ABB industrial drives

ACS800, drive modules

Technical catalog

0.75 to 250 HP @ 240 Vac
2 to 2200 HP @ 480 Vac
5 to 1900 HP @ 600 Vac

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ABB industrial drives

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ABB industrial drives

ACS800 - U4 x04 - XXXX - X + XXXX

ABB industrial drives

ABB industrial drives are designed for industrial applications, and especially for applications in process industries such as the converting, pulp & paper, metals, mining, cement, power, chemical, and oil & gas industries. ABB industrial drives are highly flexible AC drives that can be configured to meet the precise needs of industrial applications, and therefore order-based configuration is an integral part of the offering. These drives cover a wide range of powers and voltages, including industrial voltages up to 690 V. ABB industrial drives come with a wide range of built in options. A key feature of these drives is programmability, which makes adaptation to different applications easy.

Industrial design

ABB industrial drives are designed with current ratings to be used in industrial environments for applications requiring high overloadability. The heart of the drive is DTC, Direct Torque Control, that provides high performance and significant benefits: e.g. accurate static and dynamic speed and torque control, high starting torque and use of long motor cables. Built in drive options make the installation work fast and easy. The robust enclosures and cabinets, with a wide range of enclosure classes, as well as power terminals, are designed for harsh environments.

One of the most significant design criteria of ABB industrial drives has been long lifetime. Wearing parts such as fans and capacitors have been selected accordingly. This means - together with extensive protection features - excellent reliability in demanding industrial applications.

DTC Motor Control

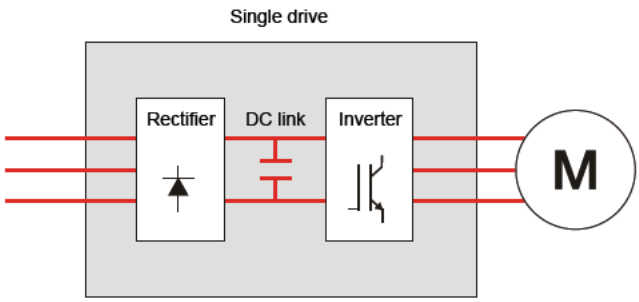
Direct Torque Control (DTC) developed by ABB has improved motor control accuracy without the requirement of speed feedback device. Accurate speed and torque control of the manufacturing process optimizes the quality of the end product. Many applications no longer require additional speed feedback when the ACS800 with DTC is used.

Industrial^{IT} enabled

ABB industrial drives are Industrial^{IT} enabled. This guarantees the user that ABB industrial drives can be easily integrated into ABB Industrial IT systems.

Single drives

The single drive configuration contains a rectifier, DC link and an inverter in one single AC drive unit.



The single drives are complete AC drives that can be installed without any additional cabinet or enclosure. The single drives are available as wall-mounted, free-standing and cabinet-built constructions. The standard protection class of the single drives is UL Type 1 and higher protection classes are available as an option.

Type Code

This is the unique reference number that clearly identifies your drive by construction, power rating voltage and selected options. By type code you can specify your drives from the wide range of available options, customer specific ones are added to the type code using the corresponding + code.

Direct Torque Control Technology

DTC Technology - key in the ACS800 family

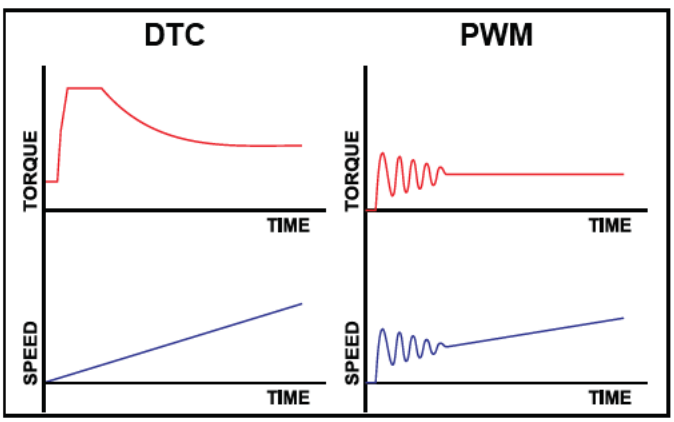
Direct Torque Control is an optimized motor control method for AC drives that allows direct control of all the core motor variables. This opens up AC drive capabilities never before realized and offers benefits for all applications.

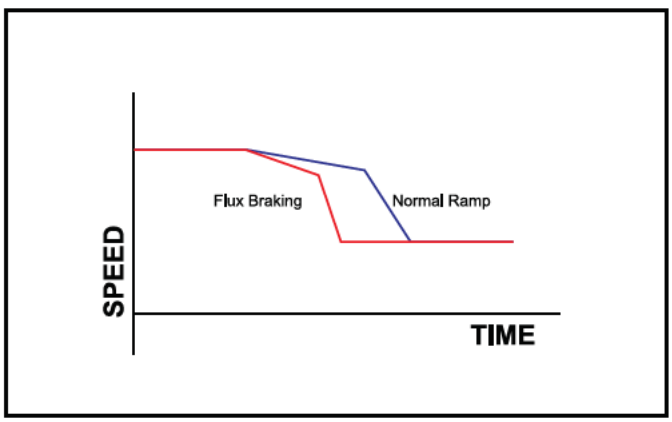
What is Direct Torque Control?

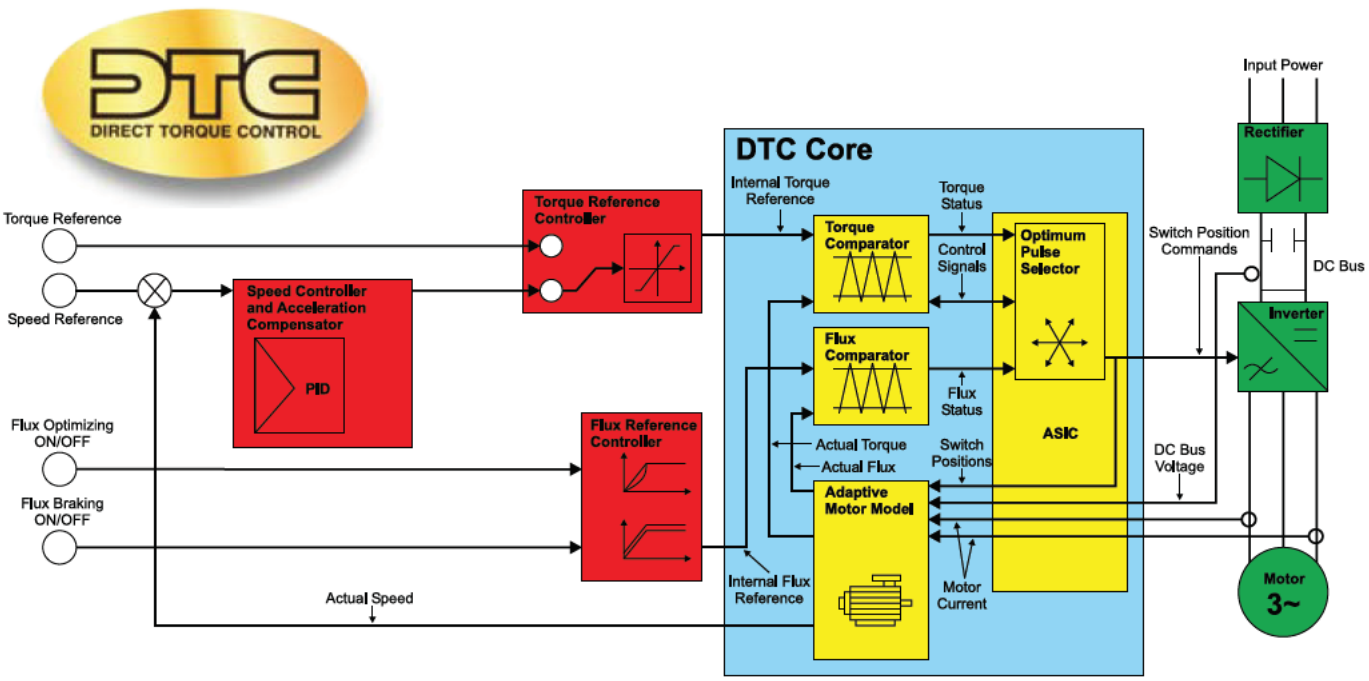
Direct Torque Control, DTC, is a revolutionary motor control method for AC drives which allows accurate control of both motor speed and torque without pulse encoder feedback from the motor shaft, down to zero speed. In DTC, stator flux and torque are used as primary control variables. The motor state calculations are updated by the high speed digital signal processor at 40,000 times a second in the advanced motor software model. Due to the continuous updating of the motor state and the comparison of the actual values to the reference values, every single switching in the drive is determined separately. This feature will always produce the optimal switching combination and can instantly react to dynamic changes such as load shocks or power interruptions. In DTC, there is no need for a separate voltage and frequency controlled pulse width modulator.

Unequalled motor speed & torque control

Open loop dynamic speed control accuracy matches that of AC drives using closed loop flux vector control. The ACS800 delivers static speed control accuracy of 0.1% to 0.5% of nominal speed - more than adequate for most industrial applications. In applications requiring even more precise speed regulation, an optional pulse encoder can be used. With an open loop torque step rise time of less than 5 milliseconds - compared to over 100 ms in AC drives using sensorless flux vector control - the ACS800 AC dive is unbeatable.







Module drive main features

Features	Benefits	Notes
Compact and complete		
Compact size, everything integrated	Less space and installation work required.	No need to install extra components such as input chokes or EMC filter.
Flange Mounting	Power section heat is outside the enclosure, thus requiring less enclosure cooling.	Option kit for frames R2-R6. Not available for other frames
Built in harmonic filter in all ACS800 drives	Low harmonics, meaning less interference and less heating in cables and transformers. Filter also protects the drive from line side transients.	
Wide range of options available	Standard solutions available from ABB to meet most customers application needs.	
Versatile braking options	Optimal braking options are always available. No need for an external braking chopper thus reducing size and installation cost.	Input contactor is not required for use with the brake chopper.
User interface		
User friendly customer interface	Easy and fast commissioning and operation.	Optional control panel has clear, alphanumeric display with start-up assistant that guides through the start-up procedure. Easy to use PC tools available for commissioning, maintenance, monitoring and programming.
Versatile connections and communications	Standard I/O covers most requirements. Connectable to commonly used fieldbuses.	Extensive standard and optional I/O.
Extensive programmability	Flexibility. Possible to replace relays or even a PLC in some applications.	Two levels of programmability: 1. Parameter programming (standard) 2. Adaptive programming (free block programming) - standard feature - more blocks available as options - all I/Os are programmable
Industrial design		
Wide power and voltage range	One product series can be used to meet all application needs, meaning less training and spare parts and standardized interface to drives.	0.75 to 600 Hp 208 to 690 Vac
Robust main circuit design	Suitable for heavy industrial use. Reliable. Long motor cables can be used without extra output filters.	Components dimensioned for heavy duty and long lifetime. Advanced thermal model allows high overloadability.

Module drive main features

Features	Benefits	Notes
Industrial design		
Extensive protection features	Enhanced reliability, fewer process interruptions. Poss bility to also protect motors and process.	Several adjustable limits to protect other equipment included.
Galvanic isolation of I/O	Safe and reliable operation without separate isolators and relays.	Isolated input signals and relay outputs as standard.
All terminals designed for industrial use	Sufficient size even for large aluminum cables. No need for special tools in I/O cabling.	
Worldwide approvals: CE, UL, cUL, CSA, C-Tick and GOST R	Products that can be used everywhere in the world.	C-Tick and Gost R are available on select product or as special type code.
Right performance for every application		
DTC, accurate dynamic and static speed and torque control	Excellent process control even without speed feedback device - improved product quality, productivity, reliability and lower investment cost	
DTC - allows high overloadability and gives high starting torque	Reliable, smooth start without overdimensioning the drive.	
DTC, fast control	No unnecessary trips or process interruptions.	Fast reaction to load or voltage variations prevents tripping. Rides through power interruptions by using kinetic energy of the load.
DTC, flux optimization and sophisticated motor model	Excellent motor and drive efficiency - cost savings for non-dynamic applications l ke pumps or fans.	Optimal flux in the motor reduces losses on applications where Dynamic Response requirements are minimal.
DTC, mechanics friendly	Less stress for mechanics improves reliability.	No shock torques. No torque ripple - minimized risk for torsional vibration. Active oscillation damping.
Available with both positioning control & normal speed/torque control in the same hardware	Same hardware & user interface for different applications means less training and fewer spare parts as well as easier system design and documentation.	
Made by ABB		
Global market leader in AC drives. Long experience.	Well proven, safe and reliable solutions. Application know-how.	
World wide service and support network	Professional support available around the world.	

Technical specification

Features

Voltage and power range	3-phase, U_{2IN} = 208 to 240 V, ± 10%, 3-phase, U_{5IN} = 380 to 500 V, ± 10% 3-phase, U_{7IN} = 525 to 690 V, ± 10% (600 V UL, CSA)
Short Circuit Current Rating (SCCR)	ACS800-U4/x04 = 100ka
Frequency	48 to 63 Hz
Nominal Impedance	3% Nominal Impedance R2-R3, DC Bus Choke R4 and greater, AC Reactor
Power factor	
Drive Module	$\cos\varphi_1$ = 0.98 (fundamental) $\cos\varphi$ = 0.93...0.95 (total)
ISU	$\cos\varphi_1$ = 1.0 (fundamental) $\cos\varphi$ = 0.99 (total)
Efficiency (at nominal power)	
ACS800-U4	98%
ACS800-x04	98% 97% with IGBT supply unit

Motor connection

Voltage	3-phase output voltage 0...U_{2IN}/U_{5IN}/U_{7IN} for > 500 V units please see "Filter selection table for ACS800" under the du/dt filters
Frequency	0...±300 Hz 0...±120 Hz with external du/dt filter
Field weakening point	8...300 Hz
Motor control	ABB's Direct Torque Control (DTC)
Torque control	Torque step rise time
Open loop	<5 ms with nominal torque
Closed loop	<5 ms with nominal torque
	Non-linearity:
Open loop	±4% with nominal torque
Closed loop	±1% with nominal torque
Speed control	Static accuracy
Open loop	10% of motor slip
Closed loop	0.01% of nominal speed
	Dynamic accuracy
Open loop	0.3...0.4% sec. with 100% torque step
Closed loop	0.1...0.2% sec. with 100% torque step

Environmental

Ambient temperature	
Transport	-40...+70°C
Storage	-40...+70°C
Operation	
ACS800-U4	-15...+50°C, no frost allowed 40...50°C at reduced output current (1% / 1°C)
ACS800-x04	0...+50°C, no frost allowed 40...50°C at reduced output current (1% / 1°C)
Cooling method	Dry clean air
Altitude	
0...1000 m	without derating
1000...4000 m	with derating ~ (1% / 100 m) (690 V units 1000...2000 m with derating)
Relative humidity	5 to 95%, no condensation allowed
Protection class	
IP20	Frames R2-R6 with IP55 power section for flange mounting
IP00	Frames R7, R8, and nxR8
Paint color	NCS 1502-Y (RAL 90021, PMS 420 C)
Contamination levels	No conductive dust allowed
Storage	IEC60721-3-1, Class 1C2 (chemical gases), Class 1S2 (solid particles)
Transportation	IEC60721-3-2, Class 2C2 (chemical gases), Class 2S2 (solid particles)
Operation	IEC60721-3-3, Class 3C1/3C2* (chemical gases), Class 3S2 (solid particles)

C = chemically active substances
S = mechanically active substances
* coated circuit boards

Product compliance

UL & cUL (508A or 508C) and CSA C22.2 NO.14-95, C-Tick, GOST R
NEC 430.126(A)(2) Motor Overtemperature Protection
Quality assurance system ISO 9001 and
Environmental system ISO 14001
CE
Low Voltage Directive 73/23/EEC with amendment 93/68/EEC
Machinery Directive 98/37/EC
EMC Directive 89/336/EEC with amendment 93/68/EEC 33

EMC (according to EN 61800-3)

2nd environment, unrestricted distribution category C3 as option up to R8
1st environment, restricted distr bution category C2 as option up to 1000 A input current

NOTE: Available options are shown in the Summary of features options table. Please see pages 48-49.

Single drive modules
ACS800-U4

ACS800-U4 single drive modules

ACS800-U4 drives are single drive modules that are optimized for building into customers' own cabinets. They have been designed to minimise the cabinet space used, make cabinet assembly as easy as possible, and give maximum flexibility. The power range is from 0.75 to 600 Hp. All the drives, regardless of the power and voltage, have the same customer interface and I/O making system design and training easier.

The units have everything necessary built-in That includes, for example, built-in chokes for harmonic filtering as standard, built-in braking chopper and built-in EMC filtering (both are optional in some frame sizes), making cabinet assembly easier. There is also a wide selection of different I/O and communications options. There is also a variety of external accessories available.

There is also a wide selection of different I/O and communications options. In addition to them there is available a selection of external accessories.

To optimize the use of the cabinet space, most of the ACS800-U4 modules can be mounted side by side. The modules themselves are not only designed for cabinet assembly, but covering documentation is also available. This documentation provides examples of different cabinet installations, circuit drawings, and hints on the selection of auxiliary equipment.

Optimized for cabinet assembly - frame sizes R2 - R6

The R2 - R6 frame size units are designed for cabinet panel mounting. The power range starts from 0.75 Hp and extends up to 200 Hp. The voltage range is from 230 V up to 690 V. The enclosure class of the modules is IP 20 as standard.

Flange mounting is available as an option. It separates the airflow to the control section and the heatsink, and makes it possible to mount the heatsink of the drive outside the enclosure. In support of this option the heatsink side of the module has IP 55 enclosure class standard on all frame R2 - R6 ACS800-U4 modules. Prevention of unexpected start-up (complies with EN954- 1, category 3) is also available as an option.

Compact power - frame sizes R7 and R8

Frame size R7 and R8 modules have a very narrow bookshelf design. They are designed to be mounted either on the cabinet wall or floor. The power range is from 100 to 600 Hp and the voltage range is from 230 V up to 690 V. The enclosure class is IP 00.

