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Catalog

ABB component drives  
ACS55, 0.18 to 2.2 kW / 0.25 to 3 hp

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Power and productivity  
for a better world™ **ABB**



## ABB component drives

ABB component drives meet the requirements of OEMs, installation companies and panel builders. These drives are components that are bought together with other components from a logistical distributor. The drives are stocked, and the number of options and variants is optimized for logistical distribution.

## Applications

- Fans
- Pumps
- Gate control
- Material handling
- Conveyors

## Highlights

- Suitable for single phase residential and commercial applications
- Compact, slim design
- Several installation alternatives
- Reduced motor noise with high switching frequency
- Built-in 1<sup>st</sup> environment EMC filter as standard
- Easy configuration using potentiometer and switches
- Fast programming of drives without the need for a power connection

Feature	Advantage	Benefit
<b>Single phase supply</b>	Suitable for single phase residential and commercial applications	Avoids cabling and installation costs associated with three-phase supplies
<b>Slim design</b>	Fits easily into a variety of cabinet designs	Reduced cabinet size or greater packing density can be achieved
<b>Several installation alternatives</b>	Can be cabinet- or DIN-rail-mounted	The same drive type can be used across different designs, saving time and installation costs
<b>High switching frequency</b>	Reduced motor noise	No disturbance to the building's occupants
<b>Built-in EMC filter</b>	High degree of electromagnetic compatibility. Category C2 (1 <sup>st</sup> environment) and category C3 (2 <sup>nd</sup> environment) RFI filters as standard	Low EMC emissions in all environments
<b>Easy configuration</b>	Quick set-up and simple configuration	Substantial time savings. Minimal expertise needed.
<b>DriveConfig kit available as an option</b>	Fast, easy and safe configuration of drives without the need for a power connection	Substantial time savings. Drive can be configured without an electrician present.
	Extended range of application parameter values and more drive functionality	Drive suitable for a wide range of applications
	Reliable copying of parameter values from PC to drives	Reduced risk of errors during setup



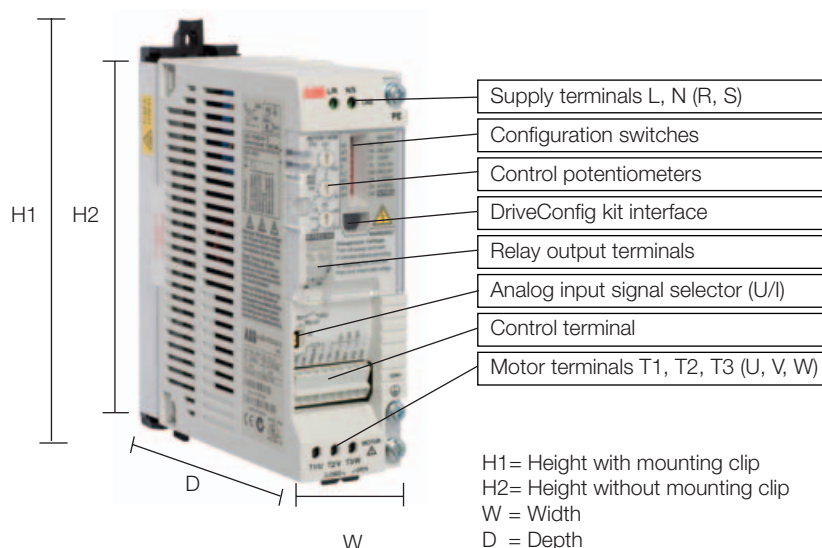
# Ratings, types and voltages

$P_N$ kW	$P_N$ hp	Output current		Input current A	Type code	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
		nominal A	max A								
<b>Inbuilt EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V</b>											
0.18	0.25	1.4	2.1	4.4	ACS55-01E-01A4-2	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	6.9	ACS55-01E-02A2-2	A	170	146.5	45	128	0.7
0.75	1.0	4.3	6.5	10.8	ACS55-01E-04A3-2	B	170	146.5	67.5	128	0.7
1.5	2	7.6	11.4	18.2	ACS55-01E-07A6-2	D	226	203	70	159	1.1
2.2	3	9.8	14.7	22	ACS55-01E-09A8-2	D	226	203	70	159	1.1

