# ABB standard drive

## ACS550, 0.75 kW - 355 kW

## Technical catalogue

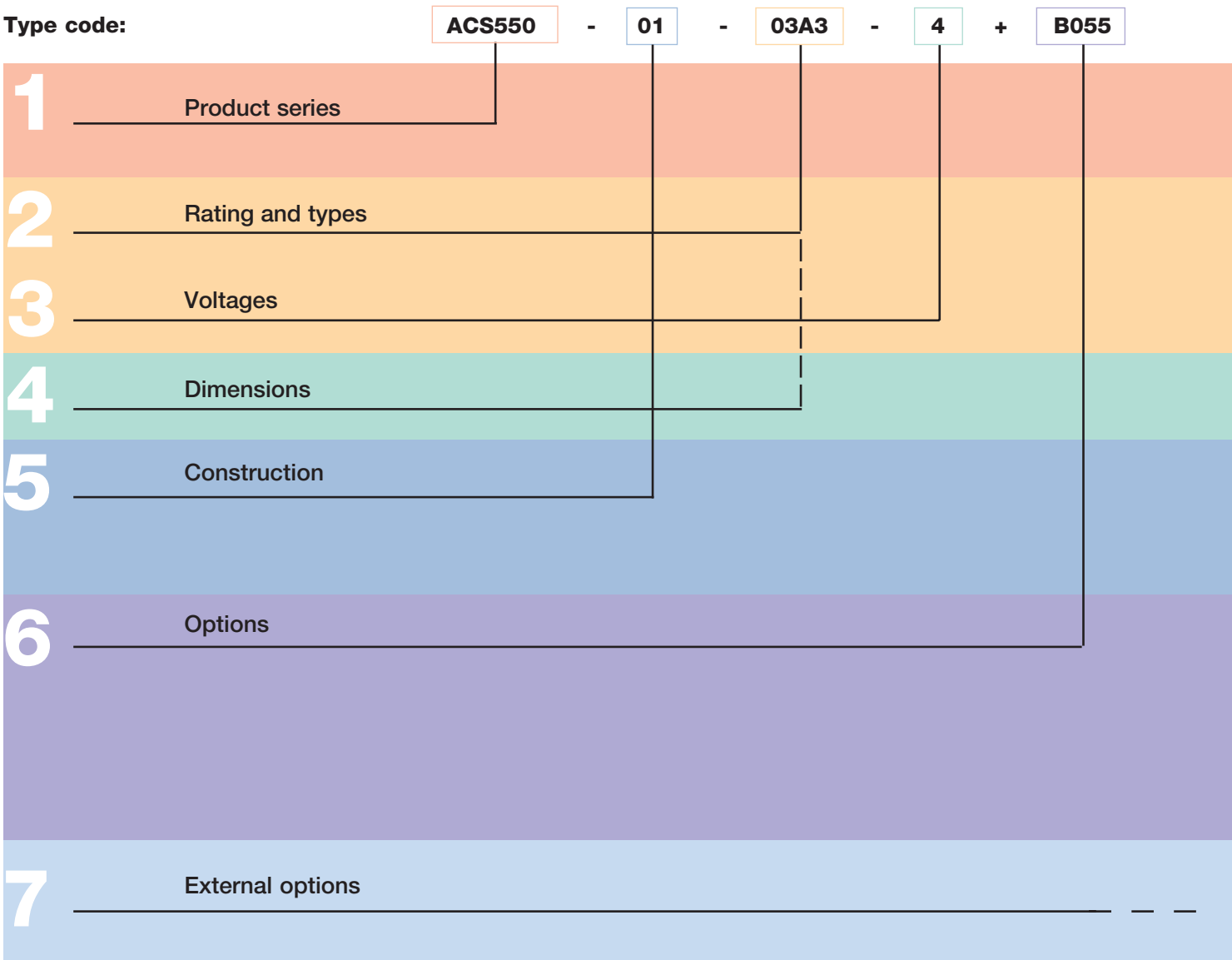


# Two ways to select your drive

**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 7-step approach below. Each step is accompanied by a reference to a page that is filled with useful information.



# Contents

## ABB standard drive, ACS550


Page

1 ABB standard drive ..... 4

2 Ratings, types and voltages ..... 5

3

4 Dimensions ..... 6

5 Construction ..... 6

Assistant control panel ..... 7

6 Options ..... 7

**Control interfaces**
How to select options ..... 7
Basic control panel ..... 7
**Plug-in options**
Extended relay output option module ..... 8
Plug-in fieldbus module ..... 8
**External options**
DriveWindow Light 2 ..... 9
Output chokes ..... 9
7 Brake units and choppers ..... 10

Technical data ..... 10
Cooling ..... 10
Fuse connections ..... 11
Technical specification ..... 12
Control connections ..... 13
Service products ..... 14
Contact and web information ..... 15

# ABB standard drive

ACS550 - 01 - 03A3 - 4 + B055

## What is an ABB standard drive?

The ABB standard drive is simple to buy, install, configure and use, saving considerable time. It is widely available through ABB's distributors, hence the use of the term standard. The drive has common user and process interface with fieldbus, common software tools for sizing, commissioning, maintenance and common spare parts.