These modules have top entry for the input power connections to optimise the use of space and cable routing in the cabinet. The output power connections are on the side to make access to the cables as easy as possible and to give sufficient space for cable bending. The outputs can be placed either on the left or right hand side of the module. I/O connections can be located in the most optimal place in the cabinet as they are in a separate unit.

Single drive modules
ACS800-U4/04, 1 to 600 Hp

Compact and complete drive

The ACS800-U4 frame R2 - R6 offers all that you need in a single, extremely small, panel-mounted package making it a compact and complete drive. The standard degree of protection is IP20 for the control section and IP55 for the power section. Power ratings start from 1 Hp heavy-duty rating and go up to 200 Hp continuous load rating. There are five different mechanical frame sizes covering the power range. Each frame size is optimized for performance, size and weight.

The ACS800-U4 frames R7 and R8 extend the power range of the module line to 600 Hp. These frames are panel or cabinet floor mountable with input power connected to the top and output connection field selectable for left or right side exit.

Everything inside

From the smallest to the largest ACS800-U4 there is an extensive range of built in features and options. Standard features include an AC Line Choke for harmonic filtering and drive protection, extensive and flexible I/O. A brake chopper is included as standard in the two smallest frame sizes R2 and R3 as well as in the 690V R4 frame. In other frames the chopper is a built in option. Other built in options include a user-friendly control panel with Start-Up Assistant, EMC filters and extension modules for additional I/O, fieldbus and pulse encoder interface modules.

Main standard hardware features

- Panel mounting (frames R2 - R6)
- Mounting on the panel or floor (frames R7 - R8)
- IP 20 for the control section and IP55 for the power section (R2 - R6 at 240V and 500V)
- IP 00 enclosure class (frames R7 - R8)
- Compact design
- Harmonic filtering AC choke inside
- Input rectifier protection
- Brake chopper (frames R2 - R3; R4 only 690 V)
- Long lifetime cooling fan and capacitors
- Extensive, programmable I/O with galvanically isolated inputs
- Three I/O and fieldbus extension slots inside
- Alphanumeric, multilingual control panel with start-up assistant feature
- Large power terminals allowing use of a wide range of cable sizes
- Instruction available for installing modules in Rittal TS8 cabinet (frames R7 - R8)
- Common module filters for motor protection (R8)

Options for ACS800-U4

Built in options:

- Alphanumeric, multilingual control panel with start-up assistant feature
- Brake chopper (frames R4 - R8)
- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (frames R2 - R6)
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (Category C3)
- Analog and digital I/O extension modules
- Fieldbus modules (Communication)
- Pulse encoder interface module
- Resolver interface (Limited SW Support)
- Prevention of unexpected start-up
- Bottom exit of motor cables (frame R7)
- Common mode filters for motor protection (R7)

External options:

- Brake resistor
- Output du/dt filters
- Flange mounting

Ratings and dimensions

ACS800-U4/04

ACS800 - U4 - XXXX - 2 + XXXX

Type code	Frame size	Input	I_{max}	Normal Duty		Heavy-duty use		Noise Level	Air flow	Heat dissipation
				I_{2N}	P_N	I_{2HD}	P_{HD}			
		A	A	A	Hp	A	Hp	dBA	ft³/min	BTU/hr
3-phase supply voltage 208, 220, 230, 240. The power ratings are valid at nominal voltage, 240Vac (50 & 60Hz)										
ACS800-U4-0002-2	R2	5.2	8.2	6.6	1.5	4.6	1	62	21	350
ACS800-U4-0003-2	R2	6.5	10.8	8.1	2	6.6	1.5	62	21	350
ACS800-U4-0004-2	R2	9.2	13.8	11	3	7.5	2	62	21	410
ACS800-U4-0006-2	R3	18	24	21	5	13	3	62	41	550
ACS800-U4-0009-2	R3	24	32	27	7.5	17	5	62	41	680
ACS800-U4-0011-2	R3	31	46	34	10	25	7.5	62	41	850
ACS800-U4-0016-2	R4	38	62	42	15	31	10	62	61	1150
ACS800-U4-0020-2	R4	49	72	54	20(1)	42	15(2)	62	61	1490
ACS800-U4-0025-2	R5	64	86	69	25	54	20(2)	65	99	1790
ACS800-U4-0030-2	R5	75	112	80	30	68	25(2)	65	99	2090
ACS800-U4-0040-2	R5	102	138	104	40(1)	80	30(2)	65	99	2770
ACS800-U4-0050-2	R6	126	164	132	50	104	40	65	238	3370
ACS800-U4-0060-2	R6	153	202	157	60	130	50(2)	65	238	4050
ACS800-U4-0070-2	R6	190	282	192	75	154	60(2)	65	238	4910
3-phase supply voltage 208, 220, 230, 240. The power ratings are valid at nominal voltage 240Vac 60Hz										
ACS800-U4-0080-2	R7	201	326	211	75	170	60	71	318	9900
ACS800-U4-0100-2	R7	239	404	248	100	202	75	71	318	11750
ACS800-U4-0120-2	R7	285	432	290	100	240	75	71	318	13450
ACS800-U4-0140-2	R8	391	588	396	150	316	125	72	718	18100
ACS800-U4-0170-2	R8	428	588	440	150	340	125	72	718	20800
ACS800-U4-0210-2	R8	506	588	516	200	370	150	72	718	22750
ACS800-U4-0230-2	R8	599	840	598	200	480	200	72	718	25900
ACS800-U4-0260-2	R8	677	1017	679	250	590(2)	200	72	718	26750
ACS800-U4-0300-2	R8	707	1017	704	250	635(2)	250	72	718	28300

NOTES:

(1) Overload may be limited to 5% at higher motor speeds (speed >90% motor base speed) by the internal power limit of the drive
(2) Overload may be limited to 40% at higher motor speeds (speed >90% motor base speed) by the internal power limit of the drive

(3) Rating not applicable for all motors. Available for some 4-pole 460V high efficiency NEMA motors.

I_{max} current available for 10 seconds at start.
I_{2N} continuous base current at 40 C (104 F). Overload cycle 110%
I_{2N} for 1 minute / 5 minutes allowed.
I_{2hd} continuous base current at 40 C (104 F). Overload cycle 150%
I_{2hd} for 1 minute / 5 minutes allowed.

- Current ratings do not change with different supply voltages.
- Horsepower ratings are based on NEMA motor ratings for typical 4-pole motors (1800 rpm). Check motor nameplate current for compatibility.

Enclosure

Degree of Protection:
IP20 (R2 - R6), P00 (R7 - R8)
Paint color:
NCS 1502-Y (RAL 90021/PMS 420C)

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
R2	14.6	6.5	7.8	20
R3	16.5	6.8	9.4	31
R4	19.3	9.4	10.1	57
R5	23.7	10.4	10.6	75
R6	27.6	11 8	15.7	148
R7	44.1	13.2	20.3	220
R8	61.6	16.4	22.4	441

Ratings and dimensions

ACS800-U4/04

ACS800 - U4 - XXXX - 5 + XXXX

Type code	Frame size	Input A	I_{max} A	Normal Duty I_{2N} A	Normal Duty P_N Hp	Heavy-duty use I_{2HD} A	Heavy-duty use P_{HD} Hp	Noise Level dBA	Air flow ft³/min	Heat Dissipation BTU/hr
3-phase supply voltage 380, 400, 415, 460, 480, 500. The power ratings are valid at nominal voltage, 480Vac 60Hz										
ACS800-U4-0004-5	R2	4.1	6.5	4.9	3	3.4	2	62	21	410
ACS800-U4-0005-5	R2	5.4	8.2	6.2	3	4.2	2	62	21	480
ACS800-U4-0006-5	R2	6.9	10.8	8.1	5	5.6	3	62	21	550
ACS800-U4-0009-5	R2	9.8	13.8	11	7.5	8.1	5	62	21	690
ACS800-U4-0011-5	R2	13	17.6	14	10	11	7.5	62	21	860
ACS800-U4-0016-5	R3	18	24	21	15	15	10	62	41	1150
ACS800-U4-0020-5	R3	24	32	27	20	21	15	62	41	1490
ACS800-U4-0025-5	R3	31	46	34	25	27	20	62	41	1790
ACS800-U4-0030-5	R4	40	62	42	30	34	25	62	61	2090
ACS800-U4-0040-5	R4	52	72	52	40	37	30(3)	62	61	2770
ACS800-U4-0050-5	R5	63	86	65	50	52	40	65	99	3370
ACS800-U4-0060-5	R5	77	112	79	60	65	50	65	99	4050
ACS800-U4-0070-5	R5	94	138	96	75	77	60	65	99	4910
ACS800-U4-0100-5	R6	121	164	124	100	96	75	65	238	6610
ACS800-U4-0120-5	R6	155	202	157	125	124	100	65	238	7890
ACS800-U4-0140-5	R6	179	282	180	150	156	125	65	238	9600
ACS800-U4-0205-5	R6	252	326	254	200	215	150	65	238	13670
3-phase supply voltage 380, 400, 415, 460, 480, 500. The power ratings are valid at nominal voltage, 480Vac 60Hz										
ACS800-U4-0170-5	R7	175	326	192	150	162	125	71	318	10100
ACS800-U4-0210-5	R7	220	384	240	200	192	150	71	318	12900
ACS800-U4-0260-5	R7	267	432	286	200(*)	224	150	71	318	15300
ACS800-U4-0270-5	R8	293	480	316	250	240	200	72	718	15350
ACS800-U4-0300-5	R8	331	568	361	300	302	250	72	718	18050
ACS800-U4-0320-5	R8	397	588	435	350	340	250	72	718	23250
ACS800-U4-0400-5	R8	467	588	510	400	370	300	72	718	26650
ACS800-U4-0440-5	R8	501	840	545	450	490	400	72	718	25950
ACS800-U4-0490-5	R8	542	840	590	500	515(2)	450	72	718	27600
ACS800-U4-0550-5	R8	614	1017	670	550	590(2)	500	72	718	3100
ACS800-U4-0610-5	R8	661	1017	704	600(1)	590(2)	500	72	718	33000

NOTES:

(1) Overload may be limited to 5% at higher motor speeds (speed >90% motor base speed) by the internal power limit of the drive
(2) Overload may be limited to 40% at higher motor speeds (speed >90% motor base speed) by the internal power limit of the drive
(3) Rating not applicable for all motors. Available for some 4-pole 460V high efficiency NEMA motors.

I_{max} current available for 10 seconds at start.
I_{2N} continuous base current at 40 C (104 F). Overload cycle 110%
I_{2N} for 1 minute / 5 minutes allowed.
I_{2hd} continuous base current at 40 C (104 F). Overload cycle 150%
I_{2hd} for 1 minute / 5 minutes allowed.

- Current ratings do not change with different supply voltages.
- Horsepower ratings are based on NEMA motor ratings for typical 4-pole motors (1800 rpm). Check motor nameplate current for compatibility.

Enclosure

Degree of Protection:
P20 (R2 - R6), IP00 (R7 - R8)
Paint color:
NCS 1502-Y (RAL 90021/PMS 420C)

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
R2	14 6	6 5	7.8	20
R3	16 5	6 8	9.4	31
R4	19 3	9.4	10.1	57
R5	23.7	10.4	10.6	75
R6	27 6	11.8	15.7	148
R7	44.1	13.2	20.3	220
R8	61 6	16.4	22.4	441

Ratings and dimensions

ACS800-U4/04

ACS800 - U4 - XXXX - 7 + XXXX

Type code	Frame size	Input	I_{max}	Normal Duty		Heavy-duty use		Noise Level	Air flow	Heat Dissipation
				I_{2N}	P_N	I_{2HD}	P_{HD}			
		A	A	A	Hp	A	Hp	dBA	ft³/min	BTU/hr
3-phase supply voltage 525, 550, 575, 600, 690. The power ratings are valid at nominal voltage, 575Vac 60Hz										
ACS800-04-0011-7	R4	10	14	11.5	10	8.5	5	62	61	1050
ACS800-04-0016-7	R4	13	19	15	10	11	10	62	61	1200
ACS800-04-0020-7	R4	19	28	20	15	15	10	62	61	1550
ACS800-04-0025-7	R4	21	38	23	20	19	15	62	61	1850
ACS800-04-0030-7	R4	29	44	30	25	22	20	62	61	2100
ACS800-04-0040-7	R4	32	54	34	30	27	25	62	61	2400
ACS800-04-0050-7	R5	45	68	46	40	34	30	65	99	2900
ACS800-04-0060-7	R5	51	84	52	50	42	40	65	99	3450
ACS800-04-0070-7	R6	70	104	73	60	54	50	65	238	4200
ACS800-04-0100-7	R6	82	124	86	75	62	60	65	238	5650
ACS800-04-0120-7	R6	103	172	108	100	86	75	65	238	6700
ACS800-04-0145-7	R6	121	245	125	125	99	100	65	238	9084
ACS800-04-0175-7	R6	150	245	155	150	131	125	65	238	11851
ACS800-04-0205-7	R6	192	245	192	200	147	150	65	238	14275
3-phase supply voltage 525, 550, 575, 600, 690. The power ratings are valid at nominal voltage 575Vac 60Hz										
ACS800-04-0140-7	R7	117	190	125	125	95	100(1)	71	318	9600
ACS800-04-0170-7	R7	146	263	155	150	131	125	71	318	12150
ACS800-04-0210-7	R7	184	294	165/195(3)	150/200(3)	147	150	71	318	14550
ACS800-04-0260-7	R7	199	326	175/212(3)	150/200(3)	163	150	71	318	16400
ACS800-04-0320-7	R8	273	433	290	300	216	200	72	718	21050
ACS800-04-0400-7	R8	325	548	344	350	274	250	72	718	22750
ACS800-04-0440-7	R8	370	656	387	400	328	350(1)	72	718	25300
ACS800-04-0490-7	R8	407	775	426	450	387	400	72	718	28900
ACS800-04-0550-7	R8	463	853	482	500	426	450	72	718	28350
ACS800-04-0610-7	R8	513	964	537	550	482	500	72	718	33300

NOTES:

(1) Overload may be limited to 5% at higher motor speeds (speed >90% motor base speed) by the internal power limit of the drive
(2) Overload may be limited to 40% at higher motor speeds (speed >90% motor base speed) by the internal power limit of the drive
(3) Rating not applicable for all motors. Available for some 4-pole 460V high efficiency NEMA motors.

I_{max} current available for 10 seconds at start.
I_{2N} continuous base current at 40 C (104 F). Overload cycle 110%
I_{2N} for 1 minute / 5 minutes allowed.
I_{2hd} continuous base current at 40 C (104 F). Overload cycle 150%
I_{2hd} for 1 minute / 5 minutes allowed.

- Current ratings do not change with different supply voltages.
- Horsepower ratings are based on NEMA motor ratings for typical 4-pole motors (1800 rpm). Check motor nameplate current for compatibility.

Enclosure

Degree of Protection:
IP20 (R4 - R6), IP00 (R7 - R8)
Paint color:
NCS 1502-Y (RAL 90021/PMS 420C)

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
R4	19 3	9.4	10.1	57
R5	23.7	10.4	10.6	75
R6	27 6	11.8	15.7	148
R7	44.1	13 2	20.3	220
R8	61 6	16.4	22.4	441

Multidrive Modules

The multidrive modules require more integration than single drive modules. Application support from ABB sales is necessary to ensure proper selection of modules, cabinet accessories and components.

The ACS800 multidrive module product series includes rectifier- and DC-supplied inverter modules and accessories especially designed for integrators, OEMs and panel builders.

The ACS800 multidrive principle based on a common DC bus arrangement enables single power entry and common braking resources for several drives. Common braking includes the possibility for regenerative braking and motor-to-motor braking depending on the motor loads in the line-up.

Special design for system integrators

The design of these modules is based on much smaller inverter modules.

The modules have a plug-in connector, meaning fast and easy assembling. The modules are also equipped with wheels, so they can easily be pulled out of the cabinet and pushed back for maintenance purposes.

This concept also allows pre-installation of the power cables in the empty cabinet.

Inverter and diode modules can be freely connected parallel for higher output current. This means a limited number of different module sizes and fewer spare parts.

The modularity, compact size and simplicity of the modules means a lot of savings for cabinet builders in terms of minimizing the number of cabinets and the widths.

Besides the compact design, the new ACS800 DC-supplied inverter and rectifier units include an extensive selection of options.

Product range

Inverter modules
Inverter modules are available in 7 different frame sizes. Frame sizes R2i - R7i start from 1 to 200 Hp, and all the powers from 100 to 2200 Hp are different configurations of R8i units, single or in parallel. The voltage range covers 380 V, 500 V and 690 V.

Supply modules
Supply modules are available as diode-, thyristor- or IGBT-based solutions.

- In the diode supply units (DSU) only four different types of unit, either in single or parallel, cover the power range of 145 to 4200 kW in 380 - 690 V.

  The basic features of the diode rectifier unit include automatic adaptation to 6 or 12-pulse operation and automatic control to charge the inverter capacitor banks during start-up.

  The mechanical dimensions are the same in each module, making engineering and assembling very easy.

- An IGBT Supply unit (ISU) is used in fully regenerative drive systems. In power control it gives the same firm and gentle performance as DTC gives in motor control. The power module is hardware compatible with the inverter module. In passive mode the converter operates as the rectifier. In the active mode the IGBTs are controlled to keep the DC voltage constant and the line current sinusoidal.

  Harmonic content remains extremely low due to DTC control and LCL filtering.

  The power range is from 60 kW up to 1975 kW in 380 - 690 V. Modules are single or parallel connected.

Braking choppers and resistors
In resistor braking whenever the voltage in the intermediate circuit of a frequency converter exceeds a certain limit, a braking chopper connects the circuit to a braking resistor. The brake chopper is a separate module in the lineup.

Standard resistors are also available, but non-standard resistors can be used, however they must be checked case-by-case.

The power range is from 230 kW up to 2400 kW in 380 - 690 V.

