



Catalog

# ABB standard drives ACS310, 0.37 to 22 kW / 0.5 to 30 hp

Power and productivity  
for a better world™





# Two ways to select your drive

**Choice 1:** Simply contact your local ABB drives sales office (see page 17) and let them know what you want. Use page 3 as a reference section for more information.

OR

**Choice 2:** Build up your own ordering code using the simple 7-step approach below. Each step is accompanied by a reference to a page that is filled with useful information.

## Type code structure:

ACS310 - 03E - 02A6 - 2 + J400

1

Product series

2

Rating and types

3

Voltages

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# ABB standard drives



ACS310 - 03E - 02A6 - 2 + J400

## ABB standard drives

An extension to the ABB standard drives family is a series of drives specifically designed for variable torque applications such as pumps and fans. The specific design includes a powerful set of features which benefit pump and fan applications including built-in PID controllers and PFC (pump and fan control) that varies the drive's performance in response to changes in pressure, flow or other external data.

These features, combined with pre-programmed application macros, an intuitive user interface and several assistant screens, speed up the installation, parameter setting and commissioning of the drive.

## Applications

- Booster pumps
- Submersible pumps
- Irrigation pumps
- Supply and return fans

## Highlights

- Pump and fan features
- Unified height and depth
- Energy efficiency calculators
- Advanced or basic control panel depending on application
- Embedded Modbus RS-485 fieldbus interface
- FlashDrop tool for fast parameter setting

Feature	Advantage	Benefit
<b>Pump and fan control (PFC) macro to control pumps and fans in parallel</b>	<p>One drive controls several pumps or fans and eliminates the need for an external programmable logic controller.</p> <p>Reduces motor stress and increases lifetime when auxiliary motors are driven according to the needed pump/fan capacity.</p> <p>Interlock function enables one motor to be disengaged from the mains supply while others continue operating in parallel.</p>	<p>Saves cost of additional drives and external PLC.</p> <p>Longer life for pump or fan system while reducing maintenance time and costs.</p> <p>Maintenance can be carried out safely without stopping process.</p>
<b>Soft pump and fan control macro (SPFC)</b>	<p>Reduces unwanted pressure peaks in pumps and pipelines when an auxiliary motor is started.</p>	<p>Reduces maintenance costs.</p> <p>Longer life for pump or fan system.</p> <p>Smoother processes.</p>
<b>Pump protection functions</b>	<p>Improved protection with pre-programmed features for preventive maintenance.</p> <p>Helps avoid corrosion in the pump systems.</p>	<p>Reduces maintenance costs.</p> <p>Longer life for pump system.</p>
<b>Embedded Modbus RS-485 fieldbus interface</b>	<p>No need for external fieldbus options.</p> <p>Integrated and compact design.</p>	<p>Saves costs of external fieldbus devices.</p> <p>Increases reliability.</p>
<b>On/off cooling fan control</b>	<p>Cooling fan rotates only when the drive is modulating, thereby cooling only when needed.</p>	<p>Silent operation.</p> <p>Improves drive's energy efficiency.</p>
<b>Software controlled phase inversion</b>	<p>Fast and easy way to change the phase order of the motor rotation.</p>	<p>Time savings as there is no need to change the output cable order manually.</p>
<b>Short parameter menu view</b>	<p>Only the most needed drive parameters are shown on the drive's parameter view. Complete parameter view can be changed by setting one parameter.</p>	<p>Time savings as user can quickly see the most important parameters.</p> <p>Fast commissioning of the drive.</p>
<b>Energy optimizer</b>	<p>Improved motor efficiency with intelligent drive control method, especially while operating on partial loads.</p>	<p>Boosts energy efficiency due to lower motor currents.</p> <p>Reduces audible noise from the motor.</p>
<b>Energy efficiency tools</b>	<p>Several tools to illustrate saved energy (kWh), carbon-dioxide emissions (CO<sub>2</sub>) and cost in local currency.</p>	<p>Shows direct impact on energy bill and helps control operational expenditure (OPEX).</p>
<b>Full output current at 50 °C ambient</b>	<p>Drive can be operated in ambient temperatures up to 50 °C without de-rating the output current.</p>	<p>Optimized drive dimensioning for wide temperature range.</p>
<b>Load analyzer</b>	<p>Load analyzer saves process data, such as current and torque values, which can be used to analyze the process and dimensioning of the drive and motor.</p>	<p>Optimized dimensioning of the drive, motor and process.</p>

# Technical specification



ACS310 - 03E - 02A6 - 2 + J400

## Mains connection

<b>Voltage and power range</b>	3-phase, 200 to 240 V $\pm$ 10% 0.37 to 11 kW (0.5 to 15 hp) 3-phase, 380 to 480 V $\pm$ 10% 0.37 to 22 kW (0.5 to 30 hp)
<b>Frequency</b>	48 to 63 Hz

## Motor connection

<b>Voltage</b>	3-phase, from 0 to $U_{supply}$
<b>Frequency</b>	0 to 500 Hz
<b>Continuous loading capability</b>	$I_{2N}$ maximum continuous output current at ambient temperature of +40 °C. No overloadability, derating 1% for every additional 1 °C up to 50 °C.  $I_{LD}$ continuous output current at max ambient temperature of +50 °C. 10% overloadability for one minute every ten minutes.
<b>Switching frequency</b>	
Default	4 kHz
Selectable	4 to 16 kHz with 4 kHz steps
<b>Acceleration time</b>	0.1 to 1800 s
<b>Deceleration time</b>	0.1 to 1800 s

