LOW VOLTAGE AC DRIVES

ABB general purpose drives

ACS530-04, R10-R11, 250 kW to 500 kW

ACS530-04: general purpose drives

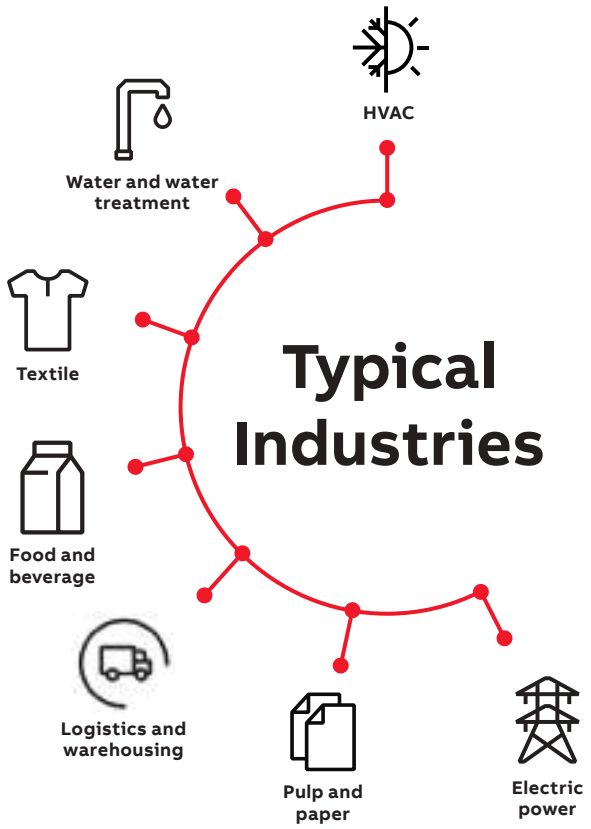
Drive modules for cabinet installations.

Contents

The all-compatible ACS530-04 series

Ease of use – a reliable choice

ACS530-04 is part of the ABB all-compatible drives portfolio. It is designed for cabinet installations and optimizing cabinet design. Its selection, installation, commissioning and maintenance are simple and easy, it is an ideal choice for system integrators, cabinet manufacturers and OEMs.



Designed for cabinet installation
The compact cabinet design ensures optimal cabinet installation in a wide range of mechanical applications, and saving spaces and costs.
The configured cooling fans ensure effective heat dissipation and product's reliability.
ACS530-04 drive module is compatible with Rittal cabinet.

Ease of use
ACS530-04 offers various built-in functions such as AC choke, optional EMC filter, STO etc., which simplifies drive's selection, installation and usage.
Installation and commissioning are quick and easy thanks to the intuitive graphical interface control panel.
Integrated PID, PFC, SPFC and other control macros, effectively reduce commissioning engineer's workload.

Scalability
Acs530-04 and other ABB all-compatible drives have same selection rules and tools, and have the same easy-to-use PC tools and similar, intuitive multi-language user interface and parameter structure, unified installation size, commissioning style and unified interface and optional parts.
Features could be continuously optimized and upgraded to better meet customer needs.

Excellent services
ABB responds quickly to customer needs.
Products are delivered from multi-center warehouses to save time on logistics. The 7*24 global service network and standard warranty policy ensure you get excellent ABB services.

Picture's size is not same with product's actual size.

Ease of use and reliable

The ACS530-04 general purpose drive is part of the ABB all-compatible drives portfolio, it ensures you a reliable and efficient use experience at all stages of its life cycle.

Designed for reliability

An enhanced coated circuit board and 55 °C designed ambient temperature make ACS530-04 a reliable choice for customers. This is further enhanced by a full load test on every single drive during production.

Built-in functions

ACS530-04 complies with multiple IEC standards, and integrates with built-in functions such as AC choke, optional EMC filter, Modbus RTU interface and safe torque off. This helps the customer simplify drive selection and save costs.

Built-in various control mcros

ACS530-04 has various built-in control macros like PID, PFC and SPFC etc., customers can get required functions through least parameter modification, these macros impove commissioning efficiency and reduce engineer's workload greatly.

Basic control panel as standard

The control panel has graphical menus that help you complete basic settings quickly, and is easy to operate.

The ACS530-04's important built-in features and compact design make it reliable and ease of use in traditional applications even under harsh environmental conditions.

Energy saving

According to square torque, even a small speed change can cause a huge difference in energy consumption. Through the energy efficiency control, ACS530-04 helps customers reduce energy consumption and save costs throughout entire life cycle.
Built-in energy optimization function – energy saving calculator helps you monitor the energy consumption of the production process to ensure Drive is more efficient.
Compliance with Ecodesign regulations, ACS530-04 is in IE2 energy efficiency level.

STO-Safe Torque Off

The built-in STO function, designed according to IEC61800-5-2 standard and meets EU Machinery Directive 2006/42/EC. It fulfills SIL3/PL e standard and has TUV certification.

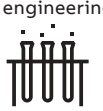
CE

ACS530-04 meets the requirements of the Low Voltage Directive, Machinery Directive, EMC Directive, RoHS III Directive and Ecodesign Directive.

