CATALOG

ABB micro drives

ACS55, 0.18 to 2.2 kW

Ease of integration. ACS55 drives.

Table of contents

ABB micro drives, ACS55
Compact simplicity to your everyday applications

ABB micro drives
Even your smallest motors can enjoy the daily dependability, reliability and performance of our drive technology. Micro drives can be conveniently tuned to your business needs with precise speed control and simple integration. Add compact efficiency, convenient global service and expertise, and you have everything you need to add big benefits to your small motors.

Ensure speed and control features in a variety of your low power applications such as automatic gate, solar trackers, treadmills and whirlpool baths. So easy to set up and commission, the design focus of the ACS55 is on easy integration into machines, with flexible mounting alternatives. The DriveConfig kit option allows set up without a power connection to the drive. It's also ready to go for commercial and domestic environments.

The drives are compact and slim. Several mounting methods like DIN rail mounting make it easy to fit the drives into a variety of cabinet designs. The drive is programmed by switches and potentiometers. More advanced programming is possible via a DriveConfig kit PC tool. The drives work with single phase power and are suitable for domestic environments.

Highlights
- Power range 0.18 to 2.2 kW/0.25 to 3 Hp
- IP20 enclosure (UL open)
- Scalar control
- For basic machinery applications
- Suitable for domestic networks as standard
- Parameter setting by switches or by PC software
- Built-in EMC filter for 1st environment

Feature	Advantage	Benefit
Worldwide availability and service	Drives are available worldwide and stocked in four regions. Dedicated global service and support network that is one of the largest in the industry.	Fast and reliable delivery with dedicated support to any country in the world.
Single phase supply	Suitable for single phase residential and commercial applications.	Avoids cabling and installation costs associated with three-phase supplies.
Slim design	Fits easily into a variety of cabinet designs.	Reduced cabinet size or greater packing density can be achieved.
Several installation alternatives	Can be mounted using screws or DIN-rail side-by-side or sideways.	The same drive type can be used across different designs, saving time and installation costs.
High switching frequency	Reduced motor noise.	Lower disturbance to the building's occupants.
Built-in EMC filter	High degree of electromagnetic compatibility. Category C2 (1st environment) RFI filters as standard.	Low EMC emissions in all environments.
Easy configuration	Quick setup and simple configuration	Substantial time savings. Minimal expertise needed.
DriveConfig kit available as an option	Fast, easy and safe configuration of drives without the need for a power connection. Extended range of application parameter values and more drive functionality. Reliable copying of parameter values from PC to drives.	Substantial time savings. Drive can be configured without an electrician present. Drive suitable for a wide range of applications. Reduced risk of errors during setup.
Wide ambient operating temperature	Drives can be operated in high ambient temperatures up to 55 °C degrees.	One drive series can be used in a wide range of different environmental conditions.

Easily integrated drives for a wide range of applications

ABB micro drives bring speed control benefits to a wide variety of applications such as fans, pumps, material handling systems, variety of commercial machines and many more.

In automatic gates the drive controls the motor that moves the gate's barrier up and down. The drive provides the barrier with smooth start and stop, thereby reducing maintenance costs. A slim design allows installation of the drive in the restrictive space associated with gate enclosures.

In solar trackers the drive controls the electric motor that turns the solar panel to track the sun. With a wide temperature range up to 55 °C, the drive can be used in environments with diverse ambient temperature. The DriveConfig kit provides a quick and safe way to configure multiple drives for hundreds or even thousands of solar trackers.

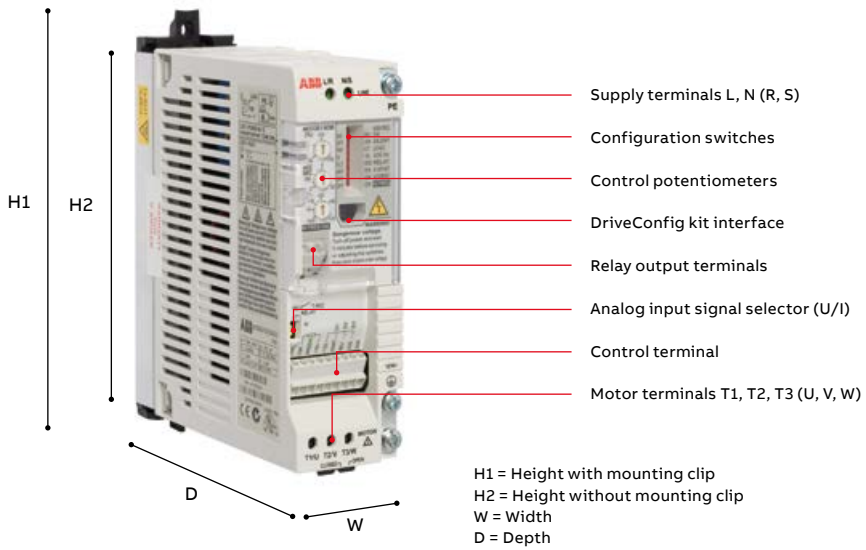
In treadmills the drive controls the speed of the motor powering the running belt. The drive offers high torque and accurate speed control throughout the treadmill's speed range providing smooth acceleration and deceleration for the user. Audible noise is reduced through the drive switching at higher frequencies. A built-in 1st environment EMC filter as standard provides low EMC emissions in all environments.