## Environmental limits

<b>Ambient temperature</b>	-10 to 50 °C (14 to 122 °F), no frost allowed
<b>Altitude</b>	
Output current	Rated current available at 0 to 1000 m (0 to 3281 ft) reduced by 1% per 100 m (328 ft) over 1000 to 2000 m (3281 to 6562 ft)
<b>Relative humidity</b>	Lower than 95% (without condensation)
<b>Degree of protection</b>	IP20 / optional NEMA 1 enclosure
<b>Enclosure colour</b>	NCS 1502-Y, RAL 9002, PMS 420 C
<b>Contamination levels</b>	IEC721-3-3 No conductive dust allowed Class 1C2 (chemical gases) Class 1S2 (solid particles)
Transportation	Class 1C2 (chemical gases) Class 1S2 (solid particles)
Storage	Class 2C2 (chemical gases) Class 2S2 (solid particles)
Operation	Class 3C2 (chemical gases) Class 3S2 (solid particles)

## Product compliance

Low Voltage Directive 2006/95/EC  
Machinery Directive 98/37/EC  
EMC Directive 2004/108/EC  
Quality assurance system ISO 9001  
Environmental system ISO 14001  
CE and C-Tick approvals  
UL, cUL and GOST R pending  
RoHS compliant

## EMC

Class C3 (2<sup>nd</sup> environment unrestricted distribution) inbuilt as standard  
Class C2 and C1 with external optional EMC filters

## Programmable control connections

<b>Two analog inputs</b>	
Voltage signal	
Unipolar	0 (2) to 10 V, $R_{in} > 312$ k $\Omega$
Bipolar	-10 to 10 V, $R_{in} > 312$ k $\Omega$
Current signal	
Unipolar	0 (4) to 20 mA, $R_{in} = 100$ $\Omega$
Bipolar	-20 to 20 mA, $R_{in} = 100$ $\Omega$
Resolution	0.1%
Accuracy	$\pm$ 1%
<b>One analog output</b>	0 (4) to 20 mA, load < 500 $\Omega$
<b>Auxiliary voltage</b>	24 V DC $\pm$ 10%, max. 200 mA
<b>Five digital inputs</b>	12 to 24 V DC with internal or external supply, PNP and NPN, pulse train 0 to 16 kHz
Input impedance	2.4 k $\Omega$
<b>One relay output</b>	
Type	NO + NC
Maximum switching voltage	250 V AC/30 V DC
Maximum switching current	0.5 A/30 V DC; 5 A/230 V AC
Maximum continuous current	2 A rms
<b>One digital output</b>	
Type	Transistor output
Maximum switching voltage	30 V DC
Maximum switching current	100 mA/30 V DC, short circuit protected
Frequency	10 Hz to 16 kHz
Resolution	1 Hz, 0.2%
Accuracy	
<b>Serial communication</b>	
<b>Fieldbus</b>	Modbus RS-485, embedded
Cable	Shielded twisted pair, impedance 100 to 150 ohms
Termination	Trunk line, drop lines allowed
Isolation	Bus interface isolated from drive
Transfer rate	1.2 to 76.8 kbit/s
Communication type	Serial, asynchronous, half duplex
Protocol	Modbus
<b>Chokes</b>	
<b>AC input chokes</b>	External option For reducing THD in partial loads and to comply with EN 61000-3-2.
<b>AC output chokes</b>	External option To achieve longer motor cables

# Ratings, types, voltages and construction



ACS310 - 03E - 02A6 - 2 + J400

## Type code

This is the unique reference number (shown above and in column 4, right) that clearly identifies your drive by power rating and frame size. Once you have selected the type code, the frame size (column 6) can be used to determine the drive dimensions, shown on the next page.

## Voltages

ACS310 is available in two voltage ranges:

2 = 200 - 240 V

4 = 380 - 480 V

Insert either "2" or "4", depending on your chosen voltage, into the type code shown above.

## Construction

"03E" within the type code (shown above) varies depending on the drive phase and EMC filtering. Choose below the one you need.

03 = 3-phase

E = EMC filter connected, 50 Hz frequency

U = EMC filter disconnected, 60 Hz frequency

(In case the filter is required it can easily be connected.)

Ratings				Type code	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}^{1)}$ A	$I_{LD}^{2)}$ A		
<b>3-phase supply voltage 200 - 240 V units</b>					
0.37	0.5	2.6	2.4	ACS310-03X-02A6-2	R0
0.55	0.75	3.9	3.5	ACS310-03X-03A9-2	R0
0.75	1.0	5.2	4.7	ACS310-03X-05A2-2	R1
1.1	1.5	7.4	6.7	ACS310-03X-07A4-2	R1
1.5	2.0	8.3	7.5	ACS310-03X-08A3-2	R1
2.2	3.0	10.8	9.8	ACS310-03X-10A8-2	R2
3.0	4.0	14.6	13.3	ACS310-03X-14A6-2	R2
4.0	5.0	19.4	17.6	ACS310-03X-19A4-2	R2
5.5	7.5	26.8	24.4	ACS310-03X-26A8-2	R3
7.5	10.0	34.1	31.0	ACS310-03X-34A1-2	R4
11.0	15.0	50.8	46.2	ACS310-03X-50A8-2	R4
<b>3-phase supply voltage 380 - 480 V units</b>					
0.37	0.5	1.3	1.2	ACS310-03X-01A3-4	R0
0.55	0.75	2.1	1.9	ACS310-03X-02A1-4	R0
0.75	1.0	2.6	2.4	ACS310-03X-02A6-4	R1
1.1	1.5	3.6	3.3	ACS310-03X-03A6-4	R1
1.5	2.0	4.5	4.1	ACS310-03X-04A5-4	R1
2.2	3.0	6.2	5.6	ACS310-03X-06A2-4	R1
3.0	4.0	8.0	7.3	ACS310-03X-08A0-4	R1
4.0	5.0	9.7	8.8	ACS310-03X-09A7-4	R1
5.5	7.5	13.8	12.5	ACS310-03X-13A8-4	R3
7.5	10.0	17.2	15.6	ACS310-03X-17A2-4	R3
11.0	15.0	25.4	23.1	ACS310-03X-25A4-4	R3
15.0	20.0	34.1	31	ACS310-03X-034A-1	R4
18.5	25.0	41.8	38	ACS310-03X-41A8-4	R4
22.0	30.0	48.4	44	ACS310-03X-48A4-4	R4