All-compatible user interface

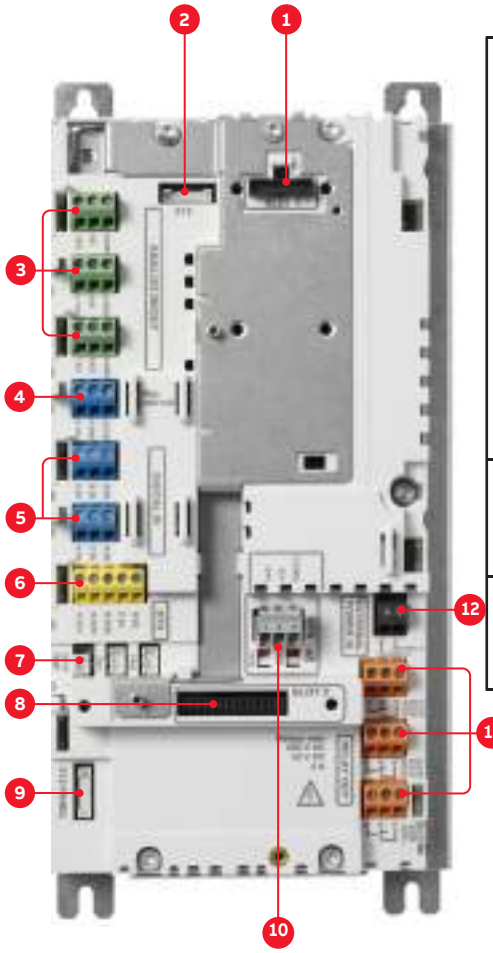
ACS530-04 is part of the ABB all-compatible drives portfolio. Other products in this portfolio include ACS380, ACS580 and ACS880. All these drives have the same easy-to-use PC tools, and a similar intuitive multi-language user interface and parameter structure, which simplifies learning and use.

Typical industries and applications

Industry	Application	Customer benefits
HVAC 	• Applied in pumps and fans for heat source companies, heat exchange stations and boiler plants • Applied in rail transit, railroad, tunnel, highway and bridge design; mainly used for fans, followed by pumps • Applied in pumps, fans and compressors in the following fields: airports, stations, stadiums, refrigeration or freezer manufacturers, and medical and health institutions with requirements for air cleanliness	• A highly reliable design, including enhanced coating board and 55 °C designed ambient temperature ensure stable operation in high-temperature and high-humidity environments • The fire (surpass) mode is specially designed for tunnel fans • Reliable PID control to ensure stable fluid control • The advanced control panel facilitates commissioning • Optional THDi filter limit THDi<10%, complying with HVAC requirements • The motor has low noise, which better meets the requirements of HVAC applications
Water and water treatment 	• Municipal water supply • Water and water treatment • Irrigation water application • Seawater desalination • Fountain system	• Advanced PID loop control keeps the pipeline pressure stable • Supports the SPFC function of multi-pump control, which helps achieve a smooth pump start and stable water pressure • Optimized motor control method reduces motor noise and extends motor service life • Enhanced coating board and 55 °C designed ambient temperature ensure long-term reliable operation even in humid environments • Designed for cabinet installation
Textile 	• Process fans and pumps for open-end spinning • Circulating water pumps and material conveyor belts in textile mills • Air conditioning systems in textile mills	• Enhanced coating and 55 °C designed ambient temperature ensure long-term reliable operation, even in harsh environments • PID control ensures the stable operation of textile process equipment • Easy access to modern industrial networks; supports a variety of mainstream communication protocols • The STO (Safe Torque Off) function, which complies with EU safety standards, ensures the safety of equipment and personnel
Food and beverage 	• Applied in mixers, conveyor belts and production equipment rooms on the production line • Refrigeration • Cold storage	• Enhanced coating board and 55 °C designed ambient temperature ensure better adaptability to dusty environments • High-quality process control improves the production efficiency of the food industry, as well as saving energy and improving work safety • ABB's superior control solutions guarantee stable speed control and high-speed operation of equipment during production • Supports a variety of mainstream communication protocols; easy access to modern industrial networks • Reliable PID control ensures stable beverage flow
Logistics and warehousing 	• Conveying on non-heavy-load plane	• ABB's superior control solution ensures the smooth operation of materials • Supports packaging solutions for various products for materials transport • Supports a variety of mainstream communication protocols; easy access to modern industrial networks • The STO (Safe Torque Off) function, which meets EU safety standards, ensures the safety of equipment and personnel
Pulp and paper 	• Auxiliary drive of paper machine • Pulping process	• A highly reliable design, including enhanced coating board and 55 °C designed ambient temperature ensure stable operation in high-temperature and high-humidity environments • Simple and easy-to-understand HMI facilitates commissioning by system integrators and troubleshooting by customers • The STO (Safe Torque Off) function meeting the EU safety standards ensures the safety of equipment and personnel • The built-in event log function facilitates recording of the running status and detection of causes of problems
Electric power 	• Fans and pumps for boilers in power plants • Pumps and circulating water pumps for pumped storage • Air cooling island • Residual heat recycling in power plants	• The power-loss ride-through function enables the drive to keep running normally, even if a short-term power failure occurs • Provides a larger power range to meet the needs of various fans • A highly reliable design, including enhanced coating and independent air ducts, ensures stable operation in high-temperature and high-humidity environments • Supports a variety of mainstream communication protocols; easy access to modern industrial networks • A complete control solution and the high quality of ABB's products ensure the equipment's reliable operation
Chemical engineering 	• Circulating water pumps and ventilation fans for chemical processes • Production in the pharmaceutical field (pharmaceutical production lines, mixers and related equipment for environmental protection in production)	• The design, including enhanced coating and 55 °C designed ambient temperature, effectively protect components from corrosion and ensures reliable operation • Simple and easy-to-understand HMI facilitates the commissioning by system integrators and troubleshooting by customers • The power-loss ride-through function enables the drive to keep running normally, even if a short-term power failure occurs • The STO (Safe Torque Off) function, which meets EU safety standards, ensures the safety of equipment and personnel
Others 	• Circulating pump • Ventilation fan	• Simple and easy-to-understand HMI facilitates commissioning by system integrators and troubleshooting by customers • The STO (Safe Torque Off) function, which meets EU safety standards, ensures the safety of equipment and personnel • A highly reliable design, including enhanced coating and independent air ducts, ensures stability in dusty environments • A built-in maintenance timer ensures regular equipment maintenance