In whirlpool baths the drive controls the pump that generates the pool's water jets. The user controls the start, stop and power of the jets via a user interface connected to the drive's I/O. The drive provides silent operation by using a high switching frequency. The drive's heatsink for cooling enables the drive to be enclosed to a high protection class enclosure.

Ratings, types and voltages

Type designation	P_N kW	P_N hp	Output current nominal A	Output current max A	Input current A	Fuse A type gG*	Heat dissipation W	Cooling requirements m^3/h**	Frame size	H1 mm	H2 mm	W mm	D mm	Weight kg
Built-in EMC filter, 1-phase AC supply 200/240 V, +10/-15%, 3-phase output 200/240 V														
ACS55-01E-01A4-2	0.18	0.25	1.4	2.1	4.4	10	21	Natural convection	A	170	146.5	45	128	0.65
ACS55-01E-02A2-2	0.37	0.5	2.2	3.3	6.9	16	32	Natural convection	A	170	146.5	45	128	0.7
ACS55-01E-04A3-2	0.75	1.0	4.3	6.5	10.8	16	51	Natural convection	B	170	146.5	67.5	128	0.9
ACS55-01E-07A6-2	1.5	2	7.6	11.4	18.2	25	74	26	D	226	203	70	159	1.6
ACS55-01E-09A8-2	2.2	3	9.8	14.7	22	32	103	26	D	226	203	70	159	1.7
No EMC filter, 1-phase AC supply 200/240 V, +10/-15%, 3-phase output 200/240 V														
ACS55-01N-01A4-2	0.18	0.25	1.4	2.1	4.4	10	21	Natural convection	A	170	146.5	45	128	0.65
ACS55-01N-02A2-2	0.37	0.5	2.2	3.3	6.9	16	32	Natural convection	A	170	146.5	45	128	0.7
ACS55-01N-04A3-2	0.75	1.0	4.3	6.5	10.8	16	51	Natural convection	B	170	146.5	67.5	128	0.9
ACS55-01N-07A6-2	1.5	2	7.6	11.4	18.2	25	74	26	C	194	171	70	159	1.2
ACS55-01N-09A8-2	2.2	3	9.8	14.7	22	32	103	26	C	194	171	70	159	1.3
Built-in EMC filter, 1-phase AC supply 110/120 V, +10/-15%, 3-phase output 200/240 V														
ACS55-01E-01A4-1	0.18	0.25	1.4	2.1	6.4	10	24	Natural convection	A	170	146.5	45	128	0.65
ACS55-01E-02A2-1	0.37	0.5	2.2	3.3	9.5	16	35	Natural convection	A	170	146.5	45	128	0.7
No EMC filter, 1-phase AC supply 110/120 V, +10/-15%, 3-phase output 200/240 V														
ACS55-01N-01A4-1	0.18	0.25	1.4	2.1	6.4	10	24	Natural convection	A	170	146.5	45	128	0.65
ACS55-01N-02A2-1	0.37	0.5	2.2	3.3	9.5	16	35	Natural convection	A	170	146.5	45	128	0.7

*Recommended values. Do not use ultra rapid or low peak fuses. Follow local rules.
**Ensure minimum installation space is provided. See ACS55 user's manual for more detailed information.



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

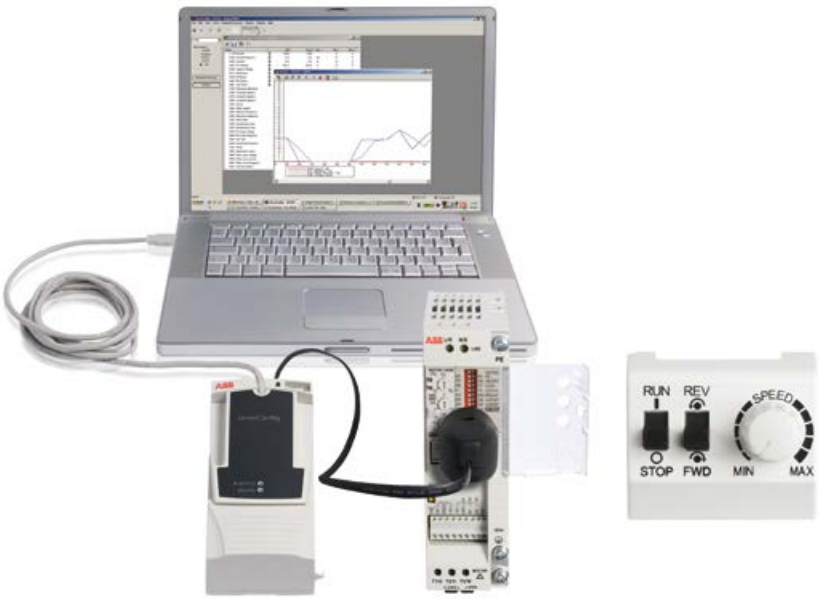
Options

DriveConfig kit
The DriveConfig kit is a PC tool for programming and control of ACS55 drives that need more functionality. 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 which means no need for a safe area. The DriveConfig kit features online drive control and monitoring of up to four signals simultaneously. Together with the ACS55 drives 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/Vista/ Windows 7 operating system
- USB port on the PC