$P_N$ kW	$P_N$ hp	Output current		Input current A	Type code	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
		nominal A	max A								
<b>No EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V</b>											
0.18	0.25	1.4	2.1	4.4	ACS55-01N-01A4-2	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	6.9	ACS55-01N-02A2-2	A	170	146.5	45	128	0.7
0.75	1.0	4.3	6.5	10.8	ACS55-01N-04A3-2	B	170	146.5	67.5	128	0.7
1.5	2	7.6	11.4	18.2	ACS55-01N-07A6-2	C	194	171	70	159	1.1
2.2	3	9.8	14.7	22	ACS55-01N-09A8-2	C	194	171	70	159	1.1

$P_N$ kW	$P_N$ hp	Output current		Input current A	Type code	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
		nominal A	max A								
<b>Inbuilt EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V</b>											
0.18	0.25	1.4	2.1	6.4	ACS55-01E-01A4-1	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	9.5	ACS55-01E-02A2-1	A	170	146.5	45	128	0.7

$P_N$ kW	$P_N$ hp	Output current		Input current A	Type code	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
		nominal A	max A								
<b>No EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V</b>											
0.18	0.25	1.4	2.1	6.4	ACS55-01N-01A4-1	A	170	146.5	45	128	0.55
0.37	0.5	2.2	3.3	9.5	ACS55-01N-02A2-1	A	170	146.5	45	128	0.6





## DriveConfig kit

The DriveConfig kit is a PC tool for programming and control of ACS55 drives in larger quantities. The kit enables parameter setting and software updating without the need for a power connection. The drives can even remain in their delivery boxes during configuration. The DriveConfig kit features on-line drive control and monitoring of up to four signals simultaneously. Together with the drives in the ACS55 series, the DriveConfig kit helps save time by ensuring fast setup, accurate parameter settings and reliable operation.

The DriveConfig kit gives users access to an extended range of application parameter values, which can be used to add drive functionality. Please see the table on the right for the value ranges, functionality and the actual signals enabled by the DriveConfig kit.

### The DriveConfig kit includes:

- Hardware and cables
- PC software
- User's manual in English (hardcopy and PDF)
- Battery charger

### DriveConfig kit requirements:

- PC with Microsoft Windows 2000/XP operating system
- Free USB port on the PC

## Application parameters

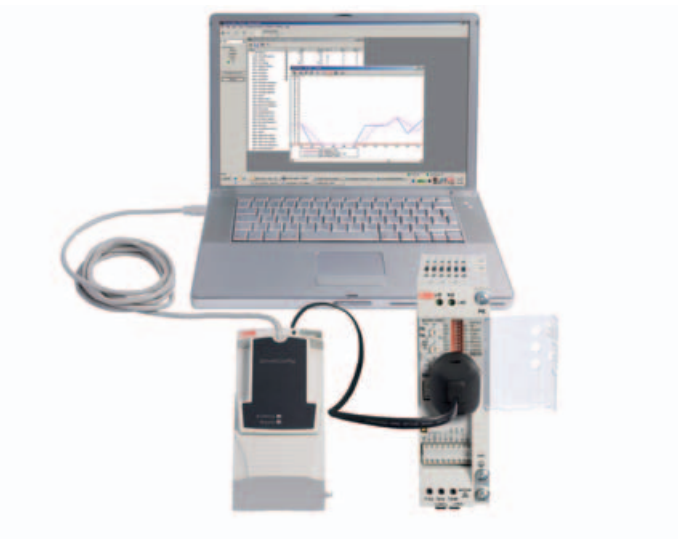
Maximum reference	0 to 250 Hz
Constant speed 1	0 to 250 Hz
Constant speed 2	0 to 250 Hz
Constant speed 3	0 to 250 Hz
AI min	0 / 1 (0 / 20%)
Relay output	Fault / Fault (-1) / Run
Minimum frequency	0 to 250 Hz
Maximum frequency	0 to 250 Hz
Stop mode	Coast / ramp
Acceleration time	0.1 to 100 s
Deceleration time	0.1 to 100 s
IR compensation voltage	0 to 80 V
IR compensation frequency	0 to 250 Hz
U/F ratio	Linear / squared
Switching frequency	5 / 16 kHz
Motor thermal protection	Enabled / disabled
Reset	Stop / Automatic + stop / No reset
Application macro	ABB Standard, 3-wire, Alternate, Constant speed, Motor potentiometer
Motor nominal voltage	110 to 230 VAC
Motor nominal current	50 to 150%
Motor nominal frequency	40 to 250 Hz

## Actual signals (read only)

Output frequency	Hz
Current	A
DC voltage	V
Output voltage	V
Reference	Hz
DI status	000 / 111
RO status	0 / 1
Last fault	Fault name

## Potentiometer

The ACS50-POT potentiometer is an option for the ACS55 drives. Two switches are included in addition to the potentiometer for drive control; start / stop and forward / reverse. The ACS50-POT potentiometer does not require an external power source.