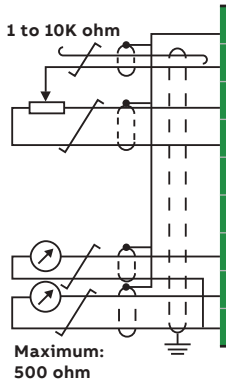
Standard interface and extensions for plug-in connectivity

ACS530-04 drives offer a wide range of standard interfaces.
In addition, the drive has two option slots that can be used for extensions, including fieldbus adapters and input/output extension modules.
For further information, please see the ACS530-04 user manual.



1. Fieldbus adapter
2. Keep for internal use
3. Analog inputs
4. Auxilary voltage output
5. Digital inputs
6. Safe torque off
7. Fan 2/fan 1
8. I/O extensions
9. Panel port
10. EIA-485
11. Relay outputs
12. 24 V AC/DC input

Default I/O Connection Diagram

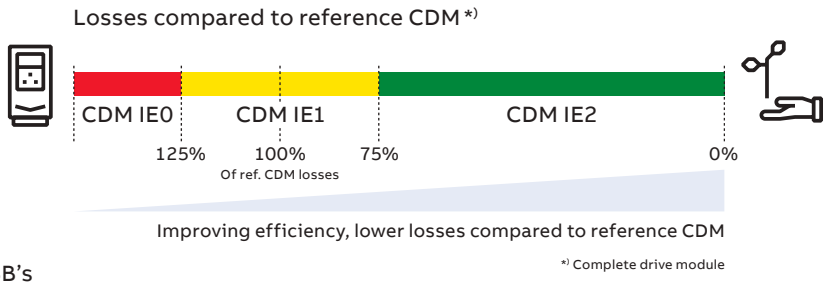


Terminal	Meaning	Default Macro Connections
XI	**Reference voltage and analog inputs and outputs**	
1	SCR	Signal cable shielding layer
2	AI1	Manual frequency setting 1:0 to 10 V
3	AGND	Analog input ground
4	+10 V	Output reference voltage 10 V DC
5	AI2	Not used
6	AGND	Analog input ground
7	AO1	Output frequency: 0 to 20 mA
8	AO2	Output current: 0 to 20 mA
9	AGND	Analog output ground
X2 & X3	**Aux. voltage output and programmable digital input**	
10	+24 V	Aux. voltage output +24 V DC, maximum: 250 mA
11	DGND	Aux. voltage output ground
12	DCOM	Digital input common terminal
13	DI1	Stop (0)/start (1)
14	DI2	Forward (0)/Reverse (1)
15	DI3	Constant speed selection
16	DI4	Constant speed selection
17	DI5	Slope selection: Slope 1 (0)/Slope 2 (1)
18	DI6	Not used
X6,X7,X8	**Relay outputs**	
19	RO1C	Ready
20	RO1A	250 V AC/30 V DC
21	RO1B	2 A
22	RO2C	Operation
23	RO2A	250 V AC/30 V DC
24	RO2B	2 A
25	RO3C	Fault (-1)
26	RO3A	250 V AC/30 V DC
27	RO3B	2 A
X5	**EIA-485 Modbus RTU**	
29	B+	Built-in Modbus RTU fieldbus interface
30	A-	
31	DGND	The signal ground of communication must not be connected to the shielding layer of the communication line.
X4	**Safe torque off**	
34	OUT1	Safe torque off.
35	OUT2	
36	SGND	
37	IN1	
38	IN2	
X10		
40	24 V	AC/DC-in. Ext. 24 V AC/DC input to power up the control unit when the main supply is disconnected
41	24 V	AC/DC+

EU Ecodesign Regulation

The EU has agreed upon new, more demanding regulation (EU) 2019/1781, replacing regulation 640/2009. The new Ecodesign Regulation (EU) 2019/1781 sets the minimum efficiency levels not only for direct-on-line rated low voltage induction motors but now also for variable speed drives with a voltage up to 1000 V. The regulation will be implemented in two steps July 1, 2021 and July 1, 2023.

Variable speed drives



Step 1: July 1, 2021

IE2 efficiency level mandatory for AC drives

- Power range from 0.12 to 1000 kW.
- 3-phase drives with diode rectifier including ABB's micro, machinery, general purpose, industrial and industry-specific drives.
- Drive manufacturers must declare power losses in 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 will be CE marked.
- All the covered ABB products fulfill the requirements.

Excluded from the regulation:

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

Markings on the ABB AC drives

Unique identifier QR code to 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 side of the drive.

