



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

new.abb.com/drives
new.abb.com/drives/drivespartners
new.abb.com/motors-generators

Learn more
from ACS380-E website



LOW VOLTAGE AC DRIVES

ABB MACHINERY DRIVES

ACS380-E, 0.25 to 22 kW/0.37 to 30 hp



ACS380-E
combines speed and flexible connectivity
with future-ready security, ensuring seamless
integration and optimal performance for
machine builders.

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MACHINERY DRIVES FAMILY

High efficiency machinery drives from ABB deliver unmatched reliability, advanced security and seamless scalability, ensuring optimal performance, protection and growth for machine builders.



Powering scalable control for agile, capable machines



Scalable

The scalable qualities of ABB Machinery drives mean they offer **unmatched flexibility** for machine builders. ABB drives **adapt to different operational needs**, accommodating small-scale projects and larger machine applications.

Our drives grow with your business, **maximizing efficiency** and making them an invaluable component in an evolving technological landscape.



Reliable

Machinery drives from ABB deliver **consistent operational performance** for machine builders.

Designed to withstand demanding industrial environments, their **robust construction** and **advanced technology** provide dependable and circular outcomes and enhance the longevity and stability of your projects.



Secure

Engineered with **advanced security features**, machinery drives from ABB **protect against cyber threats** and **unauthorized access**, while also ensuring **safe, reliable operations** from features like functional safety remote access.

Invest in a solution that prioritises the protection of your people, equipment and data.



Productive

ABB variable speed drives' efficiency credentials **offer significant benefits** for machine builders.

By optimizing motor speed and torque, you unlock faster and more reliable processes, leading to **higher output and improved product quality**. This ability to fine-tune operations means you can make more, do more and achieve more.



ACS180

Everything you need, nothing you don't. ACS180 provides the quality you expect from ABB in a simple, essential package for machinery applications.



ACS380

Consistent performance throughout their whole life cycle and offers a wider range of standard and optional features for optimal machine building.



ACS380-E

ACS380-E combines speed and flexible connectivity with future-ready security, ensuring seamless integration and optimal performance for machine builders.

+ Adaptable

+ Connected

+ Secure

PERFORMANCE, CONNECTIVITY, CYBER SECURITY →



ACS380-E has won the prestigious iF Design Award 2026 in the Product Design category
The iF Design Award is a globally recognized mark of outstanding design. The jury praised ACS380-E for combining high customization, advanced connectivity and a modular structure into a drive designed to power the next generation of machines.

ACS380-E

Introducing the new machinery drive

Adaptable, secure and connected, for seamless machine control

ACS380-E combines speed and flexible connectivity with future-ready security, ensuring seamless integration and optimal performance for machine builders.

O1

Adaptable
connectivity

+

O2

Versatile
simplicity

+

O3

Robust cyber
security



O1

Adaptable connectivity



All major automation ecosystems supported

- Multiple Ethernet protocols – Profinet IO RT, EtherNet/IP and Modbus TCP/IP
- Commissioning over Ethernet
- Remote access supported
- FW download, parameter backup and restore over Ethernet as a file
- High performance fieldbus and motor control
- Built in I/O for most typical machinery applications



ACS380-E

Introducing the new machinery drive

02

Versatile simplicity



A single product for diverse applications worldwide

- “All-compatible” platform – learn it once, use it everywhere
- Supports all rotary AC motors (IM, PM, PM servo, SynRM)
- Always the same product for multiple applications via I/O, encoder, thermistor and safety options *)
- Supports all global voltages from 100 V to 600 V

*) To be introduced in phases in 2026 and 2027



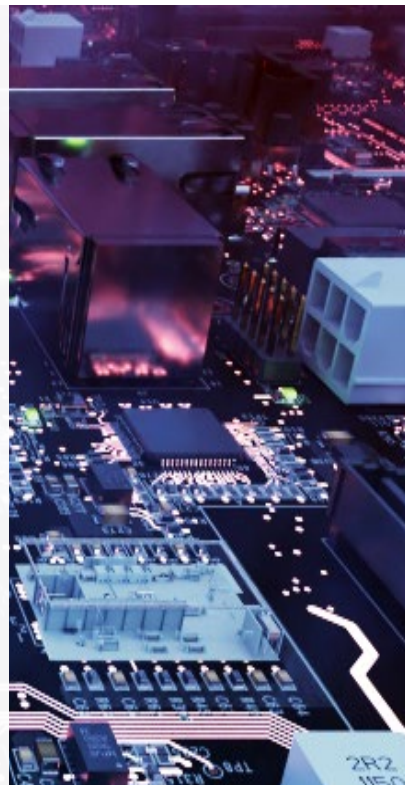
03

Robust cyber security



Future-proof drive for future compliance

- SL2 readiness
- Secure boot
- Only ABB signed firmware can be run
- Tamper-proof supply chain



