Catalog

# ABB industrial drives
# ACS800, multidrives, 1.1 to 5600 kW

Power and productivity
for a better world™

# Type code structure

# Contents

## ABB industrial drives, ACS800, multidrives

# ABB industrial drives

ACS800 - X07 - XXXX - X + XXXX

## ABB industrial drives

ABB industrial drives are designed for industrial applications, and especially for applications in process industries such as the 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 these applications, and hence order-based configuration is an integral part of the offering. These drives cover a wide range of powers and voltages, including voltages up to 690 V. ABB industrial drives come with a wide range of inbuilt 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 long motor cables. Inbuilt drive options make the installation work fast and easy.

One of the most significant design criteria of ABB industrial drives has been the long lifetime. Wearing parts such as fans and capacitors have been selected accordingly. Together with the extensive protection features this results in excellent reliability in the demanding industrial market.

## Type code

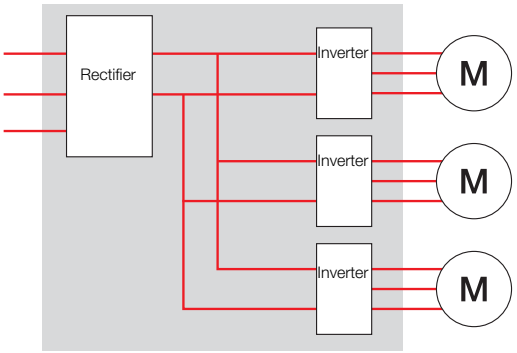
This is the unique reference number that clearly identifies your drive by construction, power rating voltage and selected options. Using the type code you can specify your drives from the wide range of options available, customer specific options are added to the type code using the corresponding + code.

DTC
DIRECT TORQUE CONTROL

**Other products:**
Please also see the separate technical catalogues
ACS800, single drives code, 3AFE68375126 EN.
ACS800, drive modules code, 3AFE68404592 EN.

## Multidrives

The multidrive principle is based on a standard DC bus arrangement enabling single power entry and common braking resources for several drives. There are several possibilities on the supply side starting from a simple diode supply unit up to highly sophisticated active IGBT supply units.




The multidrive construction simplifies the total installation and provides many advantages such as:

- savings in cabling, installation and maintenance costs
- space savings
- reduced component count and increased reliability
- reduced line currents and simpler braking arrangements
- energy circulation over the common DC busbar, which can be used for motor-to-motor braking without the need for a braking chopper or regenerative supply unit.
- The common supply of the multidrive enables the implementation of overall safety and control functions.

## Where are multidrives used

Generally speaking, multidrives can be used wherever several drives form part of a single process. The common supply of the multidrive enables the implementation of overall safety and control functions. The shafts of the individual drive motors can be more or less tightly coupled. In tight coupling, for example in a paper machine, the individual ABB drive modules provide fast communication of torque and speed signals between the drives, for controlling the tension in the paper web. But also in those cases where the shafts of the individual drive motors are not tightly coupled, for example in sugar centrifuges, each drive module can be programmed with a speed profile in order to minimize overall energy consumption. These two examples merely demonstrate the range of applications where multidrives offer substantial benefits over other types of drive constructions.

## Multidrive promises

- flexibility
- compact design
- a wide range of options
- adaptive programming
- reduced installation costs

## Overview of the construction

A multidrive is made up of several different units (see figure below). These sections are called multidrive units and the most important units are:

- drive units
- diode supply units
- IGBT supply units
- thyristor supply units
- dynamic braking units
- control units (optional)

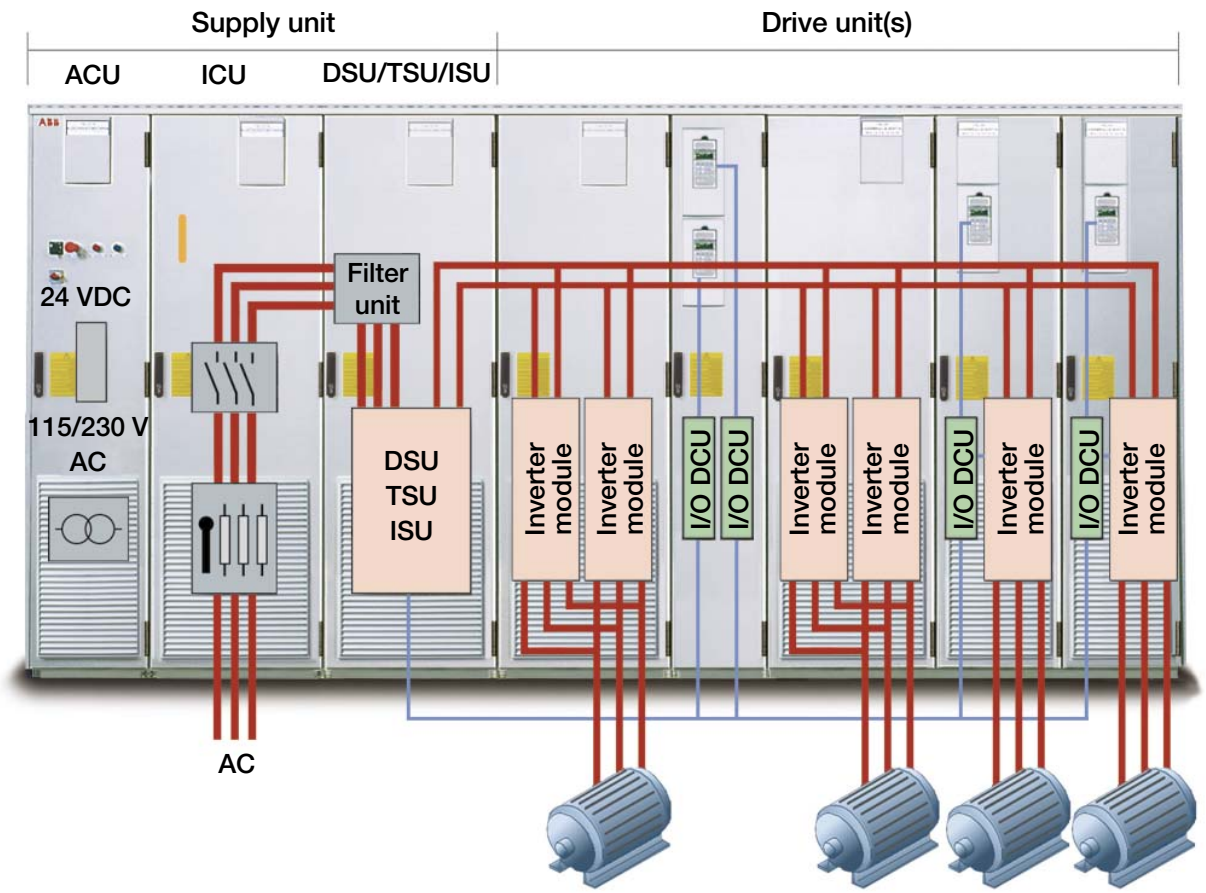
## Drive units

Inverters have inbuilt capacitors for smoothing the voltage of the DC busbars. The electrical connection to the common DC busbar is fuse protected. However, an optional fuse switch with a capacitor charging device can be selected to disconnect the whole drive unit.

Each inverter has a drive control unit (DCU) which contains the RMIO board and optional I/O modules. Several different I/O extension modules for different functions such as control, monitoring and measurement purposes are available. A separate pulse encoder interface module is also possible. Other optional features include the prevention of unexpected start-up for the inverters to provide a safe interlock for the system.

## Diode supply unit (DSU)

A diode supply unit is used in non-regenerative drive systems to convert three-phase AC voltage to DC voltage. A 12-pulse bridge configuration can be implemented with the unit supplied by a three-winding transformer with a thirty degree phase shift between secondary windings.



## IGBT supply unit (ISU)

An IGBT supply unit is used in regenerative drive systems to convert three-phase AC voltage to DC voltage. In power control it gives the same firm but gentle performance as DTC gives in motor control.

The main circuit consists of a main switch, a filter and a converter. The converter is hardware compatible with drive units. The converter can operate in both motoring and generating modes. The DC voltage constant and the line current sinusoidal. The control also provides a near unity power factor. The control performance is excellent due to the ultra-fast control technology, the same as in DTC.

A fully regenerative IGBT supply unit with power factor 1 requires no power compensation. The unit can also boost DC voltage e.g. when line voltage is low. Harmonic content remains extremely low due to DTC control and LCL filtering.

## Thyristor supply unit (TSU)

A thyristor supply unit is used in regenerative drive systems to convert three-phase AC voltage to DC voltage. The thyristor supply unit contains two 6-pulse thyristor bridges in antiparallel connection. It has the ability to regenerate back to the mains, providing considerable energy savings with applications having excessive braking powers. A 12-pulse bridge configuration can be implemented with two thyristor supply units supplied by a three-winding transformer. This configuration reduces harmonics in the supply network.