## Where can it be used?

The ABB standard drive can be used in a wide range of industries. Typical applications include pump, fan and constant torque use, such as conveyors. The ABB standard drive is 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.

## ABB standard drive promises

- Precise delivery
- Quick installation
- Rapid start-up
- Trouble-free use

## Highlights

- Assistant control panel providing intuitive use of the drive
- Patent pending swinging choke for superior harmonic reduction
- Sensorless vector control
- Integral RFI filter for 1st and 2nd environment as standard
- Flexible fieldbus system with built-in Modbus and numerous internally mountable fieldbus adapters
- UL, cUL and CE approved

### What are its main features?

| Feature | Note | Benefit |
|---|---|---|
| Assistant control panel | Two soft-keys, function of which changes according to the state of the panel<br>Built-in "Help" 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>Fast set-up<br>Easier configuration<br>Rapid fault diagnosis<br>Quick access to recent parameter changes |
| Brake chopper | Built-in up to 11 kW | Reduced cost |
| Chokes | Swinging DC chokes - matches the right inductance to the right load, thereby suppressing and reducing harmonics | Reduces Total Harmonic Distortion (THD) emissions up to 25% |
| Connectivity | Simple to install:<br>Easy connection of cables<br>Easy connection to external fieldbus systems through multiple I/Os and plug-in options | Reduced installation time<br>Secure cable connections |
| Diagnostic assistant | Activated when fault occurs | Quick fault diagnostics |
| EMC | 1st and 2nd environment RFI filters as standard | No need for additional external filtering |
| Fieldbus | Built-in Modbus using RS 485<br>Optional plug-in fieldbus modules | Reduced cost |
| Intuitive features | Noise optimisation:<br>Increases switching frequency of drive when drive temperature is reduced<br>Controlled cooling fan: Drive is cooled only when necessary | Considerable motor noise reduction<br>Reduces inverter noise and improves energy efficiency |
| Maintenance assistant | Monitors running hours or motor rotation | Takes care of preventative maintenance of drive, the motor or run application |
| Mounting template | Supplied separately with unit | Quick and easy to mark mounting screw holes on installation surface |
| Sensorless vector control | Improved motor control performance | Enables wider range of applications |
| Start-up assistant | Guides user through all essential settings without going to parameter list | Easy set-up of parameters |

# Ratings, types and voltages

ACS550 - 01 - 03A3 - 4 + B055

## Type code

This is the unique reference number (shown above and in column 7, right) that clearly indentifies 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.

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 | 3 | 6.9 | 2.2 | 3 | 5.4 | ACS550-01-06A9-4 | R1 |
| 4 | 5 | 8.8 | 3 | 3 | 6.9 | ACS550-01-08A8-4 | R1 |
| 5.5 | 7.5 | 11.9 | 4 | 5 | 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 | 44 | 18.5 | 25 | 38 | ACS550-01-044A-4 | R4 |
| 30 | 40 | 59 | 22 | 30 | 44 | ACS550-01-059A-4 | R4 |
| 37 | 50 | 72 | 30 | 40 | 59 | ACS550-01-072A-4 | R4 |
| 45 | 75 | 96 | 37 | 60 | 77 | ACS550-01-096A-4 | R5 |
| 55 | 100 | 124 | 45 | 75 | 96 | ACS550-01-124A-4 | R6 |
| 75 | 125 | 157 | 55 | 100 | 124 | ACS550-01-157A-4 | R6 |
| 90 | 150 | 180 | 75 | 125 | 156 | ACS550-01-180A-4 | R6 |
| 110 | 150 | 195 | 90 | 125 | 162 | ACS550-01-195A-4 | R6 |

### Free standing units

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 132 | 200 | 245 | 110 | 150 | 192 | ACS550-02-245A-4 | R7 |
| 160 | 200 | 289 | 132 | 200 | 224 | ACS550-02-289A-4 | R7 |
| 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 |

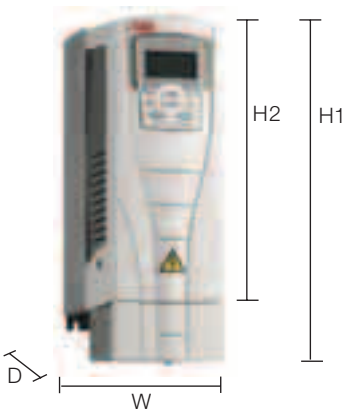
### 3-phase supply voltage 208-240 V
### Wall mounted units

| 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 units** **Free standing units**