ACS380-E

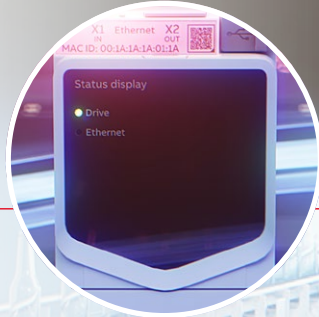
0.25 to 22 kW/0.37 to 30 hp

POWERING PRODUCTIVITY FOR MACHINE BUILDERS

Faster installation with integrated features and simplified cabling



Reduce variants, simplify selection, and accelerate machine builds



Save panel space with side-by-side installation – no derating required



Daisy-chain Ethernet connectivity – simplifies wiring, no external switch needed



One drive for all industrial Ethernet protocols



Commission via Ethernet – save time during startup



Spring terminals ensure fast, tool-free wiring



Easily removable front-mount options for easy maintenance

01: Mounted option in place
02: Eject button for easy removal

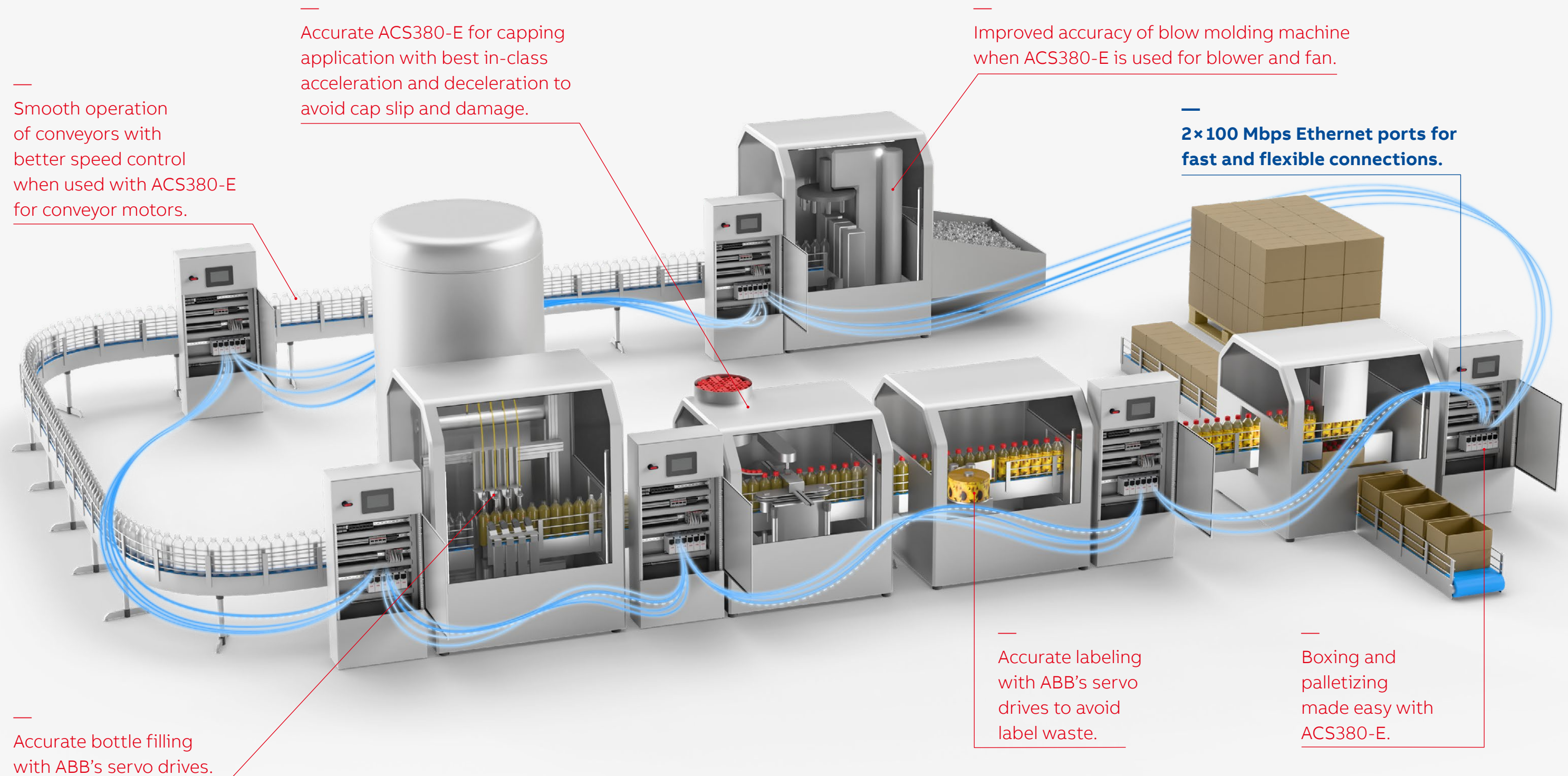


ACS380-E

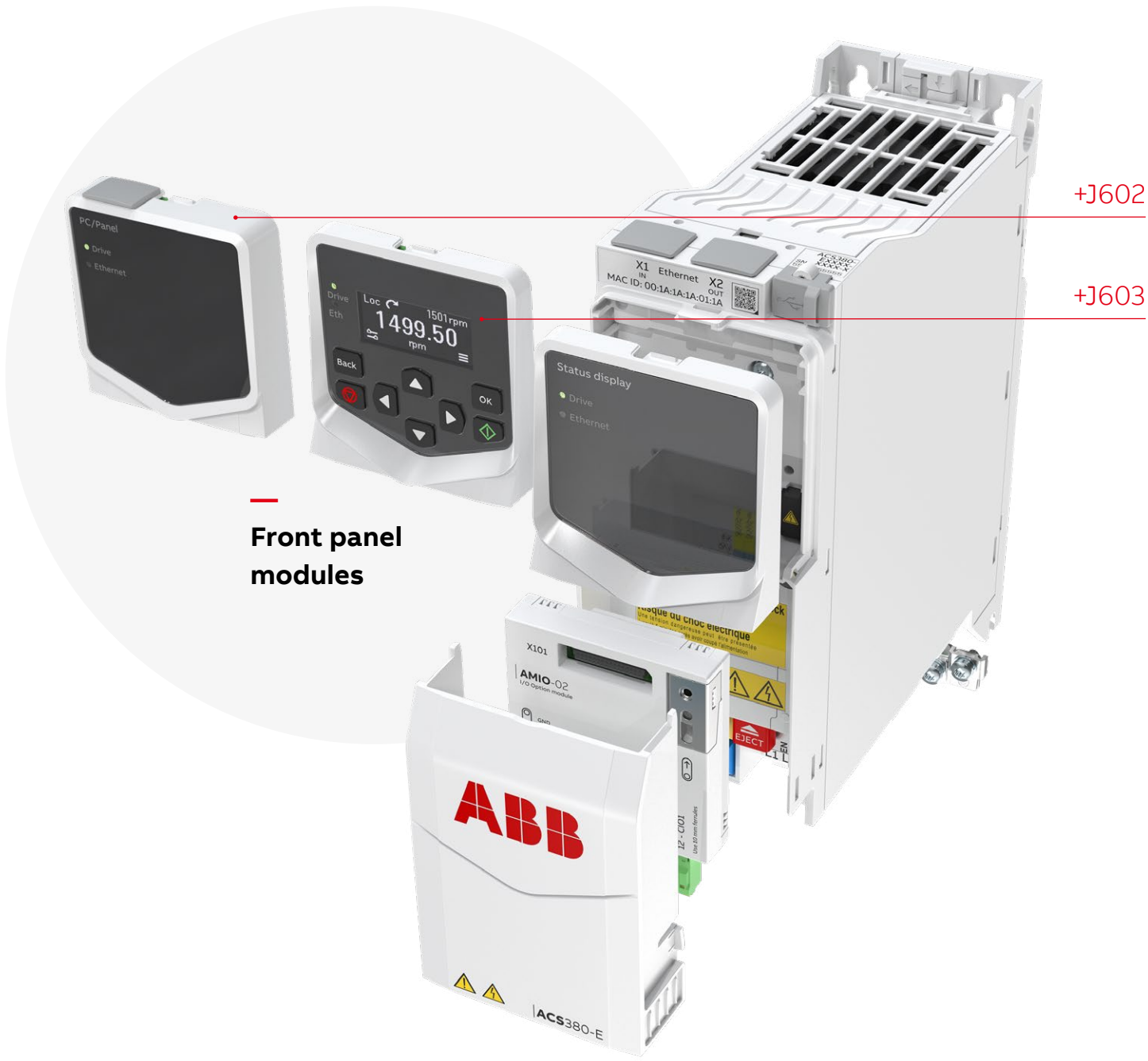
Keeping your production fast, stable and precise

Complete bottling and packaging application can be operated on Ethernet network for faster, smoother, stable, and more precise operation.

ACS380-E drives improve process performance, increase productivity, reduce external components, and ensure machine and personnel safety.



VERSATILE SIMPLICITY



Front panel modules

ACS380-E options			
Plus code	Ordering code	Type designation	Description
	3AXD50001152420	EMIC-30	Status display panel. Drive comes as default with this.
+J602*	3AXD50001152468	EMIC-34	External panel adapter
+J603	3AXD50001197490	EMID-30	Control panel. For basic diagnostics and commissioning.
+L601	3AXD50001127671	AMIO-02	A-series I/O option module (3x DI, 2x AI, 1x AO), stackable
+L602	3AXD50001295622	AMIO-04	A-series relay module (2x RO), stackable
+L673**	3AXD50001362515	ASEN-13	A-series Pulse encoder interface module (1x TTL/HTL, 2x Latch inputs)

* Enables limited use of industrial panels; backup restore is not supported.
** Release Q2/2026

A-SERIES OPTION MODULES

AMIO-02: I/O extension option module

- The optional **AMIO-02 card** expands the drive's I/O for advanced machine control:
- **Digital inputs:** PNP/NPN selectable, two general purpose DI and one CIO1 (configurable input) as DI, counter or frequency input (0-16 kHz)
 - **Analog inputs:** Unipolar differential, measures 0-11 V or 0-22 mA, mode change by drive software
 - **Analog outputs:** Configurable as 0-11 V or 0-22 mA, mode change by drive software
 - **Compact and easy to install,** the AMIO-02 card enhances system integration and enables greater control flexibility in demanding automation environments
 - **Stackable design**
 - Supports stacking of an additional option module on top for flexible system expansion



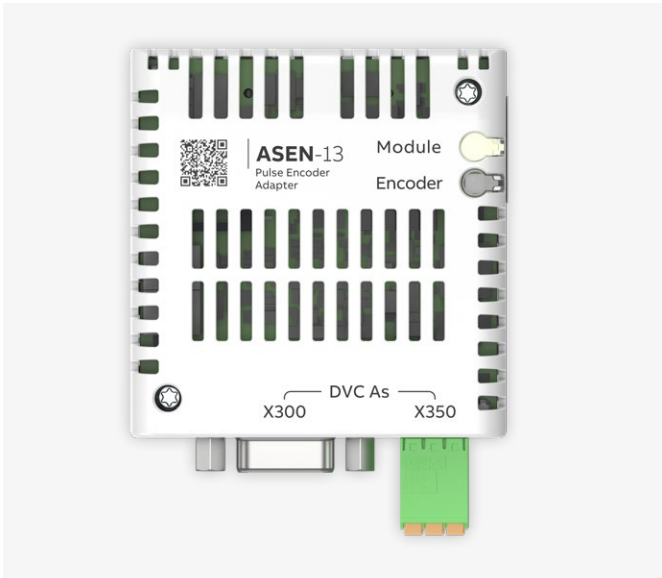
AMIO-04: Relay option module

- The optional AMIO-04 module is an I/O extension module with the following features:
- **Two relay outputs**
 - Maximum switching voltage: 30 VDC at 5 A/240 VAC at 3 A
 - Galvanically isolated
 - Electrical endurance: Minimum 300,000 cycles of operation with resistive load
 - **User friendly installation**
 - Equipped with push in spring terminals for fast and secure wiring
 - Compact form factor enabling easy integration
 - **Stackable design**
 - Supports stacking of an additional option module on top for flexible system expansion



ASEN-13: Pulse encoder interface module

- The optional ASEN-13 pulse encoder interface module is an interface module between the drive and a pulse encoder with the following features:
- **Pulse encoder interface:** supports a single TTL/HTL pulse encoder in either single-ended or differential configuration
 - **Pulse encoder power:** 5 V and 24 V power rails to power the encoder directly from the module
 - **Latch inputs:** supports two fast and isolated digital inputs for position latch
 - **Modularity:** can be used in conjunction with AMxx-xx modules
 - **High performance,** for demanding application requiring closed-loop control



ADAPTABLE CONNECTIVITY



Access drive via Ethernet using Drive Composer or USB-C.