Multidrive Modules

Main standard hardware features:

- Optimized design for cabinet assembly
- Frame R2i - R5i control board inside the module
- Frame R7i - nxR8i control board outside the module
- Extensive, programmable I/O with galvanically isolated inputs
- Block programming possibilty
- Harmonic filtering choke inside R2i - R6i
- Three I/O and fieldbus extension slots
- Modular design allowing wide variety of variants
- Compact design
- Long lifetime cooling fan and capacitors
- Du/dt filters as standard in parallel connected R8i and in single or parallel connected 690 V inverter units
- Mounting on the cabinet wall for R2i - R7i and on the cabinet floor for R8i and the D3/D4 supply module
- Wheels and plug connectors in the R8i inverter and
- Coated boards
- LCL-filter units in ISUs

Main optional hardware features:

Inverter frame sizes R2i - R7i:

- Prevention of unexpected start-up
- DC fuses, fuse bases or DC-fuse switch
- Mechanics for tilted position assembly in R2i - R5i frame size
- Assembly plates for R7i units
- du/dt filters
- common mode filter for motor protection
- on-off control for cooling fan with internal charging option
- Mechanical accessories in Rittal TS8 cabinets (R7i only):
  - NEMA 1 Filt./NEMA 12 door/roof mechanical kits
  - Accessories kits

Inverter frame sizes R8i - nxR8i:

- Prevention of unexpected start-up
- DC fuses, fuse bases or DC-fuse switch + charging circuitry
- du/dt filters as options in 400 / 500 V
- Common mode filters for motor protection
- Mechanical accessories in Rittal TS8 cabinets:
  - NEMA 1 Filt./NEMA 12 door/roof mechanical kits
  - Accessories kits

DSU frame sizes D3 - nxD4:

- Contactor (inside the module)
- RFI filter up to 1000 A
- Front end AC-fuses
- Air circuit breaker
- Mechanical accessories in Rittal TS8 cabinets:
  - NEMA 1 Filt./NEMA 12 door/roof mechanical kits
  - Accessories kits

Ratings and dimensions

ACS800-x04, drive module (400V)

ACS800 - X04 - XXXX - 3 + XXXX

Type Code	Frame Size	Normal Duty		Heavy Duty		Noise Level dBA	Air Flow ft³/min	Heat Dissipation (BTU/hr)
		I_{2N} A	P_{2N} kW	I_{hd} A	P_{hd} kW			
U_N = 400 V (Range 380 - 415 V). The power ratings are valid at nominal voltage 400 V.								
ACS800-104-0003-3	R2i	4.7	1.5	3.4	1.1	62	21	280
ACS800-104-0004-3	R2i	5.9	2.2	4.3	1.5	62	21	340
ACS800-104-0005-3	R2i	7.7	3	5.7	2.2	62	21	380
ACS800-104-0006-3	R2i	10.2	4	7.5	3	62	21	450
ACS800-104-0009-3	R2i	12.7	5.5	9.3	4	62	21	550
ACS800-104-0011-3	R3i	18	7.5	14	5.5	62	41	680
ACS800-104-0016-3	R3i	24	11	19	7.5	62	41	920
ACS800-104-0020-3	R3i	31	15	23	11	62	41	1200
ACS800-104-0025-3	R4i	41	18.5	32	15	62	61	1440
ACS800-104-0030-3	R4i	50	22	37	18.5	62	61	1680
ACS800-104-0040-3	R5i	69	30	49	22	65	147	2220
ACS800-104-0050-3	R5i	80	37	60	30	65	147	2700
ACS800-104-0060-3	R5i	94	45	69	37	65	147	3250
ACS800-104-0105-3	R7i	141	75	110	55	72	470	4780
ACS800-104-0125-3	R7i	171	90	133	55	72	470	5810
ACS800-104-0145-3	R7i	200	110	156	75	72	470	6490
ACS800-104-0175-3	R7i	240	132	187	90	72	470	7170
ACS800-104-0210-3	R8i	280	160	218	110	72	750	9220
ACS800-104-0260-3	R8i	355	200	277	132	72	750	12700
ACS800-104-0320-3	R8i	450	250	351	200	72	750	16700
ACS800-104-0390-3	R8i	542	315	423	220	72	750	20800
ACS800-104-0510-3	R8i	711	400	554	315	72	750	27300
ACS800-104-0770-3	2xR8i	1067	630	831	450	74	1510	41000
ACS800-104-1030-3	2xR8i	1394	800	1086	630	74	1510	51200
ACS800-104-1540-3	3xR8i	2070	1200	1613	900	76	2260	78600
ACS800-104-2050-3	4xR8i	2731	1600	2128	1120	76	3010	102500

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
R2i	15.7	6 5	7.6[3)]	20
R3i	18.3	6 8	9.1[3)]	26
R4i	20.6	9.4	9 9[3)]	33
R5i	26.5	10.4	10.8[3)]	51
R7i [1)]	38.0	6.6	16.0	82
R8i [2)]	55.0	9 2	23.4	331

Notes:

[1)] Dimensions do not include cooling fan.
[2)] For multi-use modules; multiply weight, widths and air flow by the number of modules
[3)] The depth is without control panels and options.

I_{2N}: continuous current allowing 110% I_N for 1 min / 5 min at 40°C.
P_{2N}: typical motor power in light-overload use.

I_{hd}: continuous current allowing 150% I_{hd} for 1 min / 5 min at 40°C.
P_{hd}: typical motor power in heavy-duty use.

- The current ratings are the same regardless of the supply voltage within one voltage range.
- The ratings apply in 40°C ambient temperature.
  In lower temperatures the ratings are higher (except I_{max}).
- The rated current of the ACS800 must be higher than or equal to the rated motor current to achieve the rated motor power given in the table.

Ratings and dimensions

ACS800-x04, supply module (400V)

ACS800 - X04 - XXXX - 3 7 + XXXX

Type Code	Frame Size	Normal Duty		Heavy Duty		Noise Level dBA	Air Flow ft³/min	Heat Dissipation (BTU/hr)
		I_{2N} A	P_{2N} kW	I_{hd} A	P_{hd} kW			
U_N = 400 V (Range 380 - 415 V). The power ratings are valid at nominal voltage 400 V.								
IGBT supply module (ISU)								
ACS800-204-0135-3	R7i + ALCL-04-5	212	124	165	97	65 4)	470 + 177	12978
ACS800-204-0155-3	R7i + ALCL-05-5	261	153	203	119	65 4)	470 + 177	14344
ACS800-204-0200-3	R8i + ALCL-12-5	331	194	258	151	72 4)	750 + 235	20150
ACS800-204-0260-3	R8i + ALCL-13-5	440	258	343	201	72 4)	750 + 235	27321
ACS800-204-0330-3	R8i + ALCL-14-5	550	323	429	252	72 4)	750 + 235	34152
ACS800-204-0440-3	R8i + ALCL-15-5	733	430	571	335	72 4)	750 + 235	51228
ACS800-204-0660-3	2xR8i + ALCL-24-5	1100	646	857	503	74 4)	1510 + 750	71719
ACS800-204-0860-3	2xR8i + ALCL-25-5	1437	844	1120	657	74 4)	1510 + 750	95625
ACS800-204-1270-3	3xR8i + 2xALCL-24-5	2134	1252	1662	976	76 4)	2260 + 1500	143438
ACS800-204-1680-3	4xR8i + 2xALCL-25-5	2816	1653	2194	1288	76 4)	3010 + 1500	187835
6-pulse diode (DSU)								
ACS800-304-0320-7	D3	355	175	280	147	65	424	3415
ACS800-304-0450-7	D3	480	251	400	210	65	424	6830
ACS800-704-0640-7	D4	670	351	560	293	65	424	13660
ACS800-704-0910-7	D4	960	503	800	419	65	424	17075
ACS800-704-1370-7	2xD4	1340	702	1120	587	67	848	27320
ACS800-704-1810-7	2xD4	1790	938	1490	780	67	848	34151
ACS800-704-2720-7	3xD4	2685	1406	2230	1168	68	1270	51227
ACS800-704-3630-7	4xD4	3580	1875	2980	1561	69	1690	68300
ACS800-704-4540-7	5xD4	4475	2344	3720	1949	70	2120	85379
12-pulse diode (DSU)								
ACS800-704-0640-7	D4	670	351	560	293	65	424	13660
ACS800-704-0910-7	D4	960	503	800	419	65	424	17075
ACS800-704-1370-7	2xD4	1340	702	1120	587	67	848	27320
ACS800-704-1810-7	2xD4	1790	938	1490	780	67	848	34151
ACS800-704-2720-7	3xD4	2685	1406	2260	1168	68	1270	51227
ACS800-704-3630-7	4xD4	3580	1875	2980	1561	69	1690	68300
ACS800-704-4540-7	5xD4	4475	2344	3720	1949	70	2120	85379

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Wid h	Depth	Weight
IGBT supply unit (ISU)				
R7i 1)	38	6.7	16.0	82
R8i 2)	55	54.9	23.4	331
LCL-filter for IGBT supply unit (ISU)				
ALCL-0X-X	32	12.0	11.5	159
ALCL-1X-X	54.9	9.4	19.6	397
ALCL-2X-X	54.9	9.4	22.5	672
6-pulse diode (DSU)				
D3	58.3	9.2	15.7 3)	287
D4 2)	58.3	9.2	15.7 3)	397
12-pulse diode (DSU)				
D4 2)	58.3	9.2	15.7 3)	397

Notes:

1) Dimensions do not include cooling fan.
2) For multi-use modules; multiply weight, widths and air flow by the number of modules
3) Cable connections need additional space (about 200 mm) behind the module.
4) Supply modules + filters.
5) Supply modules + choke.

I_{2N}: continuous current allowing 110% I_N for 1 min / 5 min at 40°C.
P_{2N}: typical motor power in light-overload use.

I_{hd}: continuous current allowing 150% I_{hd} for 1 min / 5 min at 40°C.
P_{hd}: typical motor power in heavy-duty use.

- The current ratings are the same regardless of the supply voltage within one voltage range.
- The ratings apply in 40°C ambient temperature. In lower temperatures the ratings are higher (except I_{max}).
- The rated current of the ACS800 must be higher than or equal to the rated motor current to achieve he rated motor power given in the table.

Ratings and dimensions

ACS800-x04, drive module, (500V)

ACS800 - X04 - XXXX - 5 + XXXX

Type Code	Frame Size	Normal Duty			Heavy Duty			Noise Level dBA	Air Flow ft³/min	Heat Dissipation (BTU/hr)
		I_{2N} A	P_{2N} kW	P_{2N} Hp	I_{hd} A	P_{hd} kW	P_{hd} Hp			
U_N = 500 V (Range 380 - 500 V). The power ratings are valid at nominal voltage 500 V.										
ACS800-104-0004-5	R2i	4.5	2 2	2	3.4	1.5	2	62	21	340
ACS800-104-0005-5	R2i	5.6	3	3	4.2	2.2	2	62	21	380
ACS800-104-0006-5	R2i	7.7	4	5	5.6	3	3	62	21	450
ACS800-104-0009-5	R2i	10	5 5	5	7.5	4	3	62	21	550
ACS800-104-0011-5	R2i	12	7 5	7.5	9.2	5.5	5	62	21	680
ACS800-104-0016-5	R3i	18	11	10	13	7.5	7.5	62	41	920
ACS800-104-0020-5	R3i	23	15	15	18	11	10	62	41	1200
ACS800-104-0025-5	R3i	31	18.5	20	23	15	15	62	41	1440
ACS800-104-0030-5	R4i	39	22	25	32	18.5	20	62	61	1680
ACS800-104-0040-5	R4i	44	30	30	36	22	25	62	61	2220
ACS800-104-0050-5	R5i	61	37	40	50	30	30	65	147	2700
ACS800-104-0060-5	R5i	75	45	50	60	37	40	65	147	3250
ACS800-104-0070-5	R5i	88	55	60	69	45	50	65	147	3930
ACS800-104-0105-5	R7i	110	55	75	86	55	55	72	470	3760
ACS800-104-0125-5	R7i	130	90	100	101	55	55	72	470	4440
ACS800-104-0145-5	R7i	159	110	125	124	75	75	72	470	5810
ACS800-104-0175-5	R7i	20	132	150	156	90	90	72	470	6830
ACS800-104-0215-5	R7i	240	160	200	187	110	110	72	470	7510
ACS800-104-0260-5	R8i	302	200	250	236	132	150	72	750	10900
ACS800-104-0320-5	R8i	350	250	300	273	160	200	72	750	13700
ACS800-104-0400-5	R8i	437	315	350	340	200	250	72	750	18400
ACS800-104-0460-5	R8i	504	355	400	393	250	300	72	750	20100
ACS800-104-0610-5	R8i	672	500	500	524	355	450	72	750	26600
ACS800-104-0910-5	2xR8i	1008	710	900	785	560	600	74	1510	41000
ACS800-104-1210-5	2xR8i	1317	1000	1000	1026	710	900	74	1510	51200
ACS800-104-1820-5	3xR8i	1956	1450	1700	1524	1120	1250	76	2260	75100
ACS800-104-2430-5	4xR8i	2580	1850	2200	2011	1400	1750	76	3010	99000

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
R2i	15.7	6 5	7.6[3)]	20
R3i	18.3	6 8	9.1[3)]	26
R4i	20.6	9.4	9 9[3)]	33
R5i	26.5	10.4	10.8[3)]	51
R7i [1)]	38.0	6.6	16.0	82
R8i [2)]	55.0	9 2	23.4	331

Notes:

[1)] Dimensions do not include cooling fan.
[2)] For multi-use modules; multiply weight, widths and air flow by the number of modules
[3)] The depth is without control panels and options.

I_{2N}: continuous current allowing 110% I_N for 1 min / 5 min at 40°C.
P_{2N}: typical motor power in light-overload use.

I_{hd}: continuous current allowing 150% I_{hd} for 1 min / 5 min at 40°C.
P_{hd}: typical motor power in heavy-duty use.

- The current ratings are the same regardless of the supply voltage within one voltage range.
- The ratings apply in 40°C ambient temperature. In lower temperatures the ratings are higher (except I_{max}).
- The rated current of the ACS800 must be higher than or equal to the rated motor current to achieve the rated motor power given in the table.

Ratings and dimensions

ACS800-x04, supply module, (500V)

ACS800 - X04 - XXXX - 5 7 + XXXX

Type Code	Frame Size	Normal Duty		Heavy Duty		Noise Level dBA	Air Flow ft³/min	Heat Dissipation (BTU/hr)
		I_{2N} A	P_{2N} kW	I_{hd} A	P_{hd} kW			
U_N = 500 V (Range 380 - 580 V). The power ratings are valid at nominal voltage 500 V.								
IGBT supply module (ISU)								
ACS800-204-0165-5	R7i + ALCL-04-5	210	148	163	115	65 4)	470 + 177	12978
ACS800-204-0195-5	R7i + ALCL-05-5	256	181	200	141	65 4)	470 + 177	14344
ACS800-204-0230-5	R8i + ALCL-12-5	314	222	245	173	72 4)	750 + 235	20150
ACS800-204-0310-5	R8i + ALCL-13-5	419	296	327	231	72 4)	750 + 235	27321
ACS800-204-0390-5	R8i + ALCL-14-5	524	370	408	289	72 4)	750 + 235	34152
ACS800-204-0520-5	R8i + ALCL-15-5	698	494	544	385	72 4)	750 + 235	51228
ACS800-204-0780-5	2xR8i + ALCL-24-5	1048	741	816	577	74 4)	1510 + 750	71719
ACS800-204-1020-5	2xR8i + ALCL-25-5	1369	968	1067	754	74 4)	1510 + 750	95625
ACS800-204-1510-5	3xR8i + 2xALCL-24-5	2032	1437	1584	1120	76 4)	2260 + 1500	143438
ACS800-204-2000-5	4xR8i + 2xALCL-25-5	2682	1896	2090	1478	76 4)	3010 + 1500	187835
6-pulse diode (DSU)								
ACS800-304-0320-7	D3	335	219	280	183	65	424	3415
ACS800-304-0450-7	D3	480	314	400	262	65	424	6830
ACS800-704-0640-7	D4	670	439	560	367	65	424	13660
ACS800-704-0910-7	D4	960	629	800	524	65	424	17075
ACS800-704-1810-7	2xD4	1340	877	1120	733	67	848	27320
ACS800-704-1810-7	2xD4	1790	1172	1490	976	67	848	34151
ACS800-704-2720-7	3xD4	2685	1758	2230	1460	68	1270	51227
ACS800-704-3630-7	4xD4	3580	2344	2980	1951	69	1690	68300
ACS800-704-4540-7	5xD4	4475	2930	3720	2436	70	2120	85379
12-pulse diode (DSU)								
ACS800-704-0640-7	D4	670	439	560	367	65	424	13660
ACS800-704-0910-7	D4	960	629	800	524	65	424	17075
ACS800-704-1370-7	2xD4	1340	877	1120	733	50853.1	848	27320
ACS800-704-1810-7	2xD4	1790	1172	1490	976	50853.1	848	34151
ACS800-704-2720-7	3xD4	2685	1758	2230	1460	76279.6	1270	51227
ACS800-704-3630-7	4xD4	3580	2344	2980	1951	101706.2	1690	68300
ACS800-704-4540-7	5xD4	4475	2930	3720	2436	127132.8	2120	85379

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Wid h	Depth	Weight
IGBT supply unit (ISU)				
R7i 1)	38	6.7	16.0	82
R8i 2)	55	54.9	23.4	331
LCL-filter for IGBT supply unit (ISU)				
ALCL-0X-X	32	12.0	11.5	159
ALCL-1X-X	54.9	9.4	19.6	397
ALCL-2X-X	54.9	9.4	22.5	672
6-pulse diode (DSU)				
D3	58.3	9.2	15.7 3)	287
D4 2)	58.3	9.2	15.7 3)	397
12-pulse diode (DSU)				
D4 2)	58.3	9.2	15.7 3)	397

Notes:

1) Dimensions do not include cooling fan.
2) For multi-use modules; multiply weight, widths and air flow by the number of modules
3) Cable connections need additional space (about 200 mm) behind the module.
4) Supply modules + filters.
5) Supply modules + choke.

I_{2N}: continuous current allowing 110% I_N for 1 min / 5 min at 40°C.
P_{2N}: typical motor power in light-overload use.

I_{hd}: continuous current allowing 150% I_{hd} for 1 min / 5 min at 40°C.
P_{hd}: typical motor power in heavy-duty use.

- The current ratings are the same regardless of the supply voltage within one voltage range.
- The ratings apply in 40°C ambient temperature. In lower temperatures the ratings are higher (except I_{max}).
- The rated current of the ACS800 must be higher than or equal to the rated motor current to achieve he rated motor power given in the table.

