



Catalog

ABB high performance machinery drives ACSM1, 0.75 to 160 kW / 1 to 200 hp

Contents



Type code structure:

ACSM1 - 04XX - XXXX - 4 + XXXX

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ABB high performance machinery drives



ACSM1 - 04XX - XXXX - 4 + XXXX

ABB high performance machinery drives

ABB high performance machinery drives provide speed, torque and motion control for demanding applications. They can control induction, synchronous and asynchronous servo and high torque motors with various feedback devices. The compact hardware and programming flexibility ensure the optimum solution. The innovative memory unit concept enables flexible drive configuration.



Industries and applications

The high performance machinery drives are ideal for

- Plastics and rubber
 - Extruders
 - Calenders
 - Injection moulding machines
 - Winders & unwinders
 - Blow moulding machines
- Printing
 - Sheet-fed printing
 - Commercial printing
 - Label printing
 - Web printing
 - Bindery machines
- Paper & paperboard, film & foil converting
 - Calendering
 - Slitter
 - Coating
 - Sheeter
 - Laminating
 - Winders

- Material handling
 - Cranes and winches
 - Automatic storage
 - Elevators
 - Pick and place systems
 - Conveyors
 - Palletising
- Textile
 - Knitting/weaving machines
 - Needle punching machines
 - Non-woven machines
 - Fibre processing machines
 - Spinning/spinner machines
 - Textile coating machines
- Food and beverage
 - Conveyors, mixers and extruders
 - Rolling, pressing and cutting
 - Stamping
 - Slicing
 - Bottling and labeling
 - Packaging
- Other industries and applications
 - Woodworking machinery
 - Plywood and chipboard industry
 - Flying and rotary shear
 - Packaging machinery
 - Wire & cable drawing machines

Highlights

- For demanding machine applications
- For synchronous and induction motors
- Wide range of feedback interfaces
- Solution programming to extend drive functions
- Modular and compact design
- Memory unit for easy drive management
- Safe Torque-Off



Feature	Advantage	Benefit
Control and performance		
Various control arrangements	Speed and torque control variant as well as motion control variant. High bandwidth for torque, speed and position control.	Suitable for wide range of standard and demanding applications.
Asynchronous and synchronous motor compatibility	Various motor types from asynchronous motors (standard induction motors, servo) to synchronous motors (servo, high torque), can be controlled in open or closed loop mode.	One drive can be used with various motor types.
Wide range of feedback interfaces	Different speed and position feedback devices can be used for closed loop and motion control. Each feedback interface option has two inputs and one output.	Almost any kind of feedback can be used to provide different configurations.
Drive-to-drive link as standard	Fast and powerful drive-to-drive link can be used for synchronized peer-to-peer communication.	Enables daisy-chaining multiple drives to control machine axes.
Different communication options for master communication	Flexibility with master communication as the drive supports PROFIBUS, CANopen, DeviceNet and Ethernet communication.	Choose the network standard that best suits your requirements.
Integrated Safe Torque-Off (STO) function	Safe Torque-Off can be used for prevention of unexpected start-up and other safety related stopping functions.	Safety as standard. Cost-effective and certified solution for safe machine maintenance.
I/O extensions as options	Plug-in I/O extensions available to add analogue and digital inputs/outputs.	I/O extensions offer flexibility in addition to the extensive standard offering.
Ready-made solution programs	Ready-made solution programs provide specific drive functionality for the application. Solution programs can be modified or new ones developed using technology function libraries.	Easy to develop solutions for specific applications, saving time and engineering design costs.
Modular and compact design		
Compact size	Five compact frame sizes cover the wide power range (0.75 to 160 kW).	Optimum installation layout and efficient cabinet space usage.
Modular design	Drive has three main parts - power, control and memory units. External options like mains choke, mains filter and braking resistors are available for different system configurations.	Offers flexibility in system design.
Integrated braking chopper	Braking chopper as standard.	Compact and cost-effective design.
Several mounting and cooling options	DIN-rail, back plate, side-by-side, cold plate and liquid cooling.	Optimized solutions for various cabinet designs and layouts, providing installation flexibility.
Common DC link	Several drives can be connected with a common DC link. Each drive can have its own braking resistor.	Use one AC input connection for several drives. Saves energy due to reduced need for supply-side power. Use centralized or distributed braking resistors for regenerative power.
User interface and programming		
Easy drive sizing and selection	MCSIZE feature within the sizing tool selects optimum drive and motor combination based on given motion and mechanics data.	Motors and drives can be rapidly specified using DriveSize sizing tool.
Simple and flexible human-machine interface	7-segment display shows the drive status. DriveStudio PC-programs offer easy access to drive programming and start-up features. Advanced control panel can be used for general service routines.	Easy to read and interpret user interface with the drive.
Drive programming	Application control programming with IEC-61131 function blocks provides an easy and innovative method for extending drive firmware functionality.	Provides opportunity to create tailor-made application solutions thereby avoiding additional hardware or software costs.
Memory unit for easy drive management	Complete drive configuration and settings are stored in a separate memory unit. – power or control unit can be replaced without parameter setting.	Drive functionality can be easily configured, modified or updated with the memory unit. Offers quick and easy after-sales service.