## Parallel connected supply units

It is possible to connect two supply units in parallel to the same DC bus to get higher power or redundancy. These two units will be located at the rear ends of the drive DC bus. This possibility concerns parallel connection of two diode supply units (DSU+DSU), two IGBT supply units (ISU+ISU), or a DSU and an ISU to the same DC bus.

Higher power is needed, for example, in high power applications where it gives more drive flexibility to connect drive units to the same DC bus, or for high overload requirements.

Redundancy is needed in critical processes and also when maintenance intervals are long.

Using DSU+ISU connected in parallel is a solution for when the need for braking power is much lower than for motoring power. ISU is dimensioned for braking power and operates continuously, while DSU is dimensioned for motor power minus ISU power.

## Brake unit

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.

Standard braking resistors are separately available in their own cabinets. Non-standard resistors can be used providing that the specified resistance value is not decreased and that the heat dissipation capacity of the resistor is sufficient for the drive application.

## AC800M control unit (optional)

The multidrive concept also includes the control unit for the AC800M and S800 I/O. The control unit is equipped with communication interfaces, power supplies and the front-devices necessary for the automation equipment.

# Multidrive main features

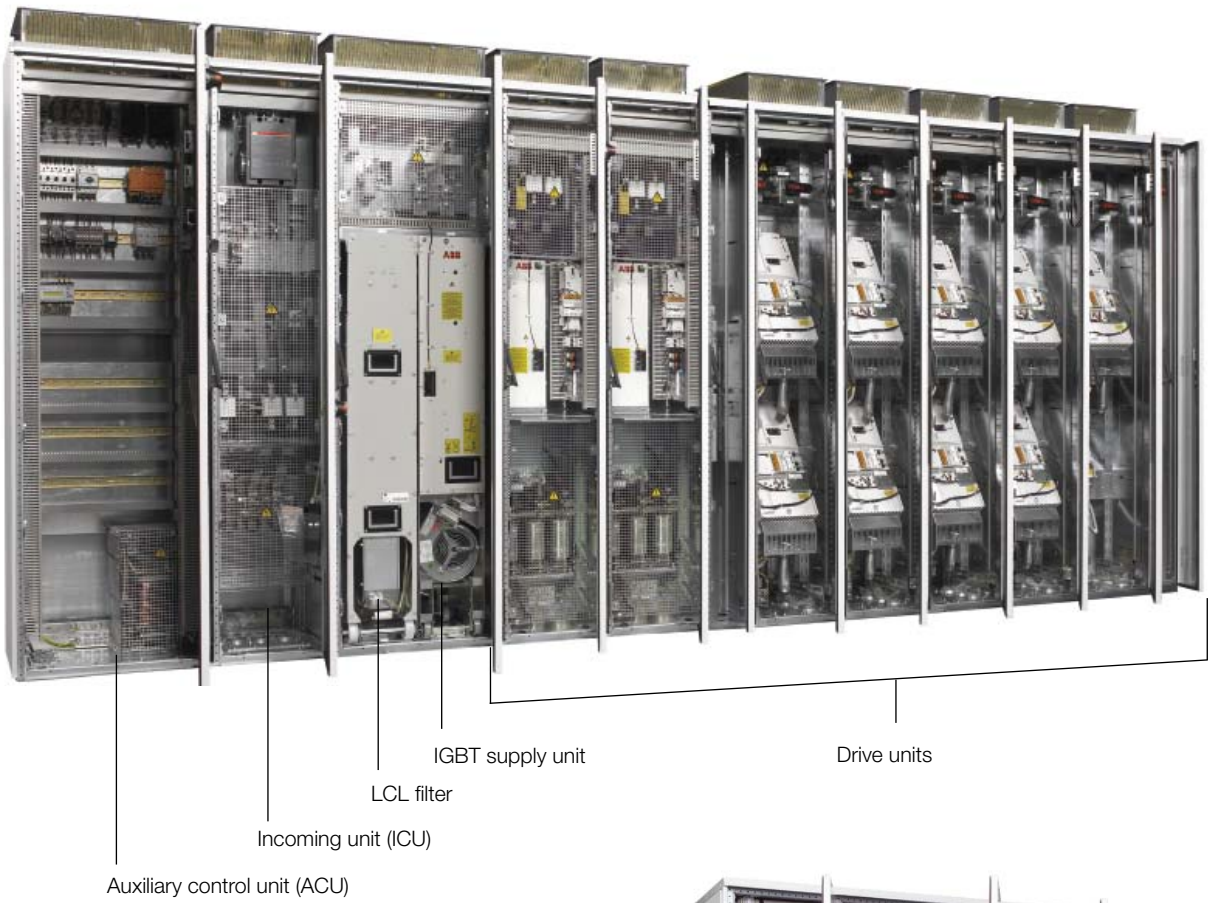
| Features | Benefits | Notes |
|---|---|---|
| **Compact and complete** | | |
| **Integration and compact size** | Small size<br>Options inside the drive | The inverter modules are dramatically smaller. The average length of the multidrive line-up has now been cut to half the previous size. |
| **Construction simpler** | Modular and redundant<br>Fewer spare parts<br>Innovative design | Power modules are available in 7 different sizes (R2i-R5i, R7i, R8i) starting from 3 kVA for motor inverters and 70 kVA for line supply.<br>All the powers from about 210 to 6900 kVA are different configurations of R8i units, single or in parallel. Only four types of diode rectifier units cover the power range of 200 to 4540 kVA. The modules have a plug-in connector, meaning very easy assembling. The modules are also equipped with wheels, which enables fast maintenance. The modules can be freely connected in parallel for higher output current. This means a limited number of different module sizes and fewer spare parts. |
| **Wide range of options available** | Standard solutions available from ABB that meets the customer needs. | Custom made solutions are available for the whole product range. |
| **Common ABB drive technology** | Industrial drive platform | Common control platform<br>Software<br>Same spare parts<br>Less training |
| **User interface** | | |
| **User-friendly customer interface** | Easy and fast commissioning and operation. | Easy to use PC tools available for commissioning, maintenance, monitoring and programming.<br>Control panel has clear, alphanumeric display. |
| **Versatile connections and communications** | Standard I/O covers most requirements.<br>Connectable to commonly used fieldbuses. | Extensive standard and optional I/O.<br>I/O fulfils PELV (EN 50178). |
| **Extensive programmability** | Flexibility. Possible to replace relays or even PLC in some applications. | Two levels of programmability:<br>1. Parameter programming (standard)<br>2. Adaptive programming (free block programming)<br>- Standard feature<br>- More blocks available as options<br>- All I/Os are programmable |

# Multidrive main features

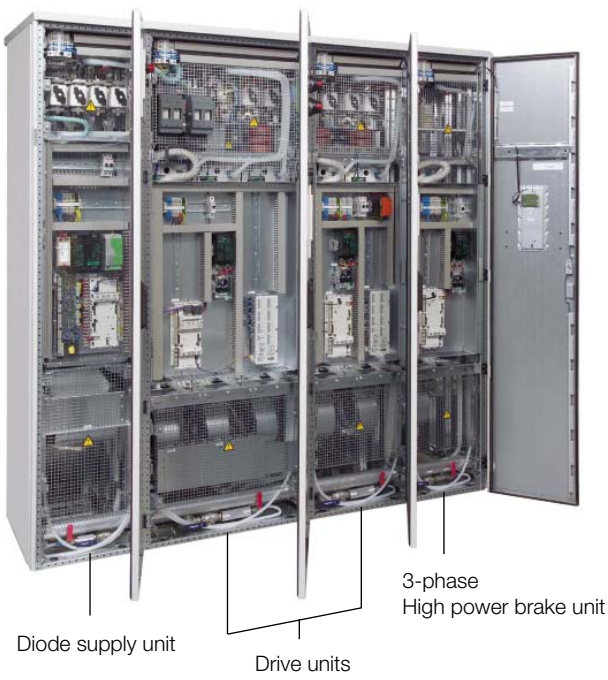
| Features | Benefits | Notes |
|---|---|---|
| **Industrial design** | | |
| **Wide power and voltage range** | One product series suits everywhere meaning less training and fewer spare parts, and a standardised interface to drives. | |
| **Wide range of robust enclosures available** | Suitable solutions available for different environments. | IP21 - IP54, except braking resistor cabinet IP21 |
| **Robust main circuit design** | Suitable for heavy industrial use.<br>Reliable. | Components dimensioned for heavy duty and long lifetime.<br>Advanced thermal model allows high overloadability. |
| **Extensive protections** | Enhanced reliability, fewer process interruptions. Possibility to also protect motors and process. | Several adjustable limits to protect other equipment also. |
| **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** | Adequate size even for large aluminium cables.<br>No need for special tools in I/O cabling. | |
| **Worldwide approvals: CE, UL, cUL, CSA, C-Tick, GOST R** | Safe products that can be used everywhere in the world. | |
| **Right performance for every application** | | |
| **DTC, accurate dynamic and static speed and torque control** | Excellent process control even without pulse encoder - improved product quality, productivity, reliability and lower investment cost. | |
| **DTC - allows high overload-ability and gives high starting torque** | Reliable, smooth start without overdimensioning the drive. | |
| **DTC, fast control** | No unnecessary trips and process interruptions. | Fast reaction to load or voltage variations prevents tripping.<br>Rides through power interruptions by using kinetic energy of the load.<br>Optimal flux in the motor reduces losses. |
| **DTC, flux optimisation and sophisticated motor model** | Excellent motor and drive efficiency - cost savings. | |
| **DTC, mechanics friendly** | Less stress for mechanics improves reliability. | No shock torques.<br>No torque ripple - minimised risk for torsional vibration.<br>Active oscillation damping.<br>Applies for ACS800-207. |
| **DTC, line supply control** | High performance and robust control in active supply unit. | |
| **Made in ABB** | | |
| **Global market leader in AC drives. Long experience.** | Well proven, safe and reliable solutions.<br>Application know-how. | |
| **World wide service and support network** | Professional support is available around the world. | |