Ratings and dimensions

ACS800-x04, drive module, (690V)

ACS800 - X04 - XXXX - 7 + XXXX

Type Code	Frame Size	Normal Duty			Heavy Duty			Noise Level dBA	Air Flow ft³/min	Heat Dissipation (BTU/hr)
		I_{2N} A	P_{2N} kW	P_{2N} Hp	I_{hd} A	P_{hd} kW	P_{hd} Hp			
U_N = 690 V (Range 525 - 690 V). The power ratings are valid at nominal voltage 600 V.										
ACS800-104-0011-7	R4i	12	7 5	10	8.5	5.5	5	62	61	1030
ACS800-104-0016-7	R4i	15	11	15	11	7.5	10	62	61	1160
ACS800-104-0020-7	R4i	20	15	20	15	11	15	62	61	1500
ACS800-104-0025-7	R4i	23	18.5	25	19	15	20	62	61	1810
ACS800-104-0030-7	R4i	30	22	30	22	18.5	25	62	61	2080
ACS800-104-0040-7	R4i	34	30	40	27	22	30	62	61	2360
ACS800-104-0050-7	R5i	46	37	50	34	30	40	65	147	2870
ACS800-104-0060-7	R5i	52	45	50	42	37	50	65	147	3450
ACS800-104-0075-7	R7i	66	55	60	52	45	50	72	470	3760
ACS800-104-0105-7	R7i	84	75	75	66	55	60	72	470	4440
ACS800-104-0125-7	R7i	101	90	100	79	75	75	72	470	5460
ACS800-104-0145-7	R7i	127	110	125	99	90	100	72	470	6830
ACS800-104-0175-7	R7i	144	132	150	112	90	100	72	470	7850
ACS800-104-0215-7	R7i	163	160	150	127	110	125	72	470	8880
ACS800-104-0260-7	R8i	206	200	200	161	160	150	72	750	12300
ACS800-104-0320-7	R8i	277	250	300	216	200	180	72	750	16400
ACS800-104-0400-7	R8i	323	315	350	251	240	250	72	750	20800
ACS800-104-0440-7	R8i	367	355	400	286	270	300	72	750	23900
ACS800-104-0580-7	R8i	467	450	500	364	355	350	72	750	25600
ACS800-104-0870-7	2xR8i	700	710	750	545	500	600	74	1510	44400
ACS800-104-1160-7	2xR8i	914	900	1000	713	710	70	74	1510	51200
ACS800-104-1740-7	3xR8i	1358	1400	1500	1058	1000	1000	76	2260	75100
ACS800-104-2320-7	4xR8i	1792	1800	1900	1396	1400	1500	76	3010	99000

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
R2i	15.7	6 5	7.6[3)]	20
R3i	18.3	6 8	9.1[3)]	26
R4i	20.6	9.4	9 9[3)]	33
R5i	26.5	10.4	10.8[3)]	51
R7i [1)]	38.0	6.6	16.0	82
R8i [2)]	55.0	9 2	23.4	331

Notes:

[1)] Dimensions do not include cooling fan.
[2)] For multi-use modules; multiply weight, widths and air flow by the number of modules
[3)] The depth is without control panels and options.

I_{2N}: continuous current allowing 110% I_N for 1 min / 5 min at 40°C.
P_{2N}: typical motor power in light-overload use.

I_{hd}: continuous current allowing 150% I_{hd} for 1 min / 5 min at 40°C.
P_{hd}: typical motor power in heavy-duty use.

- The current ratings are the same regardless of the supply voltage within one voltage range.
- The ratings apply in 40°C ambient temperature. In lower temperatures the ratings are higher (except I_{max}).
- The rated current of the ACS800 must be higher than or equal to the rated motor current to achieve the rated motor power given in the table.

Ratings and dimensions

ACS800-x04, supply module, (690V)

ACS800 - X04 - XXXX - 7 + XXXX

Type Code	Frame Size	Normal Duty		Heavy Duty		Noise Level dBA	Air Flow ft³/min	Heat Dissipation (BTU/hr)
		I_{2N} A	P_{2N} kW	I_{hd} A	P_{hd} kW			
U_N = 690 V (Range 525 - 690 V). The power ratings are valid at nominal voltage 690 V.								
IGBT supply module (ISU)								
ACS800-204-0155-7	R7i + ALCL-04-7	139	135	108	105	65 4)	470 + 177	12978
ACS800-204-0175-7	R7i + ALCL-04-7	157	153	122	119	65 4)	470 + 177	14344
ACS800-204-0220-7	R8i + ALCL-12-7	210	204	163	159	72 4)	750 + 235	20150
ACS800-204-0300-7	R8i + ALCL-13-7	291	284	227	221	72 4)	750 + 235	27321
ACS800-204-0360-7	R8i + ALCL-14-7	349	341	272	266	72 4)	750 + 235	34152
ACS800-204-0480-7	R8i + ALCL-15-7	466	454	363	354	72 4)	750 + 235	51228
ACS800-204-0720-7	2xR8i + ALCL-24-7	698	682	544	531	72 4)	1510 + 750	71719
ACS800-204-0940-7	2xR8i + ALCL-25-7	913	890	711	694	74 4)	1510 + 750	95625
ACS800-204-1390-7	3xR8i + 2xALCL-24-7	1355	1322	1056	1030	76 4)	2260 + 1500	143438
ACS800-204-1840-7	4xR8i + 2xALCL-25-7	1788	1745	1393	1359	76 4)	3010 + 1500	187835
6-pulse diode (DSU)								
ACS800-304-0320-7	D3	335	303	280	253	65	424	3415
ACS800-304-0450-7	D3	480	434	400	361	65	424	6830
ACS800-704-0640-7	D4	670	605	560	506	65	424	13660
ACS800-704-0910-7	D4	960	867	800	723	65	424	17075
ACS800-704-1370-7	2xD4	1340	1211	1120	1012	67	848	27320
ACS800-704-1810-7	2xD4	1790	1617	1490	1346	67	848	34151
ACS800-704-2720-7	3xD4	2685	2426	2230	2015	68	1270	51227
ACS800-704-3630-7	4xD4	3580	3235	2980	2693	69	1690	68300
ACS800-704-4540-7	5xD4	4475	4043	3720	3361	70	2120	85379
12-pulse diode (DSU)								
ACS800-704-0640-7	D4	670	605	560	506	65	424	13660
ACS800-704-0910-7	D4	960	867	800	723	65	424	17075
ACS800-704-1370-7	2xD4	1340	1211	1120	1012	67	848	27320
ACS800-704-1810-7	2xD4	1790	1617	1490	1346	67	848	34151
ACS800-704-2720-7	3xD4	2685	2426	2230	2015	68	1270	51227
ACS800-704-3630-7	4xD4	3580	3235	2980	2693	69	1690	68300
ACS800-704-4540-7	5xD4	4475	4043	3720	3361	70	2120	85379

Dimensions:

Frame	Imperial Units (in)&(lb)			
	Height	Wid h	Depth	Weight
IGBT supply unit (ISU)				
R7i 1)	38	6.7	16.0	82
R8i 2)	55	54.9	23.4	331
LCL-filter for IGBT supply unit (ISU)				
ALCL-0X-X	32	12.0	11.5	159
ALCL-1X-X	54.9	9.4	19.6	397
ALCL-2X-X	54.9	9.4	22.5	672
6-pulse diode (DSU)				
D3	58.3	9.2	15.7 3)	287
D4 2)	58.3	9.2	15.7 3)	397
12-pulse diode (DSU)				
D4 2)	58.3	9.2	15.7 3)	397

Notes:

1) Dimensions do not include cooling fan.
2) For multi-use modules; multiply weight, widths and air flow by the number of modules
3) Cable connections need additional space (about 200 mm) behind the module.
4) Supply modules + filters.
5) Supply modules + choke.

I_{2N}: continuous current allowing 110% I_N for 1 min / 5 min at 40°C.
P_{2N}: typical motor power in light-overload use.

I_{hd}: continuous current allowing 150% I_{hd} for 1 min / 5 min at 40°C.
P_{hd}: typical motor power in heavy-duty use.

- The current ratings are the same regardless of the supply voltage within one voltage range.
- The ratings apply in 40°C ambient temperature. In lower temperatures the ratings are higher (except I_{max}).
- The rated current of the ACS800 must be higher than or equal to the rated motor current to achieve he rated motor power given in the table.

Brake options

Brake chopper

The ACS800 series has built in brake choppers for all types. Therefore, no additional space or installation time is needed. The brake chopper is part of the standard delivery for the frame sizes R2 - R3 and at 690V frame R4. For the other frames a brake chopper is a selectable option.

Braking control is integrated into the ACS800 series through frame R8. It controls the braking, supervises the system status and detects failures such as brake resistor and resistor cable short circuits, chopper short circuit, and calculated resistor overtemperature.

Brake resistor

Brake resistors are separately available for all ACS800 types. Resistors other than the standard resistors may be used providing the specified resistance value is not decreased, and the heat dissipation capacity of the resistor is sufficient for the drive application.

For ACS800 units, no separate fuses in the brake circuit are required if the following conditions are met:

- The ACS800 mains cable is protected with fuses
- No mains cable/fuse overrating takes place

Dynamic Braking Table - 200-240V applications, stopping duty only

Drive P/N ACS800-U4-	HP ND	Duty Cycle = 3sec on / 27sec off				Duty Cycle = 10sec on / 50sec off			
		Resistor Part No.	Ohms	Watts	Dimensions	Resistor Part No.	Ohms	Watts	Dimensions
0001-2	1	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0002-2	1.5	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0003-2	2	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0004-2	3	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0006-2	5	ABB-48431-001	22.0	285	12Wx5Dx5H	ABB-48431-002	22.0	819	12Wx7Dx5H
0009-2	7.5	ABB-48431-002	22.0	819	12Wx7Dx5H	ABB-48431-002	22.0	819	12Wx7Dx5H
0011-2	10	ABB-48431-030	13.0	1433	12Wx13Dx5H	ABB-48431-030	13.0	1433	12Wx13Dx5H
0016-2	15	ABB-48431-091	8.5	719	12Wx7Dx5H	ABB-48431-093	8.5	1224	12Wx10Dx5H
0020-2	20	ABB-41133	8.0	900	12Wx10Dx5H	ABB-48431-096	8.5	2754	19Wx10Dx5H
0025-2	25	ABB-41148	6.0	3000	19Wx10Dx5H	ABB-41148	6.0	3000	19Wx10Dx5H
0030-2	30	ABB-48431-181	4.3	3135	19Wx10Dx5H	ABB-48431-181	4.3	3135	19Wx10Dx5H
0040-2	40	ABB-48431-181	4.3	3135	19Wx10Dx5H	ABB-41149	4.0	3600	19Wx10Dx5H
0050-2	50	ABB-48431-301	2.5	2723	19Wx10Dx5H	ABB-48431-304	2.5	6250	26.5Wx13Dx5H
0060-2	60	ABB-49173-006	2.0	3600	19Wx10Dx5H	ABB-49173-007	2.0	8600	26.5Wx16Dx5H
0070-2	75	ABB-49173-006	2.0	3600	19Wx10Dx5H	ABB-49173-007	2.0	8600	26.5Wx16Dx5H

Drive P/N ACS800-U4-	HP ND	Duty Cycle = 30sec on / 180sec off				Duty Cycle = 60sec on / 180sec off			
		Resistor Part No.	Ohms	Watts	Dimensions	Resistor Part No.	Ohms	Watts	Dimensions
0001-2	1	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0002-2	1.5	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0003-2	2	ABB-48431-021	44.0	800	12Wx7Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0004-2	3	ABB-48431-021	44.0	800	12Wx7Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0006-2	5	ABB-48431-002	22.0	819	12Wx7Dx5H	ABB-48431-003	22.0	1140	12Wx10Dx5H
0009-2	7.5	ABB-48431-003	22.0	1140	12Wx10Dx5H	ABB-48431-005	22.0	1862	12Wx16Dx5H
0011-2	10	ABB-48431-030	13.0	1433	12Wx13Dx5H	ABB-44473	13.5	2509	19Wx10Dx5H
0016-2	15	ABB-48431-095	8.5	1913	12Wx16Dx5H	ABB-41170	8.0	4600	26.5Wx10Dx5H
0020-2	20	ABB-48431-096	8.5	2754	19Wx10Dx5H	ABB-41170	8.0	4600	26.5Wx10Dx5H
0025-2	25	ABB-41160	6.0	3800	19Wx10Dx5H	ABB-41162	6.0	5200	26.5Wx10Dx5H
0030-2	30	ABB-41149	4.0	3600	19Wx10Dx5H	ABB-44479	4.3	9872	26.5Wx16Dx5H
0040-2	40	ABB-41150	4.0	5600	26.5Wx10Dx5H	ABB-44479	4.3	9872	26.5Wx16Dx5H
0050-2	50	ABB-48431-304	2.5	6250	26.5Wx13Dx5H	ABB-48431-305	2.5	16000	28Wx16Dx10H
0060-2	60	ABB-49173-007	2.0	8600	26.5Wx16Dx5H	ABB-48431-330	2.2	14080	28Wx16Dx10H
0070-2	75	ABB-48431-330	2.2	14080	28Wx16Dx10H	ABB-42684	2.3	18000	28Wx16Dx10H

Brake options

Dynamic Braking Table - 380-480V applications, stopping duty only

Drive P/N ACS800-U4-	HP ND	Duty Cycle = 3sec on / 27sec off				Duty Cycle = 10sec on / 50sec off			
		Resistor Part No.	Ohms	Watts	Dimensions	Resistor Part No.	Ohms	Watts	Dimensions
0004-5	3	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0005-5	3	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-020	44.0	324	12Wx5Dx5H
0006-5	5	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0009-5	8	ABB-48431-021	44.0	800	12Wx7Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0011-5	10	ABB-48431-021	44.0	800	12Wx7Dx5H	ABB-48431-022	44.0	1263	12Wx10Dx5H
0016-5	15	ABB-48431-002	22.0	819	12Wx7Dx5H	ABB-48431-004	22.0	1408	12Wx13Dx5H
0020-5	20	ABB-48431-003	22.0	1140	12Wx10Dx5H	ABB-48431-006	22.0	2200	19Wx10Dx5H
0025-5	25	ABB-48431-004	22.0	1408	12Wx13Dx5H	ABB-48431-007	22.0	2426	19Wx10Dx5H
0030-5	30	ABB-48431-031	13.0	1872	12Wx16Dx5H	ABB-48431-033	13.0	3328	19Wx10Dx5H
0040-5	40	ABB-48431-032	13.0	2197	19Wx10Dx5H	ABB-48431-035	13.0	4212	26.5Wx10Dx5H
0050-5	50	ABB-48431-096	8.5	2754	19Wx10Dx5H	ABB-48431-068	11.0	4400	26.5Wx10Dx5H
0060-5	60	ABB-48431-097	8.5	5313	26.5Wx13Dx5H	ABB-48431-097	8.5	5313	26.5Wx13Dx5H
0070-5	75	ABB-48431-120	8.0	6272	26.5Wx16Dx5H	ABB-48431-099	8.5	7650	26.5Wx16Dx5H
0100-5	100	ABB-48431-159	5.3	4770	26.5Wx10Dx5H	ABB-48431-184	4.3	10750	28Wx10Dx10H
0120-5	125	ABB-48431-183	4.3	6209	26.5Wx13Dx5H	ABB-48431-185	4.3	17067	28Wx13Dx10H
0140-5	150	ABB-48431-184	4.3	10750	28Wx10Dx10H	ABB-48431-185	4.3	17067	28Wx13Dx10H
0205-5	200	ABB-48431-184	4.3	10750	28Wx10Dx10H	ABB-48431-185	4.3	17067	28Wx13Dx10H

Drive P/N ACS800-U4-	HP ND	Duty Cycle = 30sec on / 180sec off				Duty Cycle = 60sec on / 180sec off			
		Resistor Part No.	Ohms	Watts	Dimensions	Resistor Part No.	Ohms	Watts	Dimensions
0004-5	3	ABB-48431-020	44.0	324	12Wx5Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0005-5	3	ABB-48431-021	44.0	800	12Wx7Dx5H	ABB-48431-021	44.0	800	12Wx7Dx5H
0006-5	5	ABB-48431-021	44.0	800	12Wx7Dx5H	ABB-48431-022	44.0	1263	12Wx10Dx5H
0009-5	8	ABB-48431-022	44.0	1263	12Wx10Dx5H	ABB-48431-023	44.0	3294	19Wx13Dx5H
0011-5	10	ABB-48431-023	44.0	3294	19Wx13Dx5H	ABB-48431-023	44.0	3294	19Wx13Dx5H
0016-5	15	ABB-48431-006	22.0	2200	19Wx10Dx5H	ABB-48431-009	22.0	5632	26.5Wx10Dx5H
0020-5	20	ABB-48431-008	22.0	3168	19Wx13Dx5H	ABB-48431-009	22.0	5632	26.5Wx10Dx5H
0025-5	25	ABB-48431-008	22.0	3168	19Wx13Dx5H	ABB-48431-009	22.0	5632	26.5Wx10Dx5H
0030-5	30	ABB-48431-035	13.0	4212	26.5Wx10Dx5H	ABB-48431-037	13.0	8125	26.5Wx16Dx5H
0040-5	40	ABB-48431-036	13.0	6292	26.5Wx13Dx5H	ABB-48431-038	13.0	11700	28Wx13Dx10H
0050-5	50	ABB-48431-069	11.0	6875	26.5Wx13Dx5H	ABB-48431-100	8.5	12274	28Wx13Dx10H
0060-5	60	ABB-48431-100	8.5	12274	28Wx13Dx10H	ABB-48431-101	8.5	16456	28Wx16Dx10H
0070-5	75	ABB-48431-100	8.5	12274	28Wx13Dx10H	ABB-48431-101	8.5	16456	28Wx16Dx10H
0100-5	100	ABB-48431-162	5.3	13250	28Wx13Dx10H	ABB-48431-211	4.0	22500	28Wx16Dx10H
0120-5	125	ABB-48431-185	4.3	17067	28Wx13Dx10H	ABB-48431-187	4.3	27520	30Wx18Dx24H
0140-5	150	ABB-48431-211	4.0	22500	28Wx16Dx10H	ABB-48431-188	4.3	34830	30Wx18Dx24H
0205-5	200	ABB-48431-212	4.0	25610	30Wx18Dx24H	ABB-48431-189	4.3	43000	30Wx18Dx24H