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

## Wall mounted units

| Frame size | Dimensions and weights | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | IP 21 / UL type 1 | | | | | IP 54 / UL type 12 | | | |
| | 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 | 441 | 215 | 238 | 8.2 |
| R2 | 469 | 430 | 125 | 222 | 9 | 541 | 215 | 245 | 11.2 |
| R3 | 583 | 490 | 203 | 231 | 16 | 604 | 257 | 276 | 18.5 |
| R4 | 689 | 596 | 203 | 262 | 24 | 723 | 257 | 306 | 26.5 |
| R5 | 739 | 602 | 265 | 286 | 34 | 776 | 369 | 309 | 38.5 |
| R6 | 880 | 700 | 300 | 400 | 69 | 924 | 410 | 423 | 80 |

## Free standing units

| | | | | | |
|---|---|---|---|---|---|
| R7 | 1507 | n/a | 250*) | 520*) | 115 |
| R8 | 2024 | n/a | 347*) | 617*) | 230 |

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

# Construction

ACS550 - 01 - 03A3 - 4 + B055

"01" within the type code (shown above) varies depending on the drive mounting arrangement, and power rating. Choose the correct one for your needs from the table below:

| 01 | 02 | for IP 54 units... |
|---|---|---|
| ■ Wall mounted, frame size R1-R6<br>■ 0.75 to 110 kW<br>■ IP 21<br>■ Built-in EMC filter<br>■ Standard software<br>■ Built-in Modbus interface<br>■ Cable connection box<br>■ Brake chopper in frame sizes R1-R2<br>■ Assistant control panel | ■ Free standing, frame size R7-R8<br>■ 110 to 355 kW<br>■ IP 21<br>■ Built-in EMC filter<br>■ Standard software<br>■ Built-in Modbus interface<br>■ Pedestal unit<br>■ Assistant control panel | ■ If IP 54 is required, simply select "01" and then see page 7 to find the correct "Option" code. Free standing (02) units are not available in IP 54. |

# Assistant control panel




For easy drive programming, a detachable, multi-lingual alphanumeric assistant control panel is delivered as standard. 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 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 kit

The panel mounting kit enables mounting of control panels on cabinet doors. This kit includes a 3 m extension cable, a gasket, mounting screws and a mounting template.




### How to select options

The options shown in the table are available within the ACS550 range. Each has an associated 4-figure option code, which is shown in the table. It is this code that replaces B055 in the type code above. You can order as many options as required, simply by extending the code as necessary.

### Available options

| | | |
|---|---|---|
| **Protection class** | | |
| B055 | IP 54 | |
| **Control panel** | | |
| 0J400 | If no control panel is required | |
| J404 | Basic control panel | ACS-CP-C |
| - | Panel mounting kit | ACS/H-CP-EXT |
| **I/O options**[1] | | |
| L511 | Relay output extension | OREL-01 |
| **Fieldbus**[2] | | |
| K451 | DeviceNet | RDNA-01 |
| K452 | LonWorks | RLON-01 |
| K454 | Profibus-DP | RPBA-01 |
| K457 | CANOpen | RCAN-01 |
| K462 | ControlNet | RCNA-01 |

[1] One slot available for relay
[2] One slot available for fieldbus 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