## ACS800, multidrives

### Air-cooled




### Liquid-cooled



# Technical specification

ACS800 - X07 - XXXX - X + XXXX

## Mains connection

| | |
|---|---|
| **Voltage and power range** | 3-phase, $U_{3IN}$ = 380 to 415 V, ± 10%<br>3-phase, $U_{5IN}$ = 380 to 500 V, ± 10%<br>3-phase, $U_{7IN}$ = 525 to 690 V, ± 10%<br>(600 V UL, CSA) |
| **Frequency** | 48 to 63 Hz |
| **Power factor**<br>**DSU** | <br>$\cos\varphi_1$= 0.98 (fundamental)<br>$\cos\varphi$ = 0.93 to 0.95 (total) |
| **Power factor**<br>**ISU** | <br>$\cos\varphi_1$ = 1 (fundamental)<br>$\cos\varphi_1$= 0.99 (total) |
| **TDHI (total harmonic distortion of current)**<br>**ISU** | <br>< 5% |
| **Efficiency (at nominal power)** | 98%<br>97% with ISU |

## Motor connection

| | |
|---|---|
| **Voltage**<br>for >500 V units | 3-phase output voltage 0 to $U_{3IN}$/$U_{5IN}$/$U_{7IN}$<br>please see "Filter selection table for ACS800" under the du/dt filters on page 25 |
| **Frequency** | 0 to ± 300 Hz, also with du/dt filters |
| **Field weakening point** | 8 to 300 Hz |
| **Motor control software** | ABB's Direct Torque Control (DTC) |
| **Torque control**<br>Open loop<br>Closed loop<br><br>Open loop<br>Closed loop | Torque step rise time:<br><5 ms with nominal torque<br><5 ms with nominal torque<br>Non-linearity:<br>± 4% with nominal torque<br>± 3% with nominal torque |
| **Speed control**<br>Open loop<br>Closed loop<br><br>Open loop<br>Closed loop | Static accuracy:<br>10% of motor slip<br>0.01% of nominal speed<br>Dynamic accuracy:<br>0.3 to 0.4%sec. with 100% torque step<br>0.1 to 0.2%sec. with 100% torque step |

## Environmental limits

| | |
|---|---|
| **Ambient temperature** | |
| Transport | -40 to +70 °C |
| Storage | -40 to +70 °C |
| Operation | 0 to +50 °C, no frost allowed<br>40 to 50 °C at reduced output current (1% / 1 °C) |
| **ACS800-xxxLC** | 0 to 55 °C, no frost allowed<br>45 to 55 °C at reduced output current (0.5% / 1 °C) |
| **Cooling method**<br>**ACS800-xxxLC** | Dry clean air<br> |
| Cooling liquid: | Direct liquid-cooling<br>+45 °C max. customer circuit, fresh water or sea water (optional liquid-cooling unit)<br>+38 °C to +45 °C at reduced output current 1% / 1 °C<br>+48 °C max converter circuit, fresh water<br>+42 to +48 °C at reduced output current 1% / 1 °C |
| **Altitude** | |
| 0 to 1000 m | without derating |
| 1000 to 4000 m | with derating ~ (1% / 100 m)<br>(690 V units 1000 to 2000 m with derating) |
| **Relative humidity** | 5 to 95%, no condensation allowed |
| **Degree of protection** | IP21 |
| As option | IP22, IP42 and IP54 |
| **ACS800-xxxLC** | IP42 |
| As option | IP54 |
| **Paint colour** | cabinet RAL 7035, modules: NCS 1502-Y, RAL 9002, PMS 420 C. |
| **Contamination levels** | No conductive dust allowed |
| **Storage** | IEC 60721-3-1, Class 1C2 (chemical gases), Class 1S2 (solid particles) |
| **Transportation** | IEC 60721-3-2, Class 2C2 (chemical gases), Class 2S2 (solid particles) |
| **Operation** | IEC 60721-3-3, Class 3C2 (chemical gases), Class 3S2 (solid particles without airinlet filters) |
| **Vibration** | IEC 60068-2-6, 10 to 58 Hz 0.075 mm displacement amplitude 58 to150 Hz 10m/s$^2$ (1 g) |
| **Vibration Marine Classification** | 2 to 13.2 Hz: ± 1.0 mm amplitude (peak)<br>13.2 to 100 Hz: 0.7g acceleration |

C = chemically active substances
S = mechanically active substances

## Product compliance

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
Quality assurance system ISO 9001 and
Environmental system ISO 14001
UL, cUL 508A and 508C and CSA C22.2 NO.14-95, for some types available later.
C-Tick
GOST R

## EMC according to EN 61800-3

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

# Multidrive ratings, types and voltages

## Drive unit, $U_N$= 400 V

ACS800 - 107 - XXXX - 3 + XXXX

| Nominal ratings | | No-overload use | Light-overload use | | Heavy-duty use | | Heat dissipation | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.max}$ A (AC) | $I_{max}$ A | $P_{cont.max}$ kW | $I_N$ A | $P_N$ kW | $I_{hd}$ A | $P_{hd}$ kW | kW | | |
| **$U_N$ = 400 V (Range 380-415 V)** | | | | | | | | | |
| 5.1 | 6.5 | 1.5 | 4.7 | 1.5 | 3.4 | 1.1 | 0.1 | ACS800-107-0003-3 | R2i |
| 6.5 | 8.2 | 2.2 | 5.9 | 2.2 | 4.3 | 1.5 | 0.1 | ACS800-107-0004-3 | R2i |
| 8.5 | 10.8 | 3 | 7.7 | 3 | 5.7 | 2.2 | 0.1 | ACS800-107-0005-3 | R2i |
| 10.9 | 13.8 | 4 | 10.2 | 4 | 7.5 | 3 | 0.1 | ACS800-107-0006-3 | R2i |
| 13.9 | 17.6 | 5.5 | 12.7 | 5.5 | 9.3 | 4 | 0.2 | ACS800-107-0009-3 | R2i |
| 19 | 24 | 7.5 | 18 | 7.5 | 14 | 5.5 | 0.3 | ACS800-107-0011-3 | R3i |
| 25 | 32 | 11 | 24 | 11 | 19 | 7.5 | 0.3 | ACS800-107-0016-3 | R3i |
| 34 | 46 | 15 | 31 | 15 | 23 | 11 | 0.4 | ACS800-107-0020-3 | R3i |
| 44 | 62 | 22 | 41 | 18.5 | 32 | 15 | 0.5 | ACS800-107-0025-3 | R4i |
| 55 | 72 | 30 | 50 | 22 | 37 | 18.5 | 0.6 | ACS800-107-0030-3 | R4i |
| 72 | 86 | 37 | 69 | 30 | 49 | 22 | 0.8 | ACS800-107-0040-3 | R5i |
| 86 | 112 | 45 | 80 | 37 | 60 | 30 | 1 | ACS800-107-0050-3 | R5i |
| 103 | 138 | 55 | 94 | 45 | 69 | 37 | 1.2 | ACS800-107-0060-3 | R5i |
| 147 | 220 | 75 | 141 | 75 | 110 | 55 | 1.4 | ACS800-107-0105-3 | R7i |
| 178 | 252 | 90 | 171 | 90 | 133 | 55 | 1.7 | ACS800-107-0125-3 | R7i |
| 208 | 312 | 110 | 200 | 110 | 156 | 75 | 1.9 | ACS800-107-0145-3 | R7i |
| 250 | 374 | 132 | 240 | 132 | 187 | 90 | 2.1 | ACS800-107-0175-3 | R7i |
| 292 | 400 | 160 | 280 | 160 | 218 | 110 | 2.7 | ACS800-107-0210-3 | R8i |
| 370 | 506 | 200 | 355 | 200 | 277 | 132 | 3.7 | ACS800-107-0260-3 | R8i |
| 469 | 642 | 250 | 450 | 250 | 351 | 200 | 4.9 | ACS800-107-0320-3 | R8i |
| 565 | 773 | 315 | 542 | 315 | 423 | 250 | 6.1 | ACS800-107-0390-3 | R8i |
| 741 | 1014 | 400 | 711 | 400 | 554 | 315 | 8 | ACS800-107-0510-3 | R8i |
| 1111 | 1521 | 630 | 1067 | 630 | 831 | 450 | 12 | ACS800-107-0770-3 | 2xR8i |
| 1452 | 1988 | 800 | 1394 | 800 | 1086 | 630 | 15 | ACS800-107-1030-3 | 2xR8i |
| 2156 | 2951 | 1200 | 2070 | 1200 | 1613 | 900 | 23 | ACS800-107-1540-3 | 3xR8i |
| 2845 | 3894 | 1600 | 2731 | 1600 | 2128 | 1120 | 30 | ACS800-107-2050-3 | 4xR8i |
| 3537 | 4842 | 2000 | 3396 | 2000 | 2646 | 1400 | 37 | ACS800-107-2570-3 | 5xR8i |
| 4223 | 5780 | 2400 | 4054 | 2400 | 3159 | 1600 | 44 | ACS800-107-3080-3 | 6xR8i |