Brake options

Dynamic Braking Table - 380-480V applications, stopping duty only

Drive P/N ACS800-U4-	HP ND	Duty Cycle = 3sec on / 27sec off				Duty Cycle = 10sec on / 50sec off			
		Resistor Part No.	Ohms	Watts	Dimensions	Resistor Part No.	Ohms	Watts	Dimensions
0170-5	150	ABB-48431-271	2.9	14210	28Wx10Dx10H	ABB-48431-272	2.9	16313	28Wx10Dx10H
0210-5	200	ABB-48431-271	2.9	14210	28Wx10Dx10H	ABB-48431-273	2.9	23490	28Wx16Dx10H
0260-5	200	ABB-48431-271	2.9	14210	28Wx10Dx10H	ABB-48431-273	2.9	23490	28Wx16Dx10H
0270-5	250	ABB-48431-271	2.9	14210	28Wx10Dx10H	ABB-48431-273	2.9	23490	28Wx16Dx10H
0300-5	300	ABB-48431-331	2.2	17820	28Wx13Dx10H	ABB-48431-332	2.2	26620	30Wx18Dx24H
0320-5	350	ABB-48431-331	2.2	17820	28Wx13Dx10H	ABB-48431-332	2.2	26620	30Wx18Dx24H
0400-5	400	ABB-48431-393	1.7	24480	30Wx18Dx16H	ABB-48431-395	1.7	46283	30Wx18Dx32H
0440-5	450	ABB-48431-480	1.2	32670	30Wx18Dx24H	ABB-48431-482	1.2	60750	30Wx18Dx32H
0490-5	500	ABB-48431-514	1.0	34200	30Wx18Dx24H	ABB-48431-517	1.0	67600	30Wx18Dx40H
0550-5	550	ABB-48431-514	1.0	34200	30Wx18Dx24H	ABB-48431-517	1.0	67600	30Wx18Dx40H
0610-5	600	ABB-48431-515	1.0	40000	30Wx18Dx24H	ABB-48431-518	1.0	90000	30Wx18Dx48H

Drive P/N ACS800-U4-	HP ND	Duty Cycle = 30sec on / 180sec off				Duty Cycle = 60sec on / 180sec off			
		Resistor Part No.	Ohms	Watts	Dimensions	Resistor Part No.	Ohms	Watts	Dimensions
0170-5	150	ABB-48431-273	2.9	23490	28Wx16Dx10H	ABB-48431-275	2.9	41760	30Wx18Dx32H
0210-5	200	ABB-48431-274	2.9	29000	30Wx18Dx16H	ABB-48431-276	2.9	52853	30Wx18Dx32H
0260-5	200	ABB-48431-274	2.9	29000	30Wx18Dx16H	ABB-48431-276	2.9	52853	30Wx18Dx32H
0270-5	250	ABB-48431-274	2.9	29000	30Wx18Dx16H	ABB-48431-276	2.9	52853	30Wx18Dx32H
0300-5	300	ABB-48431-334	2.2	40095	30Wx18Dx32H	ABB-48431-366	1.8	72000	30Wx18Dx48H
0320-5	350	ABB-48431-334	2.2	40095	30Wx18Dx32H	ABB-48431-366	1.8	72000	30Wx18Dx48H
0400-5	400	ABB-48431-396	1.7	58183	30Wx18Dx32H	ABB-48431-544*	0.9	45600	30Wx18Dx24H
0440-5	450	ABB-48431-484	1.2	81120	30Wx18Dx48H	ABB-48431-573*	0.6	73500	30Wx18Dx48H
0490-5	500	ABB-48431-518	1.0	90000	30Wx18Dx48H	ABB-Consult Factory			
0550-5	550	ABB-48431-518	1.0	90000	30Wx18Dx48H	ABB-Consult Factory			
0610-5	600	ABB-48431-518	1.0	90000	30Wx18Dx48H	ABB-Consult Factory			

* Requires two resistor assemblies each rated as show and connected in series. (Order quantity 2)

Multidrive module brake units

Brake Unit Type	Nominal Ratings					Duty Cycle (1 min / 5 min)		Duty Cycle (10 s /60 s)		Noise	Air flow	Resistor Type
	$P_{b\ max}$ kW	R ohm	I_{max} A	I_{rms} A	$P_{cont.}$ kW	$P_{br.}$ kW	I_{rms} A	$P_{br.}$ kW	I_{rms} A	dBA	m^3/h	
U_N = 400 V (Range 380 - 415 V)												
Only the chopper												
Chopper-0210-3 (NBRA658)	230	1.7	384	109	70	230	355	230	355	64	660	-
Chopper-0320-3 (NBRA659)	353	1.2	545	149	96	303	468	353	545	64	660	-
Chopper-0640-3 (2xNBRA659)	706	0.6	1090	298	192	606	936	706	1090	67	1320	-
Chopper-0960-3 (3xNBRA659)	1058	0.4	1635	447	288	909	1404	1059	1635	68	1980	-
Chopper-1280-3 (4xNBRA659)	1411	0.3	2180	596	384	1212	1872	1412	2180	69	2640	-
Chopper-1600-3 (5xNBRA659)	1764	0.24	2725	745	480	1515	2340	1765	2725	70	3300	-
Chopper-1920-3 (6xNBRA659)	2117	0.2	3270	894	576	1818	2808	2118	3270	71	3960	-
Chopper with the resistor												
Chopper-0210-3 (NBRA658)	230	1.7	384	65	42	130	200	224	346	66	2500	2 x SAFUR210F575
Chopper-0320-3 (NBRA659)	353	1.2	545	84	54	167	257	287	444	66	2500	2 x SAFUR180F460
Chopper-0640-3 (2xNBRA659)	706	0.6	1090	168	108	333	514	575	888	69	5000	2 x (2 x SAFUR180F460)
Chopper-0960-3 (3xNBRA659)	1058	0.4	1635	252	162	500	771	862	1332	70	7500	3 x (2 x SAFUR180F460
Chopper-1280-3 (4xNBRA659)	1411	0.3	2180	336	216	667	1028	1150	1776	71	10000	4 x (2 x SAFUR180F460)
Chopper-1600-3 (5xNBRA659)	1764	0.24	2725	420	270	833	1285	1437	2220	72	12500	5 x (2 x SAFUR180F460
Chopper-1920-3 (6xNBRA659)	2117	0.2	3270	504	324	1000	1542	1724	2664	73	15000	6 x (2 x SAFUR180F460
U_N = 500 V (Range 380 - 500 V)												
Only the chopper												
Chopper-0260-5 (NBRA658)	268	2.15	380	101	81	268	331	268	331	64	660	-
Chopper-0400-5 (NBRA659)	403	1.43	571	136	109	317	391	403	498	64	660	-
Chopper-0800-5 (2xNBRA659)	806	0.72	1142	272	218	634	782	806	996	67	1320	-
Chopper-1200-5 (3xNBRA659)	1208	0.48	1713	408	327	951	1173	1209	1494	68	1980	-
Chopper-1600-5 (4xNBRA659	1611	0.36	2284	544	436	1268	1564	1612	1992	69	2640	-
Chopper-2000-5 (5xNBRA659)	2014	0.29	2855	680	545	1585	1955	2015	2490	70	3300	-
Chopper-2400-5 (6xNBRA659)	2417	0.24	3426	816	654	1902	2346	2418	2988	71	3960	-
Chopper with the resistor												
Chopper-0260-5 (NBRA658)	268	2.00	408	45	36	111	137	192	237	66	2500	2 x SAFUR125F500
Chopper-0400-5 (NBRA659)	403	1.35	605	67	51	167	206	287	355	66	2500	2 x SAFUR200F500
Chopper-0800-5 (2xNBRA659)	806	0.68	1210	134	108	333	412	575	710	69	5000	2 x (2 x SAFUR200F500)
Chopper-1200-5 (3xNBRA659)	1208	0.45	1815	201	162	500	618	862	1065	70	7500	3 x (2 x SAFUR200F500)
Chopper-1600-5 (4xNBRA659	1611	0.34	2420	268	216	667	824	1150	1420	71	10000	4 x (2 x SAFUR200F500)
Chopper-2000-5 (5xNBRA659)	2014	0.27	3025	335	270	833	1030	1437	1775	72	12500	5 x (2 x SAFUR200F500)
Chopper-2400-5 (6xNBRA659)	2417	0.23	3630	402	324	1000	1236	1724	2130	73	15000	6 x (2 x SAFUR200F500)
0U_N = 690 V (Range 525 - 690 V)												
Only the chopper												
Chopper-0400-6 (NBRA 669)	414	107	119	298	267	404	361	64	660	-		-
Chopper-0800-6 (2xNBRA669)	807	1.36	828	214	238	596	534	808	722	67	660	-
Chopper-1200-6 (3xNBRA669)	1211	0.91	1242	321	357	894	801	1212	1083	68	1320	-
Chopper-1600-6 (4xNBRA669)	1615	0.68	1656	428	476	1192	1068	1616	1444	69	1980	-
Chopper-2000-6 (5xNBRA669)	2019	0.54	2070	535	595	1490	1335	2020	1805	70	2640	-
Chopper-2400-6 (6xNBRA669)	2422	0.45	2484	642	714	1788	1602	2424	2166	71	3300	-
Chopper with the resistor												
Chopper-0400-6 (NBRA 669)	414	1.35	835	97	54	167	149	287	254	66	2500	2 x SAFUR200F500
Chopper-0800-6 (2xNBRA669)	807	0.68	1670	194	108	333	298	575	514	69	5000	2 x (2 x SAFUR200F500)
Chopper-1200-6 (3xNBRA669)	1211	0.45	2505	291	162	500	447	862	771	70	7500	3 x (2 x SAFUR200F500)
Chopper-1600-6 (4xNBRA669)	1615	0.34	3340	388	216	667	596	1150	1028	71	10000	4 x (2 x SAFUR200F500)
Chopper-2000-6 (5xNBRA669)	2019	0.27	4175	485	270	833	745	1437	1285	72	12500	5 x (2 x SAFUR200F500)
Chopper-2400-6 (6xNBRA669)	2422	0.23	5010	582	324	2000	894	1724	1542	73	15000	6 x (2 x SAFUR200F500)

Frame size	Height	Width	Depth	Weight
Brake Chopper Modules				
NBRA658	584	334	240	26
NBRA659	584	334 [1)]	240	26 [1)]
SAFUR180F460	1320	300 [1)]	345	32 [1)]
SAFUR125F500	1320	300 [1)]	345	25 [1)]
SAFUR200F500	1320	300 [1)]	345	30 [1)]
SAFUR210F575	1320	300 [1)]	345	27 [1)]

[1)] Single module only.

$P_{br,max}$ = Maximum braking power of the NBRA-6xx chopper and SAFUR resistor combination.
The chopper will withstand this braking power for one minute every ten minutes.

Note: The braking energy transmitted to the resistor during any period shorter than 400 seconds may not exceed E_r.

The standard resistor therefore withstands continuous braking of $P_{br,max}$ typically 20 to 40 seconds ($t = E_r / P_{br,max}$).

R = Recommended brake resistor resistance. Also nominal resistance of corresponding SAFUR resistor.
I_{max} = Maximum peak current per chopper during braking. Current is achieved with minimum resistor resistance.
I_{rms} = Corresponding rms current per chopper during load cycle.

Heat loss of brake chopper is 1 % of braking power.
Heat loss of section with brake resistors is he same as braking power.

EMC filter options

1st environment vs 2nd environment

1st environment

1st environment includes domestic premises.
It also includes establishments directly connected without intermediate transformer to a low-voltage power supply network which supplies buildings used for domestic purposes."

2nd environment

2nd environment includes all establishments other than those directly connected to a low-voltage power supply network which supplies buildings used for domestic purposes."

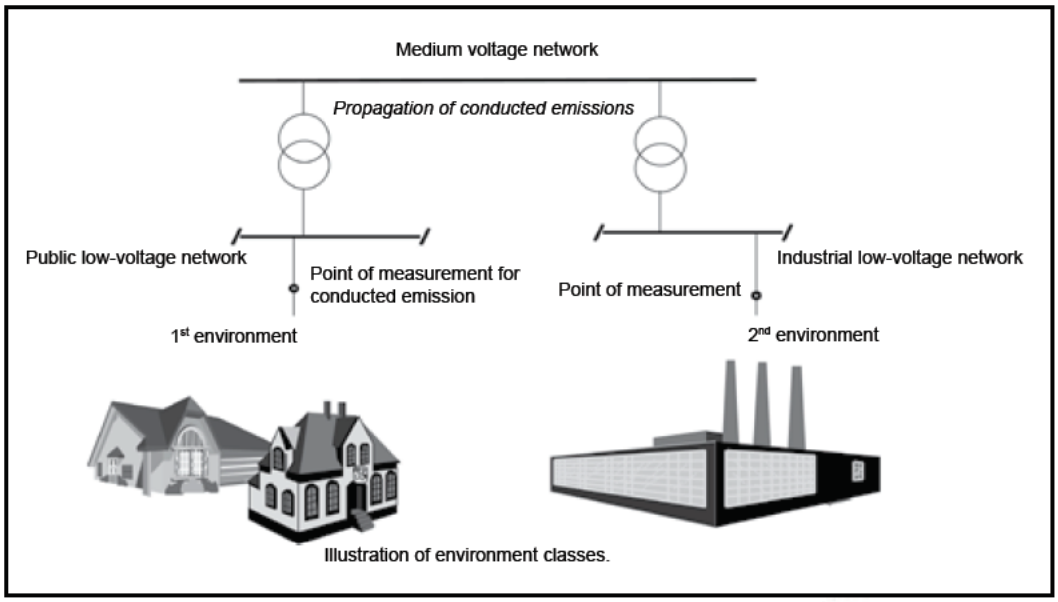
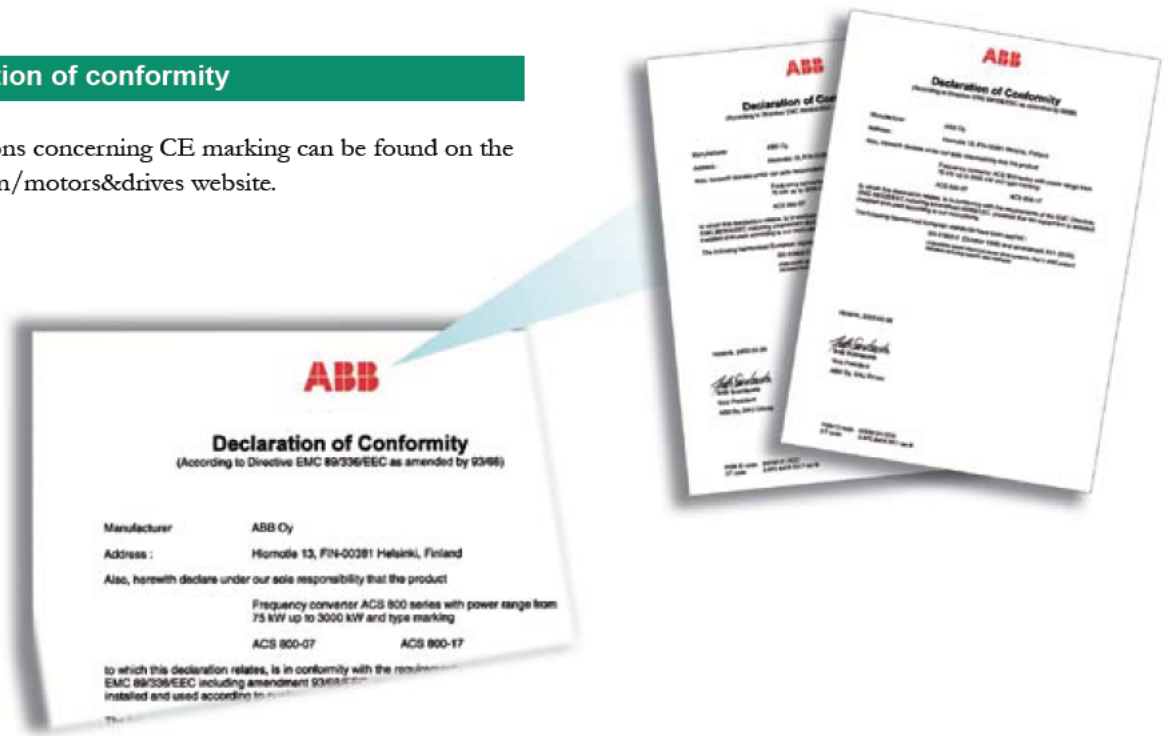


Illustration of environment classes.

Declaration of conformity

All declarations concerning CE marking can be found on the www.abb.com/motors&drives website.



EMC filter options

EMC - Electromagnetic Compatibility and modules

The electrical/electronic equipment must be able to operate without problems within an electromagnetic environment. This is called immunity. The ACS800 is designed to have adequate immunity against interference from other equipment. Likewise, the equipment must not disturb or interfere with any other product or system within its locality. This is called emission. Each ACS800 model can be equipped with an inbuilt filter to reduce high frequency emission.

EMC standards

The EMC product standard [EN 61800-3 (1996) + Amendment A11 (2000)] covers the requirements stated for drives within the EU. The new revision of EN 61800-3 (2004) product standard can be applied from now on, but latest from 1 October 2007. In some cases other standards may be applicable. The emission limits are comparable according to the following table, EMC standards.

Selecting an EMC filter

The following table gives the correct filter selection.