X within the type code stands for E or U.

<sup>1)</sup>  $I_{2N}$  maximum continuous output current at ambient temperature of +40 °C. No overloadability, derating 1% for every additional 1 °C up to 50 °C.

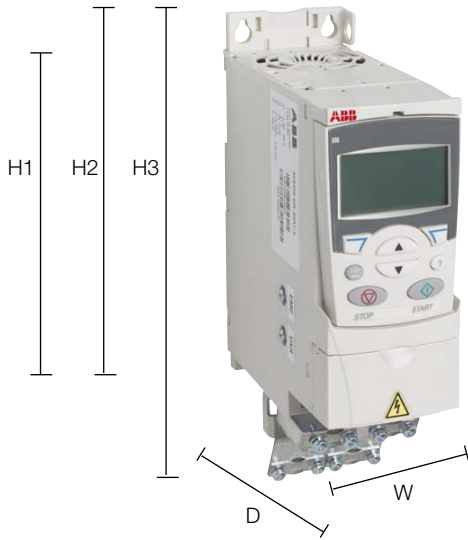
<sup>2)</sup>  $I_{LD}$  continuous output current at max ambient temperature of +50 °C. 10% overloadability for one minute every ten minutes.



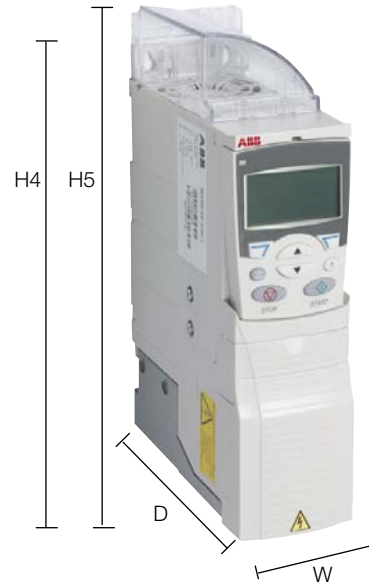
# Dimensions

ACS310 - 03E - 02A6 - 2 + J400

## Cabinet-mounted drives (IP20 UL open)



## Wall-mounted drives (NEMA 1)



Frame size	IP20 UL open						NEMA 1				
	H1 mm	H2 mm	H3 mm	W mm	D mm	Weight kg	H4 mm	H5 mm	W mm	D mm	Weight kg
R0	169	202	239	70	161	1.2	257	280	70	169	1.6
R1	169	202	239	70	161	1.2	257	280	70	169	1.6
R2	169	202	239	105	165	1.5	257	282	105	169	1.9
R3	169	202	236	169	169	2.5	260	299	169	177	3.1
R4	181	202	244	260	169	4.4	270	320	260	177	5.0

H1 = Height without fastenings and clamping plate  
H2 = Height with fastenings but without clamping plate  
H3 = Height with fastenings and clamping plate  
H4 = Height with fastenings and NEMA 1 connection box  
H5 = Height with fastenings, NEMA 1 connection box and hood  
W = Width  
D = Depth

# Options



ACS310 - 03E - 02A6 - 2 + J400

## How to select options

The options shown in the table are available within the ACS310 range. The control panels have an associated 4-figure option code, which is shown in the second column. It is this code that replaces J400 in the type code above.

Options	Ordering code	Description	Model
Protection class	)	NEMA 1 (R0, R1, R2)	MUL1-R1
	)	NEMA 1 (R3)	MUL1-R3
	)	NEMA 1 (R4)	MUL1-R4
Control panel	J400	Assistant control panel	ACS-CP-A <sup>2)</sup>
	J404	Basic control panel	ACS-CP-C <sup>1)</sup>
Panel mounting kit	)	Panel mounting kit	ACS/H-CP-EXT
	)	Panel holder mounting kit	OPMP-01
Extension module	)	Relay output extension module	MREL-01
Tools	)	FlashDrop tool	MFDT-01
	)	DriveWindow Light 2	DriveWindow Light 2
External options	)	Input chokes	
	)	EMC filters	
	)	Output chokes	
Remote monitoring	)	Ethernet adapter	SREA-01

) = Ordering with a separate MRP code number.

<sup>1)</sup> The ACS310 is compatible with ACS-CP-C basic control panel Rev M or later.