Technical specification



ACSM1 - 04XX - XXXX - 4 + XXXX

Main connections

Supply voltage	3-phase 380 to 480 V +10 /- 15%
Frequency	50 to 60 Hz +/- 5%
Total harmonic distortion (THD)	With mains choke to meet limits acc. to EN 61000-3-2, IEC 61000-3-12, IEC 61000-3-4.

DC connection

DC voltage level	485 to 648 V DC ± 10 %
Charging circuit	Internal, A to D frames / External, E frame
Common DC	See Engineering Manual

Motor connection

Motor types	Asynchronous motors (standard induction, servo) and synchronous motors (servo, high torque)
Output frequency	0 to 500 Hz
Switching frequency	2 to 16 kHz, 4 kHz as default. Output current derating above 4 kHz

Braking power connection

Braking chopper	As standard in all types
Braking resistor	External resistor connected to drive

Operating conditions

Degree of protection	IP20 acc. to EN 60529; Open Type acc. to UL 508.
Ambient temperature	-10 to +55 °C, derating above 40 °C
Installation altitude	0 to 4000 m, derating above 1000 m
Relative humidity	max. 95%
Climatic/environmental conditions	Class 3K3, 3C2 acc. to EN 60721-3-3. Oil mist, formation of ice, moisture condensation, water drops, water spray, water splashes and water jets are not permissible (EN 60204, Part 1).
Vibration	Class 3M4 acc. to EN 60721-3-3
EMC (According to EN 61800-3)	With mains filter: Category C2
Functional safety	Safe Torque-Off function (STO acc. EN 61800-5-2). IEC 61508: SIL 3 EN 954-1: Category 4 IEC 62061: SILCL 3 EN ISO 13849-1: PL e Certified by TÜV
Compliance	CE, UL, cUL, CSA, C-Tick, GOST R



ABB high performance machinery drives, ACSM1



The ACSM1 series of ABB high performance machinery drives offers versatile features for machinery applications.

Designed for machine builders

The ACSM1 is the optimum choice for machine builders. The ACSM1 can control with or without feedback induction motors, asynchronous and synchronous servo motors. It uses proven DTC (Direct Torque Control) motor control technology to guarantee high performance. The mechanical design is very compact and drives can be installed side-by-side. In addition to covering standard features there are three slots for control and communication options. Drive tools support commissioning, tuning and programming. The ACSM1 offers optimum selection for each machine control philosophy.

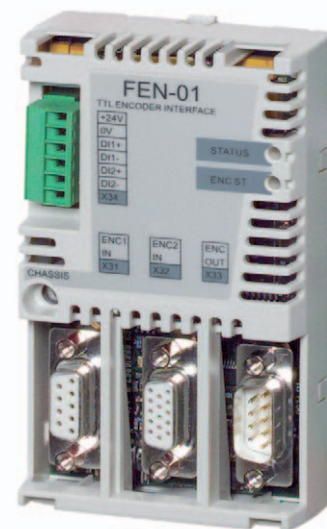
Modular and compact design

- Five compact frame sizes
 - 0.75 kW (1 Hp) to 160 kW (200 Hp) / 380 to 480 V
 - IP20
 - Supply AC or DC input from top (A, B, C, D frames) or bottom (E frame)
 - Motor and braking resistor connection from bottom
 - Inbuilt braking chopper as standard
- Optimum assembly and cooling solutions
 - Side-by-side installation
 - Air-cooled variant including support for DIN-rail mounting or back plate mounting
 - Cold-plate variant for external cooling method
 - Liquid-cooled variant
 - Removable control terminals and power terminals enables fast assembly and maintenance
- Flexibility with different external options
 - Mains filters to meet EMC requirements.
 - Mains chokes to limit harmonic distortion (THD).
 - Braking resistors for various braking power needs
 - Possibility for different common DC configurations

