

ABB component drive

ACS50, 0.18 to 2.2 kW

Technical catalogue



ABB component drive



What is an ABB component drive?

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

Where can it be used?

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

ABB component drive promises

- No programming - easy and descriptive interface
- Compact size and thin shape
- Ideal drive for DIN-rail mounting
- Low EMC emissions
- Silent motor

Highlights

- Power range 0.18 to 2.2 kW (110 to 240 V)
- IP 20
- Integral EMC filter for 1st environment (EN61800-3)
- Optimized switching frequency for low noise (up to 16 kHz)

What are its main features?

Feature	Note	Benefit
No programming	All the inverter parameter settings are done with DIP switches and potentiometers	Faster set-up Easier configuration Easier drive for new users
Compact size and thin shape	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	Less space required for installation
Removable mounting clip	Removable clip allows DIN-rail and wall mounting from back and side of the unit	Flexible and easy mounting
EMC	1 st environment EMC filters as standard	Low EMC emissions
Automatic switching frequency	Increases switching frequency automatically, when drive temperature is decreased	Provides lowest possible noise without derating of the drive

Ratings, types and voltages

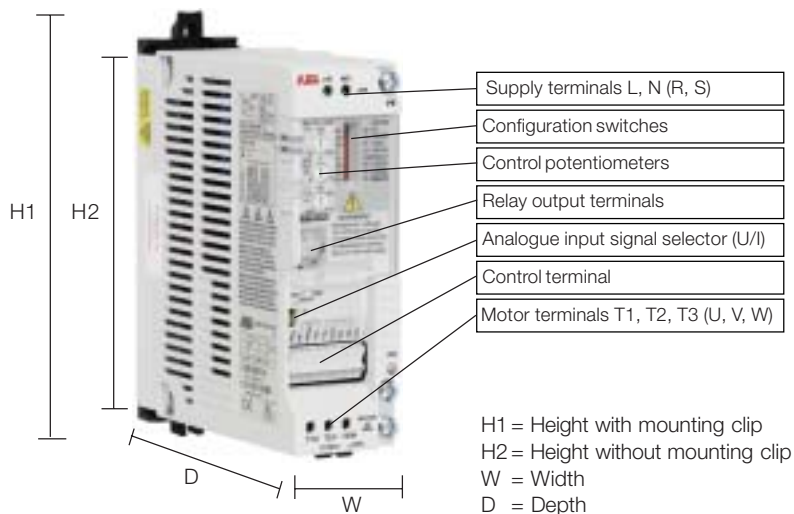


Built-in EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V											
P _N kW	P _N hp	Output current		Input current A	Type code	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
		nominal A	max A								
0.18	0.25	1.4	2.1	4.4	ACS50-01E-01A4-2	A	170	146.5	45	128	0.65
0.37	0.5	2.2	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

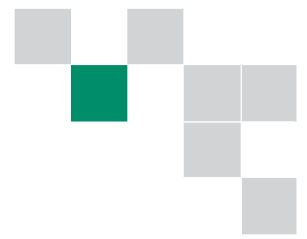
No EMC filter, 1-phase supply voltage 200/240 V, +10/-15%, 3-phase output 200/240 V											
P _N kW	P _N hp	Output current		Input current A	Type code	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
		nominal A	max A								
0.18	0.25	1.4	2.1	4.4	ACS50-01N-01A4-2	A	170	146.5	45	128	0.65
0.37	0.5	2.2	3.3	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

Built-in EMC filter, 1-phase supply voltage 110/120 V, +10/-15%, 3-phase output 200/240 V											
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								
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

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

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

^{**)} 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)
Protection class	IP 20
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 kΩ single-ended
Current signal	0 (4) to 20 mA, 100 Ω single-ended
Potentiometer reference value	10 V ±2% max. 10 mA, 1kΩ
Response time	≤ 60 ms
Resolution	0.1%
Accuracy	±1%
Three digital inputs	
	12 V DC with internal or 12 V ... 24 V DC external supply, PNP
Input impedance	1.5 kΩ
Response time	≤ 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 and C-Tick approvals

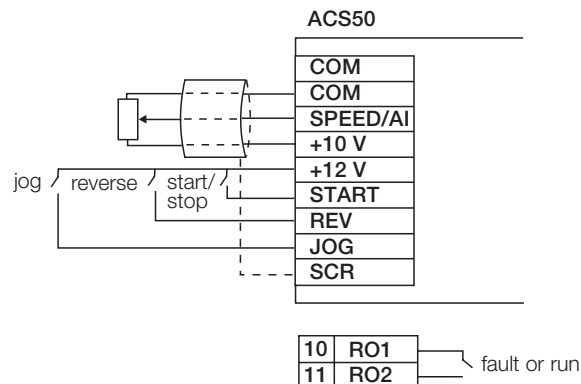




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