<sup>2)</sup> The ACS310 is compatible with ACS-CP-A assistant control panel Rev E or later.  
(New panel series manufactured since 2007 with serial number YXXXXXXX,  
where year Y = 7 or greater and revision R = E, F, G, ...)



# Options Interfaces



ACS310 - 03E - 02A6 - 2 + J400



Panel cover  
(included as standard)



Basic control panel



Assistant control panel



Panel mounting kits

## User interfaces

### Panel cover

The purpose of the panel cover is to protect the drive's connection surfaces. The ACS310 drive is delivered with a panel cover as standard. In addition there are two alternative control panels available as options.

### Basic control panel

The basic control panel features a single line numeric display. The panel can be used to control the drive, set parameter values or copy them from one drive to another.

### Assistant control panel

The assistant control panel features a multilingual alphanumeric display for easy drive programming. The control panel has various assistants and an inbuilt help function to guide the user. It includes a real time clock, which can be used during fault logging and in controlling the drive, such as start/stop. The control panel can be used for copying parameters for back up or for downloading to another drive. A large graphical display and soft keys make it extremely easy to navigate.

### Panel mounting kits

To attach the control panel to the outside of a larger enclosure, two panel mounting kits are available. A simple and cost-efficient installation is possible with the ACS/H-CP-EXT kit, while the OPMP-01 kit provides a more user-friendly solution, including a panel platform that enables the panel to be removed in the same way as a drive-mounted panel. The panel mounting kits include all hardware required, including 3 m extension cables and installation instructions.

# Options Interfaces



ACS310 - 03E - 02A6 - 2 + J400

## Machine interfaces

The embedded Modbus RS-485 fieldbus brings connectivity to major automation systems. A single twisted pair cable avoids large amounts of conventional cabling, thereby reducing costs and increasing system reliability.

## Extension module

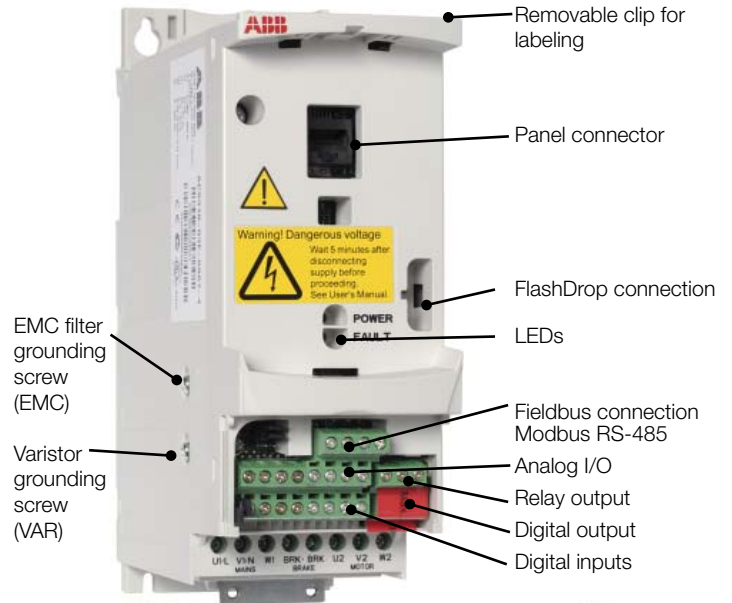
**MREL-01**  
ACS310 has one relay output as standard. The optional MREL-01 module offers three additional relay outputs. The outputs can be configured for different functions by setting selected parameters.

## Protection and installation

**NEMA 1 kit**  
The NEMA 1 kit includes a connection box for finger protection, conduit tube installation, and a hood for protection against dirt and dust.

**Terminal cover**  
The terminal cover is for protection of the I/O connections.

**Clamping plates**  
The clamping plates are used for protection against electrical disturbances. The clamping plates with the clamps are included in the drive package as standard.



Terminal cover (included as standard)



Clamping plates (included as standard)



# Options

## External



A separate order line and type code is required for any of these external options.

### FlashDrop tool

FlashDrop is a powerful palm sized tool for fast and easy parameter selecting and setting. It gives the possibility to hide selected parameters to protect the machine. Only the parameters needed in the application are shown. The tool can copy parameters between two drives or between a PC and a drive. All the above can be done without a power connection to the drive – in fact, it is not even necessary to unpack the drive.

#### DrivePM

DrivePM (Drive parameter manager) is a tool to create, edit and copy parameter sets for FlashDrop. For each parameter/group the user has a possibility to hide it, which means that the drive user does not see the parameter/group at all.

#### DrivePM requirements

- Windows 2000/XP
- Free serial port from a PC

#### FlashDrop package includes

- FlashDrop tool
- DrivePM software on a CD-rom
- User's manual in English and in pdf-format on the CD-rom
- Cable OPCA-02 for connection between the PC and FlashDrop tool
- Battery charger



### SREA-01 Ethernet adapter

SREA-01 Ethernet adapter with remote monitoring access can send process data, data logs and event messages independently, without a PLC or a dedicated on-site computer. It has an internal web server for configuration and drive access.



# Options

## External



A separate order line and type code is required for any of these external options.

### EMC filters

The ACS310's internal EMC filter is designed to meet category C3 requirements of EN/IEC 61800-3 standard. External EMC filters are used to enhance the drives electromagnetic performance in conjunction with its internal filtering. Maximum motor cable length depends on required electromagnetic performance, according to the table below.