ACS550 - 01 - 03A3 - 4 + B055

### Relay output extension option module

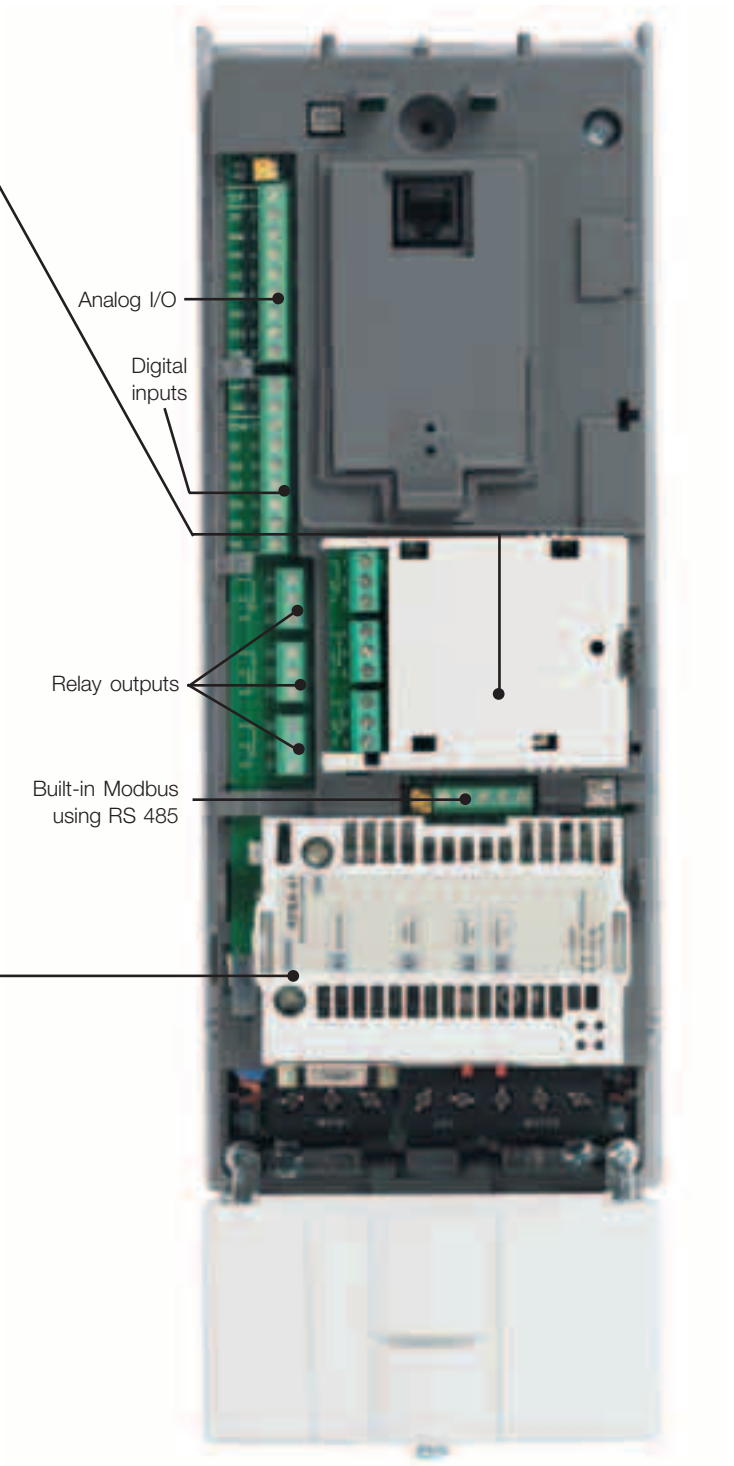
This plug-in option offers three additional relay outputs. They can be used, for example, in pump and fan control or many supervisory functions. All the relays can be programmed to on/off by using the assistant control panel's clock. Alternatively, fieldbus can be used to control any external components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

### 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.

The ACS550 supports the following fieldbus options:
- DeviceNet
- LonWorks
- Profibus-DP
- CANOpen
- ControlNet

For type codes see page 7



# Options
## External options

A separate order line and type code is required for any of these external options. These numbers are shown in the last column of the respective tables.

## DriveWindow Light 2

DriveWindow Light 2 is PC software used for rapid commissioning and controlling of drives. It has features for programming, monitoring, trouble shooting and maintenance. It is also a set-up and control tool which is Win98, WinNT, Win2000 and WinXP compatible.

DriveWindow Light 2 operates both off- and on-line. No additional PC hardware is required. It uses the PC's RS-232 port. It is compatible with drive types ACS140, ACS160, ACS400, ACS550, ACS600, ACS800 and DCS400.

**DriveWindow Light 2 features**

- Graphical start-up wizards
- Off- and on-line viewing and changing of drive parameters
- Backup and restore parameters. In a fault situation the parameters can be reloaded resulting in time savings.
- Graphical monitoring of actual signal values
- I/O mapping table
- Control of the drive

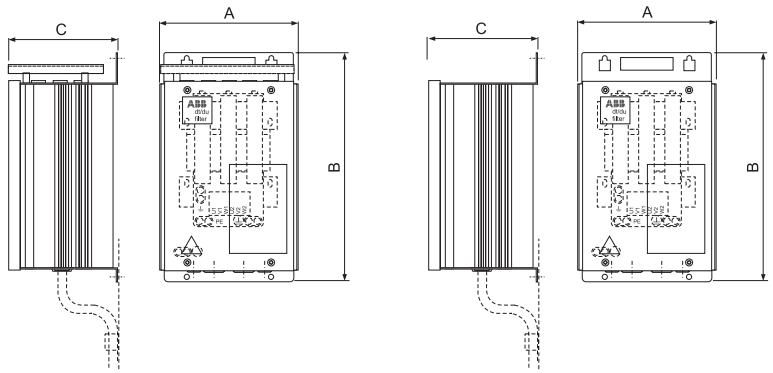
## Output chokes

Output chokes are used when motor cables above normal length are required. Cable can be roughly 1.5 times standard cable length, see below. The maximum switching frequency with output chokes is 4 kHz.