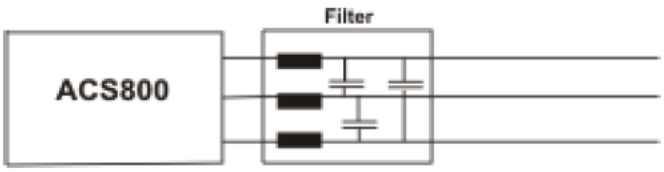
EMC standards				
EN 61800/A11, (2000), product standard	EN 61800-3 (2004), product standard	EN 55011, product family standard for industrial, scientific and medical (ISM) equipment	EN 6100-6-4, generic emission standard for industrial environments	EN 61000-6-3, generic emission standard for residential, commercial and light-industrial environment
1st environment, unrestricted distribution	Category C1	Group 1 Class B	Not applicable	Applicable
1st environment, restricted distribution	Catefory C2	Group 1 Class A	Applicable	Not applicable
2nd environment, unrestricted distribution	Category C3	Group 2 Class A	Not applicable	Not applicable
2nd environment, restricted distribution	Category C4	Not applicable	Not applicable	Not applicable

Type	Voltage	Frame sizes	1st environment, restricted distribution, grounded network (TN)	2nd environment, grounded network (TN)	2nd environment, floating network (IT)
800-U1	400-500	R1-R5	+E202	+E200	-
	400-500	R6	+E202	-	+E210
	690	R1-R5	-	+E200	-
	690	R6	-	-	+E210
800-U11	400-500	R5-R6	+E202	+E200	-
800-U2	400-500	R7-R8	+E202	+E210	+E210
	690	R7-R8	-	+E210	+E210
800-U7	400-500	R6	+E202	+E200	-
		R7-R8	+E202	+E210	+E210
800-07		nxR8i	+E202 (up to 1000A)	standard	standard
800-U7	690	R6	-	+E200	-
		R7-R8	-	+E210	+E210
800-07		nxR8i	-	standard	standard
800-17	400-500	R7i-nxR8i	+E202 (up to 1000A)	standard	standard
	690	R7i-nxR8i	-	standard	standard
800-37	400-500	R7i-nxR8i	+E202 (up to 1000A)	standard	standard
	690	R7i-nxR8i	-	standard	standard

Sine filter options

ABB sine filter solution

The ACS800 sine filter solution is an ACS800 industrial drive equipped with a sine filter. It enjoys most of the premium features of the standard ACS800 industrial drive. The LC filter suppresses the high frequency components of the output voltage.



This means that the output voltage waveform is almost sinusoidal without high voltage peaks.

Filters are available in IP 00 degree of protection over the whole power range. The ACS800-U1 power range also has NEMA 1 filters available. The ACS800-U7/07 drive sine filters are complete cabinet-built units.

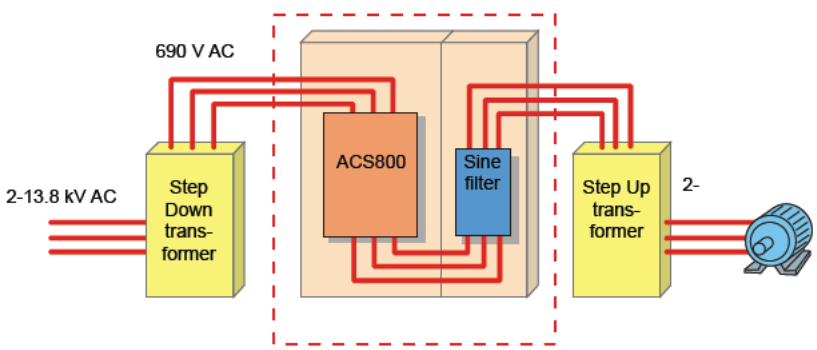
The ABB sine filter solution can be used in a variety of applications:

- Motor does not have adequate insulation for VSD duty
- Total motor cable length is long e.g. there are a number of parallel motors
- Step-up applications e.g. medium voltage motor needs to be driven
- Step-down applications
- There are industry specific requirements for peak voltage level and voltage rise time
- Motor noise needs to be reduced
- Maximum safety and reliability is needed in e.g. explosive applications
- Submersible pumps with long motor cables e.g. in the oil industry

Main features

- Optimized LC filter design that takes into account switching frequency, voltage drop and filtering characteristics
- Proven technology as ABB has delivered hundreds of sine filter solutions over the last 20 years in a wide range of applications.
- Cost effective solution
- Standard software has all the parameters that need to be set

Feature	Benefit	Note
Sinusoidal output voltage	No additional stress on the motor insulation: non-VSD compliant motors can be used, motor reliability and lifetime are maximized.	
	Allows the use of transformers in the drive output to match any required motor voltage.	Voltage drop at motor cable can be compen-sated with transformer i.e. there are no restrictions to motor cable length.
	Standard distribution transformer can be used in step-up solutions.	High starting torque is available with special transformer design.
	Less motor noise.	Usually the motor fan is the biggest noise source with sine filter solutions.
AP programming, advanced IR-compensation and flux control	The effects of load changes to motor voltage can be compensated i.e. the motor always has the optimum voltage.	Scalar control is required with sine filters.



Sine filter option

Types and ratings for ACS800-U4

Drive Type Code	Filter	$I_{cont.max}$ A	$P_{cont.max}$ Hp	Noise Level dB	Air Flow ft³/min	Heat Dissipation BTU/hr	IP Class	Filter height in	Filter width in	Filter depth in	Filter weight lb
U_N = 500 V (Range 380-500 V). The power ratings are valid at nominal voltage 500 V.											
ACS800-U4-0006-5	NSIN 0006-5	8.1	5	67	21[1)]	1024	IP00/IP23	6.30/9.21	6.10/9.05	4.72/6.69	13.23/19.84
ACS800-U4-0016-5	NSIN 0016-5	19	10	68	41[1)]	2013	IP00/IP23	11.02/18.11	9.45/18.50	7.48/10.63	33.07/57.32
ACS800-U4-0020-5	NSIN 0020-5	25	15	68	41[1)]	2661	IP00/IP23	11.02/18.11	9.45/18.50	7.87/10.63	41.88/66.14
ACS800-U4-0025-5	NSIN 0025-5	33	25	68	41[1)]	3412	IP00/IP23	11.02/18.11	9.45/18.50	8.27/10.63	46.29/70.55
ACS800-U4-0030-5	NSIN 0030-5	42	30	69	61[1)]	3753	IP00/IP23	11.02/18.11	9.45/18.50	8.66/10.63	57.32/81.57
ACS800-U4-0040-5	NSIN 0040-5	47	30	69	61[1)]	4777	IP00/IP23	12.40/18.11	11.81/18.50	8.97/10.63	74.96/99.21
ACS800-U4-0050-5	NSIN 0050-5	65	50	73	147[1)]	6142	IP00/IP23	12.40/20.08	11.81/22.83	9.44/12.79	81.57/116.84
ACS800-U4-0060-5	NSIN 0060-5	79	60	73	147[1)]	7507	IP00/IP23	12.60/20.08	11.81/22.83	10.62/12.79	116 84/152.12
ACS800-U4-0070-5	NSIN 0070-5	94	75	73	147[1)]	8872	IP00/IP23	16.33/20.08	14.17/22.83	8.27/12.79	145.50/180.78
ACS800-U4-0100-5	NSIN 0100-5	124	100	75	238[1)]	11602	IP00/IP23	16.33/20.08	14.17/22.83	8.86/12.79	152.12/187.39
ACS800-U4-0120-5	NSIN 0120-5	155	125	75	238[1)]	14672	IP00/IP23	16.33/24.41	14.17/27.56	9.45/16.73	165.35/231.49
ACS800-U4-0140-5	NSIN 0140-5	177	150	75	238[1)]	18426	IP00/IP23	17.72/24.41	15.74/27.56	19.68/20.67	264.55/363.76
ACS800-U4-0170-5	NSIN 0315-6 [3)]	196	150	79	730[2)]	14672	IP00	81.10	15.74	23.62	507.06
ACS800-U4-0210-5	NSIN 0315-6 [3)]	245	200	79	730[2)]	18426	IP00	81.10	15.74	23.62	507.06
ACS800-U4-0260-5	NSIN 0315-6 [3)]	258	250	79	730[2)]	21155	IP00	81.10	15.74	23.62	507.06
ACS800-U4-0270-5	NSIN 0315-6 [3)]	258	250	79	730[2)]	21155	IP00	81.10	15.74	23.62	507.06
ACS800-U4-0300-5	NSIN 0485-6 [3)]	440	350	80	1130[2)]	32757	IP00	81.10	15.74	23.62	551.16
ACS800-U4-0320-5	NSIN 0485-6 [3)]	440	350	80	1130[2)]	32757	IP00	81.10	15.74	23.62	551.16
ACS800-U4-0400-5	NSIN 0900-6 [3)]	515	450	80	1895[2)]	37875	IP00	83.46	39.36	23.62	1521.19
ACS800-U4-0440-5	NSIN 0900-6 [3)]	550	450	80	1895[2)]	37875	IP00	83.46	39.36	23.62	1521.19
ACS800-U4-0490-5	NSIN 0900-6 [3)]	602	500	80	1895[2)]	40605	IP00	83.46	39.36	23.62	1521.19
ACS800-U4-0550-5	NSIN 0900-6 [3)]	684	500	80	1895[2)]	45723	IP00	83.46	39.36	23.62	1521.19
ACS800-U4-0610-5	NSIN 0900-6 [3)]	700	600	80	1895[2)]	48111	IP00	83.46	39.36	23.62	1521.19
U_N = 690 V (Range 525-690 V). The power ratings are valid at nominal voltage 690 V.											
ACS800-04-0011-7	NSIN 0011-7	13	10	67	61[1)]	1365	IP00/IP23	11.02/18.11	9.45/18.50	7.48/10.63	44.10/68.34
ACS800-04-0016-7	NSIN 0020-7	17	15	67	61[1)]	1570	IP00/IP23	11.02/18.11	9.45/18.50	8.66/10.63	57.32/81.57
ACS800-04-0020-7	NSIN 0020-7	22	20	68	61[1)]	1911	IP00/IP23	11.02/18.11	9.45/18.50	8.66/10.63	57.32/81.57
ACS800-04-0025-7	NSIN 0025-7	25	20	69	61[1)]	2218	IP00/IP23	12.60/20.08	11.81/22.83	8.74/12.79	77.16/112.44
ACS800-04-0030-7	NSIN 0040-7	31	25	70	61[1)]	2525	IP00/IP23	12.60/20.08	11.81/22.83	9.25/12.79	88.18/123.46
ACS800-04-0040-7	NSIN 0040-7	34	30	73	61[1)]	2798	IP00/IP23	12.60/20.08	11.81/22.83	9.25/12.79	88.18/123.46
ACS800-04-0050-7	NSIN 0060-7	48	40	73	147[1)]	3412	IP00/IP23	12.99/20.08	11.81/22.83	10.83/12.79	125.66/160.94
ACS800-04-0060-7	NSIN 0060-7	52	50	73	147[1)]	4095	IP00/IP23	12.99/20.08	11.81/22.83	10.83/12.79	125.66/160.94
ACS800-04-0070-7	NSIN 0070-7	79	75	75	238[1)]	5118	IP00/IP23	16.33/20.08	14.17/22.83	9.45/12.79	165.35/200.62
ACS800-04-0100-7	NSIN 0120-7	93	75	75	238[1)]	6483	IP00/IP23	19.68/20.08	16.54/22.83	11.41/12.79	277.78/313.06
ACS800-04-0120-7	NSIN 0120-7	104	100	75	238[1)]	7848	IP00/IP23	19.68/20.08	16.54/22.83	11.41/12.79	277.78/313.06

NOTES:

1) Air flow of the drive.
2) Combined air flow of the drive and the filter.
3) Dimensions are approximations for a cabinet that can house the filter. Weight is approximately the total weight of the cabinet and the filter. The filter assembly is supplied as loose items, which include choke modules, capacitors and cooling fan.

Sine filters listed above are not UL rated.
Sine filters have extended lead times

Nominal Ratings:
$I_{cont.max}$ rated current of the drive-filter combination available continuously without overload at 40 C.

Typical Ratings:
$P_{cont.max}$ typical motor power.

Notes:
Noise level is a combined value for the drive and the filter. Heat dissipation is a combined value for the drive and filter

du/dt output filter options

du/dt output filters and the ACS800

du/dt output 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 emission of 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 motor manufacturer. If the motor

does not fulfill the following requirements, the lifetime of the motor might decrease.

Insulated N-end (non-driven end) bearings and/or common mode filters are also required for motor bearing currents with motors bigger than 100 kW. For more information please see the ACS800 hardware manuals.

Filter selection table for ACS800

Motor type	Nominal mains voltage (U_N)	Motor insulation requirement
ABB M2 andM3 motors	$U_N \leq 500$ V	Standard insulation system.
	500 V < $U_N \leq$ 600 V	Standard insulation system in conjunction with du/dt filtering or reinforced insulation.
	600 V < $U_N \leq$ 690 V	Reinforced insulation system in conjunction with du/dt filtering.
ABB form-wound HXR and AM motors	380 V < $U_N \leq$ 690 V	Standard insulation system.
ABB random-wound HXR and AM motors	380 V < $U_N \leq$ 690 V	Check motor insulation system with the motor manufacturer. du/dt filtering with voltages over 500 V.
Non-ABB Random-wound and Form-wound	$U_N \leq 420$ V	Insula ion system must withstand $\hat{U}_{LL}$=1300 V.
	420 V < $U_N \leq$ 500 V	If the insulation system withstands $\hat{U}_{LL}$=1600 V and Δt=0.2 µs, du/dt filtering is not required. With du/dt filtering, the insulation system must withstand $\hat{U}_{LL}$=1300 V.
	500 V < $U_N \leq$ 600 V	If the insulation system withstands $\hat{U}_{LL}$=1800 V, du/dt filtering is not required. With du/dt filtering, the insulation system must wi hstand $\hat{U}_{LL}$=1600 V.
	600 V < $U_N \leq$ 690 V	If the motor insulation system withstands $\hat{U}_{LL}$=2000 V and Δt=0.3 µs, du/dt filtering is not required. With du/dt filtering, the insulation system must withstands $\hat{U}_{LL}$=1800 V

Symbol	Explanation
U_N	Nominal AC Line voltage.
U_{LL}	Peak line to line voltage at motor terminals.
Δt	Rise time, i.e. interval during which line to line voltage at motor terminals changes from 10% to 90% of full voltage range.

Applicability

Separate filters need to be mounted separately. Unprotected IP 00 filters must be placed into an enclosure of adequate degree of protection.

External du/dt filters for ACS800-U4

ACS800		du/dt filter type (3 filters included in kits marked *) Unprotected (IP 00)							
500 V	690 V	NOCH0016-60	NOCH0030-60	NOCH0070-60	*NOCH0120-60	*NOCH0260-60	FOCH0260-70	FOCH0320-50	FOCH0610-70
-0004-5 -0005-5 -0006-5 -0011-5 -0016-5	-0011-7	1							
-0020-5	-0016-7 -0020-7 -0025-7		1						
-0025-5 -0028-5 -0030-5 -0040-5 -0045-5 -0050-5 -0060-5	-0030-7 -0040-7 -0050-7 -0060-7			1					
-0070-5 -0100-5	-0070-7 -0100-7 -0120-7				1				
-0120-5					1				
-0140-5						1			
-0150-5 -0170-5 -0210-5 -0260-5	-0140-7 -0170-7 -0210-7 -0260-7						1		
-0320-5								1	
-0400-5 -0440-5 -0490-5 -0550-5	-0320-7 -0400-7 -0440-7 -0490-7 -0550-7								1

Dimensions and Weights of the du/dt filters

du/dt filter	Imperial Units (in)&(lb)			
	Height	Width	Depth	Weight
NOCH0016-60	7 6	5 5	4.5	5.2
NOCH0030-60	8.4	6.4	5.1	10.3
NOCH0070-60	10.2	7.1	5.9	20.9
NOCH0120-60**	7 8	6.1	4.1	15.4
NOCH0260-60**	15.0	7 3	4.3	26.4
FOCH0260-70	15.0	7.4	10.0	103 6
FOCH0320-50	26.0	12.5	11.1	143 3
FOCH0610-70	26.0	12.5	11.1	143 3

** 3 filters included, dimensions apply for one filter.

Standard user interface

Control panel

The industrial drive control panel has a multilingual alpha-numeric display (4 lines x 20 characters) with plain text messages in 14 languages.

The control panel is removable and can be mounted on the drive enclosure or remotely.

```
1 L ->      1242.0 RPM I
SPEED       1242.0 RPM
CURRENT     76.00 A
TORQUE      86.00 %
```

Start-up assistant

Easy commissioning with the start-up assistant. The start-up assistant actively guides you through the commissioning procedure step by step. It also has a unique on-line help function.

```
MOTOR SETUP 4/10
MOTOR NOM CURRENT ?
(75.5 A)
ENTER: OK   RESET: BACK
```

Actual value display

The control panel can display three separate actual values simultaneously.
Examples of these are:

- Motor speed
- Frequency
- Current
- Torque
- Power
- References
- DC bus voltage
- Output voltage
- Heatsink temperature
- Operating hours
- Kilowatt hours
- I/O status

Fault memory

A built in fault memory stores information relating to the last 64 faults, each with a time stamp.

```
1 L->       1242.0 RPM I
2 LAST FAULT
OVERVOLTAGE
            1121 H 1 MIN
```

Parameter copying

Parameter copy feature allows all drive parameters to be copied from one frequency converter to another simplifying commissioning.

```
1 L->       1242.0 RPM I
UPLOAD      <= <=
DOWNLOAD    => =>
CONTRAST    4
```

Centralized control

One panel can control up to 31 drives.

```
->  ->  <-  ->
1   21  40  100
->
111
```

Easy programming

Parameters are organized into groups for easy programming.

```
1 L ->   1242.0 RPM I
11 REFERENCE SELECT
3 EXT REF 1 SELECT
AI1
```

The ACS800 keypad is backward compatible to the ACS600.