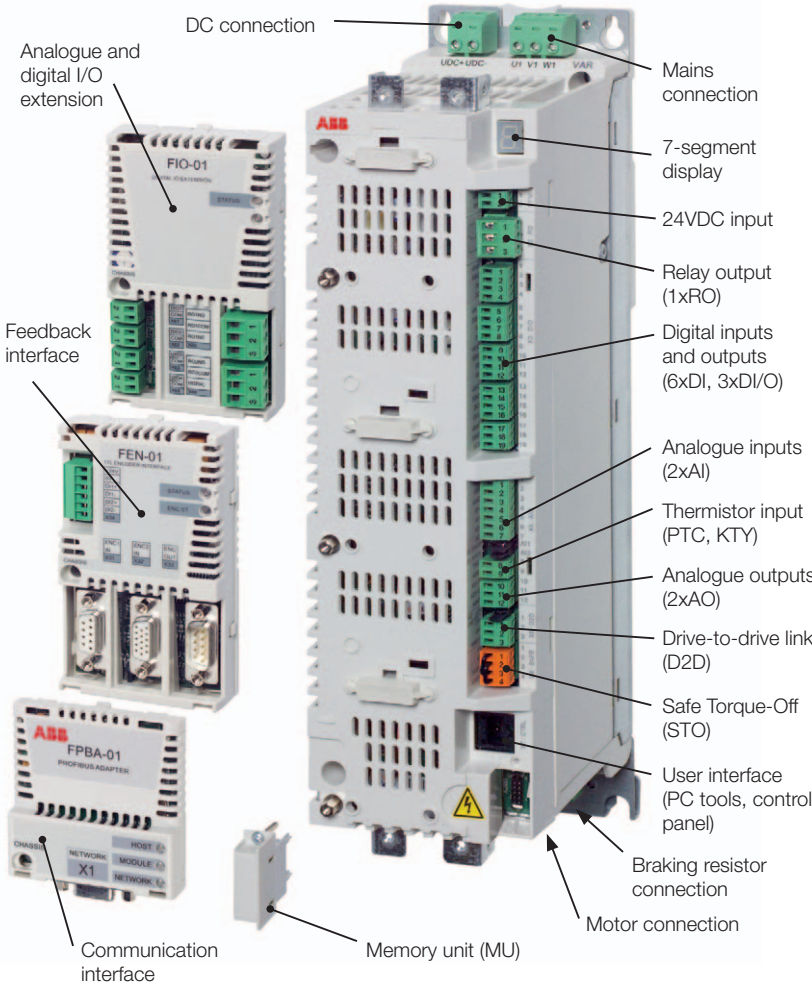
- Global compatibility with machinery environment and standards
 - Standard approvals for CE, UL, cUL, CSA, C-Tick
 - With external mains filter: EN 61800-3, category C2 (A-limits)
 - Integrated Safe Torque-Off (STO) function, which is certified by TÜV
 - Coated boards as standard to meet environmental requirement

Control and communication

- Control interface with versatile standard connections
 - Digital input/output: 6DI, 3DI/O, 1 relay output
 - Analogue input/output: 2AI + 2AO
 - Motor thermistor input (PTC/KTY)
 - Drive-to-drive communication link (RS 485)
 - Complete drive configuration and settings are stored in memory unit
- Scalability with different plug-in control options
 - Three options slots for control options
 - Analogue and digital I/O extension modules
 - Interfaces for different feedback types (TTL, Resolver, Sin/Cos, Endat, Hiperface, SSI)
 - Master communication via fieldbuses (PROFIBUS, DeviceNet, CANopen and Ethernet)



Options Internal



Control unit (CU)

		X1	
External power input 24 V DC, 1.6 A	+24VI	1	
	GND	2	

		X2	
Relay output 250 V AC / 30 V DC 2 A	NO	3	
	COM	4	
	NC	5	

		X3	
+24 V DC	+24VD	1	
Digital I/O ground	DGND	2	
Digital input 1	DI1	3	
Digital input 2	DI2	4	
+24 V DC	+24VD	5	
Digital I/O ground	DGND	6	
Digital input 3	DI3	7	
Digital input 4	DI4	8	
+24 V DC	+24VD	9	
Digital I/O ground	DGND	10	
Digital input 5	DI5	11	
Digital input 6	DI6	12	
+24 V DC	+24VD	13	
Digital I/O ground	DGND	14	
Digital input/output 1	DIO1	15	
Digital input/output 2	DIO2	16	
+24 V DC	+24VD	17	
Digital I/O ground	DGND	18	
Digital input/output 3	DIO3	19	

		X4	
Reference voltage (+)	+VREF	1	
Reference voltage (-)	-VREF	2	
Ground	AGND	3	
Analogue input 1 (Current or voltage, selectable by jumper J1)	AI1+	4	
	AI1-	5	
Analogue input 2 (Current or voltage, selectable by jumper J2)	AI2+	6	
	AI2-	7	
AI1 current/voltage selection	J1		
AI2 current/voltage selection	J2		
Thermistor input	TH	8	
Ground	AGND	9	
Analogue output 1 (current)	AO1 (I)	10	
Analogue output 2 (voltage)	AO2 (U)	11	
Ground		12	

		X5	
Drive-to-drive link termination J3			
Drive-to-drive link.	B	1	
	A	2	
	BGND	3	

		X6	
Safe Torque-Off. Both circuits must be closed for the drive to start.	OUT1	1	
	OUT2	2	
	IN1	3	
	IN2	4	

PC tools, control panel connection (RS 232)
Memory unit connection

Control and communication options

Options	Data	Slot 1	Slot 2	Slot 3
Analogue & digital extension				
FIO-01	4 x DI/O, 2 x RO	○	○	-
FIO-11	3 x AI, 1 x AO, 2 x DI/O	○	○	-
Feedback interface				
FEN-01	2 inputs (TTL incremental encoder), 1 output	○	○	-
FEN-11	2 inputs (SinCos absolute, TTL incremental encoder), 1 output	○	○	-
FEN-21	2 inputs (Resolver, TTL incremental encoder), 1 output	○	○	-
FEN-31	1 input (HTL incremental encoder), 1 output	○	○	-
Communication				
FPBA-01	PROFIBUS	-	-	○
FCAN-01	CANopen	-	-	○
FDNA-01	DeviceNet	-	-	○
FENA-01	EtherNet/IP, Modbus/TCP*	-	-	○
FSCA-01	Modbus*	-	-	○

- = option
- = not available
- * = in preparation



Mains choke

The ACSM1 drive does not necessarily need a mains choke for operation. Each individual case should be checked to ascertain whether a mains choke needs to be installed. Mains chokes are typically used to:

- reduce harmonics in the mains current
- achieve a reduction in the r.m.s. mains current
- reduce mains disturbance and low-frequency interference
- increase the allowed DC bus continuous power

A mains choke series is available to meet different system design needs.