Faster USB-C interface for PC interface

- Fast access for Drive Composer, firmware updates, and diagnostics
- Cold configuration via PC – even when the drive is not powered

Offline configuration via USB-C for parameter and firmware loading.

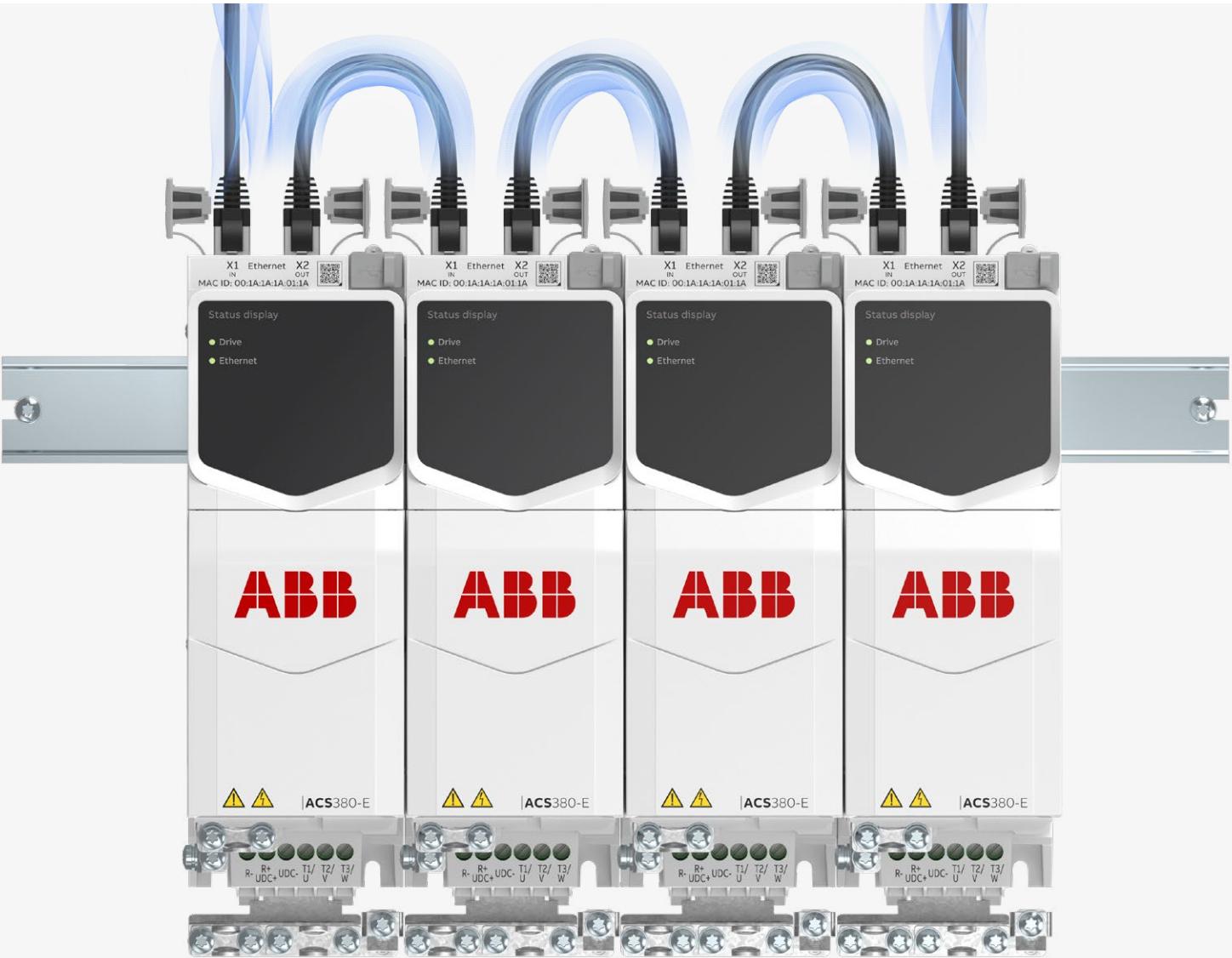
Know source of parameter backup

- The drive now stores backup source information to ease service and maintenance engineers’ tasks

ACS380-E USB cables		
Ordering codes	Type designation	Description
3AXD50001269760	ECCU-13	USB 2.0 Type-C cable for ABB drives programming
3AXD50001269777	ECCA-3	USB Type C to Type A adaptor

Let’s talk Ethernet!

Easy, secure, and reliable integration with the leading automation ecosystems



Thanks to embedded protocol, ACS380-E drive provides reliable connectivity with your automation systems, with a simplified interface to select and configure it.

Multiple protocols are supported:

- PROFINET
- EtherNet/IP
- Modbus TCP
- EtherNet Powerlink
- EtherCat (pending)

DRIVE COMPOSER 3 WITH ACS380-E

New generation of integration between drives and user tools



Drive Composer 3 is the latest version of our easy-to-use, reliable, and secure tool for faster commissioning, monitoring, and troubleshooting ABB all-compatible drives. The tool can also be used for optimizing drive performance.

01

More efficient than ever

- Fast, reliable connectivity options
- Quick, effortless commissioning
- Advanced features for power users

02

Easy to use

- Backward compatible and future-proof
- Easy to get started
- Faster commissioning and reduced risk

03

Reliable and secure

- Reliable remote troubleshooting
- Secure by design

Versatile PC connectivity

- Connectivity with ACS380-E and other selected drives
 - USB-C connectivity on drive
 - Ethernet connectivity for tool network and fieldbus communication
- Connectivity with other drive models
 - USB connection via Assistant Control Panel (ACP)
 - Ethernet connectivity via Ethernet fieldbus adapter modules
- ACS380-E supports
 - The new Drive Composer 3 as well as earlier 2.x versions
- Supported operating systems
 - Windows 10 and 11

Find out more and download the tool:



ABB ACCESS

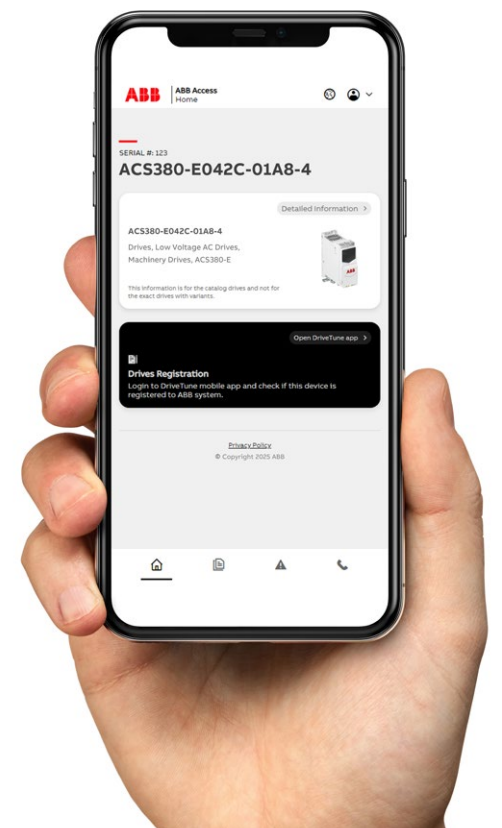
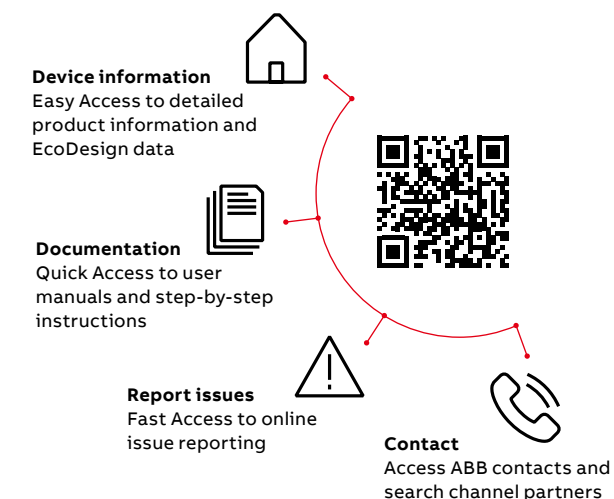
Scan the QR code to access 24/7 self-services for ABB drives, motors and PLCs



With ABB Access, you can unlock all aspects of your drives, motors or PLCs, from one central location: the palm of your hand.

Simply scan the QR code on the ABB product to get started

ABB Access, helps you easily find up-to-date product online data. It also provides easy access to documentation and manuals. If you happen to experience issues with your ABB product, these can be quickly and easily reported online to reach expert support from ABB.