Step 2: July 1, 2023

No changes for drives from July 1, 2021

For more information, see Ecodesign tool: https://ecodesign.drivesmotors.abb.com/

Technical data

Mains connection	
Voltage	3-phase, U_N 380 to 480 V, +10%/-15%
Power range	250 to 500 kW
Frequency	47 to 63 Hz
Power factor	cosφ = 0.98
Efficiency (at nominal power)	98%
Efficiency class (IEC 61800-9-2)	IE2
Motor connection	
Voltage	0 to U_N, 3-phase
Frequency	0 to 500 Hz
Motor control	Scalar control

Product standards and certifications

CE
Low Voltage Directive 2014/35/EU, EN 61800-5-1: 2007
Machinery Directive 2006/42/EC, EN 61800-5-2: 2007, EN 62061:2005 + AC:2010 + A1:2013 + A2:2015, EN ISO 13849-1:2015, EN ISO 13849-2:201 2 And EN 60204-1:2018
EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012
RoHS III Directive 2011/65/EU, EN50581: 2012,
China RoHS II Standard GB/T 26572
Delegated directive (EU) 2015/863, EN IEC 63000:2018
Ecodesign Directive 2009/125/EC, standard EN 61800-9-2: 2017
Quality Assurance System ISO 9001 and Environmental System ISO 14001
Waste Electrical and Electronic Equipment (WEEE) 2002/96/EC
TÜV Nord certification (safety function)
Ecodesign (EU) 2019/1781

EMC meets EN 61800-3: 2004 + A1: 2012 standard

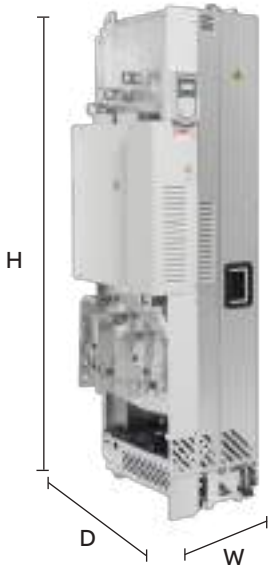
ACS530-04 with built-in C3 category filter option

Environmental limits	
Ambient temperature	
Transportation Storage	-40 to +70 °C -40 to +70 °C
Workspace	-15 to +40 °C, not required to reduce capacity, condensation not allowed +40 to +55 °C, required to reduce capacity
Cooling mode	Air-cooled Dry and clean air
Coating	Enhance coated circuit board
Altitude	0 to 1,000 m, not required to reduce capacity 1,000 to 4,000 m, capacity reduced by 1% per 100 m rise
Relative humidity	5 to 95%, condensation not allowed
Protection level	IP20
Safety features	Safe Torque Off (STO) EN 61800-5-2: SIL 3 IEC 61508 ed2: SIL 3 IEC 62061: SIL CL 3, ISO 13849-1, -2: PL e EN 60204-1
Pollution level	Conductive dust not allowed
Storage	IEC 60721-3-1, Class 1C2 (chemical gas), Class 1S2 (solid particles)*
Transportation	IEC 60721-3-2, Class 2C2 (chemical gas), Class 2S2 (solid particles)*
Operation	IEC 60721-3-3, Class 3C2 (chemical gas), Class 3S2 (solid particles)*

* C = chemically active substance
S = mechanically active substance

Dimensions

ACS530-04 IP00 or IP20 optional				
	Height	Width	Depth	Weight
Frame size	mm	mm	mm	kg
R10	1462	350	529	162
R11	1662	350	529	200



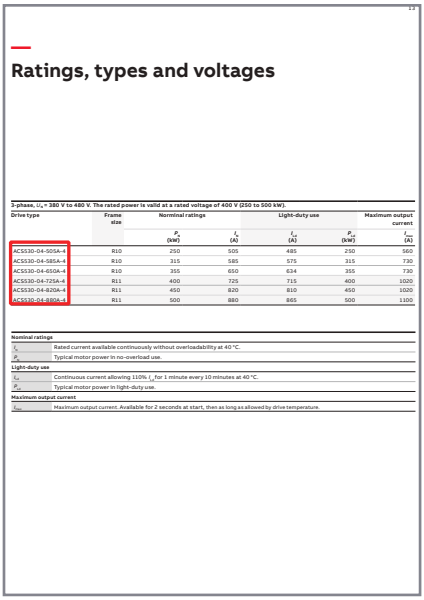
How to select a drive

The right drive is very easy to select. The following instructions show you how to order the right drive for your application.

1 Start by identifying your supply voltage. This indicates what rating table you should use – see page 13.

2 Choose the motor power and current rating from the ratings table on page 13.

3 **Select your drive's order code** from the rating table based on your motor's nominal power rating.



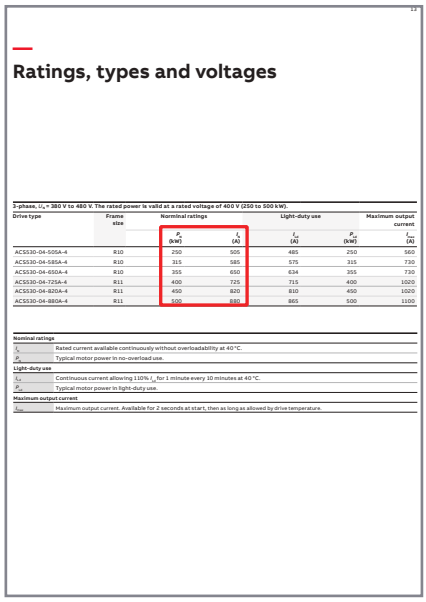
Ratings, types and voltages

3-phase, U_N = 380 V to 480 V. The rated power is valid at a rated voltage of 400 V (250 to 500 kW).