### Selection table

| Type code | Max. cable mm² | I A | Max. cable length with choke (m) | Max. cable length without choke (m) | Output choke type code |
|---|---|---|---|---|---|
| ACS550-01-03A3-4 | 10 | 15 | 150 | 100 | NOCH-0016-6X |
| ACS550-01-04A1-4 | 10 | 15 | 150 | 100 | NOCH-0016-6X |
| ACS550-01-05A4-4 | 10 | 15 | 150 | 100 | NOCH-0016-6X |
| ACS550-01-06A9-4 | 10 | 15 | 150 | 100 | NOCH-0016-6X |
| ACS550-01-08A8-4 | 10 | 15 | 150 | 100 | NOCH-0016-6X |
| ACS550-01-012A-4 | 10 | 15 | 150 | 100 | NOCH-0016-6X |
| ACS550-01-015A-4 | 10 | 15 | 250 | 200 | NOCH-0016-6X |
| ACS550-01-023A-4 | 10 | 28 | 250 | 200 | NOCH-0030-6X |
| ACS550-01-031A-4 | 16 | 28 | 250 | 200 | NOCH-0030-6X |
| ACS550-01-038A-4 | 16 | 28 | 250 | 200 | NOCH-0030-6X |
| ACS550-01-044A-4 | 35 | 65 | 300 | 200 | NOCH-0070-6X |
| ACS550-01-059A-4 | 35 | 65 | 300 | 200 | NOCH-0070-6X |
| ACS550-01-072A-4 | 35 | 65 | 300 | 200 | NOCH-0070-6X |

X stands for degree of protection where 2 = IP 22 and 5 = IP 54




### Dimensions

| Output choke type code | A mm | B mm | C mm | Weight kg |
|---|---|---|---|---|
| NOCH-0016-62/65 | 199 | 323 | 154 | 6 |
| NOCH-0030-62/65 | 249 | 348 | 172 | 9 |
| NOCH-0070-62/65 | 279 | 433 | 202 | 15.5 |

**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 Manual.

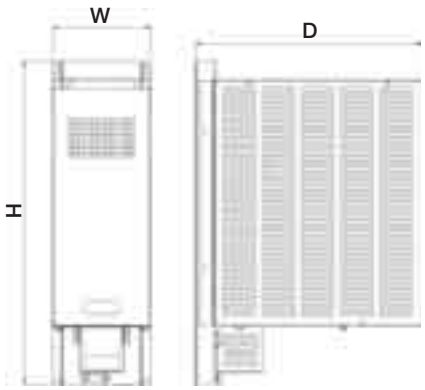
# Options
## External options

### 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 | 32 | 2000 | 4500 | ACS-BRK-C |
| 380 - 480 V AC | | | 12000 | |
| 200 - 240 V AC | 10.5 | 7000 | 14000 | ACS-BRK-D |
| 380 - 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 |

# 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 12.

#### 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 |
| ACS550-01-044A-4 | R4 | 667 | 2278 | 280 | 165 |
| ACS550-01-059A-4 | R4 | 907 | 3098 | 280 | 165 |
| ACS550-01-072A-4 | R4 | 1120 | 3825 | 280 | 165 |
| ACS550-01-096A-4 | R5 | 1440 | 4918 | 168 | 99 |
| ACS550-01-124A-4 | R6 | 1940 | 6625 | 405 | 238 |
| 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 |
| ACS550-02-245A-4 | R7 | 3850 | 13148 | 540 | 318 |
| ACS550-02-289A-4 | R7 | 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 |

# Technical data
## 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 *) | 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 |
| ACS550-01-044A-4 | R4 | 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 |
| ACS550-01-096A-4 | R5 | 125 | gG | 125 | UL Class T |
| ACS550-01-124A-4 | R6 | 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 |
| ACS550-02-245A-4 | R7 | 250 | gG | 250 | UL Class T |
| ACS550-02-289A-4 | R7 | 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 208 - 240 V units

| Type code | 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 |

# Technical specification

ACS550 - 01 - 03A3 - 4 + B055

## Mains connection

| | |
|---|---|
| **Voltage and power range** | 3-phase, 380 to 480 V, +10/-15%, 0.75 - 355 kW<br>3-phase, 200 to 240 V, +10/-15%, 0.75 - 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 $I_2$ |
| **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** | |
| Standard | Default 4 kHz |
| Selectable | 0.75 - 110 kW: 1 kHz, 4 kHz, 8 kHz, 12 kHz<br>up to 355 kW: 1 kHz, 4 kHz |
| **Acceleration time** | 0.1 to 1800 s |
| **Deceleration time** | 0.1 to 1800 s |
| **Speed control** | |
| Static accuracy | 20% of motor nominal slip |
| Dynamic accuracy | < 1% s with 100% torque step |
| **Torque control** | |
| Torque step rise time | < 10 ms with nominal torque |
| Non-linearity | ± 5% 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** | |
| Output current | Rated current available at 0 to 1000 m<br>reduced by 1% per 100 m over 1000 m to 2000 m |
| **Relative humidity** | lower than 95% (without condensation) |
| **Protection class** | IP 21 or IP 54 |
| **Enclosure colour** | NCS 1502-Y, RAL 9002, PMS 420 C |
| **Contamination levels** | IEC 721-3-3<br>No conductive dust allowed |
| Transportation | Class 1C2 (chemical gases),<br>Class 1S2 (solid particles) |
| Storage | Class 2C2 (chemical gases),<br>Class 2S2 (solid particles) |
| Operation | Class 3C2 (chemical gases),<br>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...32 ms |
| Resolution | 0.1% |
| Accuracy | ±1% |
| **Two analog outputs** | 0 (4) to 20 mA, load < 500 Ω |
| **Auxiliary voltage** | 24 V DC ±10%, max. 250 mA |
| **Six digital inputs** | 12 V... 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** | |
| 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),<br>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),<br>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