ACS380-E – THE NEXT EVOLUTION IN ABB'S MOTOR CONTROL

Carrying forward ACS380 legacy.
ACS380-E can control:

- AC induction motors
- Permanent magnet motors
- Synchronous reluctance motors

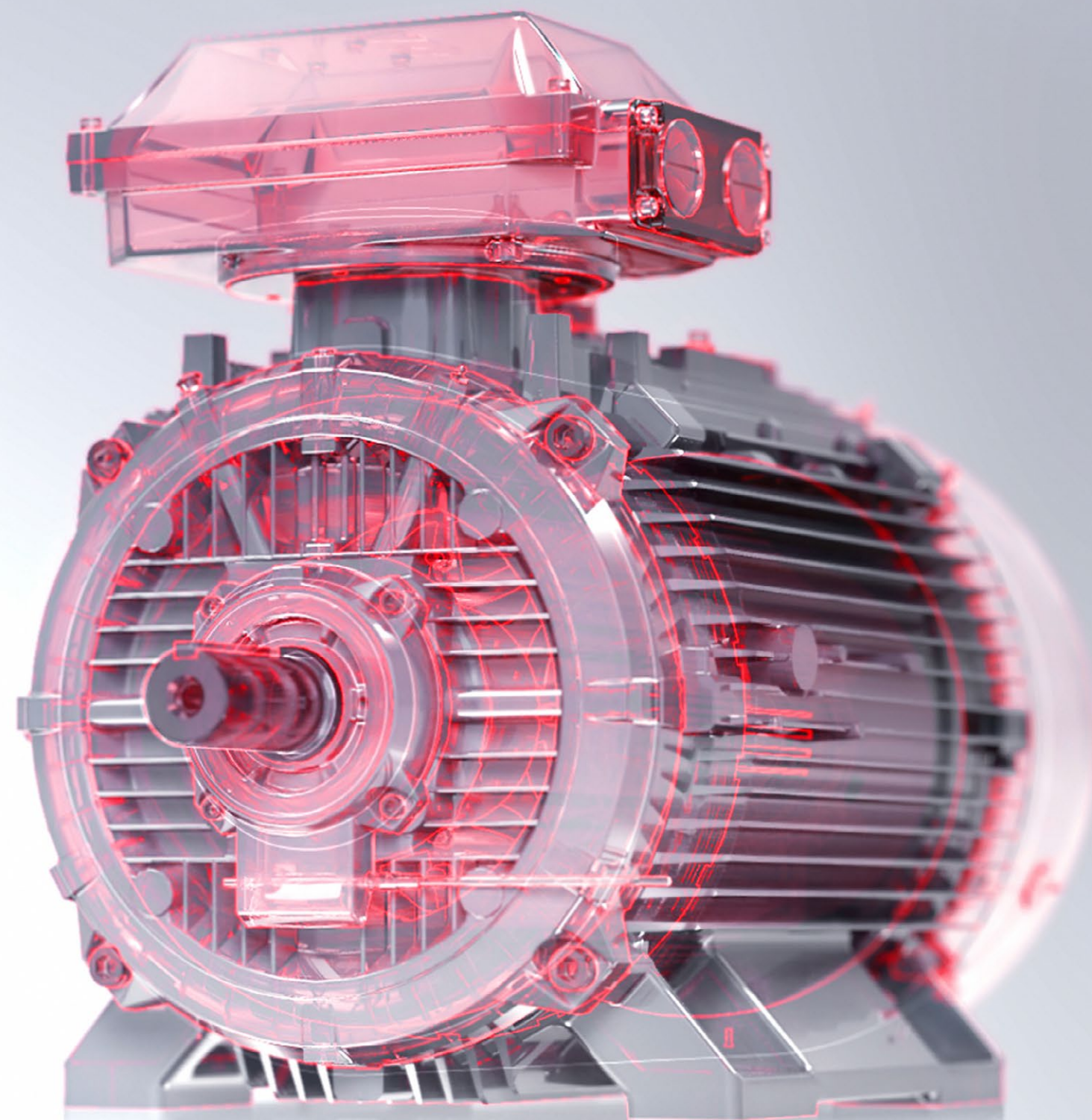


8x times faster speed and torque control cycle time.

The drive exhibits up to **10x lower** jitter in response to control commands.

With a significant step forward in motor control loop timing for, **better, faster, and more accurate motor for improved machine performance** making ACS380-E better suited for cyclic and dynamic motor control applications.

Newly introduced floating value for Switching frequency for further optimizing motor control performance.





As part of ABB's sustainability strategy, the company will provide Environmental Product Declarations for relevant products, contributing to transparent and environmentally conscious business practices.

Environmental Product Declarations (EPDs) are standardized, third party verified, documents that provide information about the environmental performance of a product throughout its life cycle. They are based on Life Cycle Assessment (LCA) data and provide information on a range of environmental impacts such as carbon footprint, energy consumption, and resource use. EPDs are part of ABB's commitment to transparency and environmental sustainability.

ABB Drives EPDs include:

1. Raw materials extraction and processing:
Information about the materials used in the product.
2. Manufacturing process:
Details about the manufacturing process, energy consumption, and emissions during production.
3. Transportation:
Information on the transportation of raw materials to the manufacturing site, and the transportation of the finished product to the end-user.
4. Installation:
Environmental impacts associated with the installation process, including energy use and emissions.
5. Use phase:
Energy consumption during the operation of the frequency converter based on efficiency its rating.

6. Maintenance:
Information about the environmental impact of maintaining and servicing the frequency converter during its operational life.
7. End of life:
Details about the recyclability of the product and the environmental impact of its disposal.

Environmental impact categories:

EPDs include information on a range of environmental impact categories, such as global warming potential, ozone depletion, acidification, eutrophication, and others.

Declaration of Global Warming Potential (GWP):

Information about the product's contribution to climate change, expressed in terms of carbon dioxide equivalent (CO₂-eq).

ABB Group EPDs follow the ISO 14025 standard.

The ABB EPD's can be found here:
[Environmental Product Declarations](#)
– ABB Group (global.abb)

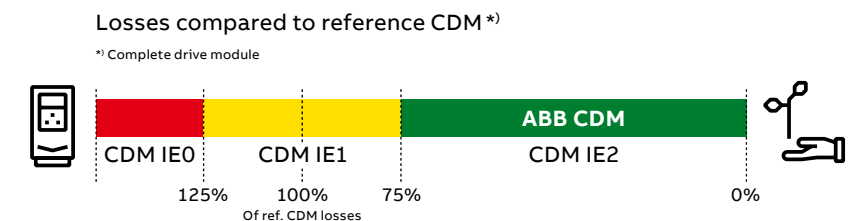


ABB AC DRIVES COMPLY WITH THE EU ECODESIGN REQUIREMENTS

The Ecodesign regulation (EU) 2019/1781 is the legislative framework that sets minimum energy efficiency requirements for low voltage induction motors and variable speed drives. AC drives and power drive systems are classified according to their power losses. From July 2021, the minimum requirement for non-regenerative AC drives in EU is IE2.

ABB's AC drives (machinery, general, industrial and industrial specific drives) comply with the strictest requirements of the standard for energy efficiency and are classified as IE2.

Energy efficiency classes for a Complete Drive Module (CDM)



Markings on the ABB LV AC drives

Unique identifier QR code for Ecodesign information



IE class and % loss of rated apparent power 50 Hz, 400 V

IE2 (90;100) 2.3 %

Unique QR codes are located on the rating plate and/or the front of the drive.

Web-based ABB EcoDesign Tool



- Calculates absolute and relative losses and efficiency data at standard and user-defined operating points according to EU regulation 2019/1781 for complete drive module (CDM), LV motors with VSD supply, and power drive system (PDS)
- Losses and efficiency data at operating points in graphical and table format
- Printable efficiency report with possibility to customize title and additional details
- Calculates PDS energy consumption, energy cost and CO₂ emission based on given load profile

The regulation was implemented in two steps:

Step 1: July 1, 2021

- Power range: from 0.12 to 1000 kW
- 3-phase LV AC drives with diode rectifier
- Drive manufacturers must declare power losses as a percentage of the rated apparent output power at 8 different operating points, as well as standby losses. The international IE level is given at the nominal point. Drives fulfilling the requirements are CE-marked.

