

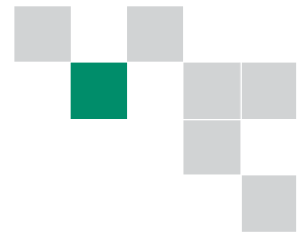
ABB component drives

ACS50, 0.25 to 3 Hp

Technical Catalog



ABB component drive



What is the ACS50 customer value?

- Reduces panel size
- Reduces commissioning, installation and energy costs
- Replaces contactors and starters

The ABB ACS50 Component Drive continues in the tradition of ABB AC Drives being simple to buy, install, configure and use, saving considerable time. The ACS50 can easily be integrated into existing or smaller panels, replacing contactors and motor starters due to its compact size as well as new installations or wherever energy savings of small AC induction motors is desired.

Where can it be used?

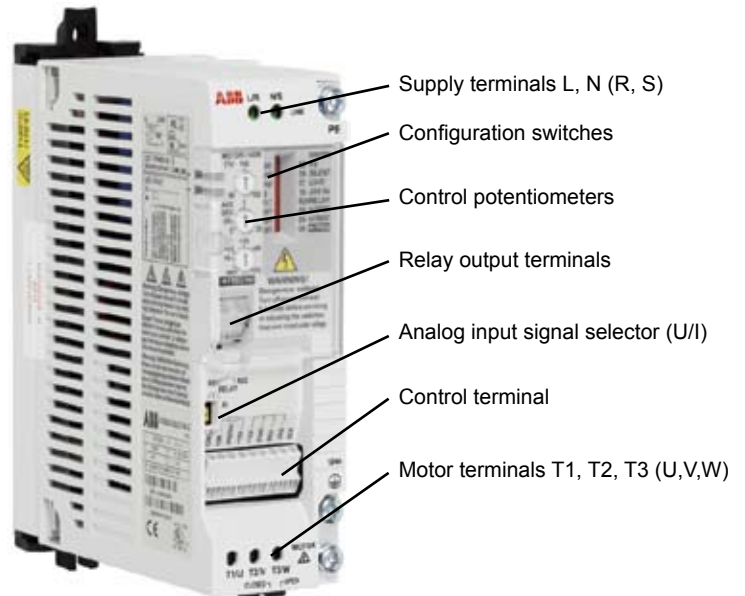
The ABB ACS50 Component Drive can be used in a wide range of industries. Typical applications include pumps and fans as well as constant torque applications such as material handling. The ABB ACS50 Component Drive is ideal for those situations where a low cost, easy to install and easy to operate product is needed.

ABB ACS50 Component Drive Promises

- Easy and descriptive interface
- Compact size and slim
- DIN rail mounting
- Quiet motor operation

Highlights

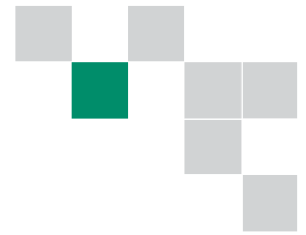
- Power range 0.25 to 3 Hp
- Protected Chassis (IP 20)
- Optimized switching frequency up to 16kHz
- Suitable for domestic environment



What are the ACS50's main features and benefits supporting customer value?

Feature	Note	Benefit
No programming	All inverter parameter settings are made with DIP switches and potentiometers	Faster set-up Easier configuration Easier set-up for new users
Compact size and thin shape	up to 0.5 Hp 1.77" width, 1 Hp 2.66" 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
Automatic switching frequency	Increases switching frequency automatically, when drive temperature is decreased	Provides lowest possible noise without derating of the drive
EMC	1st Environment built-in EMC filter unit is available	Low EMC emissions

Ratings, types and voltages



Type Code	Frame Size	P _N Hp	Output Current		Input Current A	Dimensions inches				Weight lbs
			Nominal I _{2N} A	Maximum A		H1	H2	W	D	
1-phase supply voltage 110 to 120V, +10/-15%, 3-phase output 200 to 240V										
ACS50-01N-01A4-1	A	0.25	1.4	2.1	6.4	6.69	5.77	1.77	5.04	1.5
ACS50-01N-02A2-1	A	0.5	2.2	3.3	9.5	6.69	5.77	1.77	5.04	1.5
1-phase supply voltage 200 to 240V, +10/-15%, 3-phase output 200 to 240V										
ACS50-01N-01A4-2	A	0.25	1.4	2.1	4.4	6.69	5.77	1.77	5.04	1.5
ACS50-01N-02A2-2	A	0.5	2.2	3.3	6.9	6.69	5.77	1.77	5.04	1.5
ACS50-01N-04A3-2	B	1.0	4.3	6.5	10.8	6.69	5.77	2.66	5.04	2.4
ACS50-01N-07A6-2	C	2.0	7.6	11.4	18.2	7.6	6.7	2.8	6.3	2.4
ACS50-01N-09A8-2	C	3.0	9.8	14.7	22	7.6	6.7	2.8	6.3	2.4