**Standard options:**
- Cable top exit
- DC switch with capacitor charging circuits
- Ground fault protection with current transformer(s)
- Output du/dt filter, standard for parallel connected inverters
- Common motor connection terminals with parallel connected inverters

## Dimensions

| Frame size | Height mm | Width mm | Width with top exit mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[5] | Air flow m³/h |
|---|---|---|---|---|---|---|---|---|
| R2i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 35 |
| R3i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 69 |
| R4i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 103 |
| R5i | 2130[1] | 400[2] | - | 644 | 180 | 65 | - | 168 |
| R7i | 2130[1] | 400 | 600[3][4] | 644[6] | 200 | 72 | - | 800 |
| R8i | 2130[1] | 400[3] | 700[3][4] | 644[6] | 320 | 72 | 60 | 1280 |
| 2xR8i | 2130[1] | 600[3] | 900[3][4] | 644[6] | 510 | 74 | 62 | 2560 |
| 3xR8i | 2130[1] | 800[3] | 1200[3][4] | 644[6] | 660 | 76 | 64 | 3840 |
| 4xR8i | 2130[1] | 1200[3] | 1600[3][4] | 644[6] | 1020 | 76 | 64 | 5120 |
| 5xR8i | 2130[1] | 1400[3] | 1800[3][4] | 644[6] | 1170 | 77 | 65 | 6400 |
| 6xR8i | 2130[1] | 1600[3] | 2200[3][4] | 644[6] | 1320 | 78 | 66 | 7680 |

[1] Cabinet height is 2315 mm for IP54 classification and for IPXXR 2051 mm. An additional 10 mm is required for marine supports.
[2] 1-3 x R2i, 1-3 x R3i, 1-2 x R4i, 1-2 x R5i.
[3] 300 mm is required for Drive Control Unit (DCU). One DCU can be used for two drive units.
[4] Delivered with additional cabinet(s), when top exit or common motor output connection is required.
[5] Average noise level with controlled cooling fan.
[6] Alternative for top exit with additional cabinet: Backpack, depth is an additional 120 mm.

**Nominal ratings:**
**$I_{cont.max}$:** rated current available continuously without overloadability at 40 °C.

**$I_{max}$:** maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature.

**Typical ratings:**
**No-overload use**
**$P_{cont.max}$:** typical motor power in no-overload use.

**Light-overload use**
**$I_N$:** continuous current allowing 110% $I_N$ for 1min / 5 min at 40 °C.
**$P_N$:** typical motor power in light-overload use.

**Heavy-duty use**
**$I_{hd}$:** continuous current allowing 150% $I_{hd}$ for 1min / 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 $I_{max}$).

Dimensioning has to be checked with DriveSize.

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.

# Multidrive ratings, types and voltages

## Supply unit, $U_N$= 400 V

ACS800 - X07 - XXXX - 3 + XXXX

| Nominal ratings | | | | No-overload use | Light-overload use | | Heavy-duty use | | Heat dissipation | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.max}$ A (AC) | $I_{cont.max}$ A (DC) | $I_{max}$ A (DC) | $S_N$ kVA | $P_{cont.max}$ kW (DC) | $I_N$ A (DC) | $P_N$ kW (DC) | $I_{hd}$ A (DC) | $P_{hd}$ kW (DC) | kW | | |
| **$U_N$ = 400 V (Range 380-415 V)** | | | | | | | | | | | |
| **IGBT supply unit (ISU)** | | | | | | | | | | | |
| 182 | 221 | 330 | 131 | 130 | 212 | 124 | 165 | 97 | 3.8 | ACS800-207-0135-3 | R7i |
| 224 | 272 | 406 | 161 | 159 | 261 | 153 | 203 | 119 | 4.2 | ACS800-207-0155-3 | R7i |
| 284 | 344 | 471 | 204 | 202 | 331 | 194 | 258 | 151 | 5.9 | ACS800-207-0200-3 | R8i |
| 378 | 458 | 627 | 272 | 269 | 440 | 258 | 343 | 201 | 8 | ACS800-207-0260-3 | R8i |
| 473 | 573 | 784 | 340 | 336 | 550 | 323 | 429 | 252 | 10 | ACS800-207-0330-3 | R8i |
| 630 | 764 | 1046 | 453 | 448 | 733 | 430 | 571 | 335 | 15 | ACS800-207-0440-3 | R8i |
| 945 | 1146 | 1568 | 679 | 672 | 1100 | 646 | 857 | 503 | 21 | ACS800-207-0660-3 | 2xR8i |
| 1235 | 1497 | 2049 | 888 | 879 | 1437 | 844 | 1120 | 657 | 28 | ACS800-207-0860-3 | 2xR8i |
| 1833 | 2223 | 3042 | 1318 | 1304 | 2134 | 1252 | 1662 | 976 | 42 | ACS800-207-1270-3 | 3xR8i |
| 2419 | 2933 | 4015 | 1739 | 1722 | 2816 | 1653 | 2194 | 1288 | 55 | ACS800-207-1680-3 | 4xR8i |
| 3591 | 4354 | 5960 | 2581 | 2555 | 4180 | 2453 | 3257 | 1911 | 81 | ACS800-207-2490-3 | 6xR8i |
| **6-pulse diode (DSU)** | | | | | | | | | | | |
| 286 | 350 | 462 | 198 | 183 | 335 | 175 | 280 | 147 | 1.5 | ACS800-307-0200-3 | D3 |
| 408 | 500 | 700 | 283 | 262 | 480 | 251 | 400 | 210 | 2.4 | ACS800-307-0280-3 | D3 |
| 571 | 700 | 924 | 396 | 367 | 670 | 351 | 560 | 293 | 3.8 | ACS800-307-0400-3 | D4 |
| 816 | 1000 | 1400 | 566 | 524 | 960 | 503 | 800 | 419 | 5 | ACS800-307-0570-3 | D4 |
| 1143 | 1400 | 1848 | 792 | 733 | 1340 | 702 | 1120 | 587 | 7.6 | ACS800-307-0790-3 | 2xD4 |
| 1518 | 1860 | 2604 | 1052 | 974 | 1790 | 938 | 1490 | 780 | 10 | ACS800-307-1050-3 | 2xD4 |
| 2278 | 2790 | 3906 | 1578 | 1461 | 2685 | 1406 | 2230 | 1168 | 15 | ACS800-307-1580-3 | 3xD4 |
| 3037 | 3720 | 5208 | 2104 | 1949 | 3580 | 1875 | 2980 | 1561 | 20 | ACS800-307-2100-3 | 4xD4 |
| 3796 | 4650 | 6510 | 2630 | 2436 | 4475 | 2344 | 3720 | 1949 | 25 | ACS800-307-2630-3 | 5xD4 |
| **6-pulse regenerative (TSU)** | | | | | | | | | | | |
| 981 | 1202 | 1947 | 680 | 639 | 1136 | 604 | 880 | 468 | 6.3 | ACS800-407-0680-3 | B4 |
| 1617 | 1980 | 3208 | 1120 | 1053 | 1872 | 995 | 1450 | 771 | 10 | ACS800-407-1120-3 | B4 |
| 2449 | 3000 | 4860 | 1697 | 1595 | 2838 | 1509 | 2244 | 1193 | 17 | ACS800-407-1700-3 | B5 |
| 2858 | 3500 | 5670 | 1980 | 1861 | 3311 | 1760 | 2618 | 1392 | 21 | ACS800-407-2100-3 | B5 |
| **12-pulse diode (DSU)** | | | | | | | | | | | |
| 571 | 700 | 924 | 396 | 367 | 670 | 351 | 560 | 293 | 3.8 | ACS800-507-0400-3 | D4 |
| 816 | 1000 | 1400 | 566 | 524 | 960 | 503 | 800 | 419 | 5 | ACS800-507-0570-3 | D4 |
| 1143 | 1400 | 1848 | 792 | 733 | 1340 | 702 | 1120 | 587 | 76 | ACS800-507-0790-3 | 2xD4 |
| 1518 | 1860 | 2604 | 1052 | 974 | 1790 | 938 | 1490 | 780 | 10 | ACS800-507-1050-3 | 2xD4 |
| 2278 | 2790 | 3906 | 1578 | 1461 | 2685 | 1406 | 2230 | 1168 | 15 | ACS800-507-1580-3 | 3xD4 |
| 3037 | 3720 | 5208 | 2104 | 1949 | 3580 | 1875 | 2980 | 1561 | 20 | ACS800-507-2100-3 | 4xD4 |
| 3796 | 4650 | 6510 | 2630 | 2436 | 4475 | 2344 | 3720 | 1949 | 25 | ACS800-507-2630-3 | 5xD4 |
| **12-pulse regenerative (TSU)** | | | | | | | | | | | |
| 1865 | 2285 | 3700 | 1292 | 1215 | 2161 | 1149 | 1665 | 885 | 13 | ACS800-807-1290-3 | B4 |
| 3072 | 3763 | 6094 | 2128 | 2010 | 3555 | 1890 | 2741 | 1457 | 20 | ACS800-807-2130-3 | B4 |
| 4654 | 5701 | 9234 | 3224 | 3031 | 5393 | 2867 | 4260 | 2265 | 33 | ACS800-807-3220-3 | B5 |