Drive type	Frame size	Nominal ratings P_N (kW)	I_N (A)	Light-duty use I_{Ld} (A)	P_{Ld} (kW)	Maximum output current I_{max} (A)
ACS530-04-505A-4	R10	250	505	485	250	560
ACS530-04-585A-4	R10	315	585	575	315	730
ACS530-04-650A-4	R10	355	650	634	355	730
ACS530-04-725A-4	R11	400	725	715	400	1020
ACS530-04-820A-4	R11	450	820	810	450	1020
ACS530-04-880A-4	R11	500	880	865	500	1100

Nominal ratings
I_N Rated current available continuously without overloadability at 40 °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 40 °C.
P_{Ld} Typical motor power in light-duty use.
Maximum output current
I_{max} Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

Page 13



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ACS530-04-585A-4	R10	315	585	575	315	730
ACS530-04-650A-4	R10	355	650	634	355	730
ACS530-04-725A-4	R11	400	725	715	400	1020
ACS530-04-820A-4	R11	450	820	810	450	1020
ACS530-04-880A-4	R11	500	880	865	500	1100

Nominal ratings
I_N Rated current available continuously without overloadability at 40 °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 40 °C.
P_{Ld} Typical motor power in light-duty use.
Maximum output current
I_{max} Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

Page 13

4 **Choose your options** (on page 14) and add the option codes to the drive's order code. Remember to use a "+" sign before each option code or order them as loose items.

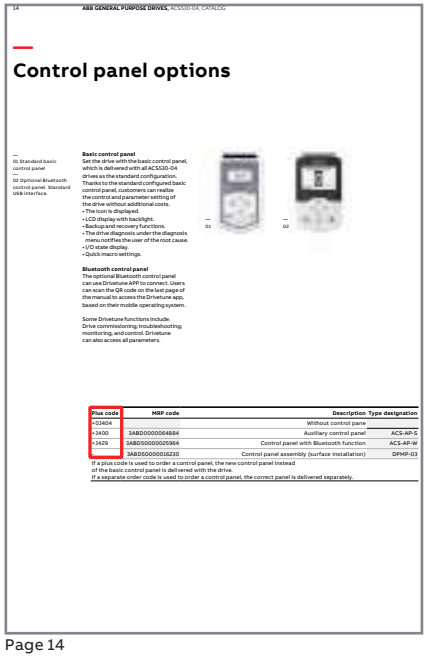


ABB GENERAL PURPOSE DRIVES, ACS530-04, CATALOG

Control panel options

— 01 Standard basic control panel
— 02 Optional Bluetooth control panel. Standard USB interface.

Basic control panel
Set the drive with the basic control panel, which is delivered with all ACS530-04 drives as the standard configuration. Thanks to the standard configured basic control panel, customers can realize the control and parameter setting of the drive without additional costs.
- The icon is displayed.
- LCD display with backlight.
- Backup and recovery functions.
- The drive diagnosis under the diagnosis menu notifies the user of the root cause.
- I/O state display.
- Quick macro settings.

— 01

— 02

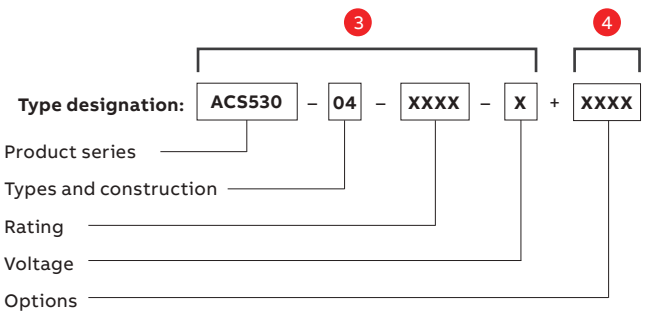
Bluetooth control panel
The optional Bluetooth control panel can use Drivetune APP to connect. Users can scan the QR code on the last page of the manual to access the Drivetune app, based on their mobile operating system.

Some Drivetune functions include: Drive commissioning, troubleshooting, monitoring, and control. Drivetune can also access all parameters.

Plus code	MRP code	Description	Type designation
+0J404	-	Without control panel	-
+J400	3ABD00000064884	Auxiliary control panel	ACS-AP-S
+J429	3ABD00000025964	Control panel with Bluetooth function	ACS-AP-W
	3ABD50000016230	Control panel assembly (surface installation)	DPMP-03

If a plus code is used to order a control panel, the new control panel instead of the basic control panel is delivered with the drive.
If a separate order code is used to order a control panel, the correct panel is delivered separately.

Page 14



Ratings, types and voltages

3-phase, U_N = 380 V to 480 V. The rated power is valid at a rated voltage of 400 V (250 to 500 kW).

Drive type	Frame size	Norminal ratings		Light-duty use		Maximum output current
		P_N (kW)	I_N (A)	I_{Ld} (A)	P_{Ld} (kW)	I_{max} (A)
ACS530-04-505A-4	R10	250	505	485	250	560
ACS530-04-585A-4	R10	315	585	575	315	730
ACS530-04-650A-4	R10	355	650	634	355	730
ACS530-04-725A-4	R11	400	725	715	400	1020
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ACS530-04-880A-4	R11	500	880	865	500	1100

Nominal ratings	
I_N	Rated current available continuously without overloadability at 40 °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 40 °C.
P_{Ld}	Typical motor power in light-duty use.
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

Control panel options

— 01 Standard basic control panel
— 02 Optional Bluetooth control panel. Standard USB interface.