Mains filter (EMC)

The EMC product standard (EN 61800-3 + Amendment A11 (2000)) covers the specific EMC requirements stated for drives (tested with motor and cable) within the EU. EMC standards such as EN 55011, or EN 61000-6-3/4, apply to industrial and household equipments and systems including drive component inside. Drive units complying with requirements of EN 61800-3 are always compliant with comparable categories in EN 55011 and EN 61000-6-3/4, but not necessarily vice versa. EN 55011 and EN 61000-6-3/4 do not specify cable length nor require a motor to be connected as a load. The emission limits are comparable according to the following table, EMC standards.

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

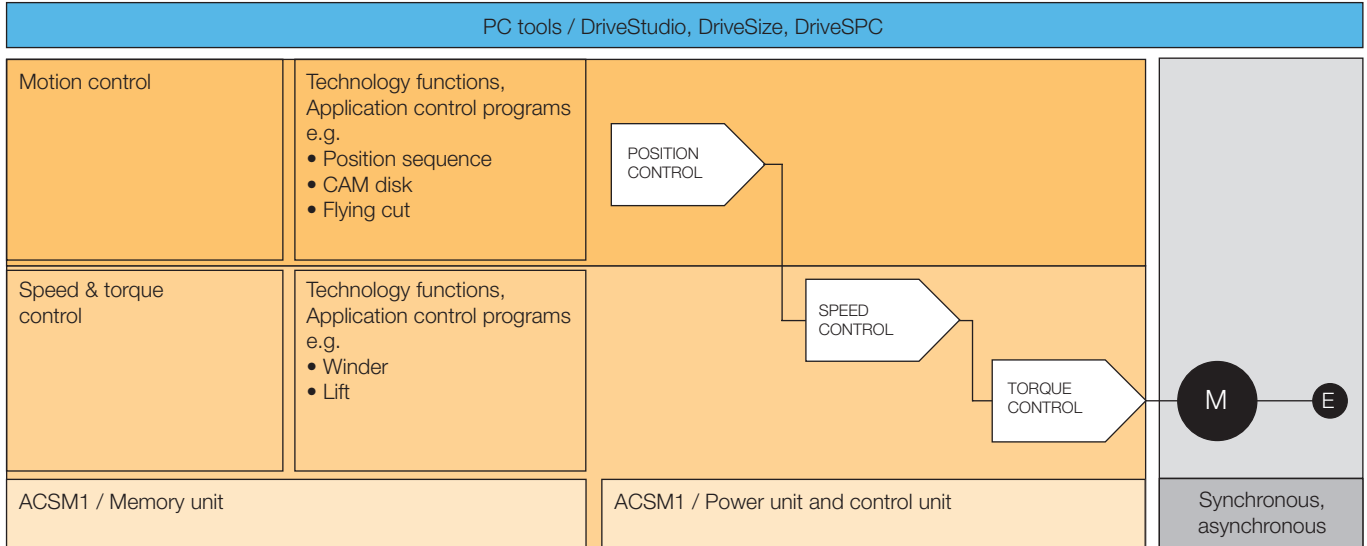
Mains filters are available to meet category C2 level with the ACSM1 drive installation, including a motor with a max. 50 m cable. This level corresponds to the A limits for Group 1 equipment according to EN 55011.

Braking resistors

Depending on the application, an external braking resistor may be needed to convert the kinetic energy generated into thermal energy. A selection of resistors is available for different kinds of pulse duty performance. All braking resistors are equipped with a thermal sensor as standard.



Scalable control and programming environment



Two control variants

- Speed and torque control
- Motion control

Speed and torque control

- Open and closed loop DTC (Direct Torque Control)
- Synchronous and asynchronous motors
- Ideal for high bandwidth of speed or torque control application

Motion control

In addition to speed and torque control

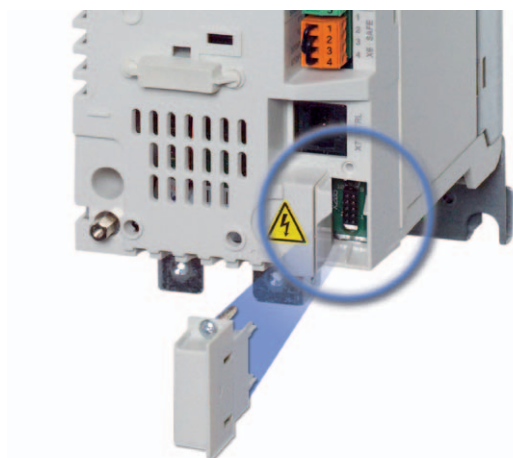
- High bandwidth of position and synchronization control
- Point-to-point positioning with extensible positioning profile sets
- Synchronization (encoder feedback or drive-to-drive link)
- Register control based on fast probe inputs
- Multiple homing methods

Application control programming

In addition to multiple parameter programmable speed and position control functions, drive functionality

can be easily modified or extended using application control programming of the DriveSPC tool.