Type code ACS310-	Frame size	Filter type	Cable length with EMC filter			Cable length without EMC filter	
			C1 [m]	C2 [m]	C3 [m]	C3 [m]	C4 [m]
<b>3-phase supply voltage 200 - 240 V units</b>							
03X-02A6-2	R0	RFI-32	10	30	-	30	30
03X-03A9-2	R0	RFI-32	10	30	-	30	30
03X-05A2-2	R1	RFI-32	10	30	50	30	50
03X-07A4-2	R1	RFI-32	10	30	50	30	50
03X-08A3-2	R1	RFI-32	10	30	50	30	50
03X-10A8-2	R2	RFI-32	10	30	50	30	50
03X-14A6-2	R2	RFI-33	10	30	50	30	50
03X-19A4-2	R2	RFI-33	10	30	50	30	50
03X-26A8-2	R3	RFI-34	10	30	50	30	50
03X-34A1-2	R4	RFI-34	10	30	50	30	50
03X-50A8-2	R4	RFI-34	10	30	50	30	50
<b>3-phase supply voltage 380 - 480 V units</b>							
03X-01A3-4	R0	RFI-32	30	30	-	30	30
03X-02A1-4	R0	RFI-32	30	30	-	30	30
03X-02A6-4	R1	RFI-32	50	50	50	30	50
03X-03A6-4	R1	RFI-32	50	50	50	30	50
03X-04A5-4	R1	RFI-32	50	50	50	30	50
03X-06A2-4	R1	RFI-32	50	50	50	30	50
03X-08A0-4	R1	RFI-32	50	50	50	30	50
03X-09A7-4	R1	RFI-32	50	50	50	30	50
03X-13A8-4	R3	RFI-33	40	40	40	30	50
03X-17A2-4	R3	RFI-33	40	40	40	30	50
03X-25A4-4	R3	RFI-33	40	40	40	30	50
03X-034A-1	R4	RFI-34	-	30	-	30	50
03X-41A8-4	R4	RFI-34	-	30	-	30	50
03X-48A4-4	R4	RFI-34	-	30	-	30	50

### EMC standards in general

EN 61800-3 (2004), product standard	EN 55011, product family standard for industrial, scientific and medical (ISM) equipment	EN 61800-3/A11 (2000), product standard
Category C1	Group 1 Class B	1 <sup>st</sup> environment, unrestricted distribution
Category C2	Group 1 Class A	1 <sup>st</sup> environment, restricted distribution
Category C3	Group 2 Class A	2 <sup>nd</sup> environment, unrestricted distribution
Category C4	Not applicable	2 <sup>nd</sup> environment, restricted distribution

# Options

## Software tools



A separate order line and type code is required for any of these software tool options.

### DriveWindow Light 2

DriveWindow Light 2 is an easy-to-use start-up and maintenance tool for ACS310 drives. It can be used in an offline mode, which enables parameter setting at the office even before going to the actual site. The parameter browser enables viewing, editing and saving of parameters. The parameter comparison feature makes it possible to compare parameter values between the drive and saved parameter files. With the parameter subset you can create your own parameter sets. Controlling the drive is one of the features in DriveWindow Light. With this software tool, you can monitor up to four signals simultaneously. This can be done in both graphical and numerical format. Any signal can be set to stop the monitoring from a predefined level.

#### Start-up wizards

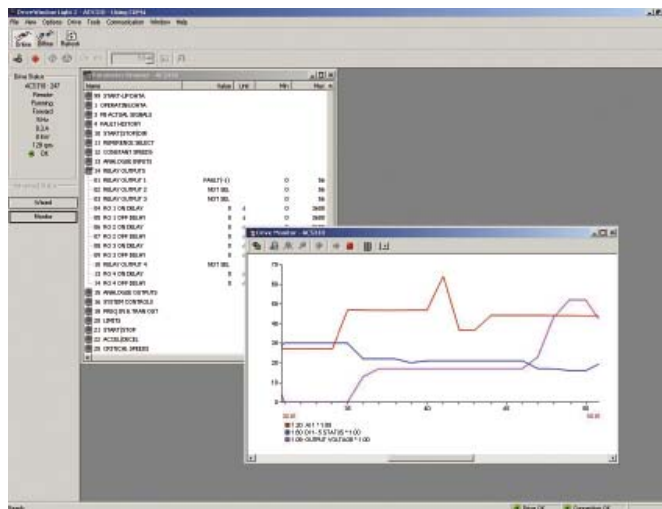
Start-up wizards make the setting of parameters easy. Simply launch the wizard, select an appropriate assistant e.g. for setting analog outputs, and all parameters related to this function are shown together with help pictures.

#### Highlights

- Editing, saving and downloading parameters
- Graphical and numerical signal monitoring
- Drive control
- Start-up wizards

#### DriveWindow Light requirements

- Windows NT/2000/XP
- Free serial port from a PC
- Free control panel connector





## Cooling

ACS310 is fitted with cooling fans as standard. The cooling air must be free from corrosive substances and must not be above the maximum ambient temperature of 50 °C. For more specific limits see the Technical specification - Environmental limits in this catalogue.