Out of scope of the regulation:

- All drives without CE marking
- The following low voltage AC drives: regenerative drives, low-harmonic drives (THD < 10%), multiple AC-output drives and single-phase drives.
- Medium-voltage drives, DC drives and traction drives
- Drive cabinets that already have conformity-assessed modules

Step 2: July 1, 2023

No changes for AC drives

For more information, see: ecodesign.drivesmotors.abb.com

TECHNICAL DATA

Mains connection	
Voltage and power range	1-phase, 110 to 120 V, +10%/-15% 0.37 to 1.1 kW (1/2 to 1.48 hp)
	1-phase, 200 to 240 V, +10%/-15% 0.25 to 3 kW (1/3 to 3 hp)
	3-phase, 200 to 240 V, +10%/-15% 0.25 to 15 kW (1/3 to 20 hp)
	3-phase, 380 to 480 V, +10%/-15% 0.37 to 22 kW (1/2 to 30 hp)
	3-phase, 500-600 V, +10%/-15% 1.7 to 32 kW (2.3 to 30 hp)
Frequency	50/60 Hz ± 5%
Efficiency class (IEC 61800-9-2)	IE2
Common DC connection	
DC voltage level	-0 types 110 to 120 V +/-10% -1 and -2 types 270 to 324 V ±10% -4 types 513 to 648 V ±10% -6 types 500 to 600 V +/-10%
Charging circuit	Internal charging circuit
Motor connection	
Voltage	0 to U_N , 3-phase
Frequency	0 to 599 Hz
Motor control	Scalar control Vector control
Switching frequency	1 to 16 kHz, default 4 kHz
Dynamic braking	Flux braking (moderate or full) Resistor braking (optional)
Motor control performance	
Speed control performance, open loop	
Static accuracy	20% of motor rated slip
Dynamic accuracy	1% seconds with 100% torque step
Speed control performance, closed loop	
Static accuracy	0.1% of motor rated speed
Dynamic accuracy	<1% seconds with 100% torque step
Torque control performance	
Torque step rise time	< 10 ms, rated torque step
Non-linearity	±5% with rated torque
Braking power connection	
Brake chopper	Built-in brake chopper as standard
Brake resistor	External resistor connected to drive

Functional safety	
Built-in safety features	Safe Torque Off (STO) EN/IEC61800-5-2: IEC61508 ed2: SIL 3, IEC 61511: SIL 3, IEC 62061: SIL CL 3, EN ISO 13849-1: PL e/ cat. 3
Environmental limits	
Ambient temperature	
Transportation and storage	-40 to +70 °C (-40 to +158 °F)
Operation	-10 to +50 °C (14 to 122 °F), with derating up to 60 °C
Cooling method	
Air-cooled, dry clean air	
Altitude	0 to 4000 m, (0 to 13000 ft) for 400 V units (see allowed power systems in HW manual) 0 to 2000 m, (0 to 6600 ft) for 200 V units derating above 1000 m (3300 ft)
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	IP20 as standard
Contamination levels	No conductive dust allowed
Storage	IEC 60721-3-1, Class 1C2 (chemical gases) Class 1S2 (solid particles)
Transportation	IEC 60721-3-2, Class 2C2 (chemical gases) Class 2S2 (solid particles)
Operation	IEC 60721-3-3, Class 3C2 (chemical gases) Class 3S2 (solid particles)
Product compliance	
CE	
Low Voltage Directive 2014/35/EU 2, EN 61800-5-1: 2007	
Machinery Directive 2006/42/EC, EN 61800-5-2: 2007	
EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012	
UL, cUL certification – file E211945	
TUV Certification for functional safety	
Quality assurance system ISO 9001	
Ecodesign (EU) 2019/1781	
Environmental system ISO 14001	
Waste electrical and electronic equipment directive (WEEE) 2002/96/EC	
RoHS directive 2011/65/EU	
EAC, KC, RCM	



ACS380-E DRIVE

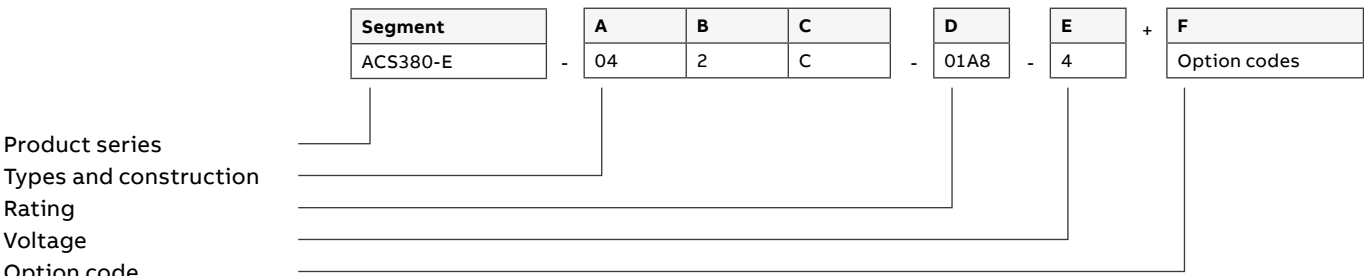
Types and codes

Drive type	Frame size	EAN Codes ^{*)}
1-phase, U_N = 120 V		
ACS380-E040C-02A4-0	R1	6438177748458
ACS380-E040C-03A7-0	R1	6438177748465
ACS380-E040C-04A8-0	R1	6438177748472
ACS380-E040C-06A9-0	R1	6438177748489
1-phase, U_N = 230 V		
ACS380-E042C-02A4-1	R1	6438177749257
ACS380-E042C-03A7-1	R1	6438177749264
ACS380-E042C-04A8-1	R1	6438177749271
ACS380-E042C-06A9-1	R1	6438177749288
ACS380-E042C-07A8-1	R1	6438177749295
ACS380-E042C-09A8-1	R2	6438177749301
ACS380-E042C-12A2-1	R2	6438177749318
3-phase, U_N = 230 V		
ACS380-E040C-02A4-2	R1	6438177749134
ACS380-E040C-03A7-2	R1	6438177749141
ACS380-E040C-04A8-2	R1	6438177749158
ACS380-E040C-06A9-2	R1	6438177749165
ACS380-E040C-07A8-2	R1	6438177749172
ACS380-E040C-09A8-2	R1	6438177749189
ACS380-E040C-12A2-2	R2	6438177749196
ACS380-E040C-17A5-2	R3	6438177749202
ACS380-E040C-25A0-2	R3	6438177749219
ACS380-E040C-033A-2	R3	6438177749226
ACS380-E040C-048A-2	R4	6438177749233
ACS380-E040C-055A-2	R4	6438177749240
3-phase, U_N = 400 V		
ACS380-E042C-01A8-4	R1	6438177722083
ACS380-E042C-02A6-4	R1	6438177722090
ACS380-E042C-03A3-4	R1	6438177722106
ACS380-E042C-04A0-4	R1	6438177722410
ACS380-E042C-05A6-4	R1	6438177722427
ACS380-E042C-07A2-4	R1	6438177722434
ACS380-E042C-09A4-4	R1	6438177722441
ACS380-E042C-12A6-4	R2	6438177722458
ACS380-E042C-17A0-4	R3	6438177722465
ACS380-E042C-25A0-4	R3	6438177722472
ACS380-E042C-033A-4	R3	6438177722489
ACS380-E042C-038A-4	R4	6438177722496
ACS380-E042C-045A-4	R4	6438177722502
ACS380-E042C-050A-4	R4	6438177722519
3-phase, U_N = 600 V		
ACS380-E040C-01A7-6	R2	6438177748496
ACS380-E040C-02A4-6	R2	6438177748502
ACS380-E040C-02A7-6	R2	6438177748618
ACS380-E040C-03A9-6	R2	6438177748625
ACS380-E040C-06A1-6	R2	6438177748632
ACS380-E040C-09A0-6	R3	6438177748649
ACS380-E040C-11A0-6	R3	6438177748656
ACS380-E040C-17A0-6	R3	6438177748663
ACS380-E040C-22A0-6	R4	6438177748670
ACS380-E040C-27A0-6	R4	6438177748687
ACS380-E040C-32A0-6	R4	6438177748694

^{*)} The EAN code applies to the base unit only and does not include plus code options.