Standard user interface

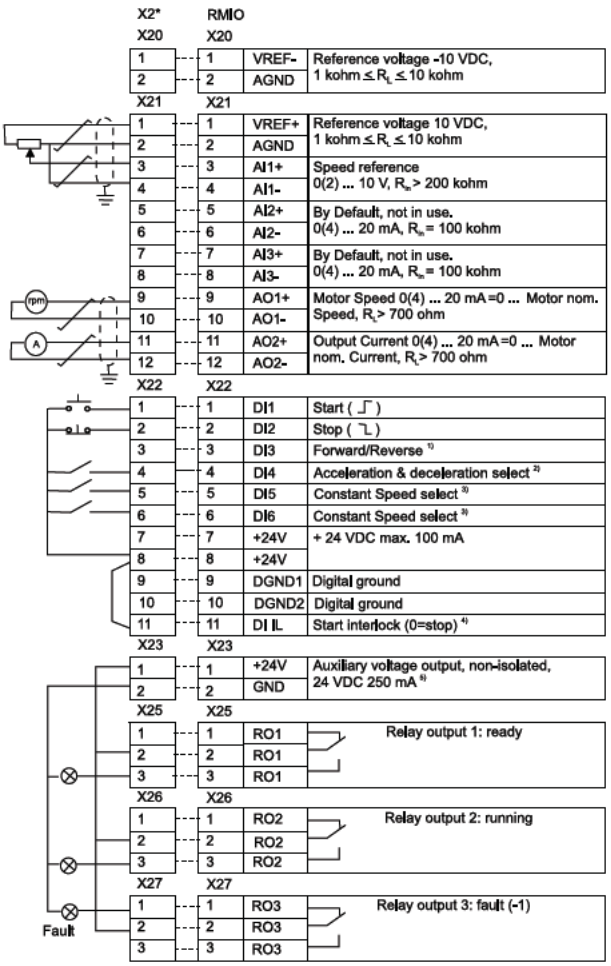
Standard I/O

Analog and digital I/O channels are used for different functions such as control, monitoring and measurement purposes (e.g. motor temperature). In addition, optional I/O extension modules are available providing additional analog or digital I/O connections.

Below are the standard drive control I/O of the ABB industrial drive for the Factory Macro. For other ACS800 application macros the default functions may be different.

Standard I/O on RMIO-01 Board

- **3 analog inputs:** differential, common mode voltage ±15 V, galvanically isolated as a group.
  - One ±0(2)...10 V, resolution 12 bit
  - Two 0(4)...20 mA, resolution 11 bit
- **2 analog outputs:**
  - 0(4)...20 mA, resolution 10 bit
- **7 digital inputs:** galvanically isolated as a group (can be split in two groups)
  - Input voltage 24 V DC
  - Filtering (HW) time 1 ms
- **3 digital (relay) outputs:**
  - Form C contacts
  - 24 V DC or 115/230 V AC
  - Max. continious current 2 A
- **Reference voltage output:**
  - ±10 V ±0.5%, max. 10 mA
- **Auxiliary power supply output:**
  - +24 V ±10%, max. 250 mA



Additional I/O options

Standard I/O can be extended by using analog and digital extension modules or pulse encoder interface modules which are mounted in the slots on the ASC800 control board. The control board has two slots available for extension modules. More extension modules can be added with the I/O extension adapter which has three additional slots. The available number and combination of I/O's depends on the control software used. The standard application software supports 2 analog, 2 digital extension modules and 1 encoder interface module.

Optional I/O

Analog I/O extension module RAIO-01 (+L500)

- **2 analog inputs:** galvanically isolated from 24 V supply and ground
  - ±0(2)...10 V, 0(4)... 20 mA or ±0...2 V, resolution 12 bits
- **2 analog outputs:** galvanically isolated from 24 V supply and ground
  - 0(4)...20 mA, resolution 12 bit

Digital I/O extension module RDIO-01 (+L501)

- **3 digital inputs:** individually galvanically isolated
  - Signal level 24 to 250 V DC or 115/230 V AC
- **2 relay (digital) outputs:**
  - Form C contacts
  - 24 V or 115/230 V AC
  - Max. 2 A

Pulse encoder interface module RTAC-01 (+L502)

- **1 incremental encoder input:**
  - Channels A, B and Z (zero pulse)
  - Signal level and power supply for the encoder is 24 or 15 V
  - Single ended or differential inputs
  - Maximum input frequency 200 kHz

Resolver Interface Module (Limited SW Support)

I/O extension adapter AIMA-01

- Three slots for I/O extension modules
- Connection to the ACS800 control board through fiber optic link
- Dimensions: 3.1 × 12.8× 1.1 in
- Mounting: onto 1.4 × 0.3 in DIN rail
- External power supply connection
- Supply voltage: 24 V DC ±10%
- Current consumption: depends on connected I/O extension modules. (Recommend 1A 24 Vdc supply)

Communications options
Fieldbus control

ABB industrial drives have connectivity to most major automation systems. This is achieved with a dedicated gateway concept between the fieldbus systems and ABB drives.

The fieldbus gateway module can easily be mounted inside the drive. Because of the wide range of fieldbus gateways, your choice of automation system is independent of your decision to use first-class ABB AC drives.

Manufacturing flexibility

Drive control
The drive control word (16 bit) provides a wide variety of functions from start, stop and reset to ramp generator control. Typical setpoint values such as speed, torque and position can be transmitted to the drive with 15 bit accuracy.

Drive monitoring
A set of drive parameters and/or actual signals, such as torque, speed, position, current etc., can be selected for cyclic data transfer providing fast data for operators and the manufacturing process.

Drive diagnostics
Accurate and reliable diagnostic information can be obtained via the alarm, limit and fault words, reducing the drive downtime and therefore the downtime of the manufacturing process.

Drive parameter handling
Total integration of the drives in the production process is achieved by single parameter read/write up to complete parameter set-up or download.

Reduced installation and engineering effort

Cabling
Substituting the large amount of conventional drive control cabling with a single communication cable reduces costs and increases system reliability.

Design
The use of fieldbus control reduces engineering time at installation due to the modular structure of the hardware and software.

Commissioning and assembly
The modular machine configuration allows pre-commissioning of single machine sections and provides easy and fast assembly of the complete installation.

Currently available gateways

Fieldbus	Protocol	Device profile	Baud rate
PROFIBUS (+K454)	DP, DPV1	PROFIdrive ABB Drives *)	9.6 kbit/s - 12 Mbit/s
DeviceNet (+K451)	-	AC/DC drive ABB Drives *)	125 kbit/s - 500 kbit/s
ControlNet (+K462)	-	AC/DC drive ABB Drives *)	5 Mbit/s
Modbus (+K458)	RTU	ABB Drives *)	600 bit/s - 19.2 kbit/s
Ethernet (+K466)	Modbus/TCP Ethernet/IP	ABB Drives *)	10 Mbit/s / 100 Mbit/s
CANopen (+K457)	-	Drives and motion control ABB Drives*)	10 kbit/s - 1 Mbit/s
InterBUS-S (+K453)	I/O, PCP	ABB Drives*)	500 kbit/s

*) Vendor specific profile

NOTE:
Additional Fieldbus module options are available. Contact your local ABB representative for more information.

Additional options

Remote monitoring and diagnostics tool

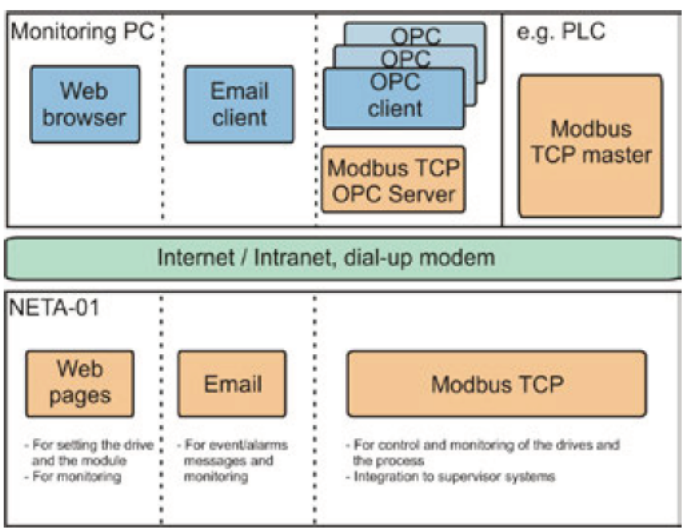
Browser-based, user-friendly

The intelligent ethernet NETA-01 module gives simple access to the drive via the internet, communicating via a standard web browser. The user can set up a virtual monitoring room wherever there is a PC with an internet connection or via a simple dial-up modem connection. This enables remote monitoring, configuration, diagnostics and, when needed, control. The drive can also provide process related information, such as load level, run time, energy consumption and I/O data, the bearing temperature of the driven machine, for instance.

This opens up new possibilities for the monitoring and maintenance of unmanned applications across a range of industries, for instance water, wind power, building services and oil & gas, as well as any application where the user needs access to the drives from more than one location. The NETA-01 also provides an opportunity for OEMs and system integrators to support their installed base globally.

No PC needed at local end

The intelligent ethernet module has an embedded server with the necessary software for the user interface, communication and data storage. This gives ease of access, realtime information and the possibility for two-way communication with the drive, enabling immediate response and actions, saving time and money. This is possible without using a PC at the local end, as required by other remote solutions.



Powerful and versatile

Up to nine drives can be connected to the intelligent ethernet module via fiber optic links. It is available as an option for new drives, as well as an upgrade for existing systems. Access to the module is secured by user ID and passwords.

The intelligent ethernet NETA-01 module connects to the drive with fiber optic cables. The size of the module is 3.7(h) x 1.4 (w) x 3.0 (d) in

The web page of the module is opened like any other web address. The home page shows a general overview of the system with traffic lights and action buttons to guide the user through the different sections.

Features

- Virtual monitoring room for
  - Monitoring
  - Configuration of parameters
  - Diagnostics
  - Control, if needed
- Browser-based access via
  - Intra-/extra-/internet or
  - Simple dial-up modem connection
- No PC needed at the local end
- Can be used as a Modbus/TCP bridge for process control
- The NETA-01 module may be used in conjunction with other Fieldbus modules from the previous page

Standard application software

Standard application software

Based on ABB's exclusive Direct Torque Control technology, the ACS800 offers highly advanced features as standard. The ACS800 standard application software provides solutions to virtually all AC drives applications.

Adaptive programming

In addition to parameters, industrial drives have the possibility for function block programming as standard. Adaptive programming with 15 programmable function blocks makes it possible to replace relays or even a PLC in some applications. Adaptive programming can be done either by standard control panel or DriveAP, a user-friendly PC tool.

The standard application macros

The ACS800 features built in, pre-programmed application macros for configuration of such parameters as inputs, outputs and signal processing.

- FACTORY SETTINGS for basic industrial applications
- HAND/AUTO CONTROL for local and remote operation
- PID CONTROL for closed loop processes
- SEQUENTIAL CONTROL for repetitive cycles
- TORQUE CONTROL for processes where torque control is required
- USER MACRO 1 & 2 for user's own parameter settings

Software features

A complete set of standard software features offers premium functionality and flexibility.

- Accurate speed control
- Accurate torque control without speed feedback
- Adaptive programming
- Automatic reset
- Automatic start
- Constant speeds
- Controlled torque at zero speed
- DC hold
- DC magnetizing
- Diagnostics
- Flux braking
- Flux optimization
- IR compensation
- Master/follower control
- Mechanical brake control
- Motor identification
- Parameter lock
- Power loss ride-through
- Process PID control
- Programmable I/O
- Scalar control
- Speed controller tuning
- Start-up assistant
- Support for sine filter in the drive output
- Trim function
- User-selectable acceleration and deceleration ramps
- User adjustable load supervision/limitation

Pre-programmed protection functions

A wide range of features provides protection for the drive, motor and the process.

- Ambient temperature
- DC overvoltage
- DC undervoltage
- Drive temperature
- Input phase loss
- Overcurrent
- Power limits
- Short circuit

Programmable protection functions

- Adjustable power limits
- Control signal supervision
- Critical frequencies lock-out
- Current and torque limits
- Earth fault protection
- External fault
- Motor phase loss
- Motor stall protection
- Motor thermal protection
- Motor underload protection
- Panel loss

Optional application software

Control solutions for different applications

ABB provides a set of ready-made control solutions for specific industrial AC drive applications. Such software adds application-dedicated features and protection without an external PLC - improving productivity and reducing costs.

Main advantages of ABB's control solutions

- Application-dedicated features
- Improved production
- No external PLC
- User-friendly
- Easy to use
- Energy savings
- Smooth power loss ride-through
- Reduced costs
- Adaptive protection

Master/follower control

Reliable control via the fiber optic link of several drives when they are controlled by one master. This is needed e.g. if the motor shafts are coupled together. The master/follower function enables the load to be evenly distributed between the drives.

Pump control

Intelligent pump control software is a combination of traditional PFC which is specially designed for multi-motor pumping (or compressor, etc.) stations. While directly controlling one motor, the drive is able to start additional, direct-on-line motors whenever a higher capacity is needed.

Multipump function
Additional features such as the multipump function are designed for pumping stations that consist of multiple pumps, each controlled by a separate drive. The drives can be connected so that in the case of pump failure or maintenance action on one drive, the remaining drives continue operation - having 100% redundancy. There is an autochange function to alternate between the pumps so all pumps have equal operating time and wear.

Level control function
The liquid level of a container can be used as a process variable for a pumping station either filling or emptying the container when the level control function is activated. Three drives can be used in a master/follower configuration.

Flow calculation
The flow calculation contains a function that enables reasonably accurate calculation of flow without the installation of a separate flow meter.

Anti-jam function
The anti-jam function can be used for preventing solids from building up on pump impellers. The anti-jam procedure consists of a programmable sequence of forward and reverse runs of the pump, effectively shaking off any residue on the impeller.

Progressive Cavity Pump

Software to provide protection and optimization for Progressive Cavity Pumps and Electrical Submersible Pumps for the Oil and Gas industry. The software is designed to protect the pump rods from over torque situation during adverse conditions and provides safe shutdown through controlled backspin. It also provides for input from external sensors for further protection and returns feedback in pump terminology (rod speed and torque etc..).

Optional application software

Control solutions for different applications

Centrifuge control

Practical programmable sequences for conventional centrifuges. Integrated decanter control for the accurate speed difference control of two shafts, where direct communication via the fiber optic link between bowl and scroll is used.

Crane drive control

Crane drive control with optimal operational safety and performance built into the drive.

- Easy installation and start-up reduces the total project costs
- Ready to use with proven crane functionality
- Accurate and fast response increases the operational productivity
- Multiple drives can be synchronized with internal fiber optic link, reducing the need for separate controllers. Everything needed is built in
- Available as single drive or multi-drive with dynamic and regenerative braking

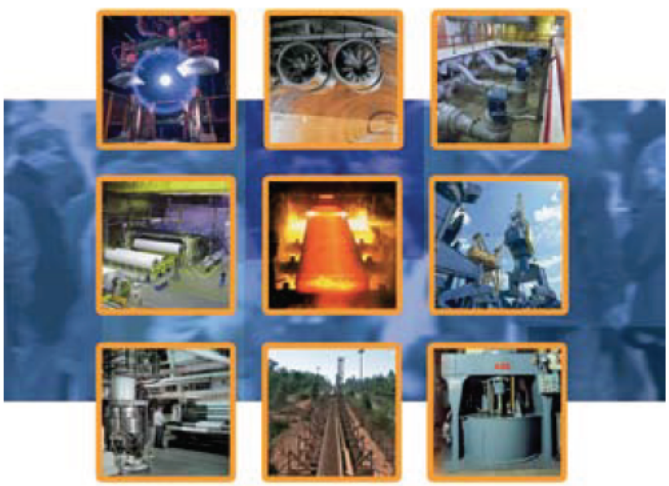
Spinning control & traverse control

Spinning control and traverse control make a perfect pair for the precise control of spinning and traverse drives in textile machines.

Inline Control

The application software is designed for web process line Draw / Dancer / Tension control. An inline section on a process line is a section controlling the web in the machine after an extruder or unwind and before the winder or sheeter. This application program focuses on the converting and web handling industries and is commonly paired with the Center Winder/Unwind program.

- Draw Macro- Configures the drive to operate with manual speed adjustment from an operator control station.
- Dance Macro- Configures the drive to maintain setpoint dancer position based on dancer position feedback. The force on the dancer determines the tension on the web.
- Tension Macro- Configures the drive to maintain setpoint web tension based on a web force measurement device such as a loadcell. The ACS800 adjusts the speed of the the section to maintain the desired web tension.
- Master-Follower communications via fiber optics are supported for process line coordination



Optional application software

Control solutions for different applications

Center Winder/Unwind

The Center Winder/Unwind software is designed for process lines. The program supports tension control of a web using dancer trim, tension trim, or torque control. Included are a diameter calculator, tension regulators, inertia compensation, and roll change logic for continuous process lines. This application program focuses on the converting and web handling industries and is commonly paired with the Inline Control program.

- Draw Macro- Configures the drive to operate with manual speed adjustment from an operator control station.
- Dance Macro- Configures the drive to maintain setpoint dancer position based on dancer position feedback. The force on the dancer determines the tension on the web.
- Tension Macro- Configures the drive to maintain setpoint web tension by varying speed or torque of the section.
  - Closed Loop Tension Control uses a web force measurement device such as a loadcell. Based on the feedback value, the ACS800 adjusts speed or torque (setup optoin) to maintain set point tension.
  - Open Loop Tension Control operates in torque control mode and does not require a web force measurement device. The torque required to maintain setpoint tension is calculated from setup variables.
- Master-Follower communications via fiber optics are supported for process line coordination
- Built-in diameter calculator using web velocity and spindle speed to calculate actual diameter of the wound roll. The diameter calculation is used to trim the actual speed of the spindle axis as material is wound or unwound from the spindle thus maintaining accurate surface speed.
- Built-in inertia compensation with dynamic inertia adjustment based on actual roll diameter and web density
- Support for automatic roll change.

Position Control

ABB's Position Control Software provides an ideal solution for OEM machine builders and system integrators seeking to implement accurate position control in their applications. This software incorporates accurate positioning, synchronization, and DTC performance for position control applications. This software is designed to be an optimal solution to replace systems that implement sensors and PLCs as the main control apparatus for positioning systems.

This software offers four control modes:

- Speed & Torque control
- Position & Synchronization Control

These basic position control functions are included:

- Homing and Cyclic Corrections
- Gear functions for load, motor, and synchronization
- Selectable physical units for position values (mm. inch, increment, degree, and revolution)
- Probe latching through digital inputs

Additional Application Support

Extended I/O

An analog and digital I/O extension is typically installed on the AIMA-01 I/O extension adapters. Three extension modules can be installed on each I/O extension adapter and a fiber optic link connects the I/O extension adapters to the drive control board. The maximum number of I/O connections is 62.

