

## 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 1<sup>st</sup> and 2<sup>nd</sup> 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                       | 1 <sup>st</sup> and 2 <sup>nd</sup> 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                                                                                                      |

## 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.

## 3-phase supply voltage 380-480 V

### Wall mounted units

| Ratings              |                      |                      |                       |                       |                       | Type code        | Frame size |
|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|------------------|------------|
| Normal use           |                      |                      | Heavy-duty use        |                       |                       |                  |            |
| P <sub>N</sub><br>kW | P <sub>N</sub><br>hp | I <sub>2N</sub><br>A | P <sub>hd</sub><br>kW | P <sub>hd</sub><br>hp | I <sub>2hd</sub><br>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

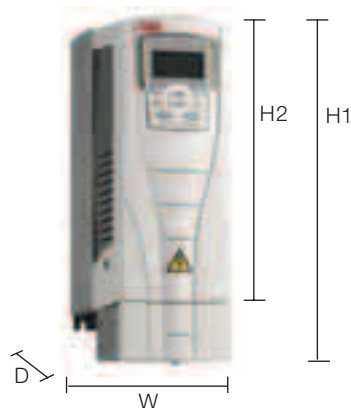
### Wall mounted units

| Ratings              |                      |                      |                       |                       |                       | Type code        | Frame size |
|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|------------------|------------|
| Normal use           |                      |                      | Heavy-duty use        |                       |                       |                  |            |
| P <sub>N</sub><br>kW | P <sub>N</sub><br>hp | I <sub>2N</sub><br>A | P <sub>hd</sub><br>kW | P <sub>hd</sub><br>hp | I <sub>2hd</sub><br>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         |

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.

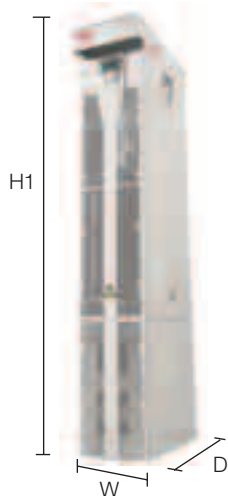
P<sub>N</sub> for kW = Typical motor power in 400 V at normal use  
P<sub>N</sub> for hp = Typical motor power in 460 V at normal use  
P<sub>hd</sub> for kW = Typical motor power in 400 V at heavy-duty use  
P<sub>hd</sub> for hp = Typical motor power in 460 V at heavy-duty use

## Wall mounted units



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

## Free standing units



## 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 |
| R1         | 369                    | 330   | 125  | 212  | 6.5       | 441                | 215  | 238  |
| R2         | 469                    | 430   | 125  | 222  | 9         | 541                | 215  | 245  |
| R3         | 583                    | 490   | 203  | 231  | 16        | 604                | 257  | 276  |
| R4         | 689                    | 596   | 203  | 262  | 24        | 723                | 257  | 306  |
| R5         | 739                    | 602   | 265  | 286  | 34        | 776                | 369  | 309  |
| R6         | 880                    | 700   | 300  | 400  | 69        | 924                | 410  | 423  |

## Free standing units

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

<sup>\*)</sup> 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:

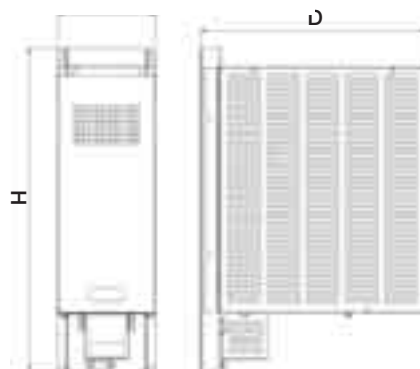
| 01                                                                                                                                                                                                                                                                                                                            | 02                                                                                                                                                                                                                                                                         | for IP 54 units...                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Wall mounted, frame size R1-R6</li> <li>0.75 to 110 kW</li> <li>IP 21</li> <li>Built-in EMC filter</li> <li>Standard software</li> <li>Built-in Modbus interface</li> <li>Cable connection box</li> <li>Brake chopper in frame sizes R1-R2</li> <li>Assistant control panel</li> </ul> | <ul style="list-style-type: none"> <li>Free standing, frame size R7-R8</li> <li>110 to 355 kW</li> <li>IP 21</li> <li>Built-in EMC filter</li> <li>Standard software</li> <li>Built-in Modbus interface</li> <li>Pedestal unit</li> <li>Assistant control panel</li> </ul> | <ul style="list-style-type: none"> <li>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.</li> </ul> |