CE, UL and cUL approvals

## EMC (according to EN61800-3)

1st environment restricted distribution for frame sizes R3, R4 with 30 m motor cables and for frame sizes R1, R2, R5, R6 with 100 m motor cables

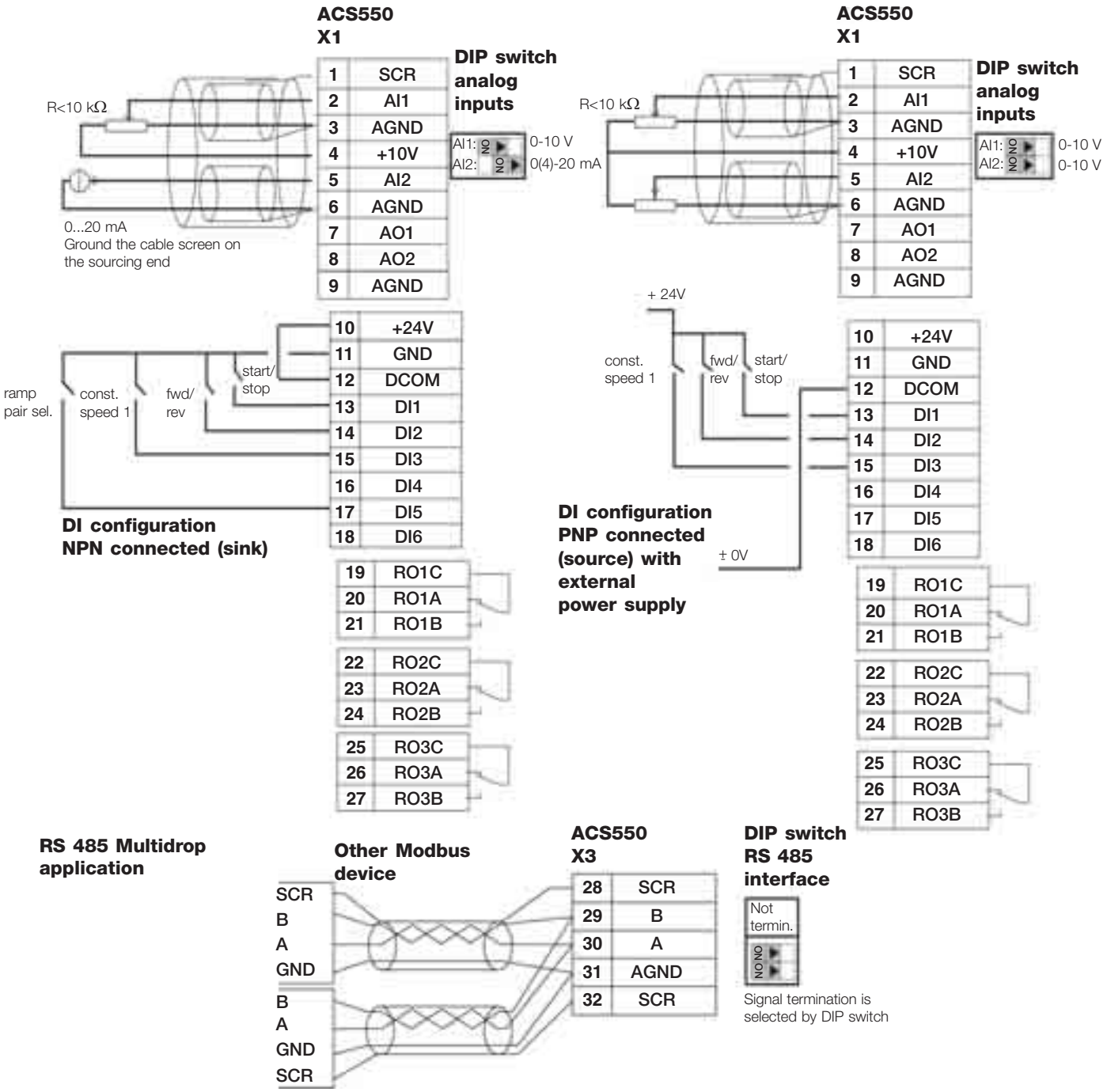
2nd environment unrestricted distribution with 100 m cable as standard

For longer motor cable lengths, external EMC filters are available on request

# Control connections

ACS550 - 01 - 03A3 - 4 + B055

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



# Service products

ABB has created a lifecycle management model for ABB drives products and systems to provide customers with maximum profit for purchased assets by maintaining high availability, eliminating unplanned repair costs and extending system lifetime. The lifecycle management model comprises a palette of dedicated services for the entire lifecycle of the ABB standard drive, ACS550.