- Standard function blocks to modify a basic control interface or make extensible PLC-tasks.
- Technology function blocks to meet machine-specific application requirements, e.g. damping filters for demanding mechanical systems. Technology function block libraries are optional.
- Application control programs, ready-made solutions for dedicated applications such as winding, lift control and flying cut applications using the corresponding technology function library. Easy to modify with parameters or additive function blocks.
- Drive functionality is defined and delivered with memory unit.





DriveStudio

User-friendly PC environment both for simple drive commissioning tasks and for the more demanding drive tuning and programming tasks.

Commissioning and tuning tools

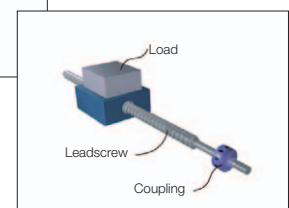
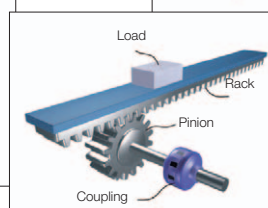
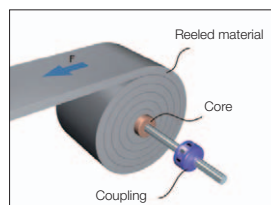
- Drive overview screen for fast parameter and function block navigation
- Parameter setting and signal monitoring
- Data logger and on-line signal monitoring for drive tuning (multiple signal channels and triggering conditions)
- Back-up and restore tool for drive parameter cloning and life time support
- Case sensitive help with detailed drive parameter, event and function descriptions

DriveSPC

- Simple, easy-to-understand solution program composer connecting a function block interface with drive firmware functions for signal monitoring and parameter setting
- Same interface enables the adding of user-defined function block programs even on the fastest time levels of the drive control
- Function block programming with standard function block library
- Optional and customizable function block library expands the variety of functions
- Professional programming environment allowing: hierarchy levels, custom circuits, user defined parameters, etc.
- Copy protection prevents users from uploading or viewing password protected parameters

DriveCAM

- Cam solution program for designing electronic cams (flying shear, flying cut, traverse control, etc.)
- Built-in cam function library
- Upload/download multiple profiles to drive memory



Assistant control panel

The assistant control panel features a multilingual alphanumeric display for easy drive configuration. It is an ideal tool for service engineers providing the following main features:

- A large graphical display
- Extremely easy to navigate
- Soft and convenient keys
- Local control keys (start/stop/reference)
- Parameter setting and monitoring
- Status and history data



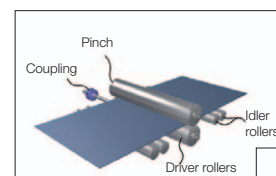
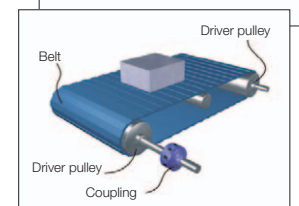
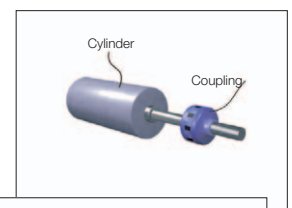
The control panel is an external option and can be connected by cable to the ACSM1 drive. The panel mounting kit enables mounting of control panels on cabinet doors or inside the control cabinet.

Sizing tool

DriveSize helps the machine designer select the optimum ACSM1 drive, motor and gear combination for the required motion and speed profiles, and for typical mechanical applications.

Ready defined input sheets make it very easy to specify the dimensions of different kinds of linear or rotary movement mechanisms such as

- lead screws
- rack and pinion combinations
- belt and pulley
- conveyor
- feed roll
- rotating table



Types, ratings and dimensions



ACSM1 - 04XX - XXXX - 4 + XXXX

Feature / frame size	A	B	C	D	E
Current & Power					
Nominal current	2.5 to 7.0 A	9.5 to 16 A	24 to 46 A	60 to 90 A	110 to 210 A
Maximum current	5.3 to 14.7 A	16.6 to 28 A	42 to 81 A	105 to 158 A	165 to 326 A
Typical motor power	0.75 to 3 kW	4 to 7.5 kW	11 to 22 kW	30 to 45 kW	55 to 110 kW / 160 kW ¹⁾
Braking chopper	●	●	●	●	●
Braking resistor	□	□	□	□	□
Mains choke	□	□	□	□	●
Mains filter (EMC)	□	□	□	□	●
Mounting and cooling					
Removable power connectors	●	●	-	-	-
Removable control connectors	●	●	●	●	●
Air-cooled variant	■	■	■	■	■
- Back plate mounting	●	●	●	●	●
- DIN-rail mounting	●	●	-	-	-
Cold plate variant	-	-	■	■	-
Liquid-cooled variant	-	-	-	-	■

¹⁾ Power range up to 160 kW with the liquid-cooled variant

● = standard
■ = product variant

□ = option, external
- = not available

Ratings ($U_N = 400\text{ V}$)