### Cooling air flow

Type code	Frame size	Heat dissipation		Air flow	
		w	BTU/Hr	m <sup>3</sup> /h	ft <sup>3</sup> /min
<b>3-phase supply voltage 200 - 240 V units</b>					
ACS310-03X-02A6-2	R0	42	142	-*)	-*)
ACS310-03X-03A9-2	R0	54	183	-*)	-*)
ACS310-03X-05A2-2	R1	64	220	24	14
ACS310-03X-07A4-2	R1	86	295	24	14
ACS310-03X-08A3-2	R1	88	302	21	12
ACS310-03X-10A8-2	R2	111	377	21	12
ACS310-03X-14A6-2	R2	140	476	52	31
ACS310-03X-19A4-2	R2	180	613	52	31
ACS310-03X-26A8-2	R3	285	975	71	42
ACS310-03X-34A1-2	R4	328	1119	96	57
ACS310-03X-50A8-2	R4	488	1666	96	57
<b>3-phase supply voltage 380 - 480 V units</b>					
ACS310-03X-01A3-4	R0	35	121	-*)	-*)
ACS310-03X-02A1-4	R0	40	138	-*)	-*)
ACS310-03X-02A6-4	R1	50	170	13	8
ACS310-03X-03A6-4	R1	60	204	13	8
ACS310-03X-04A5-4	R1	69	235	13	8
ACS310-03X-06A2-4	R1	90	306	19	11
ACS310-03X-08A0-4	R1	107	364	24	14
ACS310-03X-09A7-4	R1	127	433	24	14
ACS310-03X-13A8-4	R3	161	551	52	31
ACS310-03X-17A2-4	R3	204	697	52	31
ACS310-03X-25A4-4	R3	301	1029	71	42
ACS310-03X-034A-1	R4	408	1393	96	57
ACS310-03X-41A8-4	R4	498	1700	96	57
ACS310-03X-48A4-4	R4	588	2007	96	57

X within the type code stands for E or U.

\*) Frame size R0 with free convection cooling.

## Fuses

Standard fuses can be used with ABB standard drives. For input fuse connections see table below.

### Selection table

Type code	Frame size	IEC Fuses		UL Fuses	
		A	Fuse type*)	A	Fuse type*)
<b>3-phase supply voltage 200 - 240 V units</b>					
ACS310-03X-02A6-2	R0	10	gG	10	UL class T
ACS310-03X-03A9-2	R0	10	gG	10	UL class T
ACS310-03X-05A2-2	R1	10	gG	15	UL class T
ACS310-03X-07A4-2	R1	16	gG	15	UL class T
ACS310-03X-08A3-2	R1	16	gG	15	UL class T
ACS310-03X-10A8-2	R2	16	gG	20	UL class T
ACS310-03X-14A6-2	R2	25	gG	30	UL class T
ACS310-03X-19A4-2	R2	25	gG	35	UL class T
ACS310-03X-26A8-2	R3	63	gG	60	UL class T
ACS310-03X-34A1-2	R4	80	gG	80	UL class T
ACS310-03X-50A8-2	R4	100	gG	100	UL class T
<b>3-phase supply voltage 380 - 480 V units</b>					
ACS310-03X-01A3-4	R0	10	gG	10	UL class T
ACS310-03X-02A1-4	R0	10	gG	10	UL class T
ACS310-03X-02A6-4	R1	10	gG	10	UL class T
ACS310-03X-03A6-4	R1	10	gG	10	UL class T
ACS310-03X-04A5-4	R1	16	gG	15	UL class T
ACS310-03X-06A2-4	R1	16	gG	15	UL class T
ACS310-03X-08A0-4	R1	16	gG	20	UL class T
ACS310-03X-09A7-4	R1	20	gG	25	UL class T
ACS310-03X-13A8-4	R3	25	gG	30	UL class T
ACS310-03X-17A2-4	R3	35	gG	35	UL class T
ACS310-03X-25A4-4	R3	50	gG	50	UL class T
ACS310-03X-034A-1	R4	80	gG	80	UL class T
ACS310-03X-41A8-4	R4	100	gG	100	UL class T
ACS310-03X-48A4-4	R4	100	gG	100	UL class T

X within the type code stands for E or U.

\*) According to IEC-60269 standard.