ORDERING INFORMATION

The type designation indicates the specifications and configuration of the drive.
The table shows the primary drive variants.
Sample type code: ACS380-E042C-01A8-4 (Standard variant, not possible to add options as pluscode)



Basic codes		
Segment	Option	Description
A	Construction	04 = Module, IP20
B	EMC filter	0 = C4, 2 = C2 (3-phase 400 V)
C	Connectivity	C = Configured variant
D	Current rating	For example, 02A6 refers to a nominal output current of 2.6 A
E	Voltage rating	0 = 1-phase 115 V, 1 = 1-phase 230 V, 2 = 3-phase 230 V, 4 = 3-phase 400 V, 6 = 3-phase 600 V

Option codes for configured variant (ACS380-E04xC) and MRP codes for loose items					
Segment	Option	Plus code	MRP code	Type designation	Description
F	A-series option modules		3AXD50001152420	EMIC-30	Status display panel. Drive comes as default with this.
		+J602*	3AXD50001152468	EMIC-34	External panel adapter
		+J603	3AXD50001197490	EMID-30	Control panel. For basic diagnostics and commissioning.
		+L601	3AXD50001127671	AMIO-02	A-series I/O option module (3x DI, 2x AI, 1x AO), stackable
		+L602	3AXD50001295622	AMIO-04	A-series relay module (2x RO), stackable
		+L673**	3AXD50001362515	ASEN-13	A-series Pulse encoder interface module (1x TTL/HTL, 2x Latch inputs)
	Services	+P992			Pre-assembled options (front and side options)

* Enables limited use of industrial panels; backup restore is not supported.
** Release Q2/2026

RATINGS, TYPES AND VOLTAGES

IEC ratings										
1-phase, $U_N = 230\text{ V}$ (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.25 to 3 kW).										
Drive type	Frame size	Input current		Max. current	Output ratings					
		No choke	With choke		Nominal use		Light-duty use		Heavy-duty use	
		$I_{IN}\text{ (A)}$	$I_{IN}\text{ (A)}$	$I_{MAX}\text{ (A)}$	$I_N\text{ (A)}$	$P_N\text{ (kW)}$	$I_{Ld}\text{ (A)}$	$P_{Ld}\text{ (kW)}$	$I_{Hd}\text{ (A)}$	$P_{Hd}\text{ (kW)}$
ACS380-E042C-02A4-1	R1	5.3	4.2	3.2	2.4	0.37	2.3	0.37	1.8	0.25
ACS380-E042C-03A7-1	R1	7	6.4	4.3	3.7	0.55	3.5	0.55	2.4	0.37
ACS380-E042C-04A8-1	R1	8.9	8.3	6.7	4.8	0.75	4.6	0.75	3.7	0.55
ACS380-E042C-06A9-1	R1	11.5	11.9	8.6	6.9	1.1	6.6	1.1	4.8	0.75
ACS380-E042C-07A8-1	R1	14.7	13.5	12.4	7.8	1.5	7.4	1.5	6.9	1.1
ACS380-E042C-09A8-1	R2	19.8	17	14	9.8	2.2	9.3	2.2	7.8	1.5
ACS380-E042C-12A2-1	R2	25.6	21.2	17.6	12.2	3	11.6	3	9.8	2.2

IEC ratings										
3-phase, $U_N = 230\text{ V}$ (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.25 to 15 kW).										
Drive type	Frame size	Input current		Max. current	Output ratings					
		No choke	With choke		Nominal use		Light-duty use		Heavy-duty use	
		$I_{IN}\text{ (A)}$	$I_{IN}\text{ (A)}$	$I_{MAX}\text{ (A)}$	$I_N\text{ (A)}$	$P_N\text{ (kW)}$	$I_{Ld}\text{ (A)}$	$P_{Ld}\text{ (kW)}$	$I_{Hd}\text{ (A)}$	$P_{Hd}\text{ (kW)}$
ACS380-E040C-02A4-2	R1	3.4	2.4	3.2	2.4	0.37	2.3	0.37	1.8	0.25
ACS380-E040C-03A7-2	R1	4.5	3.7	4.3	3.7	0.55	3.5	0.55	2.4	0.37
ACS380-E040C-04A8-2	R1	5.7	4.8	6.7	4.8	0.75	4.6	0.75	3.7	0.55
ACS380-E040C-06A9-2	R1	7.8	6.9	8.6	6.9	1.1	6.6	1.1	4.8	0.75
ACS380-E040C-07A8-2	R1	9.3	7.8	12.4	7.8	1.5	7.5	1.5	6.9	1.1
ACS380-E040C-09A8-2	R1	12.8	9.8	14	9.8	2.2	9.3	2.2	7.8	1.5
ACS380-E040C-12A2-2	R2	16	12.2	17.6	12.2	3	11.6	3	9.8	2.2
ACS380-E040C-17A5-2	R3	20.7	17.5	22	17.5	4	16.7	4	12.2	3
ACS380-E040C-25A0-2	R3	27.2	25	31.5	25	5.5	24.2	5.5	17.5	4
ACS380-E040C-033A-2	R3	35	32	45	32	7.5	30.8	7.5	25	5.5
ACS380-E040C-048A-2	R4	47.8	48	57.6	48	11	46.2	11	32	7.5
ACS380-E040C-055A-2	R4	60	55	86.4	55	15	52.8	15	48	11

IEC ratings										
3-phase, $U_N = 400\text{ V}$ (range 380 to 480 V). The power ratings are valid at nominal voltage 400 V (0.25 to 22 kW).										
Drive type	Frame size	Input current		Max. current	Output ratings					
		No choke	With choke		Nominal use		Light-duty use		Heavy-duty use	
		$I_{IN}\text{ (A)}$	$I_{IN}\text{ (A)}$	$I_{MAX}\text{ (A)}$	$I_N\text{ (A)}$	$P_N\text{ (kW)}$	$I_{Ld}\text{ (A)}$	$P_{Ld}\text{ (kW)}$	$I_{Hd}\text{ (A)}$	$P_{Hd}\text{ (kW)}$
ACS380-E042C-01A8-4	R1	2.8	1.8	2.2	1.8	0.55	1.7	0.55	1.2	0.37
ACS380-E042C-02A6-4	R1	3.5	2.6	3.2	2.6	0.75	2.5	0.75	1.8	0.55
ACS380-E042C-03A3-4	R1	4.8	3.3	4.7	3.3	1.1	3.1	1.1	2.6	0.75
ACS380-E042C-04A0-4	R1	6.1	4	5.9	4	1.5	3.8	1.5	3.3	1.1
ACS380-E042C-05A6-4	R1	8.5	5.6	7.2	5.6	2.2	5.3	2.2	4	1.5
ACS380-E042C-07A2-4	R1	10.1	7.2	10.1	7.2	3	6.8	3	5.6	2.2
ACS380-E042C-09A4-4	R1	12.9	9.4	13	9.4	4	8.9	4	7.2	3
ACS380-E042C-12A6-4	R2	16.5	12.6	16.9	12.6	5.5	12	5.5	9.4	4
ACS380-E042C-17A0-4	R3	23.4	17	22.7	17	7.5	16.2	7.5	12.6	5.5
ACS380-E042C-25A0-4	R3	31.8	25	30.6	25	11	23.8	11	17	7.5
ACS380-E042C-033A-4	R3	40.9	32	45	32	15	30.5	15	25	11
ACS380-E042C-038A-4	R4	49	38	57.6	38	18.5	36	18.5	32	15
ACS380-E042C-045A-4	R4	55.7	45	68.4	45	22	42.8	22	38	18.5
ACS380-E042C-050A-4	R4	55.7	50	81	50	22	48	22	45	22

RATINGS, TYPES AND VOLTAGES

UL (NEC) ratings								
1-phase, $U_N = 120$ V (range 100 to 120 V). The power ratings are valid at nominal voltage 120 V (0.33 to 1 hp).								
Drive type	Frame size	Input current		Max. current I_{MAX} (A)	Output ratings			
		No choke	With choke		Light-duty use		Heavy-duty use	
		I_{1Ld} (A)	I_{1Ld} (A)		I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)
ACS380-E040C-02A4-0	R1	9.4	8	3.2	2.4	0.5	1.8	0.33
ACS380-E040C-03A7-0	R1	12.5	11.0	4.7	3.5	0.75	2.4	0.5
ACS380-E040C-04A8-0	R1	15.1	13.6	6.3	4.6	1	3.5	0.75
ACS380-E040C-06A9-0	R1	21.0	19.5	8.9	6.6	1.5	4.6	1

UL (NEC) ratings								
1-phase, $U_N = 230$ V (range 208 to 240 V). The power ratings are valid at nominal voltage 230 V (0.33 to 3 hp).								
Drive type	Frame size	Input current		Max. current I_{MAX} (A)	Output ratings			
		No choke	With choke		Light-duty use		Heavy-duty use	
		I_{1Ld} (A)	I_{1Ld} (A)		I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)
ACS380-E042C-02A4-1	R1	5.5	4	3.2	2.3	0.5	1.8	0.33
ACS380-E042C-03A7-1	R1	7.4	6.1	4.3	3.5	0.75	2.3	0.5
ACS380-E042C-04A8-1	R1	9.1	8	6.7	4.6	1	3.5	0.75
ACS380-E042C-06A9-1	R1	12.6	11.4	8.6	6.6	1.5	4.6	1
ACS380-E042C-07A8-1	R1	14.9	12.8	12.4	7.5	2	6.6	1.5
ACS380-E042C-09A8-1	R2	14.8	12.8	14	9.3	2	7.5	2
ACS380-E042C-12A2-1	R2	21	20.1	17.6	11.6	3	9.3	3