Ratings				Type code	Frame size	$I_{2cont4k}^{(6)}$ 4 kHz A	$I_{2cont8k}^{(7)}$ 8 kHz A	$I_{2cont16k}^{(8)}$ 16 kHz A
$P_N^{(1)}$ kW	$P_N^{(1)}$ hp	$I_{2N}^{(2)}$ A	$I_{2max}^{(3)}$ A					
0.75	1	2.5	5.3	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -02A5-4	A	3	2.5	2
1.1	1.5	3	6.3	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -03A0-4	A	3.6	3	2.2
1.5	2	4	8.4	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -04A0-4	A	4.8	4	2.4
2.2	3	5	10.5	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -05A0-4	A	6	5	2.5
3	3	7	14.7	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -07A0-4	A	8	5.5	3
4	5	9.5	16.6	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -09A5-4	B	10.5	9.5	5
5.5	7.5	12	21	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -012A-4	B	14	12	6
7.5	10	16	28	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -016A-4	B	18	13	7.5
11	15	24	42	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -024A-4	C	27	24	18
15	20	31	54	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -031A-4	C	35	31	20
18.5	25	40	70	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -040A-4	C	44	35	22
22	30	46	81	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -046A-4	C	50	38	24
30	40	60	105	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -060A-4	D	65	55	28
37	50	73	128	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -073A-4	D	80	60	31
45	60	90	150	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -090A-4	D	93	65	34
55	75	110	165	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -110A-4	E	110	75	-
75	100	135	202	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -135A-4	E	135	90	-
90	125	175	282	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -175A-4	E	175	115	-
110	150	210	326	ACSM1-04x ⁽⁴⁾ x ⁽⁵⁾ -210A-4	E	210	135	-
160 ⁹⁾	200 ⁹⁾	304 ⁹⁾	351	ACSM1-04Lx ⁽⁵⁾ -260A-4	E	260	165	-

¹⁾ P_N : Typical motor power at 400 V AC (kW) and 460 V AC (hp). A and B frame sizes with or without mains choke, C and D frame sizes with mains choke.

²⁾ I_{2N} : Nominal output current.

³⁾ I_{2max} : Maximum short time output current.

⁴⁾ $x^{(4)}$
A = Air-cooling
C = Cold plate
L = Liquid-cooled

⁵⁾ $x^{(5)}$ = Control (torque, speed, motion)

⁶⁾ $I_{2cont4k}$: Continuous output current at a switching frequency of 4 kHz at 40 °C (104 °F).

⁷⁾ $I_{2cont8k}$: Continuous output current at a switching frequency of 8 kHz at 40 °C (104 °F).

⁸⁾ $I_{2cont16k}$: Continuous output current at a switching frequency of 16 kHz at 40 °C (104 °F).

⁹⁾ Nominal output current and typical motor power values at a switching frequency of 3 kHz.

Dimensions

Frame size	Height ¹⁾ mm	Width mm	Depth ²⁾ mm	Weight kg
A	364	90	146	3
B	380	100	223	5
C	467	165	225/161 ³⁾	10/8 ³⁾
D	467	220	225/161 ³⁾	17/14 ³⁾
E	700	314	398	67

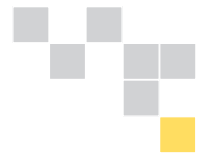
Notes

All dimensions and weights are without options.

¹⁾ Height is the maximum measure without clamping plates.

²⁾ Depth will increase by 23 mm with options. Additionally, 50 mm should be reserved for feedback cabling if FEN-xx options are used.

³⁾ Depth or weight is for ACSM1 with the cold plate variant.



All industries face a common goal: to maximize their production output at the lowest possible cost, while maintaining the highest quality end products. One of ABB's key objectives is to maximize the uptime of its customers' processes by ensuring optimum lifetime of all ABB products in a predictable, safe and low cost manner.

The services offered for ABB low voltage drives span the entire value chain, from the moment a customer makes the first enquiry through to disposal and recycling of the drive. Throughout the value chain, ABB provides training and learning, technical support and contracts. All of this is supported by one of the most extensive global drive sales and service networks.

Maximizing return on investment

At the heart of ABB's services is its drive lifecycle management model. All services available for ABB low voltage drives are planned according to this model. For customers it is easy to see which services are available at which phase.

precisely the timing of the part replacements plus all other maintenance related actions. The model also helps the customer when deciding about upgrades, retrofits and replacements.

Drive specific maintenance schedules are also based on this four-phase model. Thus, a customer knows

Professional management of the drive's lifecycle maximizes the return on any investment in ABB low voltage drives.

ABB drive lifecycle management model



- The drive, with complete lifecycle services, is available for purchase.
- The drive, with complete lifecycle services, is available for plant extensions.

Complete lifecycle services

To ensure the availability of complete lifecycle services, a drive must be in the Active or Classic phase. A drive can be kept in the Active or Classic phase by upgrading, retrofitting or replacing.



- Spare parts, maintenance and repair services are available as long as materials can be obtained.
- ABB cannot guarantee availability of lifecycle services for technical reasons or within reasonable cost.

Limited lifecycle services

Caution! A drive entering the Limited or Obsolete phase has limited repair options. This may result in unpredictable process downtime. To avoid this possibility, the drive should be kept in the Active or Classic phase.

ABB follows a four-phase model for managing drive lifecycles, which brings enhanced customer support and improved efficiency.

Examples of lifecycle services are: selection and dimensioning, installation and commissioning, preventive and corrective maintenance, remote services, spare part services, training and learning, technical support, upgrade and retrofit, replacement and recycling.