Basic control panel
Basic control panel as standard, and is delivered with ACS530-04 drives together, no need to buy separately. With this basic control panel, customers can set parameters and control drives.
- The icon is displayed
- LCD display with backlight
- Backup and recovery functions
- The drive diagnosis under the diagnosis menu notifies the user of the root cause
- I/O state display
- Quick macro settings

Bluetooth control panel
The optional Bluetooth control panel can use Drivetune APP to connect. Users can scan the QR code on the last page of the manual to access the Drivetune app, based on their mobile operating system.

Some Drivetune functions include: Drive commissioning; troubleshooting; monitoring; and control. Drivetune can also access all parameters.

— 01

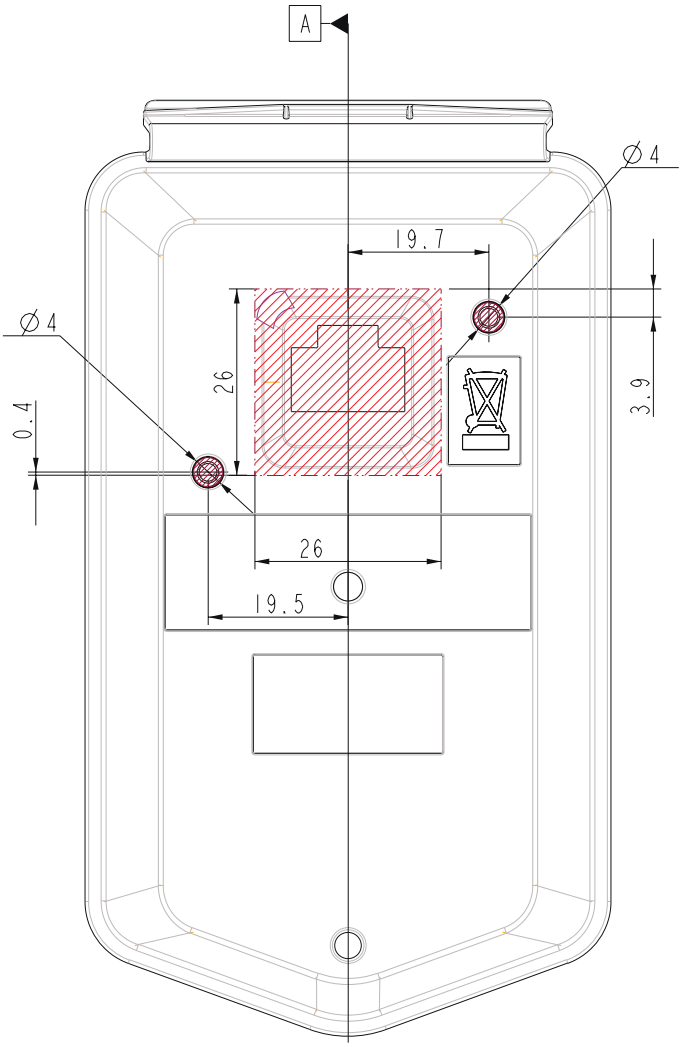
— 02

Plus code	MRP code	Description	Type designation
+0J404		Without control pane	
+J400	3ABD0000064884	Auxiliary control panel	ACS-AP-S
+J429	3ABD50000025964	Control panel with Bluetooth function	ACS-AP-W
-	3ABD50000016230	Control panel assembly (surface installation)	DPMP-03

If a plus code is used to order a control panel, the new control panel instead of the basic control panel is delivered with the drive.
If a separate order code is used to order a control panel, the correct panel is delivered separately.

Cabinet door opening size for basic control panel

The ACS-BP-S basic control panel can be directly installed on the cabinet door, just open a wiring hole and two screw holes on the cabinet door. Please refer to the right picture for the hole size (this picture is control panel's back side):



Panel's back side

Additional options

03 Cold configuration adapter CCA-01
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04 Remote monitoring tool NETA-21
—
05 Drive composer PC tool

Cold configuration adapter
The safely configured CCA-01 cold configuration adapter applicable to unpowered drives provides a serial communication interface for an unpowered ACS530-04 drive. Through the adapter, serial communication and control board power can be safely isolated. The power is supplied by the PC's USB port.

Remote monitoring tool
The drive can be conveniently accessed through the Internet or local Ethernet during remote monitoring, and access to the NETA-21 remote monitoring tool is enabled around the world. NETA-21 features a web server that is compatible with a standard network browser, ensuring easy access to the network-based user interface. Through the network interface, the user can configure the drive parameters and monitor the drive log data, load level, running time, energy consumption, I/O data and the temperature of the motor bearing connected to the drive.

PC Tool
The Drive Composer PC tool provides fast and synchronized setup, commissioning and monitoring for fully compatible drives. The free version offers startup and maintenance functions, which allows all drive information such as parameter recorders, faults, spare parts and lists to be collected in the support diagnostic file. The professional version of Drive Composer offers more features like a customized parameter window, graphic control charts of drive configuration, and enhanced monitoring and diagnostic functions.