UL (NEC) ratings								
3-phase, $U_N = 230$ V (range 208 to 240 V). The power ratings are valid at nominal voltage 230 V (0.33 to 15 hp).								
Drive type	Frame size	Input current		Max. current I_{MAX} (A)	Output ratings			
		No choke	With choke		Light-duty use		Heavy-duty use	
		I_{1Ld} (A)	I_{1Ld} (A)		I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)
ACS380-E040C-02A4-2	R1	3.5	2.3	3.2	2.3	0.5	1.8	0.33
ACS380-E040C-03A7-2	R1	4.8	3.5	4.3	3.5	0.75	2.4	0.5
ACS380-E040C-04A8-2	R1	5.8	4.6	6.7	4.6	1	3.2	0.75
ACS380-E040C-06A9-2	R1	8.4	6.6	8.6	6.6	1.5	4.6	1
ACS380-E040C-07A8-2	R1	9.4	7.5	12.4	7.5	2	6.6	1.5
ACS380-E040C-09A8-2	R1	9.4	7.5	14	9.3	2	7.5	2
ACS380-E040C-12A2-2	R2	13.1	11.6	17.6	11.6	3	9.3	3
ACS380-E040C-17A5-2	R3	21	16.7	22	16.7	5	11.6	3
ACS380-E040C-25A0-2	R3	30.5	24.2	31.5	24.2	7.5	16.7	5
ACS380-E040C-033A-2	R3	37.5	30.8	45	30.8	10	24.2	7.5
ACS380-E040C-048A-2	R4	53.2	46.2	57.6	46.2	15	30.8	10
ACS380-E040C-055A-2	R4	53.2	46.2	86.4	52.8	15	46.2	15

UL (NEC) ratings								
3-phase, $U_N = 400$ V (range 380 to 480 V). The power ratings are valid at nominal voltage 480 V (0.5 to 30 hp).								
Drive type	Frame size	Input current		Max. current I_{MAX} (A)	Output ratings			
		No choke	With choke		Light-duty use		Heavy-duty use	
		I_{1Ld} (A)	I_{1Ld} (A)		I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)
ACS380-E042C-01A8-4	R1	2.2	1.6	2.2	1.6	0.75	1.1	0.5
ACS380-E042C-02A6-4	R1	2.7	2.1	3.2	2.1	1	1.6	0.75
ACS380-E042C-03A3-4	R1	3.9	3	4.7	3	1.5	2.1	1
ACS380-E042C-04A0-4	R1	4.5	3.4	5.9	3.4	2	3	1.5
ACS380-E042C-05A6-4	R1	6.6	4.8	7.2	4.8	3	3.5	2
ACS380-E042C-07A2-4	R1	6.2	6	10.1	6	3	4.8	3
ACS380-E042C-09A4-4	R1	9.8	7.6	13	7.6	5	6	3
ACS380-E042C-12A6-4	R2	13.9	11	16.9	11	7.5	7.6	5
ACS380-E042C-17A0-4	R3	18.8	14	22.7	14	10	11	7.5
ACS380-E042C-25A0-4	R3	26.6	21	30.6	21	15	14	10
ACS380-E042C-033A-4	R3	33.9	27	45	27	20	21	15
ACS380-E042C-038A-4	R4	41.3	34	57.6	34	25	27	20
ACS380-E042C-045A-4	R4	46.9	40	68.4	40	30	34	25
ACS380-E042C-050A-4	R4	46.9	42	81	42	30	40	30

UL (NEC) ratings								
3-phase, $U_N = 600$ V (range 500 to 600 V). The power ratings are valid at nominal voltage 600 V (1 to 30 hp).								
Drive type	Frame size	Input current		Max. current I_{MAX} (A)	Output ratings			
		No choke	With choke		Light-duty use		Heavy-duty use	
		I_{1Ld} (A)	I_{1Ld} (A)		I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)
ACS380-E040C-01A7-6	R2	2.2	1.7	2.3	1.7	1	1.3	0.75
ACS380-E040C-02A4-6	R2	3.1	2.4	3.2	2.4	1.5	1.7	1
ACS380-E040C-02A7-6	R2	3.6	2.7	4.3	2.7	2	2.4	1.5
ACS380-E040C-03A9-6	R2	5.1	3.9	5.3	3.9	3	2.7	2
ACS380-E040C-06A1-6	R2	8.5	6.1	8.2	6.1	5	3.9	3
ACS380-E040C-09A0-6	R3	12.3	6	12.2	9	7.5	6.1	5
ACS380-E040C-11A0-6	R3	15.3	11	16.2	11	10	9	7.5
ACS380-E040C-17A0-6	R3	22	17	23	17	15	11	10
ACS380-E040C-22A0-6	R4	27.3	22	30.6	22	20	17	15
ACS380-E040C-27A0-6	R4	33.4	27	39.6	27	25	22	20
ACS380-E040C-32A0-6	R4	38.5	32	48.6	32	30	27	25

Nominal ratings	
I_N	Rated current available continuously without overload ability at 50 °C.
P_N	Typical motor power in no-overload use.
Light-duty use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 50 °C.
P_{Ld}	Typical motor power in light-duty use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 50 °C.
P_{Hd}	Typical motor power in heavy-duty use.
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.
For derating at higher altitudes, temperatures or switching frequencies, see the user's HW manual, document code: 3AXD50001141677	
Note: Availability of products may vary. Kindly check with your local ABB representative to confirm availability in your region.	

DIMENSIONS

Dimensions and weights (IP20 / UL open type)														
Frame size	H1		H2		W		D1		D2		M1		M2	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)
R1	205	8.07	227.5	8.96	70	2.76	186.8	7.35	198.2	7.8	50	1.97	191	7.52
R2	205	8.07	227.6	8.96	95	3.74	186.8	7.35	198.2	7.8	75	2.95	191	7.52
R3	205	8.07	241.3	9.5	170	6.69	185.7	7.31	198.2	7.8	148	5.83	191	7.52
R4	205	8.07	240.4	9.46	260	10.24	192	7.56	203.4	8.01	234	9.21	191	7.52

Frame size	Drive without front panel and clamps		Drive with standars components		
	(kg)	(lb)	(kg)	(lb)	
R1	1.6	3.5	1.7	3.8	
R2	2.2	4.8	2.3	5	
R3	3.7	8.1	3.8	8.3	
R4	5.8	12.7	5.9	13	

H1 = Height rear mounting

H2 = Height rear total

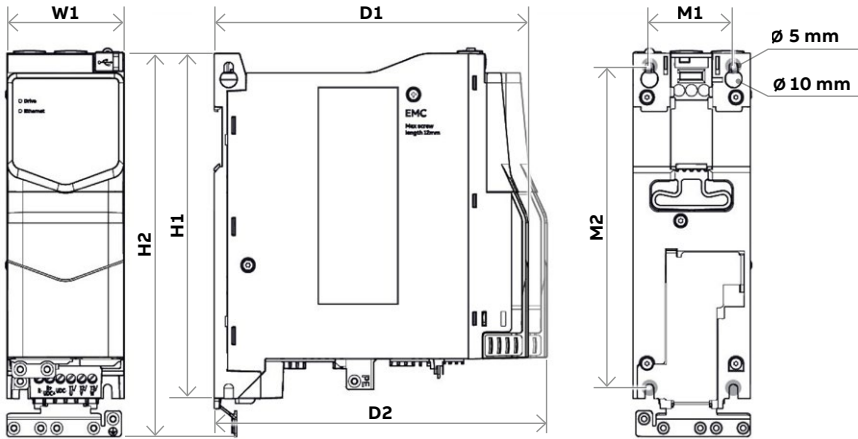
W = Width

D1 = Depth, front cover inner position

D2 = Depth, front cover outer position

M1 = Mounting hole distance, horizontal

M2 = Mounting hole distance, vertical



CONNECTION

Spring connectors for IO's

- 2×Digital input
- 2×Digital input/output

DIO1 is optimized for driving external contactor's +24VDC coil.

Now on-board

External +24 VDC supply to keep control unit alive.



STANDARD I/O CONNECTIONS		
Terminals	Descriptions	
Auxiliary voltage output and digital connections		
24VDC IN+	External +24 V DC input	
24VDC IN-	External +24 V DC common	
24VDC OUT	Auxiliary voltage output +24 V DC, max. 200 mA	
GND	Auxiliary voltage output common	
DICOM	Digital input 1 and 2 common	
DI1	Digital input 1	
DI2	Digital input 2	
DIO1	Digital input/output 1	
DIO2	Digital input/output 2	
DIOSRC	Digital output 1 and 2 auxiliary voltage	
DIOCOM	Digital input/output 1 and 2 common	
Safe Torque Off (STO)		
STO 24VDC	STO 24 V output	Safe Torque Off function.
SGND	STO ground	Factory connection.
STO1	STO 1 input	Both circuits must be closed for the drive to start.
STO2	STO 2 input	



RESISTOR BRAKING

Brake chopper

The brake chopper is built in as standard for the ACS380. It not only controls braking, but also supervises system status and detects failures such as brake resistor and resistor cable short-circuits, chopper short-circuit, and calculated resistor over-temperature. See the tables for internal brake chopper specifications for each drive type.