**Nominal ratings:**
**$I_{cont.max}$:** rated current available continuously without overloadability at 40 °C.

**$I_{max}$:** maximum output current.

**Typical ratings:**
**No-overload use**
**$P_{cont.max}$:** power in no-overload use.

**Light-overload use**
**$I_N$:** continuous current allowing 110% $I_N$ for 1min / 5 min at 40 °C.
**$P_N$:** power in light-overload use.

**Heavy-duty use**
**$I_{hd}$:** continuous current allowing 150% $I_{hd}$ for 1min / 5 min at 40 °C.

**$P_{hd}$:** 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 $I_{max}$).

## Dimensions (for ACU, ICU and ISU/DSU/TSU)

| Frame size | Height mm | Width mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[4] | Air flow m³/h |
|---|---|---|---|---|---|---|---|
| **IGBT supply unit (ISU)** | | | | | | | |
| R7i | 2130[1] | 1000 | 644 | 350 | 72 | - | 1300 |
| R8i | 2130[1] | 1400[2] | 644 | 950 | 74 | 62 | 1880 |
| 2xR8i | 2130[1] | 2000[3] | 644 | 1750 | 76 | 64 | 3840 |
| 3xR8i | 2130[1] | 2600[3] | 644 | 2400 | 78 | 66 | 6400 |
| 4xR8i | 2130[1] | 2800[3] | 644 | 2580 | 78 | 66 | 7680 |
| 6xR8i | 2130[1] | 3600[3] | 644 | 3600 | 80 | 68 | 11520 |
| **6-pulse diode (DSU)** | | | | | | | |
| D3 | 2130[1] | 1200 | 644 | 840 | 65 | 55 | 720 |
| D4 | 2130[1] | 1200 | 644 | 840 | 65 | 55 | 720 |
| 2xD4 | 2130[1] | 1800 | 644 | 1060 | 67 | 57 | 1440 |
| 3xD4 | 2130[1] | 2000[3] | 644 | 1330 | 68 | 58 | 2160 |
| 4xD4 | 2130[1] | 2400[3] | 644 | 1900 | 69 | 59 | 2880 |
| 5xD4 | 2130[1] | 3000[3] | 644 | 2170 | 70 | 60 | 3600 |

| Frame size | Height mm | Width mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[4] | Air flow m³/h |
|---|---|---|---|---|---|---|---|
| **6-pulse regenerative (TSU)** | | | | | | | |
| B4 | 2130[1] | 2800 | 644 | 1690 | 72 | - | 2500 |
| B5 | 2130[1] | 2800 | 644 | 2090 | 75 | - | 4500 |
| **12-pulse diode (DSU)** | | | | | | | |
| D4 | 2130[1] | 1300 | 644 | 840 | 65 | 55 | 720 |
| 2xD4 | 2130[1] | 1700 | 644 | 1060 | 67 | 57 | 1440 |
| 3xD4 | 2130[1] | 2600[3] | 644 | 1330 | 68 | 58 | 2160 |
| 4xD4 | 2130[1] | 3000[3] | 644 | 1900 | 69 | 59 | 2880 |
| 5xD4 | 2130[1] | 3200[3] | 644 | 2170 | 70 | 60 | 3600 |
| **12-pulse regenerative (TSU)** | | | | | | | |
| B4 | 2130 | 5200 | 644 | 3290 | 74 | - | 5000 |
| B5 | 2130 | 5200 | 644 | 3290 | 77 | - | 9000 |

[1] Cabinet height is 2315 mm for IP54 classification and for IPXXR 2051 mm. An additional 10 mm is required for marine supports.
[2] Width 1600 mm if UL or CSA approved
[3] An additional 300 mm cabinet is required when top connection of supply cables is needed.
[4] Average noise level with controlled cooling fan.

# Multidrive ratings, types and voltages

## Drive unit, $U_N$= 500 V

ACS800 - 107 - XXXX - 5 + XXXX

| Nominal ratings | | No-overload use | Light-overload use | | Heavy-duty use | | Heat dissipation | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.\ max}$ A (AC) | $I_{max}$ A | $P_{cont.\ max}$ kW | $I_N$ A | $P_N$ kW | $I_{hd}$ A | $P_{hd}$ kW | kW | | |
| **$U_N$ = 500 V (Range 380-500 V)** | | | | | | | | | |
| 4.9 | 7 | 2.2 | 4.5 | 2.2 | 3.4 | 1.5 | 0.1 | ACS800-107-0004-5 | R2i |
| 6.2 | 8 | 3 | 5.6 | 3 | 4.2 | 2.2 | 0.1 | ACS800-107-0005-5 | R2i |
| 8.1 | 11 | 4 | 7.7 | 4 | 5.6 | 3 | 0.2 | ACS800-107-0006-5 | R2i |
| 11 | 14 | 5.5 | 10 | 5.5 | 7.5 | 4 | 0.2 | ACS800-107-0009-5 | R2i |
| 13 | 18 | 7.5 | 12 | 7.5 | 9.2 | 5.5 | 0.3 | ACS800-107-0011-5 | R2i |
| 19 | 24 | 11 | 18 | 11 | 13 | 7.5 | 0.3 | ACS800-107-0016-5 | R3i |
| 25 | 32 | 15 | 23 | 15 | 18 | 11 | 0.4 | ACS800-107-0020-5 | R3i |
| 34 | 46 | 18.5 | 31 | 18.5 | 23 | 15 | 0.5 | ACS800-107-0025-5 | R3i |
| 42 | 62 | 22 | 39 | 22 | 32 | 18.5 | 0.6 | ACS800-107-0030-5 | R4i |
| 48 | 72 | 30 | 44 | 30 | 36 | 22 | 0.8 | ACS800-107-0040-5 | R4i |
| 65 | 86 | 37 | 61 | 37 | 50 | 30 | 1 | ACS800-107-0050-5 | R5i |
| 79 | 112 | 45 | 75 | 45 | 60 | 37 | 1.2 | ACS800-107-0060-5 | R5i |
| 96 | 138 | 55 | 88 | 55 | 69 | 45 | 1.4 | ACS800-107-0070-5 | R5i |
| 115 | 172 | 75 | 110 | 55 | 86 | 55 | 1.1 | ACS800-107-0105-5 | R7i |
| 135 | 202 | 90 | 130 | 90 | 101 | 55 | 1.3 | ACS800-107-0125-5 | R7i |
| 166 | 248 | 110 | 159 | 110 | 124 | 75 | 1.7 | ACS800-107-0145-5 | R7i |
| 208 | 312 | 132 | 200 | 132 | 156 | 90 | 2.0 | ACS800-107-0175-5 | R7i |
| 250 | 374 | 160 | 240 | 160 | 187 | 110 | 2.2 | ACS800-107-0215-5 | R7i |
| 315 | 457 | 200 | 302 | 200 | 236 | 132 | 3.2 | ACS800-107-0260-5 | R8i |
| 365 | 530 | 250 | 350 | 250 | 273 | 160 | 4 | ACS800-107-0320-5 | R8i |
| 455 | 660 | 315 | 437 | 315 | 340 | 200 | 5.4 | ACS800-107-0400-5 | R8i |
| 525 | 762 | 355 | 504 | 355 | 393 | 250 | 5.9 | ACS800-107-0460-5 | R8i |
| 700 | 1016 | 500 | 672 | 500 | 524 | 355 | 7.8 | ACS800-107-0610-5 | R8i |
| 1050 | 1524 | 710 | 1008 | 710 | 785 | 560 | 12 | ACS800-107-0910-5 | 2xR8i |
| 1372 | 1991 | 1000 | 1317 | 1000 | 1026 | 710 | 15 | ACS800-107-1210-5 | 2xR8i |
| 2037 | 2956 | 1450 | 1956 | 1450 | 1524 | 1120 | 22 | ACS800-107-1820-5 | 3xR8i |
| 2688 | 3901 | 2000 | 2580 | 1850 | 2011 | 1400 | 29 | ACS800-107-2430-5 | 4xR8i |
| 3343 | 4850 | 2400 | 3209 | 2400 | 2500 | 1600 | 36 | ACS800-107-3030-5 | 5xR8i |
| 3990 | 5790 | 2900 | 3830 | 2900 | 2985 | 2000 | 43 | ACS800-107-3640-5 | 6xR8i |