Application parameters		
P1105	Maximum reference	0 to 250 Hz
P1202	Constant speed 1	0 to 250 Hz
P1203	Constant speed 2	0 to 250 Hz
P1204	Constant speed 3	0 to 250 Hz
P1301	AI min	0/1 (0/20%)
P1401	Relay output	Fault/Fault (-1)/Run
P2007	Minimum frequency	0 to 250 Hz
P2008	Maximum frequency	0 to 250 Hz
P2021	Minimum frequency to modulate	
P2102	Stop mode	Coast/ramp
P2202	Acceleration time	0.1 to 100 s
P2203	Deceleration time	0.1 to 100 s
P2603	IR compensation voltage	0 to 80 V
P2604	IR compensation frequency	0 to 250 Hz
P2605	U/F ratio	Linear/squared
P2606	Switching frequency	5/16 kHz
P3005	Motor thermal protection	Enabled/disabled
P3101	Reset	Stop, Automatic + stop, No reset
P9902	Application macro	ABB Standard, 3-wire, Alternate, Constant speed, Motor potentiometer, Motpot (R)
P9905	Motor nominal voltage	110 to 230 V AC
P9906	Motor nominal current	50 to 150%
P9907	Motor nominal frequency	40 to 250 Hz
P9912	SW Parameters	
Actual signals (read only)		
P0102	Output frequency	Hz
P0104	Current	A
P0107	DC voltage	V
P0109	Output voltage	V
P0111	Reference	Hz
P0160	DI status	000/111
P0162	RO status	0/1
P0401	Last fault	Fault name

Potentiometer
The ACS55-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 ACS55-POT potentiometer does not require an external power source.

Technical data

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, 0 to 250 Hz with DriveConfig kit
Overload capacity		150% (60 s)
Motor control method		Scalar U/f
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 up to 55 °C		With nominal current and 5 kHz switching frequency, no frost allowed 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 kΩ single-ended
Current signal		0 (4) to 20 mA, 100 Ω single-ended
Potentiometer reference value		10 V ±2% max. 10 mA, 1 kΩ ≤ R ≤ 10 kΩ
Response time		≤ 60 ms
Resolution		0.1%
Accuracy		±1%
Three digital inputs		12 V DC with internal supply or 12 to 24 V DC external supply, PNP
Input impedance		1.5 Ω
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 2006/95/EC EMC Directive 2004/108/EC Machinery Directive 2006/42/EC Quality assurance system ISO 9001 and Environmental system ISO 14001 CE, UL, cUL, C-Tick and GOST R approvals RoHS compliant		

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
1st environment, unrestricted distribution	Category C1	Group 1 Class B
1st environment, restricted distribution	Category C2	Group 1 Class A
2nd environment, unrestricted distribution	Category C3	Group 2 Class A
2nd environment, restricted distribution	Category C4	Not applicable

Typical I/O connections

A lifetime of peak performance

You're in control of every life cycle phase of your drives. At the heart of drive services is a four-phase product life cycle management model. This model defines the services recommended and available throughout drives lifespan.

Now it's easy for you to see the exact service and maintenance available for your drives.

ABB drives life cycle phases explained:

	Active	Classic	Limited	Obsolete
	Full range of life cycle services and support		Limited range of life cycle services and support	Replacement and end-of-life services
Product	Product is in active sales and manufacturing phase.	Serial production has ceased. Product may be available for plant extensions, as a spare part or for installed base renewal.	Product is no longer available.	Product is no longer available.
Services	Full range of life cycle services is available.	Full range of life cycle services is available. Product enhancements may be available through upgrade and retrofit solutions.	Limited range of life cycle services is available. Spare parts availability is limited to available stock.	Replacement and end-of-life services are available.

Keeping you informed
We notify you every step of the way using life cycle status statements and announcements.

Your benefit is clear information about your drives' status and precise services available. It helps you plan the preferred service actions ahead of time and make sure that continuous support is always available.

Step 1

Life Cycle Status Announcement
Provides early information about the upcoming life cycle phase change and how it affects the availability of services.

Step 2

Life Cycle Status Statement
Provides information about the drive's current life cycle status, availability of product and services, life cycle plan and recommended actions.

For more information, please contact
your local ABB representative or visit

abb.com/drives
abb.com/drivespartners

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