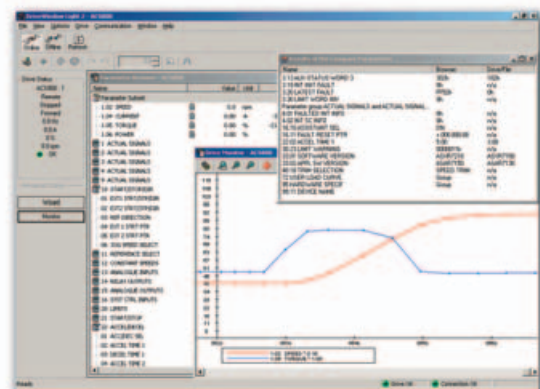
Start-up wizards make the setting of parameters easy. Simply launch the wizard, select an appropriate assistant e.g. for setting analog outputs, and all parameters related to this function are shown together with help pictures.

Highlights

- Editing, saving and downloading parameters
- Graphical and numerical signal monitoring
- Drive control
- Start-up wizards

DriveWindow Light requirements

- Windows NT/2000/XP
- Free serial port from a PC
- Free control panel connector in the drive



Options

External options

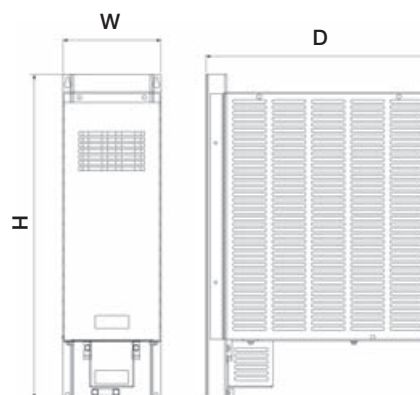


Brake units and choppers

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 Start-up Guide.

Brake units technical data

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



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 code | 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 - 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 defines 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 filter is 4 kHz

Note

An output choke does not improve the EMC performance of the drive.

To fulfil local EMC requirements use sufficient RFI filtering.

For more information refer to the ACS550 Technical reference.

Technical data



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 5.

Cooling air flow 380 - 480 V units

| Type code | 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 | 3850 | 13148 | 540 | 318 |
| ACS550-01-290A-4 | R6 | 4550 | 15539 | 540 | 318 |
| 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 - 240 V units

| Type code | 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 |

Fuse connections

Standard fuses can be used with ABB standard drives. For input fuse connections see tables below.

Recommended input protection fuses for 380 - 480 V units

| Type code | Frame size | IEC fuses | | UL fuses | |
|------------------|------------|-----------|-------------------------|----------|------------|
| | | A | Fuse type ¹⁾ | 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 |