**Standard options:**
- Cable top exit
- DC switch with capacitor charging circuits
- Ground fault protection with current transformer(s)
- Output du/dt filter, standard for parallel connected inverters
- Common motor connection terminals with parallel connected inverters

## Dimensions

| Frame size | Height mm | Width mm | Width with top exit mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[5] | Air flow m³/h |
|---|---|---|---|---|---|---|---|---|
| R2i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 35 |
| R3i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 69 |
| R4i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 103 |
| R5i | 2130[1] | 400[2] | - | 644 | 180 | 65 | - | 168 |
| R7i | 2130[1] | 400 | 600[4] | 644[6] | 200 | 72 | - | 800 |
| R8i | 2130[1] | 400[3] | 700[3][4] | 644[6] | 320 | 72 | 60 | 1280 |
| 2xR8i | 2130[1] | 600[3] | 900[3][4] | 644[6] | 510 | 74 | 62 | 2560 |
| 3xR8i | 2130[1] | 800[3] | 1200[3][4] | 644[6] | 660 | 76 | 64 | 3840 |
| 4xR8i | 2130[1] | 1200[3] | 1600[3][4] | 644[6] | 1020 | 76 | 64 | 5120 |
| 5xR8i | 2130[1] | 1400[3] | 1800[3][4] | 644[6] | 1170 | 77 | 65 | 6400 |
| 6xR8i | 2130[1] | 1600[3] | 2200[3][4] | 644[6] | 1320 | 78 | 66 | 7680 |

[1] Cabinet height is 2315 mm for IP54 classification and for IPXXR 2051 mm. An additional 10 mm is required for marine supports.
[2] 1-3 x R2i, 1-3 x R3i, 1-2 x R4i, 1-2 x R5i.
[3] 300 mm is required for Drive Control Unit (DCU). One DCU can be used for two drive units.
[4] Delivered with additional cabinet(s), when top exit or common motor output connection is required.
[5] Average noise level with controlled cooling fan.
[6] Alternative for top exit with additional cabinet: Backpack, depth is an additional 120 mm.

**Nominal ratings:**
**$I_{cont.max}$:** rated current available continuously without overloadability at 40 °C.

**$I_{max}$:** maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature.

**Typical ratings:**
**No-overload use**
**$P_{cont.max}$:** typical motor power in no-overload use.

**Light-overload use**
**$I_N$:** continuous current allowing 110% $I_N$ for 1min / 5 min at 40 °C.
**$P_N$:** typical motor power in light-overload use.

**Heavy-duty use**
**$I_{hd}$:** continuous current allowing 150% $I_{hd}$ for 1min / 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.

# Multidrive ratings, types and voltages

## Supply unit, $U_N$= 500 V

ACS800 - X07 - XXXX - 5 + XXXX

| Nominal ratings | | | | No-overload use | Light-overload use | | Heavy-duty use | | Heat dissipation | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.max}$ A (AC) | $I_{cont.max}$ A (DC) | $I_{max}$ A (DC) | $S_N$ kVA | $P_{cont.max}$ kW (DC) | $I_N$ A (DC) | $P_N$ kW (DC) | $I_{hd}$ A (DC) | $P_{hd}$ kW (DC) | kW | | |
| **$U_N$ = 500 V (Range 380-500 V)** | | | | | | | | | | | |
| **IGBT supply unit (ISU)** | | | | | | | | | | | |
| 180 | 218 | 327 | 156 | 154 | 210 | 148 | 163 | 115 | 4.0 | ACS800-207-0165-5 | R7i |
| 220 | 267 | 394 | 191 | 189 | 256 | 181 | 200 | 141 | 4.4 | ACS800-207-0195-5 | R7i |
| 270 | 327 | 475 | 220 | 231 | 314 | 222 | 245 | 173 | 6.2 | ACS800-207-0230-5 | R8i |
| 360 | 436 | 633 | 312 | 309 | 419 | 296 | 327 | 231 | 8.4 | ACS800-207-0310-5 | R8i |
| 450 | 546 | 792 | 390 | 386 | 524 | 370 | 408 | 289 | 11 | ACS800-207-0390-5 | R8i |
| 600 | 727 | 1056 | 520 | 514 | 698 | 494 | 544 | 385 | 15 | ACS800-207-0520-5 | R8i |
| 900 | 1091 | 1584 | 779 | 772 | 1048 | 741 | 816 | 577 | 21 | ACS800-207-0780-5 | 2xR8i |
| 1176 | 1426 | 2069 | 1018 | 1008 | 1369 | 968 | 1067 | 754 | 29 | ACS800-207-1020-5 | 2xR8i |
| 1746 | 2117 | 3072 | 1512 | 1497 | 2032 | 1437 | 1584 | 1120 | 43 | ACS800-207-1510-5 | 3xR8i |
| 2304 | 2794 | 4054 | 1995 | 1975 | 2682 | 1896 | 2090 | 1478 | 56 | ACS800-207-2000-5 | 4xR8i |
| 3420 | 4147 | 6017 | 2962 | 2932 | 3981 | 2815 | 3102 | 2193 | 83 | ACS800-207-2960-5 | 6xR8i |
| **6-pulse diode (DSU)** | | | | | | | | | | | |
| 286 | 350 | 462 | 247 | 229 | 335 | 219 | 280 | 183 | 1.5 | ACS800-307-0250-5 | D3 |
| 408 | 500 | 700 | 353 | 327 | 480 | 314 | 400 | 262 | 2.4 | ACS800-307-0350-5 | D3 |
| 571 | 700 | 924 | 495 | 458 | 670 | 439 | 560 | 367 | 3.8 | ACS800-307-0490-5 | D4 |
| 816 | 1000 | 1400 | 707 | 655 | 960 | 629 | 800 | 524 | 5 | ACS800-307-0710-5 | D4 |
| 1143 | 1400 | 1848 | 990 | 917 | 1340 | 877 | 1120 | 733 | 7.6 | ACS800-307-0990-5 | 2xD4 |
| 1518 | 1860 | 2604 | 1315 | 1218 | 1790 | 1172 | 1490 | 976 | 10 | ACS800-307-1310-5 | 2xD4 |
| 2278 | 2790 | 3906 | 1972 | 1827 | 2685 | 1758 | 2230 | 1460 | 15 | ACS800-307-1970-5 | 3xD4 |
| 3037 | 3720 | 5208 | 2630 | 2436 | 3580 | 2344 | 2980 | 1951 | 20 | ACS800-307-2630-5 | 4xD4 |
| 3796 | 4650 | 6510 | 3287 | 3045 | 4475 | 2930 | 3720 | 2436 | 25 | ACS800-307-3290-5 | 5xD4 |
| **6-pulse regenerative (TSU)** | | | | | | | | | | | |
| 981 | 1202 | 1947 | 850 | 792 | 1137 | 749 | 881 | 580 | 6.3 | ACS800-407-0850-5 | B4 |
| 1617 | 1980 | 3208 | 1400 | 1304 | 1872 | 1233 | 1450 | 955 | 10 | ACS800-407-1400-5 | B4 |
| 2449 | 3000 | 4860 | 2120 | 1976 | 2838 | 1869 | 2244 | 1478 | 17 | ACS800-407-2120-5 | B5 |
| 2858 | 3500 | 5670 | 2475 | 2305 | 3310 | 2180 | 2618 | 1724 | 21 | ACS800-407-2600-5 | B5 |
| **12-pulse diode (DSU)** | | | | | | | | | | | |
| 571 | 700 | 924 | 495 | 458 | 670 | 439 | 560 | 367 | 3.8 | ACS800-507-0490-5 | D4 |
| 816 | 1000 | 1400 | 707 | 655 | 960 | 629 | 800 | 524 | 5 | ACS800-507-0710-5 | D4 |
| 1143 | 1400 | 1848 | 990 | 917 | 1340 | 877 | 1120 | 733 | 7.6 | ACS800-507-0990-5 | 2xD4 |
| 1518 | 1860 | 2604 | 1315 | 1218 | 1790 | 1172 | 1490 | 976 | 10 | ACS800-507-1310-5 | 2xD4 |
| 2278 | 2790 | 3906 | 1972 | 1827 | 2685 | 1758 | 2230 | 1460 | 15 | ACS800-507-1970-5 | 3xD4 |
| 3037 | 3720 | 5208 | 2630 | 2436 | 3580 | 2344 | 2980 | 1951 | 20 | ACS800-507-2630-5 | 4xD4 |
| 3796 | 4650 | 6510 | 3287 | 3045 | 4475 | 2930 | 3720 | 2436 | 25 | ACS800-507-3290-5 | 5xD4 |
| **12-pulse regenerative (TSU)** | | | | | | | | | | | |
| 1864 | 2283 | 3700 | 1614 | 1504 | 2161 | 1423 | 1672 | 1101 | 13 | ACS800-807-1615-5 | B4 |
| 3072 | 3764 | 6094 | 2661 | 2479 | 3556 | 2342 | 2758 | 1816 | 20 | ACS800-807-2660-5 | B4 |
| 4653 | 5700 | 9234 | 4030 | 3754 | 5392 | 3551 | 4252 | 2800 | 33 | ACS800-807-4030-5 | B5 |
| 5430 | 6652 | 10773 | 4703 | 4381 | 6293 | 4144 | 4976 | 3277 | 42 | ACS800-807-4700-5 | B5 |