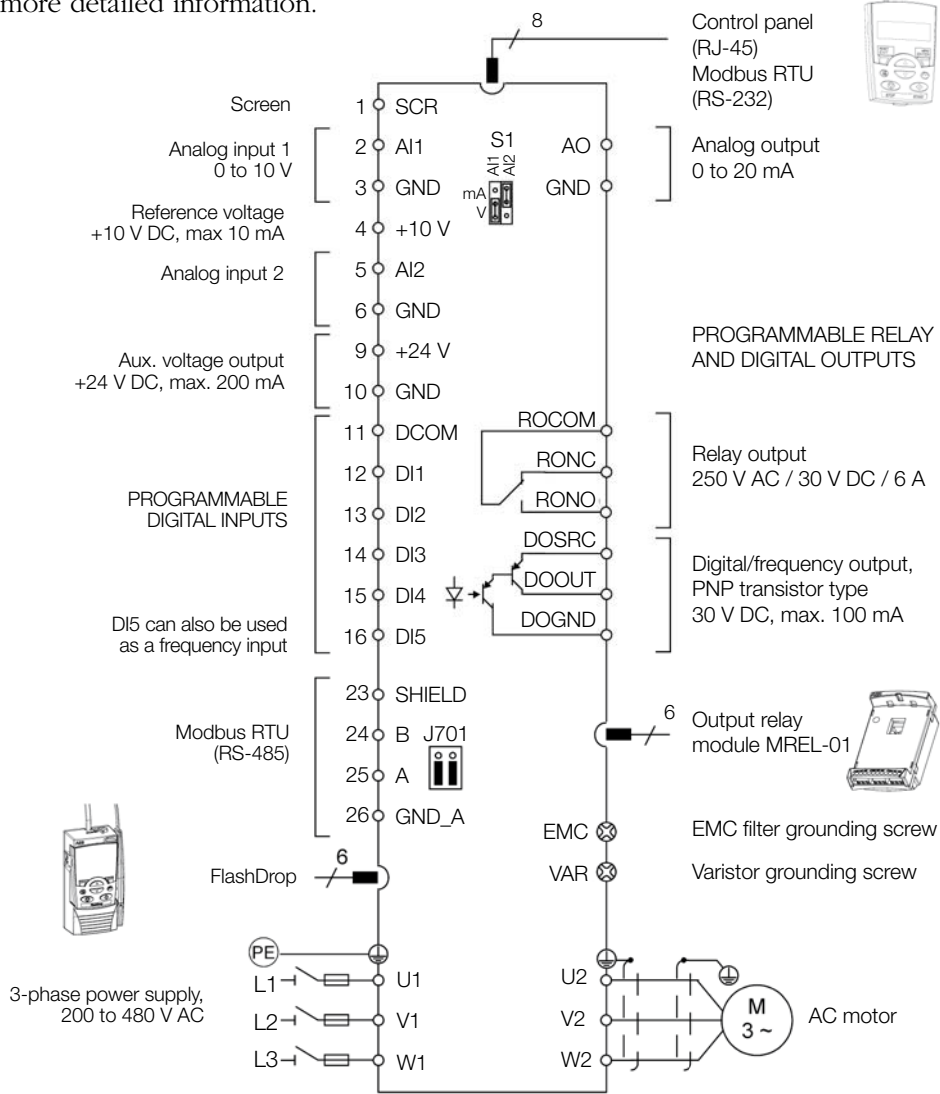
### Free space requirements

Enclosure type	Space above mm	Space below mm	Space on left/right mm
All frame sizes	75	75	0

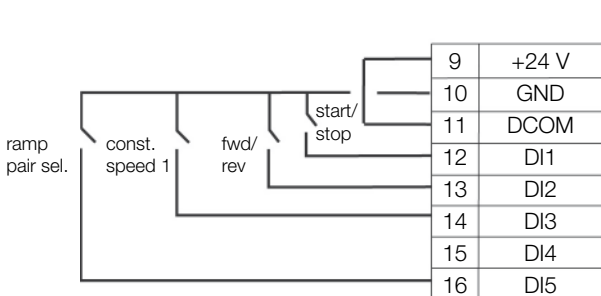
# Control connections



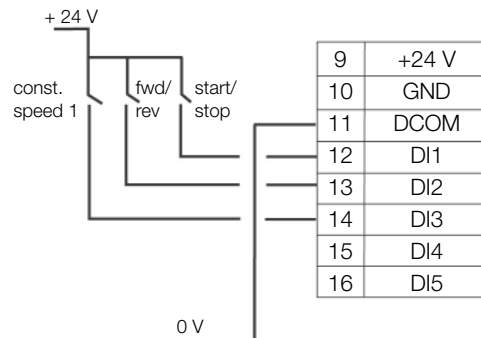
The diagram below gives an overview of ACS310 control connections. Please refer to the ACS310 User's Manual for more detailed information.



## DI configuration NPN connected (sink)

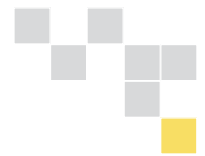


## DI configuration PNP connected (source) with external power supply





# Services



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.



## Complete lifecycle management maximizes 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 product lifecycle phase.

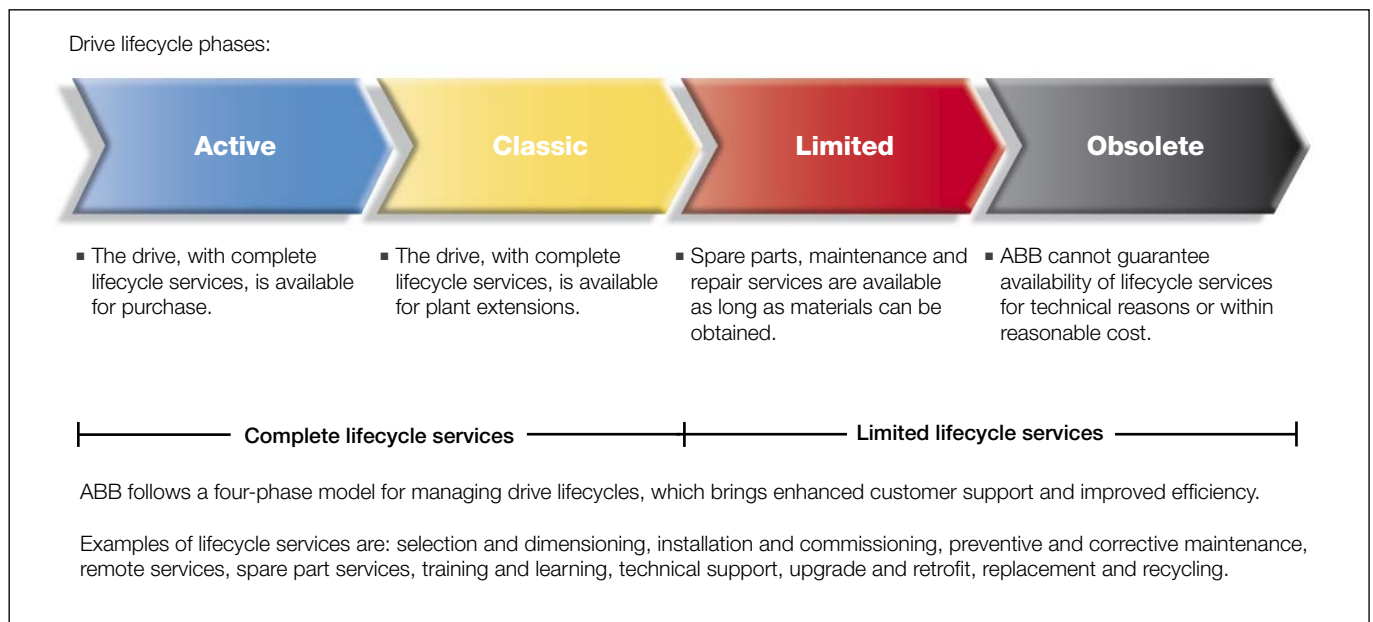
Drive specific maintenance schedules are also based on this four-phase model. Thus, a customer knows precisely the timing of the part replacements plus all other maintenance related actions. The model also