Recommended input protection fuses for 208 - 240 V units

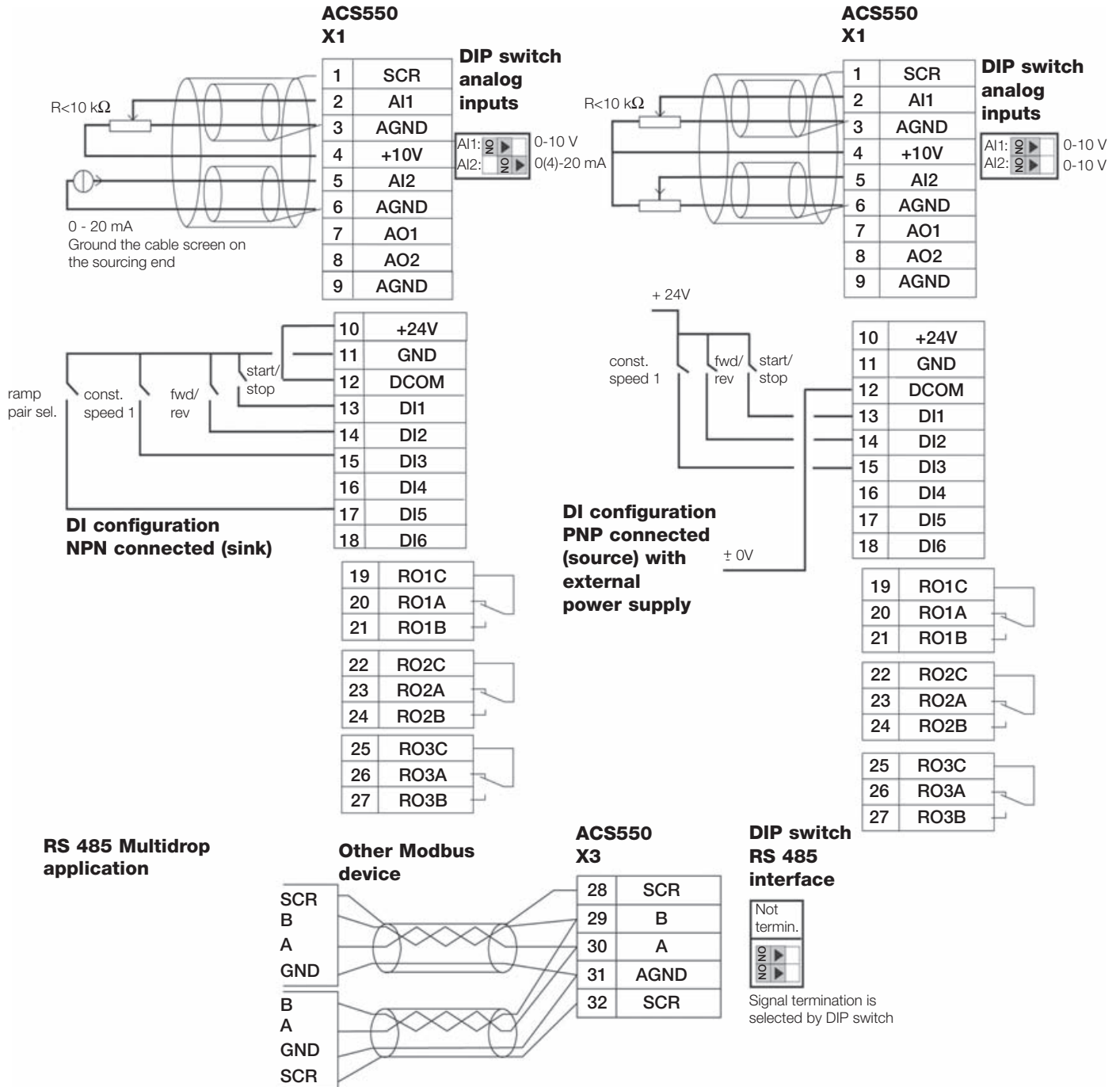
| Type code | Frame size | IEC fuses | | UL fuses | |
|------------------|------------|-----------|-------------------------|----------|------------|
| | | A | Fuse type ¹⁾ | A | Fuse type |
| ACS550-01-04A6-2 | R1 | 10 | gG | 10 | UL Class T |
| ACS550-01-06A6-2 | R1 | 10 | gG | 10 | UL Class T |
| 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 |

¹⁾ According to IEC-60269 standard



Control connections

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





All industries face a common goal: to maximize their production output at the lowest possible cost, while maintaining the highest quality end products. One of ABB's key objectives is to maximize the uptime of its customers' processes by ensuring optimum lifetime of all ABB products in a predictable, safe and low cost manner.

The services offered for ABB low voltage drives span the entire value chain, from the moment a customer makes the first enquiry through to disposal and recycling of the drive. Throughout the value chain, ABB provides training and learning, technical support and contracts. All of this is supported by one of the most extensive global drive sales and service networks.



Complete lifecycle management maximizes return on investment

At the heart of ABB's services is its drive lifecycle management model. All services available for ABB low voltage drives are planned according to this model. For customers it is easy to see which services are available at which product lifecycle phase.

Drive specific maintenance schedules are also based on this four-phase model. Thus, a customer knows precisely the timing of the part replacements plus all other maintenance related actions. The model also

helps the customer when deciding about upgrades, retrofits and replacements.

Professional management of the drive's lifecycle maximizes the return on any investment in ABB low voltage drives.

More detailed information on services can be found in the brochure "ABB drives - Lifecycle services for low voltage drives."

ABB drive lifecycle management model

Drive lifecycle phases:



- The drive, with complete lifecycle services, is available for purchase.

- The drive, with complete lifecycle services, is available for plant extensions.

- Spare parts, maintenance and repair services are available as long as materials can be obtained.

- ABB cannot guarantee availability of lifecycle services for technical reasons or within reasonable cost.



ABB follows a four-phase model for managing drive lifecycles, which brings enhanced customer support and improved efficiency.

Examples of lifecycle services are: selection and dimensioning, installation and commissioning, preventive and corrective maintenance, remote services, spare part services, training and learning, technical support, upgrade and retrofit, replacement and recycling.

Contact us



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