**Nominal ratings:**
**$I_{cont.max}$:** rated current available continuously without overloadability at 40 °C.

**$I_{max}$:** maximum output current.

**Typical ratings:**
**No-overload use**
**$P_{cont.max}$:** power in no-overload use.

**Light-overload use**
**$I_N$:** continuous current allowing 110% $I_N$ for 1min / 5 min at 40 °C.
**$P_N$:** power in light-overload use.

**Heavy-duty use**
**$I_{hd}$:** continuous current allowing 150% $I_{hd}$ for 1min / 5 min at 40 °C.

**$P_{hd}$:** 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 $I_{max}$).

## Dimensions (for ACU, ICU and ISU/DSU/TSU)

| Frame size | Height mm | Width mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[4] | Air flow m³/h |
|---|---|---|---|---|---|---|---|
| **IGBT supply unit (ISU)** | | | | | | | |
| R7i | 2130[1] | 1000 | 644 | 350 | 72 | - | 1300 |
| R8i | 2130[1] | 1400[2] | 644 | 950 | 74 | 62 | 1880 |
| 2xR8i | 2130[1] | 2000[3] | 644 | 1750 | 76 | 64 | 3840 |
| 3xR8i | 2130[1] | 2600[3] | 644 | 2400 | 78 | 66 | 6400 |
| 4xR8i | 2130[1] | 2800[3] | 644 | 2580 | 78 | 66 | 7680 |
| 6xR8i | 2130[1] | 3600[3] | 644 | 3600 | 80 | 68 | 11520 |
| **6-pulse diode (DSU)** | | | | | | | |
| D3 | 2130[1] | 1200 | 644 | 840 | 65 | 55 | 720 |
| D4 | 2130[1] | 1200 | 644 | 840 | 65 | 55 | 720 |
| 2xD4 | 2130[1] | 1800 | 644 | 1060 | 67 | 57 | 1440 |
| 3xD4 | 2130[1] | 2000[3] | 644 | 1330 | 68 | 58 | 2160 |
| 4xD4 | 2130[1] | 2400[3] | 644 | 1900 | 69 | 59 | 2880 |
| 5xD4 | 2130[1] | 3000[3] | 644 | 2170 | 70 | 60 | 3600 |

| Frame size | Height mm | Width mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[4] | Air flow m³/h |
|---|---|---|---|---|---|---|---|
| **6-pulse regenerative (TSU)** | | | | | | | |
| B4 | 2130[1] | 2800 | 644 | 1690 | 72 | - | 2500 |
| B5 | 2130[1] | 2800 | 644 | 2090 | 75 | - | 4500 |
| **12-pulse diode (DSU)** | | | | | | | |
| D4 | 2130[1] | 1300 | 644 | 840 | 65 | 55 | 720 |
| 2xD4 | 2130[1] | 1700 | 644 | 1060 | 67 | 57 | 1440 |
| 3xD4 | 2130[1] | 2600[3] | 644 | 1330 | 68 | 58 | 2160 |
| 4xD4 | 2130[1] | 3000[3] | 644 | 1900 | 69 | 59 | 2880 |
| 5xD4 | 2130[1] | 3200[3] | 644 | 2170 | 70 | 60 | 3600 |
| **12-pulse regenerative (TSU)** | | | | | | | |
| B4 | 2130 | 5200 | 644 | 3290 | 74 | - | 5000 |
| B5 | 2130 | 5200 | 644 | 3290 | 77 | - | 9000 |

[1] Cabinet height is 2315 mm for IP54 classification and for IPXXR 2051 mm. An additional 10 mm is required for marine supports.
[2] Width 1600 mm if UL or CSA approved
[3] An additional 300 mm cabinet is required when top connection of supply cables is needed.
[4] Average noise level with controlled cooling fan.