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03


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Cold configuration adapter

MRP code	Description	Type designation
3ABD50000019865	Cold configuration adapter, packaged kit	CCA-01

—
Remote monitoring option

MRP code	Description	Type designation
3ABD0000094517	2 x control panel bus interface 2 x 32 = maximum 64 drives 2 x Ethernet interface SD memory card USB port for WLAN/3G	NETA-21

—
Drive Composer

Link/MRP code	Description	Type designation
new.abb.com/drives/software-tools/drive-composer	Download Drive Composer starter version for free	-
3ABD0000108087	Professional version stand-alone version of Drive Composer debugging software	DCPT-01 Single user version
3ABD0000145150	Professional version of Drive Composer debugging software for a maximum of 10 users	DCPT-01 10-user version
3ABD0000145151	Professional version of Drive Composer debugging software for a maximum of 20 users	DCPT-01 20-user version

Communication and connectivity options

— 06 Fieldbus adapter modules
— 07 Input/output extension modules

Fieldbus adapter module
The ACS530-04 standard drive is compatible with a wide variety of fieldbus protocols. It features the Modbus RTU fieldbus interface as standard. Compared with traditional hard-wired I/O connections, the fieldbus communication reduces wiring costs.

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Fieldbus options

MRP code	Fieldbus protocol	Type designation
3ABD68469341	DeviceNet™	FDNA-01
3ABD68469325	PROFIBUS DP. DPV0/DPV1	FPBA-01
3ABD68469376	CANopen®	FCAN-01
3ABD0000031336	Modbus RTU	FSCA-01
3ABD0000094512	ControlNet	FCNA-01
3ABD0000072069	EtherCAT®	FECA-01
3ABD0000072120	POWERLINK	FEPL-02
3ABD50000192786	Dual-port Ethernet/IP	FEIP-21
3ABD50000049964	Dual-port Modbus/TCP	FMBT-21
3ABD50000192779	Dual-port PROFINET IO	FPNO-21

Input/output extension modules

Standard input and output can be extended by using optional analog and digital input/output extension modules. These modules can be easily installed on the expansion slot.

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Input/output options

MRP code	Description	Type designation
3ABD50000004420	External 24 V AC and DC power supply, 2 x RO and 1 x DO	CMOD-01
3ABD50000004418	External 24 V power supply and isolated PTC interface	CMOD-02
3ABD50000004431	115/230 V digital input 6 x DI and 2 x RO	CHDI-01
3AXD50000137954	Bipolar analog I/O extended module	CBAI-01

Internal options

ACS530-04 series internal options

Plus code	Description
Constructoin	
+J410	Control panel door mounting kit (+J410 Includes DPMP-03)
+H370	Full-size input terminals
+P906	Remote control board
+0H371	No full size output terminals
+H356	DC busbar
+0H534	No pedestal
+0P919	No cabinet installation ramp
IP20 enclosure	
+B051	IP20 Finger safe
Safety	
-	ATEX-certified Safe Disconnection Function, Ex II (2) GD / CPTC-02 (+Q971 option sold only together with +L537 option)
Filter	
+E210	EMC/RFI-filter, C3, 2nd Environment, Unrestricted (Earthed & Unearthed Networks)
+E208	Common mode filter

Cooling and fuses

Cooling
ACS530-04 drives are fitted with variable-speed cooling air fans. The cooling air must be free from corrosive materials and not exceed the maximum ambient temperature of 40 °C (55 °C with derating).
The speed-controlled fans cool the drive only when needed, which reduces overall noise level and energy consumption.

Fuse connections
Standard fuses can be used with ABB general purpose drives. For input fuses, see the table below.

Cooling air flow and recommended input protection fuses for 400 V units

Type designation	Frame size	Cooling air flow 400 V units			Recommended input protection fuses for 400 V units ***)	
		Heat dissipation *)	Air flow	Max. noise level **)		IEC fuses
		(W)	(m^3/h)	(dBA)	(A)	Fuse type
ACS530-04-505A-4	R10	5602	1200	72	***	***
ACS530-04-585A-4	R10	6409	1200	72	***	***
ACS530-04-650A-4	R10	8122	1200	72	***	***
ACS530-04-725A-4	R11	8764	1200	72	***	***
ACS530-04-820A-4	R11	9862	1200	72	***	***
ACS530-04-880A-4	R11	10578	1420	72	***	***

*) Heat dissipation value is a reference for cabinet thermal design. According to Ecodesign regulations.
**) The maximum noise level at full fan speed. When the drive is not operating at full load and at maximum ambient temperature the noise level is lower.
***) For detailed fuse sizes and types, please see the ACS530-04 HW manuals.

du/dt filters

du/dt filtering suppresses inverter output voltage spikes and rapid voltage changes that stress motor insulation. Additionally, du/dt filtering reduces capacitive leakage currents and high-frequency emissions from the motor cable, as well as high-frequency losses and bearing currents in the motor.
The need for du/dt filtering depends on the motor insulation. For information on the construction of the motor insulation, consult the manufacturer. More information on the du/dt filters can be found in the ACS530-04 hardware manual.

du/dt filter

ACS530-04	du/dt filter type	
	IP00	
	FOCH0610-70	FOCH0875-70
400 V		
ACS530-04-505A-4	x	
ACS530-04-585A-4	x	
ACS530-04-650A-4	x	
ACS530-04-725A-4		x
ACS530-04-820A-4		x
ACS530-04-880A-4		x