Programming

Function blocks are easy to program using the DriveAP 2 PC tool. For example, there are PROFIBUS fieldbus blocks available to help users to understand the block program connections between the drive and Profibus master. Block program information, as well as text comments, symbolic names of block outputs and page header information is saved in the flash memory of the control board of the drive.

DriveSize

Quality dimensioning

DriveSize is a PC program for helping the user to select the optimal motor, frequency converter and transformer, especially in those cases where a straightforward selection from a catalog is not possible. Additionally it can be used to compute currents, network harmonics and to create documents about the dimensioning based on actual load. DriveSize contains the current versions of the ABB motor and frequency converter catalogs.

The default values make DriveSize simple to use, but the user is provided with ample options for drive selection. The shortcut keys make drive selection easy while giving the optimal dimensioning result. A manual selection mode is also supported.

DriveSize is currently used by more than 1,000 engineers globally.

DriveSize is for drive system components

- 3-phase standard, customized, and user defined motors
- ABB low voltage AC drives
- Transformers

DriveSize features

- Selects the optimal motor, drive unit, supply unit and transformer
- Calculates network harmonics for a single supply unit or for the whole system
- Allows importation of own motor database
- Supplies dimensioning results in graphical and numerical format
- Prints and saves the results

The DriveSize PC program can be downloaded from www.abb.com/motors&drives
→ Drives
→ Drive PC Tools
→ DriveSize

DriveAP

Programming tool

DriveAP is a PC software tool for creating, documenting, editing and downloading adaptive programs and multiblock programming programs. DriveAP 1.1 supports adaptive programming, whereas DriveAP 2 supports both adaptive programming and multiblock programming applications. The adaptive programming contains 15 function blocks and is available in a standard application. The multiblock programming application contains over 200 function blocks, and also includes PROFIBUS fieldbus and drive I/O blocks. DriveAP offers a clear and easy way to develop, test and document these programs with a PC.

It is a user-friendly tool for modifying function blocks and their connections. No special programming skills are required, a basic knowledge about block programming is enough. DriveAP supports IEC61131.

The adaptive programs are easy to document as hard copies or store as PC files. The multiblock programming with all related information is saved directly to the drive.

Upload or download

Both program types can be uploaded from connected drives and displayed graphically on a PC screen for service or documentation purposes.

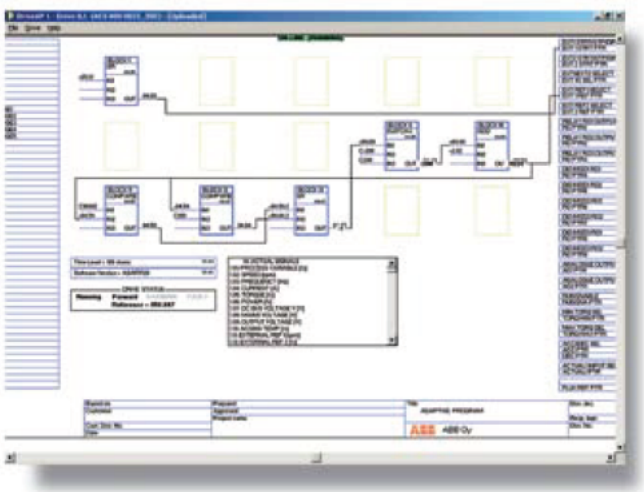
The adaptive programs and multiblock programming programs made off-line can be downloaded to any of the connected drives that support corresponding programs.

Three operating modes

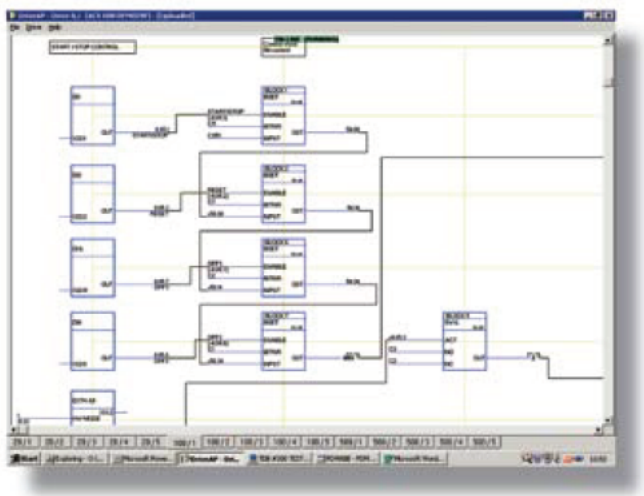
- Stand-alone mode - DriveAP is not connected to a drive. The adaptive programming and multiblock programming can be carried out in the office, for example, and later downloaded to a drive.
- Off-line mode - DriveAP is connected to a drive. The adaptive programming and multiblock programming can be carried out in batch mode.
- On-line mode - DriveAP is connected to a drive. Changes to the adaptive programs and multiblock programs are written immediately to the drive and actual values are shown on the screen in real-time.

DriveAP features

- Easy-to-use tool, no special skills required
- Create and download new programs
- Document programs
- Upload existing programs from the drive
- Operating modes
  - Stand-alone
  - Off-Line
  - On-Line



DriveAP with adaptive program of standard application.



DriveAP with multiblock programming application.

DriveWindow 2

Start-up and maintenance tool

ABB's DriveWindow is an advanced, easy-to-use PC software tool for the start-up and maintenance of ABB industrial AC-drives. Its host of features and clear, graphical presentation of the operation make it a valuable addition to your system, providing information necessary for troubleshooting, maintenance and service, as well as training.

With DriveWindow the user is able to follow the operation of several drives simultaneously by collecting the actual values from the drives on a single screen or printout.

Additionally, the client part of DriveWindow may reside on one intranet PC, and the server on another PC closer to the drives. This enables easy plant-wide monitoring with two PCs.

High speed communication

DriveWindow uses a high-speed fibre optic cable network with DDCS communication protocol. This enables very fast communication between PC and drives. The fibre optic network is safe and highly immune to external disturbance. A fiber optic communication card inside the computer is needed.

Monitoring drives

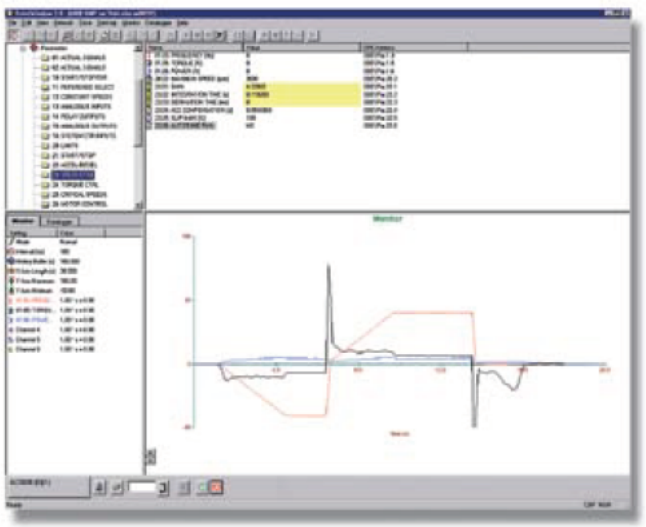
With DriveWindow you can monitor several drives simultaneously. The history buffer makes it possible to record a large amount of data in the PC's memory. The drive's data logger can be accessed with DriveWindow and viewed in graphical form. The fault logger inside the drive automatically documents every fault, warning and event which occurs. The fault history stored in the drive can be uploaded to your computer.

Versatile back-up functions

Drive parameters can be saved to the PC with DriveWindow, and can easily be downloaded back to the drive whenever needed. The same goes for the software. DriveWindow allows the entire control board software to be saved and restored later, if needed. This makes it possible to use one control board as a spare part for many different sizes of drives.

DriveWindow 2 features

- Easy-to-use tool for commissioning and maintenance
- Several drives connected and monitored at the same time
- Monitor, edit or save signals and parameters, clear graphical presentation
- High speed communication between PC and drive
- Versatile back-up functions
- View data collected and stored in the drive
- Fault diagnostics; DriveWindow indicates the status of drives, and also reads fault history data from the drive



DriveWindow Light 2

Start-up and maintenance tool

DriveWindow Light 2 is an easy-to-use start-up and maintenance tool for ACS800 drives. It supports the following software: standard application, pump control, and spinning and traverse control. The DriveWindow Light 2 only supports drive frame sizes of R2-R8.

DriveWindow Light uses the drive's panel connector for communication, which makes communication setup very easy.

Light software with heavy features

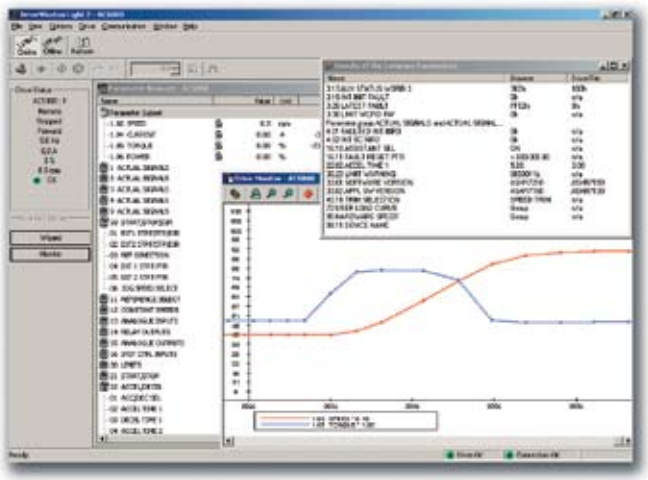
DriveWindow Light offers many functions in an easy-to-use package. It can be used in an offline mode, which enables parameter setting at the office even before going to the actual site. The parameter browser enables viewing, editing and saving of parameters. The parameter comparison feature makes it possible to compare parameter values between the drive and the file. With the parameter subset you can create your own parameter sets. Controlling of the drive is naturally one of the features in DriveWindow Light.
With DriveWindow Light, 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.

Highlights

- Viewing and setting parameters in offline mode
- Editing, saving and downloading parameters
- Comparing parameters
- Graphical and numerical signal monitoring
- Drive control

DriveWindow Light requirements

- Windows 98/NT/2000/XP
- Free serial port from a PC
- Free control panel connector
- NPCU-01 PC connection unit (serial communications)



Summary of features and options

Power & voltage range	Option Code	-U4 / -04	-U4 / -04	104 (inverters)	204 (ISU)	304 and 704 (supply units)
		Frame sizes R2-R6	Frame sizes R7-R8	Frame sizes nxR81	Frame sizes R2i-4xR8i	Frame sizes D3 - 5xD4
		230V: 0.75 - 75 Hp 500V: 2 - 200 Hp 690V: 5 - 200 Hp	230V: 60 - 250 Hp 500V: 125 - 600 Hp 690V: 100 - 550 Hp	400V: 1.1 - 1600 kW 500V: 1.5 - 2000 kW 690V: 5.5 - 1800 kW	400V: 60 -1740 kW 500V: 70 - 1975 kW 690V: 60 - 1820 kW	400V: 145 - 2435 kW 500V: 185 - 3045 kW 690V: 250 - 4200 kW
Mounting						
Wall mounting		●	●	●6)	●6)	-
Free-standing		-	●1)	●11)	●11)	●
Side by side mounting		●	●	●	●	●
Flange mounting		■	-	-	-	-
Separate drive control unit (RDCU)		-	●	●7)	●	-
Wheels for easy manoeuvring of the module		-	-	●8)	●8)	●8)
Enclosure Class						
IP00 (UL open chassis)		-	●	●	●	●
IP20 (UL open chassis)		●	■	-	-	-
DTC Motor Control						
DTC		●	●	●	●	-
Software 5						
Start-up assistant		●2)	●2)	●2)	-	-
Adaptive programming		●2)	●2)	●2)	-	-
Motion Control	N685	□	□	□	-	-
Optional software optimized for different applications or for enhanced programmability: for more details see section “Application software and programming”		□	□	□	-	-
Control Panel						
Alphanumeric 4*20 character control panel	J400	□	■	■	■	-
Control panel mounting platform		■	-	■	■	-
Control Connections (I/O) and communications						
3 pcs analog inputs, programmable, galvanically isolated		●	●	●	●5)	●5)
2 pcs analog outputs, programmable		●	●	●	●5)	●5)
7 pcs digital outputs, programmable, galvanically isolated - can be divided into two groups		●	●	●	●5)	●5)
3 pcs relay outputs, programmable		●	●	●	●5)	●5)
Poss bility for external control voltage		●	●	●	●	●
Built-in I/O extension and speed feedback modules: for more details see section “Control connections and communications”		□	□	□	-	-
Built-in adapters for fieldbus: for more details see section “Control connections and communications”		□	□	□	□	-

- ● Standard
- □ Option built-in
- ▲ External accessory, with plus code
- ■ External accessory, no plus code
- \- Not available

1) R7 frame size bottom exit version has only wall mounting possibility.
2) Only in standard software.
3) Not for 690V.
4) Standard in frame sizes R2 and R3 and at 690 V also in R4.
5) Fixed I/O in ISU and DSU.
6) Frame sizes R2i-R7i.
7) Frame sizes R2i-R5i inside of the module.
8) Frame sizes R8i-4xR8i D3-5xD4.
9) Optional in frame sizes R2i-R7i and 400V/500V R8i.
10) Not in frame size D3.
11) R8i-4xR8i.
12) Special Type Code required, not included in U4

Summary of features and options

Power & voltage range	Option Code	-U4 / -04	-U4 / -04	104 (inverters)	204 (ISU)	304 and 704 (supply units)
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		230V: 0.75 - 75 Hp 500V: 2 - 200 Hp 690V: 5 - 200 Hp	230V: 60 - 250 Hp 500V: 125 - 600 Hp 690V: 100 - 550 Hp	400V: 1.1 - 1600 kW 500V: 1.5 - 2000 kW 690V: 5.5 - 1800 kW	400V: 60 -1740 kW 500V: 70 - 1975 kW 690V: 60 - 1820 kW	400V: 145 - 2435 kW 500V: 185 - 3045 kW 690V: 250 - 4200 kW
EMC filters						
EMC 1st environment (Category C2)	E202	□ [3]	-	-	-	-
EMC 2nd environment, earthed networks only (Category C3)	E200	□ (R2-R5)	-	-	-	-
EMC 2nd environment, earthed and unearthed networks (Category C3)	E210	□ (R6)	□	-	-	-
Line filter						
AC or DC choke		●	●	-	-	●
LCL		-	-	-	●	-
Output filters						
Common mode filter	E208	-	□	■ [11]	■ [11]	-
du/dt filters		■	■	● [9]	-	-
Braking						
Brake Chopper	D150	□ [4]	□	■	-	-
Brake Resistor		■	■	■	-	-
Regenerative Braking		-	-	-	●	-
Rectifier Bridge						
6-pulse that can be connected as a 12-pulse one also		-	-	-	-	● [10]
Line side apparatus						
Built-in load switch		-	-	-	-	●
Built-in contactor	F250	-	-	-	-	□
Safety Options						
Prevention of unexpected start-up	Q950	▲	▲	□	-	-
Earth fault monitoring, earthed mains		●	●	●	●	●
Earth fault monitoring, unearthed mains		●	●	●	■	■
Approvals						
CE		●	●	●	●	●
UL, cUL, CSA		●	●	●	●	●
GOST R		● [12]	● [12]	●	●	●
C-Tick		-	● [12]	pending	pending	pending
Auxiliary option kits						
Fuses, fuse base		-	-	■	■	■
DC- fuse switch		-	-	■	-	-
Contactor or breaker		-	-	-	■	■
Assembly kits for Rittal TS8 cabinets		-	-	■	■	■
IP21 - IP54 door/roof kits		-	-	■	■	■

● Standard
□ Option built-in
▲ External accessory, with plus code
■ External accessory, no plus code
- Not available

Services and support

Global service network

ABB provides professional spare part, maintenance and repair services using its own authorized and certified service personnel as well as the personnel of the ABB channel partners all over the world.

Note: Though all services are available globally, local services may vary.

For more information on our ACS800 services and service network, please contact your local ABB representative.

Productized services

ABB's drive lifecycle management model provides customers with the maximum profit for the purchased assets by maintaining high availability, eliminating unplanned repair costs and extending drive lifetime. The lifecycle management model comprises many dedicated services for the entire lifecycle of ACS800 drives.

Start-up services

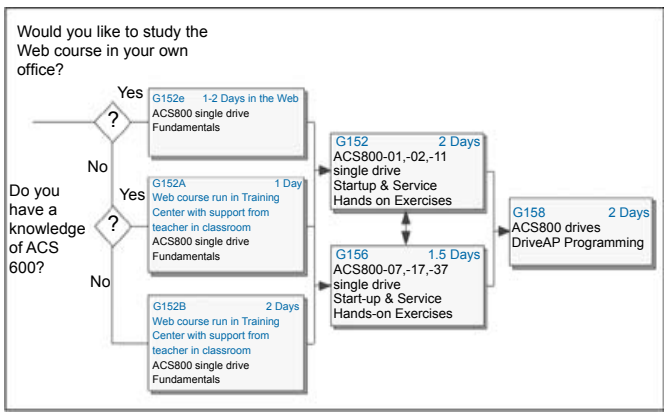
Using ABB's start-up services you can trust that your drives are correctly commissioned and tuned to their application. ABB global service network personnel are authorized professionals who are thoroughly trained for their job.

Training services

ABB offers dedicated training on ACS800 drives for your service and operating personnel for acquiring the required skills to use your ABB drives correctly and safely and to run the application in the most effective way.

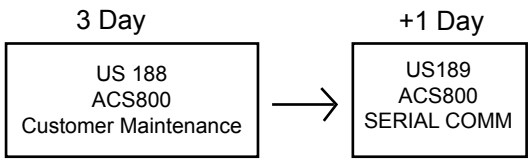
ACS800 single drive training courses

Global Training



For more information on our training services, please contact your local ABB representative or visit the ABB University website: http://www.abb.com/ abbuniversity.

US Specific Training



USA website: http://www.abb-drives.com/training

On-site spares kits

ACS800 drive on-site spares kits contain the most critical spare parts. You can choose your ACS800 drive spares kits from a separate table. If you do not have a copy, please contact your local ABB representative.