

ABB component drives

ACS50, 0.18 to 2.2 kW / 0.25 to 3 hp

Technical catalogue



ABB component drives



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.

Highlights

- No programming - easy and descriptive interface
- Compact and slim
- Ideal for DIN-rail mounting
- Suitable for domestic environment as standard
- Silent motor

Applications

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

Features	Benefits	Notes
No programming	Faster set-up Easier configuration Easier drive for new users	All the inverter parameter settings are done with DIP switches and potentiometers
Compact and slim	Less space required for installation	0.18 to 0.37 kW 45 mm width 0.75 kW 67.5 mm width 1.5 to 2.2 kW 70 mm width
Removable mounting clip	Flexible and easy mounting	Removable clip allows DIN-rail and wall mounting from back and side of the unit
EMC	Low EMC emissions	1 st environment EMC filters as standard
Automatic switching frequency	Provides lowest possible noise without decreased derating of the drive	Increases switching frequency automatically, when drive temperature is decreased



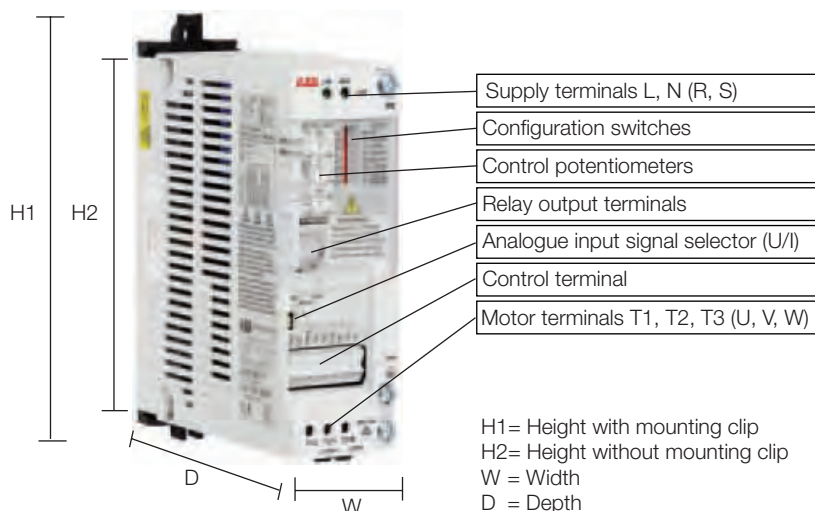
Ratings, types and voltages

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								
Inbuilt EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V											
0.18	0.25	1.4	2.1	4.4	ACS50-01E-01A4-2	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	6.9	ACS50-01E-02A2-2	A	170	146.5	45	128	0.7
0.75	1.0	4.3	6.5	10.8	ACS50-01E-04A3-2	B	170	146.5	67.5	128	0.7
1.5	2	7.6	11.4	18.2	ACS50-01E-07A6-2	D	226	203	70	159	1.1
2.2	3	9.8	14.7	22	ACS50-01E-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								
No EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V											
0.18	0.25	1.4	2.1	4.4	ACS50-01N-01A4-2	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	6.9	ACS50-01N-02A2-2	A	170	146.5	45	128	0.7
0.75	1.0	4.3	6.5	10.8	ACS50-01N-04A3-2	B	170	146.5	67.5	128	0.7
1.5	2	7.6	11.4	18.2	ACS50-01N-07A6-2	C	194	171	70	159	1.1
2.2	3	9.8	14.7	22	ACS50-01N-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								
Inbuilt EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V											
0.18	0.25	1.4	2.1	6.4	ACS50-01E-01A4-1	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	9.5	ACS50-01E-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								
No EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V											
0.18	0.25	1.4	2.1	6.4	ACS50-01N-01A4-1	A	170	146.5	45	128	0.55
0.37	0.5	2.2	3.3	9.5	ACS50-01N-01A4-1	A	170	146.5	45	128	0.6



Options



Potentiometer

Type code
ACS50-POT



EMC filter for 1st and 2nd environment

External EMC filter for frame sizes A and B to comply the European EMC regulations with long motor cables.

Type code	Height mm	Width mm	Depth mm	Weight kg
ACS50-IFAB-01	146.5	45	128	0.7



Input and output chokes

Type code	Frame size	Choke type		Max. motor cable length ¹⁾	
		Input choke	Output choke ²⁾	with choke (m)	without choke (m)
Inbuilt EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V					
ACS50-01E-01A4-2	A	CHK-A1	ACS-CHK-B3	75	50
ACS50-01E-02A2-2	A	CHK-A1	ACS-CHK-B3	75	50
ACS50-01E-04A3-2	B	CHK-B1	ACS-CHK-B3	100	75
ACS50-01E-07A6-2	D	CHK-C1	ACS-CHK-C3	100	75
ACS50-01E-09A8-2	D	CHK-D1	ACS-CHK-C3	100	75
No EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V					
ACS50-01N-01A4-2	A	CHK-A1	ACS-CHK-B3	75	50
ACS50-01N-02A2-2	A	CHK-A1	ACS-CHK-B3	75	50
ACS50-01N-04A3-2	B	CHK-B1	ACS-CHK-B3	100	75
ACS50-01N-07A6-2	C	CHK-C1	ACS-CHK-C3	100	75
ACS50-01N-09A8-2	C	CHK-D1	ACS-CHK-C3	100	75
Inbuilt EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V					
ACS50-01E-01A4-1	A	CHK-A1	ACS-CHK-B3	75	50
ACS50-01E-02A2-1	A	CHK-B1	ACS-CHK-B3	75	50
No EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V					
ACS50-01N-01A4-1	A	CHK-A1	ACS-CHK-B3	75	50
ACS50-01N-02A2-1	A	CHK-B1	ACS-CHK-B3	75	50

¹⁾ To comply with European EMC regulations, motor cable length has to be limited as specified in the ACS50 User's Guide

²⁾ The maximum switching frequency with output chokes is 5 kHz

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_{SUPPLY} (for 110/120 V from 0 to 230 V)
Frequency	0 to 120/130 Hz
Overload capacity	150% (60 s)
Switching frequency	
Standard	5 kHz, adjustable up to 16 kHz with automatic switching frequency reduction
Acceleration time	0.1 to 30 s
Deceleration time	0.1 to 30 s

Environmental limits

Ambient temperature	
0 to 40°C	with nominal current and 5 kHz switching frequency
up to 50°C	with derating
-20°C	with restrictions
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 (IEC60721-3-3)

Control connections

One analog input

Voltage signal	0 (2) to 10 V, 200 k Ω single-ended
Current signal	0 (4) to 20 mA, 100 Ω single-ended
Potentiometer reference value	10 V \pm 2% max. 10 mA, 1 k Ω \leq R \leq 10 k Ω
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 Ω
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 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