Contact and web information

www.abb.com/drives



ABB's worldwide presence is built on strong local companies working together with the channel partner network. By combining the experience and know-how gained in local and global markets, we ensure that our customers in all industries can gain the full benefit from our products.

For further details about all our low voltage AC drives and services please contact your nearest ABB office or ABB drives channel partner or visit the websites www.abb.com/drives and www.abb.com/drivespartners.

Albania (Tirana)

Tel: +355 42 241 492
Fax: +355 42 234 368

Algeria

Tel: +213 21 553 860
Fax: +213 21 552 330

Argentina (Valentin Alsina)

Tel: +54 11 4229 5500
Fax: +54 11 4229 5784

Australia (Victoria - Notting Hill)

Tel: +1800 222 435
Tel: +61 3 8544 0000
e-mail: drives@au.abb.com

Austria (Vienna)

Tel: +43 1 60109 0
Fax: +43 1 60109 8312

Azerbaijan (Baku)

Tel: +994 12 404 5200
Fax: +994 12 404 5022

Bahrain (Manama)

Tel: +973 725 377
Fax: +973 725 332

Bangladesh (Dhaka)

Tel: +88 02 8856468
Fax: +88 02 8850906

Belarus (Minsk)

Tel: +375 228 12 40, 228 12 42
Fax: +375 228 12 43

Belgium (Zaventem)

Tel: +32 2 718 6320
Fax: +32 2 718 6664

Bolivia (La Paz)

Tel: +591 2 278 8181
Fax: +591 2 278 8184

Bosnia Herzegovina (Tuzla)

Tel: +387 35 246 020
Fax: +387 35 255 098

Brazil (Osasco)

Tel: 0800 014 9111
Tel: +55 11 3688 9282
Fax: +55 11 3688 9421

Bulgaria (Sofia)

Tel: +359 2 807 5500
Fax: +359 2 807 5599

Canada (Montreal)

Tel: +1 514 420 3100
Fax: +1 514 420 3138

Chile (Santiago)

Tel: +56 2 471 4391
Fax: +56 2 471 4399

China (Beijing)

Tel: +86 10 5821 7788
Fax: +86 10 5821 7618

Colombia (Bogotá)

Tel: +57 1 417 8000
Fax: +57 1 413 4086

Costa Rica (San Jose)

Tel: +506 288 5484
Fax: +506 288 5482

Croatia (Zagreb)

Tel: +385 1 600 8550
Fax: +385 1 619 5111

Czech Republic (Prague)

Tel: +420 234 322 327
e-mail: motors&drives@cz.abb.com

Denmark (Skovlunde)

Tel: +45 44 504 345
Fax: +45 44 504 365

Dominican Republic (Santo Domingo)

Tel: +809 562 9010
Fax: +809 562 9011

Ecuador (Quito)

Tel: +593 2 2500 645
Fax: +593 2 2500 650

Egypt (Cairo)

Tel: +202 2 6251630
drives@eg.abb.com

El Salvador (San Salvador)

Tel: +503 2264 5471
Fax: +503 2264 2497

Estonia (Tallinn)

Tel: +372 6801 800
e-mail: info@ee.abb.com

Ethiopia (Addis Abeba)

Tel: +251 1 669506, 669507
Fax: +251 1 669511

Finland (Helsinki)

Tel: +358 10 22 11
Tel: +358 10 222 1999
Fax: +358 10 222 2913

France (Montluel)

Tel: +33 (0)4 37 40 40 00
Fax: +33 (0)4 37 40 40 72

Germany (Ladenburg)

Tel: +01805 222 580 (Service)
Tel: +49 (0)6203 717 717
Fax: +49 (0)6203 717 600

Greece (Athens)

Tel: +30 210 289 1 651
Fax: +30 210 289 1 792

Guatemala (Guatemala City)

Tel: +502 2 363 3814
Fax: +502 2 363 3624

Hungary (Budapest)

Tel: +36 1 443 2224
Fax: +36 1 443 2144

India (Bangalore)

Tel: +91 80 2294 9585
Fax: +91 80 2294 9389

Indonesia (Jakarta)

Tel: +62 21 2551 5555
e-mail: automation@id.abb.com

Iran (Tehran)

Tel: +98 21 2222 5120
Fax: +98 21 2222 5157

Ireland (Dublin)

Tel: +353 1 405 7300
Fax: +353 1 405 7307

Israel (Haifa)

Tel: +972 4 850 2111
Fax: +972 4 850 2112

Italy (Milan)

Tel: +39 02 2414 3085
Fax: +39 02 2414 3979

Ivory Coast (Abidjan)

Tel: +225 21 21 7575
Fax: +225 21 35 0414

Japan (Tokyo)

Tel: +81(0)3 5784 6010
Fax: +81(0)3 5784 6275

Jordan (Amman)

Tel: +962 6 562 0181
Fax: +962 6 5621369

Kazakhstan (Almaty)

Tel: +7 727 2583838
Fax: +7 727 2583839

Kenya (Nairobi)

Tel: +254 20 828811/13 to 20
Fax: +254 20 828812/21

Kuwait (Kuwait city)

Tel: +965 2428626 ext. 106
Fax: +965 2403139

Latvia (Riga)