The services begin with drive dimensioning, professional commissioning and training, continue with spare part services, proactive scheduled maintenance programs and support services and end with smooth transition to new technology and recycling at the end of the product lifecycle.

## Start-up services

Using ABB's start-up services you can trust that your drives are correctly commissioned and well-tuned to their application. ABB employs authorized professionals who have been thoroughly trained for their job.

### Start-up services

| Service product code | Service type | Description |
|---|---|---|
| 68299918 | ACS550, (R7-R8) 75 km | Professional start-up |
| 68299900 | ACS550, (R7-R8) 30 km | Professional start-up |
| 64731700 | ACS550, (R1-R6) 30 km | Professional start-up |
| 64731718 | ACS550, (R1-R6) 75 km | Professional start-up |



## Training services

ABB offers dedicated training on ABB drives for your service and operating personnel. Upon successful completion of the training course your personnel will have acquired the skills to use ABB drives correctly and safely, and also to get the best results from their application. The training courses are broken down into modules that allow for customization of the contents depending on the objectives and skill levels of the participants.

### Training services

| Service product code | Service type | Description |
|---|---|---|
| G165E | ACS550 fundamentals | Training services |
| G165 | ACS550 startup & maintenance 1D | Training services |

For more information on our training services, please contact your local ABB representative or visit the ABB University web pages at http://www.abb.com/abbuniversity.

## On-site spares kits

On-site spares kits contain the most critical spare parts for your AC drives. The contents of the kit can be chosen according to the number of drives in use. Having a spares kit on site reduces the downtime of equipment and increases the availability of critical processes.

## ABB maintenance services

ABB maintenance services ensure optimal operation of your drives and extends their useful life.

ABB has a service organization that spans the globe. For more information on our ACS550 services, please contact your local ABB representative or visit our web pages at http://www.abb.com > Products & Services > Motors, Drives and Power Electronics > Drives > Drive Services.

# Contact and web information

ABB's worldwide presence is built on strong local companies working together with the local distributor and channel partner network across borders to achieve a uniform level of services for all our customers. By combining the experience and know-how gained in local and global markets, we ensure that our customers in all industries can gain the full benefit from our products.

For further details about all our variable speed drive products and services please contact your nearest ABB drives channel partner or visit the ABB website www.abb.com/motors&drives.

For orders, quotations, etc. please contact your local ABB drives channel partner, ABB office, or visit the website www.abb.com/drivespartners.