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

## 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 | m³/h     | ft³/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 | m³/h     | ft³/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                      |

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 <sup>1)</sup> | 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 |

<sup>1)</sup> 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 <sup>1)</sup> | 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 |

## Mains connection

|                                |                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Voltage and power range</b> | 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 |
| <b>Frequency</b>               | 48 to 63 Hz                                                                                                                          |
| <b>Power factor</b>            | 0.98                                                                                                                                 |

## Motor connection

|                                                                                                |                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Voltage</b>                                                                                 | 3-phase, from 0 to $U_{SUPPLY}$                                                                                                                                                                       |
| <b>Frequency</b>                                                                               | 0 to 500 Hz                                                                                                                                                                                           |
| <b>Continuous loading capability</b><br>(constant torque at a max ambient temperature of 40°C) | Rated output current $I_2$                                                                                                                                                                            |
| <b>Overload capacity</b><br>(at a max. ambient temperature of 40°C)                            | At normal use $1.1 \times I_{2N}$ for 1 minute every 10 minutes<br>At heavy-duty use $1.5 \times I_{2nd}$ for 1 minute every 10 minutes<br>Always $1.8 \times I_{2nd}$ for 2 seconds every 60 seconds |
| <b>Switching frequency</b>                                                                     |                                                                                                                                                                                                       |
| 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                                                                                                                          |
| <b>Acceleration time</b>                                                                       | 0.1 to 1800 s                                                                                                                                                                                         |
| <b>Deceleration time</b>                                                                       | 0.1 to 1800 s                                                                                                                                                                                         |
| <b>Speed control</b>                                                                           |                                                                                                                                                                                                       |
| Static accuracy                                                                                | 20% of motor nominal slip                                                                                                                                                                             |
| Dynamic accuracy                                                                               | < 1% s with 100% torque step                                                                                                                                                                          |
| <b>Torque control</b>                                                                          |                                                                                                                                                                                                       |
| Torque step rise time                                                                          | < 10 ms with nominal torque                                                                                                                                                                           |
| Non-linearity                                                                                  | ± 5% with nominal torque                                                                                                                                                                              |

## Environmental limits

|                             |                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------|
| <b>Ambient temperature</b>  |                                                                                          |
| -15 to 40°C                 | No frost allowed                                                                         |
| 40 to 50°C                  | $f_{switch}$ 4 kHz, derating please contact supplier                                     |
| <b>Altitude</b>             |                                                                                          |
| Output current              | Rated current available at 0 to 1000 m<br>reduced by 1% per 100 m over 1000 m to 2000 m  |
| <b>Relative humidity</b>    | lower than 95% (without condensation)                                                    |
| <b>Protection class</b>     | IP 21 or IP 54                                                                           |
| <b>Enclosure colour</b>     | NCS 1502-Y, RAL 9002, PMS 420 C                                                          |
| <b>Contamination levels</b> | IEC 721-3-3                                                                              |
| Transportation              | No conductive dust allowed<br>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

|                               |                                                               |
|-------------------------------|---------------------------------------------------------------|
| <b>Two analog inputs</b>      |                                                               |
| 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...32 ms                                                    |
| Resolution                    | 0.1%                                                          |
| Accuracy                      | ±1%                                                           |
| <b>Two analog outputs</b>     | 0 (4) to 20 mA, load < 500 $\Omega$                           |
| <b>Auxiliary voltage</b>      | 24 V DC ±10%, max. 250 mA                                     |
| <b>Six digital inputs</b>     | 12 V... 24 V DC with internal or external supply, PNP and NPN |
| Input impedance               | 2.4 k $\Omega$                                                |
| Maximum delay                 | 5 ms ± 1 ms                                                   |
| <b>Three relay outputs</b>    |                                                               |
| 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                                                       |
| <b>Serial communication</b>   |                                                               |
| RS 485                        | Modbus protocol                                               |

## Protection limits

|                                 |                                                                       |
|---------------------------------|-----------------------------------------------------------------------|
| <b>Overvoltage trip limits</b>  |                                                                       |
| 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) |
| <b>Undervoltage trip limits</b> |                                                                       |
| 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)

|                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 <sup>st</sup> 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 |
| 2 <sup>nd</sup> environment unrestricted distribution with 100 m cable as standard                                                                           |
| For longer motor cable lengths, external EMC filters are available on request                                                                                |



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