Type Code	Frame Size	P _N Hp	Output Current		Input Current A	Dimensions inches				Weight lbs
			Nominal I _{2N} A	Maximum A		H1	H2	W	D	
1-phase supply voltage 110 to 120V, 3-phase output 200 to 240V (Built-in EMC filter)										
ACS50-01E-01A4-1	A	0.25	1.4	2.1	6.4	6.7	5.7	1.77	5.0	1.4
ACS50-01E-02A2-1	A	0.5	2.2	3.3	9.5	6.7	5.7	1.77	5.0	1.5
1-phase supply voltage 200 to 240V, 3-phase output 200 to 240V (Built-in EMC filter)										
ACS50-01E-01A4-2	A	0.25	1.4	2.1	4.4	6.7	5.7	1.77	5.0	1.4
ACS50-01E-02A2-2	A	0.5	2.2	3.3	6.9	6.7	5.7	1.77	5.0	1.5
ACS50-01E-04A3-2	B	1.0	4.3	6.5	10.8	6.7	5.7	2.6	5.0	1.5
ACS50-01E-07A6-2	D	2.0	7.6	11.4	18.2	8.9	8.0	2.7	6.2	2.4
ACS50-01E-09A8-2	D	3.0	9.8	14.7	22	8.9	8.0	2.7	6.2	2.4

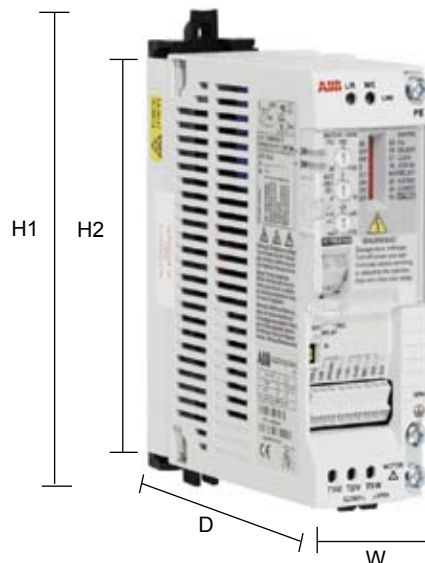
P_N = Nominal Power
I_{2N} = Nominal Current

Options

Potentiometer

Type Code

ACS50-POT



H1= Height with mounting clip
H2= Height without mounting clip
W = Width
D = Depth

Technical specification

Mains Connection

Power range	0.25 to 3.0Hp (0.18 to 2.2kW)
Input Voltage	1-phase, 110 to 120V and 200 to 240V, +10/-15%
Frequency	48 to 63Hz

Motor Connection

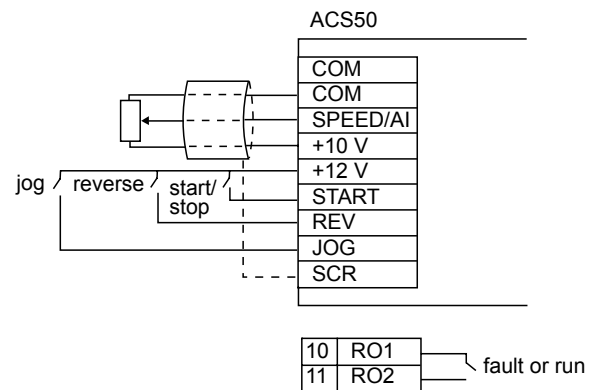
Output Voltage	3-phase, from 0 to U_{SUPPLY} (for 100/115V from 0 to 230V)
Frequency	0 to 120/130Hz
Overload Capacity	150% (60 s)
Switching Frequency	5kHz, adjustable up to 16kHz with automatic switching frequency reduction
Acceleration Time	0.1 to 30 s
Deceleration Time	0.1 to 30 s

Environmental Limits

Ambient Temperature	-4°F (-20°C) to 104°F (40°C) No Frost Allowed 122°F (50°C) with derating to 85% nominal output current
Altitude	0 to 3280 ft (1000 m) with derating of 1% per 320 ft (100 m) over 3280 ft (1000 m) to 6560 ft (2000 m)
Relative Humidity	Less than 95% (without condensation)
Protection Class	IP20, Protected Chassis
Contamination Levels	No conductive dust allowed, corrosive liquids or gasses (IEC60721-3-3) Chemical gases: Class 3C2 Solid particles: Class 3S2
Sinusoidal Vibration	Frequency range: 5 - 150 Hz Constant Peak Acceleration: 1g ISTA 2A

Control Connections

One analog input	
Voltage Signal	0 (2) to 10V, 200kΩ single-ended
Current Signal	0 (4) to 20 mA, 100Ω single-ended
Potentiometer reference value	10V ±2% max 10mA, 1kΩ ≤ R ≤ 10kΩ
Response Time	≤ 60 ms
Resolution	0.1%
Accuracy	±1%
Three Digital Inputs	12VDC to 24VDC
Auxiliary Power Supply	12VDC max 30mA
Input Impedance	1.5kΩ
Response Time	≤ 9 ms
One Relay Output	
Switching Voltage	12 to 250VAC or max 30VDC / 0.5A
Maximum Continuous Current	2A



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 140001
CE, UL, cUL, C-Tick, and GOST-R approvals
EN 61800-3 (consult manual)
IEC 61000-3-2 (line current harmonics)
EN 55011 (scientific and medical equipment)



ABB Inc
Low Voltage Drives
16250 W. Glendale Drive
New Berlin, WI 53151
USA
Telephone (800) 752-0696
Fax (262) 785-0397
Internet <http://www.abb.us/drives>

ABB Inc
Drives and LVC Canada
3299 J.B. Deschamps Blvd
Lachine, Quebec
H8T 3E4
Telephone (800) 215-3066
Fax (514) 420-3137
Internet <http://www.abb.com/motors&drives>