helps the customer when deciding about upgrades, retrofits and replacements.

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

More detailed information on services can be found in the brochure "ABB drives - Lifecycle services for low voltage drives."

### ABB drive lifecycle management model





# Contact and web information

[www.abb.com/drives](http://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](http://www.abb.com/drives) and [www.abb.com/drivespartners](http://www.abb.com/drivespartners).

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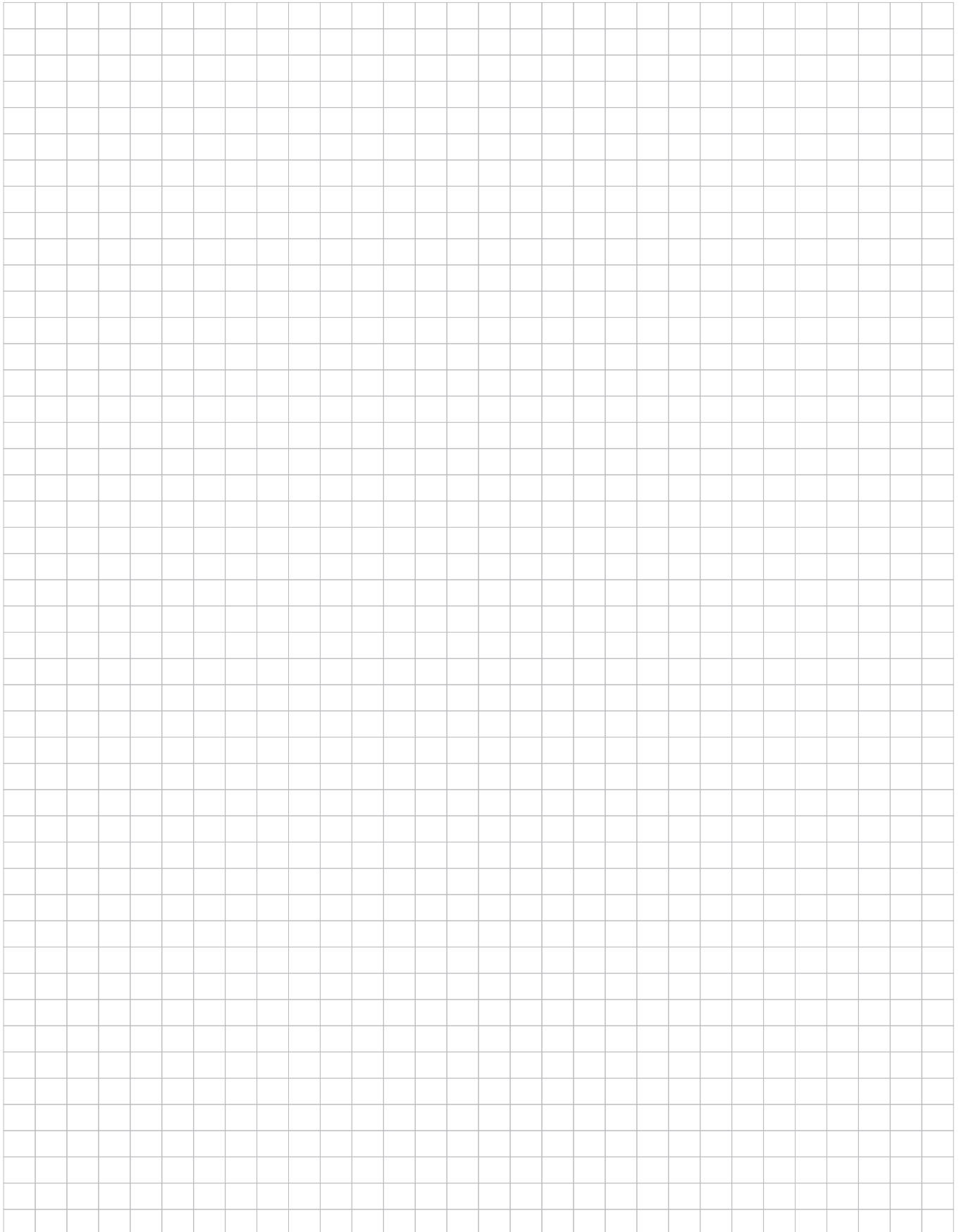
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