Brake resistor

The brake resistors are separately available for the ACS380. Resistors other than the standard option resistors may be used, provided that the specified resistance value is higher than the minimum resistance and that heat dissipation capacity of the resistor is sufficient for the drive application (see hardware manual). No separate fuses in the brake circuit are required if the conditions for the mains cable, for example, are protected with fuses and no mains cable/fuse overrating occurs.

Drive type	Frame size	Internal brake chopper					
		R_{min} (ohm)	R_{max} (ohm)	P_{BRcont} (kW)	P_{BRcont} (hp)	P_{BRmax} (kW)	P_{BRmax} (hp)
1-phase 230 V							
ACS380-E042C-02A4-1	R1	32.5	468	0.25	0.33	0.38	0.5
ACS380-E042C-03A7-1	R1	32.5	316	0.37	0.5	0.56	0.74
ACS380-E042C-04A8-1	R1	32.5	213	0.55	0.75	0.83	1.1
ACS380-E042C-06A9-1	R1	32.5	145	0.75	1	1.1	1.5
ACS380-E042C-07A8-1	R1	32.5	96.5	1.1	1.5	1.7	2.2
ACS380-E042C-09A8-1	R2	32.5	69.9	1.5	2	2.3	3
ACS380-E042C-12A2-1	R2	19.5	47.1	2.2	3	3.3	4.4
3-phase 230 V							
ACS380-E040C-02A4-2	R1	39	474	0.25	0.33	0.38	0.5
ACS380-E040C-03A7-2	R1	39	319	0.37	0.5	0.56	0.74
ACS380-E040C-04A8-2	R1	39	217	0.55	0.75	0.83	1.1
ACS380-E040C-06A9-2	R1	39	145	0.75	1	1.13	1.5
ACS380-E040C-07A8-2	R1	39	105	1.1	1.5	1.65	2.2
ACS380-E040C-09A8-2	R1	20	71	1.5	2	2.25	3
ACS380-E040C-12A2-2	R2	20	52	2.2	2	3.3	4.4
ACS380-E040C-17A5-2	R3	16	38	3	3	4.5	6
ACS380-E040C-25A0-2	R3	16	28	4	5	6	8
ACS380-E040C-033A-2	R3	8	17	5.5	7.5	8.25	11
ACS380-E040C-048A-2	R4	3	14	7.5	10	11.25	15
ACS380-E040C-055A-2	R4	3	10	11	15	16.5	21.99
3-phase 400 V							
ACS380-E042C-01A8-4	R1	99	933	0.37	0.5	0.56	0.74
ACS380-E042C-02A6-4	R1	99	628	0.55	0.75	0.83	1.1
ACS380-E042C-03A3-4	R1	99	428	0.75	1	1.13	1.5
ACS380-E042C-04A0-4	R1	99	285	1.1	1.5	1.65	2.2
ACS380-E042C-05A6-4	R1	99	206	1.5	2	2.25	3
ACS380-E042C-07A2-4	R1	53	139	2.2	2	3.3	4.4
ACS380-E042C-09A4-4	R1	53	102	3	3	4.5	6
ACS380-E042C-12A6-4	R2	32	76	4	5	6	8
ACS380-E042C-17A0-4	R3	32	54	5.5	7.5	8.25	11
ACS380-E042C-25A0-4	R3	23	39	7.5	10	11.25	15
ACS380-E042C-033A-4	R3	16	33	11	15	17	22
ACS380-E042C-038A-4	R4	6	24	15	20	23	30
ACS380-E042C-045A-4	R4	6	20	18.5	25	28	37
ACS380-E042C-050A-4	R4	6	20	22	30	30	40

Definitions

P_{BRmax} = The maximum braking capacity of the drive, when the length of the braking pulse is at most 1 minute for each 10 minutes ($P_{BRcont} \times 1.5$). The maximum braking capacity must be more than the desired braking power.

P_{BRcont} = The continuous braking capacity of the drive

R_{max} = The maximum resistance value of the brake resistor that can provide P_{BRcont}

EMC – ELECTROMAGNETIC COMPATIBILITY

The ACS380-E machinery drive has a built-in EMC filter, category C2, for 3-phase 400 V ratings.

The emission limits are comparable to EMC standards according to the table below.

EMC standards

The EMC product standard (EN 61800-3) 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 are applicable to industrial and domestic equipment and systems including components inside the drive. Drive units complying with the requirements of EN 61800-3 are 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 or require a motor to be connected as a load.

Domestic environments versus public low voltage networks

The first environment includes domestic premises. It also includes establishments directly connected without an intermediate transformer to a low voltage power supply network that supplies buildings used for domestic purposes. The second environment includes all establishments directly connected to public low voltage power supply networks.

Comparison of EMC standards				
EMC according to EN 61800-3 product standard	EN 61800-3 product standard	EN 55011, product family standard for industrial, scientific and medical (ISM) equipment	EN 61000-6-4, generic emission standard for industrial environments	EN 61000-6-3, generic emission standard for residential, commercial and light-industrial environments
1 st environment, unrestricted distribution	Category C1	Group 1, Class B	Not applicable	Applicable
1 st environment, restricted distribution	Category C2	Group 1, Class A	Applicable	Not applicable
2 nd environment, unrestricted distribution	Category C3	Group 2, Class A	Not applicable	Not applicable
2 nd environment, restricted distribution	Category C4	Not applicable	Not applicable	Not applicable

EMC compliance and maximum motor cable length				
Voltage (Product variant)	Frame size	EMC category (EN 61800-3), max. motor cable length		
		C1	C2 ^{a)}	C3
		With internal / external filter		
1-phase 230 V (ACS380-E04xx-xxx-1)	R1	– / 10 m	0 / 10 m	
	R2	– / – m	10 m / – m	
3-phase 230 V (ACS380-E04xx-xxx-2)	R1			
	R2	– / – m	– / 20 m	
	R3			
	R4			
3-phase 400 V (ACS380-E04xx-xxxx-4)	R1			30 m / 40 m
	R2	– /40 m	10 m / 40 m	20 m / 40 m
	R3			30 m / 40 m
	R4	– / 30 m	10 m / 30 m	30 m / 30 m

^{a)} ACS380-E drives frames R1 to R4 with C2 filters: maximum motor cable length is 100 m in C3 environment without external EMC filters.



ACS380-E DRIVES ARE COMPATIBLE

with the extensive ABB product offering



Programmable Logic Controllers PLCs

The AC500, AC500-eCo, AC500-S and AC500-XC scalable PLC ranges provide solutions for small, medium and high-end applications. Our AC500 PLC platform offers different performance levels and is the ideal choice for high availability, extreme environments, condition monitoring, motion control or safety solutions, and applications where the highest level of security is mandatory.



AC motors

ABB's low-voltage AC motors are designed to save energy, reduce operating costs and minimize unscheduled downtime. General performance motors ensure convenience, while process performance motors provide a broad set of motors for the process industries and heavy-duty applications.



Control panels

CP600-eCo, CP600, CP600-C and CP600-Pro control panels offer a wide range of features and functionalities for maximum operability. ABB control panels are distinguished by their robustness and easy usability, providing all the relevant information from production plants and machines at a single touch. Also, includes ABB's internal drive communication protocol – for seamless integration with ABB drives, enabling efficient parameter read/write access and real-time monitoring and visualization.



All-compatible drives portfolio

The all-compatible drives share the same architecture: software platform; tools; user interfaces; and options. However, there is an optimal drive, from the smallest water pump to the biggest cement kiln, and everything in between.



Safety products

ABB safety products help machine builders create production-friendly and safe work environments for operators. We deliver machine safety solutions for single machines or entire production lines. Our long experience of helping customers making solutions for demanding environments has made us experts in combining production demands with safety demands for production-friendly solutions.

ABB MOTION SERVICES

ABB Motion Services helps customers around the globe by maximizing uptime, extending product life cycle, and enhancing the performance and energy efficiency of electrical motion solutions. We enable innovation and success through digitalization by securely connecting and monitoring our customers' motors and drives, increasing operational uptime, and improving efficiency. We make the difference for our customers and partners every day by keeping their operations running profitably, safely and reliably.



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 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 modernizations	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.

The benefit for you is clear information about the status of your drives and the exact 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, the availability of product and services, the life-cycle plan, and recommended actions.

Additional information

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