**Argentina (Valentin Alsina)**
Tel: +54 (0)114 229 5707
Fax: +54 (0)114 229 5593

**Australia (Victoria)**
Tel: 1800 222 435
Tel: +61 3 8544 0000
Fax: +61 3 8544 0004

**Austria (Vienna)**
Tel: 0800 201 009
Tel: +43 1 60109-0
Fax: +43 1 60109-8312

**Belarus (Minsk)**
Tel: +375 172 236 711
Tel: +375 172 239 185
Fax: +375 172 239 154

**Belgium (Zaventem)**
Tel: +32 2 718 6313
Fax: +32 2 718 6664

**Bolivia (La Paz)**
Tel: +591 2 242 3636
Fax: +591 2 242 3698

**Bosnia Herzegovina (Tuzla)**
Tel: +387 35 255 097
Fax: +387 35 255 098

**Brazil (Sao Paulo)**
Tel: 0800 149 111
Tel: +55 11 3688 9282
Fax: +55 11 3684 1991

**Bulgaria (Sofia)**
Tel: +359 2 981 4533
Fax: +359 2 980 0846

**Canada (Montreal)**
Tel: +1 514 215 3006
Fax: +1 514 332 0609

**Chile (Santiago)**
Tel: +56 2 471 4391
Fax: +56 2 471 4399

**China (Beijing)**
Tel: +86 10 8456 6688
Fax: +86 10 8456 7636

**Colombia (Bogota)**
Tel: +57 1 417 8000
Fax: +57 1 413 4086

**Croatia (Zagreb)**
Tel: +385 1 600 8550
Fax: +385 1 239 5598

**Czech Republic (Prague)**
Tel: +420 234 322 360
Fax: +420 234 322 310

**Denmark (Skovlunde)**
Tel: +45 44 504 345
Fax: +45 44 504 365

**Estonia (Tallinn)**
Tel: +372 6 711 800
Fax: +372 6 711 810

**Finland (Helsinki)**
Tel: +358 10 22 11
Tel: +358 10 222 1999
Fax: +358 10 222 2913

**France (Champagne)**
Tel: +33 (0)810 020 000
Fax: +33 (0)472 054 041

**Germany (Lampertheim)**
Tel: +01805 123 580
Tel: +49 (0)6206 503 503
Fax: +49 (0)6206 503 600

**Greece (Athens)**
Tel: +30 210 289 1900
Fax: +30 210 289 1999

**Hungary (Budapest)**
Tel: +36 1 443 2224
Fax: +36 1 443 2144

**India (Bangalore)**
Tel: +91 80 837 0416
Fax: +91 80 839 9173

**Indonesia (Jakarta)**
Tel: +62 21 590 9955
Fax: +62 21 590 0115
Fax: +62 21 590 0116

**Ireland (Dublin)**
Tel: +353 1 405 7300
Fax: +353 1 405 7312

**Israel (Tirat Carmel)**
Tel: +972 4 858 1188
Fax: +972 4 858 1199

**Italy (Milano)**
Tel: +39 02 2414 3792
Fax: +39 02 2414 3979

**Latvia (Riga)**
Tel: +371 7 063 600
Fax: +371 7 063 601

**Lithuania (Vilnius)**
Tel: +370 5 273 8300
Fax: +370 5 273 8333

**Luxembourg (Leudelange)**
Tel: +352 493 116
Fax: +352 492 859

**Macedonia (Skopje)**
Tel: +389 2 118 010
Fax: +389 2 118 774

**Malaysia (Kuala Lumpur)**
Tel: +60 3 5628 4888
Fax: +60 3 5631 2926

**Mexico (Mexico City)**
Tel: +52 55 5328 1400
Fax: +52 55 5328 1482/1439

**The Netherlands (Rotterdam)**
Tel: +31 (0)10 407 8362
Fax: +31 (0)10 407 8433

**New Zealand (Auckland)**
Tel: +64 9 356 2170
Fax: +64 9 357 0019

**Norway (Oslo)**
Tel: +47 22 872 000
Fax: +47 22 872 541

**Peru (Lima)**
Tel: +51 1 561 0404
Fax: +51 1 561 3040

**Philippines (Metro Manila)**
Tel: +63 2 821 7777
Fax: +63 2 823 0309
Fax: +63 2 824 4637

**Poland (Lodz)**
Tel: +48 42 613 4900
Fax: +48 42 613 4901

**Portugal (Amadora)**
Tel: +351 21 425 6239
Fax: +351 21 425 6392

**Romania (Bucarest)**
Tel: +40 21 310 4377
Fax: +40 21 310 4383

**Russia (Moscow)**
Tel: +7 095 960 22 00
Fax: +7 095 913 96 95

**Saudi-Arabia (Al Khobar)**
Tel: +966 (0)3 882 9394
Fax: +966 (0)3 882 4603

**Serbia and Montenegro (Belgrade)**
Tel: +381 11 324 4341
Fax: +381 11 324 1623

**Singapore**
Tel: +65 6776 5711
Fax: +65 6778 0222

**Slovakia (Banska Bystrica)**
Tel: +421 48 410 2324
Fax: +421 48 410 2325

**Slovenia (Ljubljana)**
Tel: +386 1 587 5482
Fax: +386 1 587 5495

**South Africa (Johannesburg)**
Tel: +27 11 617 2000
Fax: +27 11 908 2061

**South Korea (Seoul)**
Tel: +82 2 528 2794
Fax: +82 2 528 2338

**Spain (Barcelona)**
Tel: +34 (9)3 728 8700
Fax: +34 (9)3 728 8743

**Sweden (Västerås)**
Tel: +46 (0)21 32 90 00
Fax: +46 (0)21 14 86 71

**Switzerland (Zürich)**
Tel: +41 (0)58 586 0000
Fax: +41 (0)58 586 0603

**Taiwan (Taipei)**
Tel: +886 2 2577 6090
Fax: +886 2 2577 9467
Fax: +866 2 2577 9434

**Thailand (Bangkok)**
Tel: +66 (0)2665 1000
Fax: +66 (0)2665 1042

**Turkey (Istanbul)**
Tel: +90 216 528 2200
Fax +90 216 365 2944

**United Kingdom (Manchester)**
Tel: +44 (0)161 445 5555
Fax. +44 (0)161 445 6066

**Uruguay (Montevideo)**
Tel: +598 2 707 7300
Tel: +598 2 707 7466

**USA (New Berlin)**
Tel: +1 800 752 0696
Tel: +1 262 785 3200
Fax: +1 262 785 0397

**Venezuela (Caracas)**
Tel: +58 212 203 1817
Fax: +58 212 237 6270

**ABB Oy**
Drives
P. O. Box 184
FI - 00381 Helsinki
Finland
Telephone +358 10 22 11
Fax +358 10 222 2764
Internet http://www.abb.com/motors&drives

© Copyright 2004 ABB. All rights reserved. 3AFE 64792857 REV F EN 1.10.2004 Specifications subject to change without notice..