Dimensions and weights of the du/dt filters

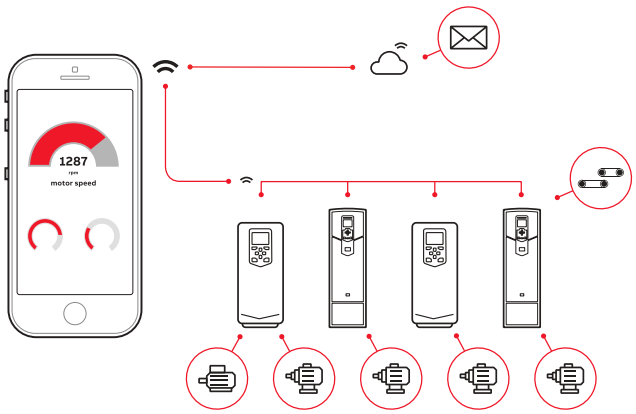
du/dt filter	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)
FOCH0610-70	662	319	293	65
FOCH0875-70	662	319	293	65

Circuit breakers

ACS530-04						
Product type	**Frame size**	**Aux. Contr. Volt.:**	**Miniature circuit breaker**	**T_{max} moulded case circuit breaker**	**Switch-disconnector Main Switch**	**Main contactor (≤40 °C)**
			ABB type	**ABB type**	**ABB type**	**ABB type**
U_N = 380...480 V (380, 400, 415 V)						
505A-4	R10	230/115	–	1SDA054412R1 (T5H 630 PR221DS-LS/I I_n = 630 3p F F)	OT630E	–
585A-4	R10	230/115	–	1SDA069428R1 (T6V 800 PR221DS-LS/I I_n = 800 3p F F)	OT630E	–
650A-4	R10	230/115	–	1SDA069428R1 (T6V 800 PR221DS-LS/I I_n = 800 3p F F)	OT800E	–
725A-4	R11	230/115	–	1SDA062770R1 (T7H 1000 PR231/P LS/I I_n = 1000A 3p F F)	OT800E	–
820A-4	R11	230/115	–	1SDA062770R1 (T7H 1000 PR231/P LS/I I_n = 1000A 3p F F)	OT1000E	–
880A-4	R11	230/115	–	1SDA062770R1 (T7H 1000 PR231/P LS/I I_n = 1000A 3p F F)	OT1000E	–

ABB Ability™ smartphone apps

Better connectivity and user experience with Drivetune



Easy and fast access to product information and support

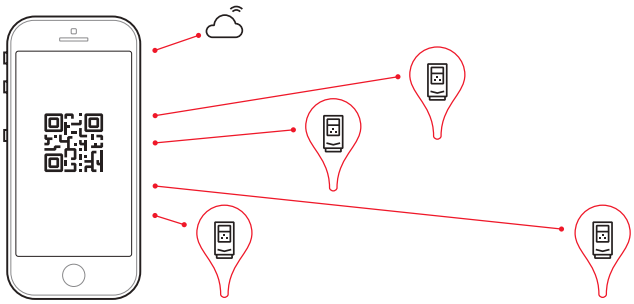
Start up, commission and tune your drive and application

Instantly access drive status and configuration with simplified user guidance

Optimize performance via drive troubleshooting features

Create and share backups and support packages

Services and support on the go with Drivebase



Search for support documents and contacts

Access your product and service information in the cloud from anywhere

View your drive's installed base and plan service activities

Use dynamic QR code to troubleshoot your drive

Report service events

Access information anywhere

Download the apps using the QR codes below or directly from app stores

Drivetune for commissioning and managing drives

Drivebase for guaranteed reliability and reduced downtime on production sites

We keep your world turning

Whatever your needs, we offer the most extensive service offering for drives, motors and generators, from spare parts and technical support to cloud-based condition monitoring solutions to keep your equipment running.

The global ABB service units complemented by external Value Providers form a service network on your doorstep. Maximize performance, uptime and efficiency throughout the life cycle of your assets.

With you every step of the way
Even before you buy a generator, drive, motor, bearing or softstarter, ABB's experts are on hand to offer technical advice, from dimensioning through to potential energy saving.

When you've decided on the right product, ABB and its global network of Value Providers can help with installation and commissioning. They are also on hand to support you throughout the operation and maintenance phases of the product's life cycle, providing maintenance programs tailored to your facility's needs.

ABB will ensure you are aware of any service opportunities. If you've registered your drives and motors with ABB, its engineers will proactively contact you to advise on your most effective service options. All this helps maximize performance, uptime and efficiency throughout the lifetime of your powertrain.

Replacements
Fast and efficient replacement services to minimize production downtime.

End-of-life services
Responsible dismantling, recycling and reusing of products, in accordance with local laws and industrial standards.

Maintenance
Systematic and organized maintenance and support over the life cycle of your assets.

Advanced services
Gain the unique ABB Ability™ digital advantage through data collection and analytics with advanced services.

Extensions, upgrades & retrofits
Up-to-date systems and devices with the best possible performance level.

Engineering & consulting
Ways to identify and improve the reliability, usability, maintainability and safety of your production processes.

Spares & consumables
Authentic, high-quality ABB spares and consumables with quick delivery.

Global service network 24/7

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"I need operational excellence, rapid response, improved performance and life cycle management."

Technical support & repairs
Quick and accurate response during emergencies, and efficient support during planned production breaks.

Installation & commissioning
Highly-trained and reliable installation and commissioning experts at your service.

Training
Comprehensive and professional training either at ABB's premises or your own.

Agreements
Comprehensive bundling of relevant services into one contract to suit your needs.

A lifetime of peak performance

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

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

ABB drives life cycle phases explained:

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

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

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

Step 1

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

Step 2

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

Notes

Notes

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

Online manuals
for the ACS530-04 drives.

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