Tel: +371 7 063 600
Fax: +371 7 063 601

Lithuania (Vilnius)

Tel: +370 5 273 8300
Fax: +370 5 273 8333

Luxembourg (Leudelange)

Tel: +352 493 116
Fax: +352 492 859

Macedonia (Skopje)

Tel: +389 23 118 010
Fax: +389 23 118 774

Malaysia (Kuala Lumpur)

Tel: +603 5628 4888
Fax: +603 5635 8200

Mauritius (Port-Louis)

Tel: +230 208 7644, 211 8624
Fax: +230 211 4077

Mexico (Mexico City)

Tel: +52 (55) 5328 1400 ext. 3008
Fax: +52 (55) 5328 7467

Morocco (Casablanca)

Tel: +212 2 234 5540
Fax: +212 2 234 2099

The Netherlands (Rotterdam)

Tel: +31 (0)10 407 8886
e-mail: freqconv@nl.abb.com

New Zealand (Auckland)

Tel: +64 9 356 2160
Fax: +64 9 357 0019

Nigeria (Ikeja, Lagos)

Tel: +234 1 4937 347
Fax: +234 1 4937 329

Norway (Oslo)

Tel: +47 03500
motor@no.abb.com

Oman (Muscat)

Tel: +968 2456 7410
Fax: +968 2456 7406

Pakistan (Lahore)

Tel: +92 42 6315 882-85
Fax: +92 42 6368 565

Panama (Panama City)

Tel: +507 209 5400, 2095408
Fax: +507 209 5401

Peru (Lima)

Tel: +51 1 415 5100
Fax: +51 1 561 2902

The Philippines (Metro Manila)

Tel: +63 2 821 7777
Fax: +63 2 823 0309, 824 4637

Poland (Lodz)

Tel: +48 42 299 3000
Fax: +48 42 299 3340

Portugal (Oeiras)

Tel: +351 21 425 6000
Fax: +351 21 425 6390, 425 6354

Qatar (Doha)

Tel: +974 4253888
Fax: +974 4312630

Romania (Bucharest)

Tel: +40 21 310 4377
Fax: +40 21 310 4383

Russia (Moscow)

Tel: +7 495 960 22 00
Fax: +7 495 960 22 20

Saudi-Arabia (Al Khobar)

Tel: +966 (0)3 882 9394, ext. 240, 254, 247
Fax: +966 (0)3 882 4603

Senegal (Dakar)

Tel: +221 832 1242, 832 3466
Fax: +221 832 2057, 832 1239

Serbia (Belgrade)

Tel: +381 11 3094 320, 3094 300
Fax: +381 11 3094 343

Singapore (Singapore)

Tel: +65 6776 5711
Fax: +65 6778 0222

Slovakia (Banska Bystrica)

Tel: +421 48 410 2324
Fax: +421 48 410 2325

Slovenia (Ljubljana)

Tel: +386 1 2445 440
Fax: +386 1 2445 490

South Africa (Johannesburg)

Tel: +27 11 617 2000
Fax: +27 11 908 2061

South Korea (Seoul)

Tel: +82 2 528 2794
Fax: +82 2 528 2338

Spain (Barcelona)

Tel: +34 (9)3 728 8500
Fax: +34 (9)3 728 7659

Sri Lanka (Colombo)

Tel: +94 11 2399304/6
Fax: +94 11 2399303

Sweden (Västerås)

Tel: +46 (0)21 32 5000
Fax: +46 (0)21 14 8671

Switzerland (Zürich)

Tel: +41 (0)58 586 0000
Fax: +41 (0)58 586 0603

Syrian Arab Republic

Tel: +963 11 212 7018 / 9551
Fax: +963 11 212 8614

Taiwan (Taipei)

Tel: +886 2 2577 6090
Fax: +886 2 2577 9467, 2577 9434

Tanzania (Dar es Salaam)

Tel: +255 51 2136750, 2136751, 2136752
Fax: +255 51 2136749

Thailand (Bangkok)

Tel: +66 (0)2665 1000
Fax: +66 (0)2665 1042

Tunisia (Tunis)

Tel: +216 71 860 366
Fax: +216 71 860 255

Turkey (Istanbul)

Tel: +90 216 528 2200
Fax: +90 216 365 2944

Uganda (Nakasero, Kampala)

Tel: +256 41 348 800
Fax: +256 41 348 799

Ukraine (Kiev)

Tel: +380 44 495 22 11
Fax: +380 44 495 22 10

The United Arab Emirates (Dubai)

Tel: +971 4 3147500, 3401777
Fax: +971 4 3401771, 3401539

United Kingdom (Daresbury, Warrington)

Tel: +44 1925 741 111
Fax: +44 1925 741 693

Uruguay (Montevideo)

Tel: +598 2 707 7300
Tel: +598 2 707 7466

USA (New Berlin)

Tel: +1 800 752 0696
Tel: +1 262 785 3200
Fax: +1 262 785 0397

Venezuela (Caracas)

Tel: +58 212 2031949
Fax: +58 212 237 6270

Vietnam (Hochiminh)

Tel: +84 8 8237 972
Fax: +84 8 8237 970

Zimbabwe (Harare)

Tel: +263 4 369 070
Fax: +263 4 369 084

Contact us



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