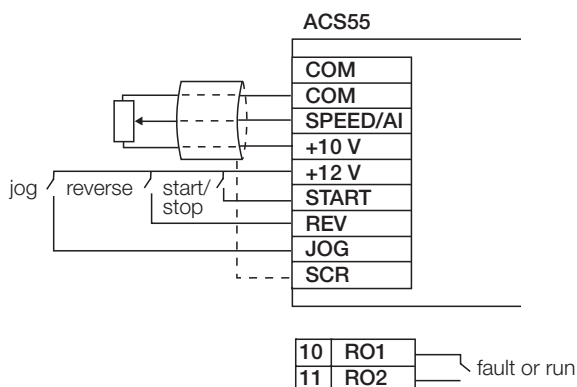


# Technical specification



Mains connection		
Power range	0.18 to 2.2 kW	
Voltage	1-phase, 110 to 120 V and 200 to 240 V, +10/-15%	
Frequency	48 to 63 Hz	
Motor connection		
Voltage	3-phase, from 0 to $U_{\text{SUPPLY}}$ (for 110/120 V from 0 to 230 V)	
Frequency	0 to 120/130 Hz, 0 to 250 Hz with DriveConfig kit	
Overload capacity	150% (60 s)	
Application parameters		
	As standard	With DriveConfig kit
Motor nominal frequency	50/60 Hz	40 to 250 Hz
Acceleration time	0.1 to 30 s	0.1 to 100 s
Deceleration time	0.1 to 30 s	0.1 to 100 s
Maximum frequency	50 to 120 Hz	0 to 250 Hz
Relay output	Fault/Run	Fault/Fault (-1)/Run
Load type	Pump/fan or constant	
Switching frequency	Standard 5 kHz, adjustable up to 16 kHz with automatic switching frequency reduction	
Environmental limits		
Ambient temperature	-20 to 40 °C with nominal current and 5 kHz switching frequency, no frost allowed	
	up to 50 °C with derating	
Altitude	Output current Nominal current : 0 to 1000 m reduced by 1% per 100 m over 1000 m to 2000 m	
Relative humidity	lower than 95% (without condensation)	
Degree of protection	IP20	
Contamination levels	No conductive dust allowed, corrosive liquids or gases (IEC 60721-3-3)	

Control connections		
One analog input		
Voltage signal	0 (2) to 10 V, 200 k $\Omega$ single-ended	
Current signal	0 (4) to 20 mA, 100 $\Omega$ single-ended	
Potentiometer reference value	10 V $\pm$ 2% max. 10 mA, 1 k $\Omega$ $\leq$ R $\leq$ 10 k $\Omega$	
Response time	$\leq$ 60 ms	
Resolution	0.1%	
Accuracy	$\pm$ 1%	
Three digital inputs		
	12 V DC with internal or 12 to 24 V DC external supply, PNP	
Input impedance	1.5 $\Omega$	
Response time	$\leq$ 9 ms	
One relay output		
Switching voltage	12 to 250 V AC or max 30 V DC	
Maximum continuous current	2 A	
Product compliance		
Low Voltage Directive 73/23/EEC with supplements		
EMC Directive 89/336/EEC with supplements		
Quality assurance system ISO 9001 and Environmental system ISO 14001		
CE, UL, cUL, C-Tick and GOST R approvals		
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 <sup>st</sup> environment, unrestricted distribution	Category C1	Group 1 Class B
1 <sup>st</sup> environment, restricted distribution	Category C2	Group 1 Class A
2 <sup>nd</sup> environment, unrestricted distribution	Category C3	Group 2 Class A
2 <sup>nd</sup> environment, restricted distribution	Category C4	Not applicable



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