# Multidrive ratings, types and voltages

## Drive unit, $U_N$= 690 V

ACS800 - 107 - XXXX - 7 + XXXX

| Nominal ratings | | No-overload use | Light-overload use | | Heavy-duty use | | Heat dissipation | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|
| $I_{cont,max}$ A (AC) | $I_{max}$ A | $P_{cont,max}$ kW | $I_N$ A | $P_N$ kW | $I_{hd}$ A | $P_{hd}$ kW | kW | | |
| **$U_N$ = 690 V (Range 525-690 V)** | | | | | | | | | |
| 13 | 14 | 11 | 12 | 7.5 | 8.5 | 5.5 | 0.3 | ACS800-107-0011-7 | R4i |
| 17 | 19 | 15 | 16 | 11 | 11 | 7.5 | 0.3 | ACS800-107-0016-7 | R4i |
| 22 | 28 | 18.5 | 21 | 15 | 15 | 11 | 0.4 | ACS800-107-0020-7 | R4i |
| 25 | 38 | 22 | 24 | 18.5 | 19 | 15 | 0.5 | ACS800-107-0025-7 | R4i |
| 33 | 44 | 30 | 32 | 22 | 22 | 18.5 | 0.6 | ACS800-107-0030-7 | R4i |
| 36 | 54 | 30 | 35 | 30 | 27 | 22 | 0.7 | ACS800-107-0040-7 | R4i |
| 51 | 68 | 45 | 49 | 37 | 34 | 30 | 0.8 | ACS800-107-0050-7 | R5i |
| 57 | 84 | 55 | 55 | 45 | 42 | 37 | 1 | ACS800-107-0060-7 | R5i |
| 69 | 104 | 55 | 66 | 55 | 52 | 45 | 1.1 | ACS800-107-0075-7 | R7i |
| 88 | 132 | 75 | 84 | 75 | 66 | 55 | 1.3 | ACS800-107-0105-7 | R7i |
| 105 | 158 | 90 | 101 | 90 | 79 | 75 | 1.6 | ACS800-107-0125-7 | R7i |
| 132 | 198 | 110 | 127 | 110 | 99 | 90 | 2.0 | ACS800-107-0145-7 | R7i |
| 150 | 224 | 132 | 144 | 132 | 112 | 90 | 2.3 | ACS800-107-0175-7 | R7i |
| 170 | 254 | 160 | 163 | 160 | 127 | 110 | 2.6 | A CS800-107-0215-7 | R7i |
| 215 | 322 | 200 | 206 | 200 | 161 | 160 | 3.6 | ACS800-107-0260-7 | R8i |
| 289 | 432 | 250 | 277 | 250 | 216 | 200 | 4.8 | ACS800-107-0320-7 | R8i |
| 336 | 503 | 315 | 323 | 315 | 251 | 240 | 6.1 | ACS800-107-0400-7 | R8i |
| 382 | 571 | 355 | 367 | 355 | 286 | 270 | 7 | ACS800-107-0440-7 | R8i |
| 486 | 727 | 450 | 467 | 450 | 364 | 355 | 7.5 | ACS800-107-0580-7 | R8i |
| 729 | 1091 | 710 | 700 | 710 | 545 | 500 | 13 | ACS800-107-0870-7 | 2xR8i |
| 953 | 1425 | 900 | 914 | 900 | 713 | 710 | 15 | ACS800-107-1160-7 | 2xR8i |
| 1414 | 2116 | 1400 | 1358 | 1400 | 1058 | 1000 | 22 | ACS800-107-1740-7 | 3xR8i |
| 1866 | 2792 | 1900 | 1792 | 1800 | 1396 | 1400 | 29 | ACS800-107-2320-7 | 4xR8i |
| 2321 | 3472 | 2300 | 2228 | 2200 | 1736 | 1600 | 35 | ACS800-107-2900-7 | 5xR8i |
| 2770 | 4144 | 2800 | 2659 | 2700 | 2072 | 2000 | 42 | ACS800-107-3490-7 | 6xR8i |
| 3232 | 4835 | 3200 | 3103 | 3100 | 2417 | 2400 | 49 | ACS800-107-4070-7 | 7xR8i |
| 3694 | 5526 | 3700 | 3546 | 3600 | 2763 | 2800 | 56 | ACS800-107-4650-7 | 8xR8i |
| 4155 | 6216 | 4200 | 3989 | 4000 | 3108 | 3100 | 63 | ACS800-107-5230-7 | 9xR8i |
| 4617 | 6907 | 4600 | 4432 | 4500 | 3454 | 3500 | 70 | ACS800-107-5810-7 | 10xR8i |
| 5079 | 7598 | 5100 | 4876 | 4900 | 3799 | 3800 | 77 | ACS800-107-6390-7 | 11xR8i |
| 5540 | 8288 | 5600 | 5319 | 5400 | 4144 | 4200 | 84 | ACS800-107-6970-7 | 12xR8i |

**Standard options:**
- Cable top exit
- DC switch with capacitor charging circuits
- Ground fault protection with current transformer(s)
- Output du/dt filter, standard for parallel connected inverters
- Common motor connection terminals with parallel connected inverters

## Dimensions

| Frame size | Height mm | Width mm | Width with top exit mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[5] | Air flow m³/h |
|---|---|---|---|---|---|---|---|---|
| R4i | 2130[1] | 400[2] | - | 644 | 180 | 62 | - | 103 |
| R5i | 2130[1] | 400[2] | - | 644 | 180 | 65 | - | 168 |
| R7i | 2130[1] | 400 | 600[4] | 644[6] | 200 | 72 | - | 800 |
| R8i | 2130[1] | 400[3] | 700[3][4] | 644[6] | 320 | 72 | 60 | 1280 |
| 2xR8i | 2130[1] | 600[3] | 900[3][4] | 644[6] | 510 | 74 | 62 | 2560 |
| 3xR8i | 2130[1] | 800[3] | 1200[3][4] | 644[6] | 660 | 76 | 64 | 3840 |
| 4xR8i | 2130[1] | 1200[3] | 1600[3][4] | 644[6] | 1020 | 76 | 64 | 5120 |
| 5xR8i | 2130[1] | 1400[3] | 1800[3][4] | 644[6] | 1170 | 77 | 65 | 6400 |
| 6xR8i | 2130[1] | 1600[3] | 2200[4] | 644[6] | 1320 | 78 | 66 | 7680 |
| 7xR8i | 2130[1] | 2000[3] | 2600[4] | 644[6] | 1680 | 78 | 66 | 8960 |
| 8xR8i | 2130[1] | 2200[3] | 3000[4] | 644[6] | 1830 | 79 | 67 | 10240 |
| 9x8Ri | 2130[1] | 2400[3] | 3200[4] | 644[6] | 1980 | 79 | 67 | 11520 |
| 10xR8i | 2130[1] | 2800[3] | 3800[4] | 644[6] | 2340 | 79 | 67 | 12800 |
| 11xR8i | 2130[1] | 3000[3] | 4200[4] | 644[6] | 2490 | 79 | 67 | 14080 |
| 12xR8i | 2130[1] | 3200[3] | 4400[4] | 644[6] | 2640 | 79 | 67 | 15360 |

[1] Cabinet height is 2315 mm for IP54 classification and for IPXXR 2051 mm. An additional 10 mm is required for marine supports.
[2] 1-3 x R2i, 1-3 x R3i, 1-2 x R4i, 1-2 x R5i.
[3] 300 mm is required for Drive Control Unit (DCU). One DCU can be used for two drive units.
[4] Delivered with additional cabinet(s), when top exit or common motor output connection is required.
[5] Average noise level with controlled cooling fan.
[6] Alternative for top exit with additional cabinet: Backpack, depth is an additional 120 mm.

**Nominal ratings:**
**$I_{cont.max}$:** rated current available continuously without overloadability at 40 °C.

**$I_{max}$:** maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature.

**Typical ratings:**
**No-overload use**
**$P_{cont.max}$:** typical motor power in no-overload use.

**Light-overload use**
**$I_N$:** continuous current allowing 110% $I_N$ for 1min / 5 min at 40 °C.
**$P_N$:** typical motor power in light-overload use.

**Heavy-duty use**
**$I_{hd}$:** continuous current allowing 150% $I_{hd}$ for 1min / 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.

# Multidrive ratings, types and voltages

## Supply unit, $U_N$= 690 V

ACS800 - X07 - XXXX - 7 + XXXX

| Nominal ratings | | | | No-overload use | Light-overload use | | Heavy-duty use | | Heat dissipation | Type code | Farme size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.\ max}$ A (AC) | $I_{cont.\ max}$ A (DC) | $I_{max}$ A (DC) | $S_N$ kVA | $P_{cont.\ max}$ kW (DC) | $I_N$ A (DC) | $P_N$ kW (DC) | $I_{hd}$ A (DC) | $P_{hd}$ kW (DC) | kW | | |
| **$U_N$ = 690 V (Range 525-690 V)** | | | | | | | | | | | |
| **IGBT supply unit (ISU)** | | | | | | | | | | | |
| 119 | 144 | 216 | 142 | 141 | 139 | 135 | 108 | 105 | 4.6 | ACS800-207-0155-7 | R7i |
| 135 | 164 | 245 | 161 | 160 | 157 | 153 | 122 | 119 | 5.2 | ACS800-207-0175-7 | R7i |
| 180 | 218 | 327 | 215 | 213 | 210 | 204 | 163 | 159 | 8.3 | ACS800-207-0220-7 | R8i |
| 250 | 303 | 453 | 299 | 296 | 291 | 284 | 227 | 221 | 9.4 | ACS800-207-0300-7 | R8i |
| 300 | 364 | 544 | 359 | 355 | 349 | 341 | 272 | 266 | 13 | ACS800-207-0360-7 | R8i |
| 400 | 485 | 726 | 478 | 473 | 466 | 454 | 363 | 354 | 15 | ACS800-207-0480-7 | R8i |
| 600 | 727 | 1088 | 717 | 710 | 698 | 682 | 544 | 531 | 27 | ACS800-207-0720-7 | 2xR8i |
| 784 | 951 | 1422 | 937 | 928 | 913 | 890 | 711 | 694 | 29 | ACS800-207-0940-7 | 2xR8i |
| 1164 | 1411 | 2111 | 1391 | 1377 | 1355 | 1322 | 1056 | 1030 | 42 | ACS800-207-1390-7 | 3xR8i |
| 1536 | 1862 | 2786 | 1836 | 1817 | 1788 | 1745 | 1393 | 1359 | 56 | ACS800-207-1840-7 | 4xR8i |
| 2280 | 2764 | 4136 | 2725 | 2698 | 2654 | 2590 | 2068 | 2018 | 83 | ACS800-207-2730-7 | 6xR8i |
| 3040 | 3686 | 5514 | 3633 | 3597 | 3539 | 3453 | 2757 | 2690 | 110 | ACS800-207-3630-7 | 8xR8i |
| 3800 | 4607 | 6893 | 4541 | 4496 | 4423 | 4316 | 3446 | 3363 | 138 | ACS800-207-4550-7 | 10xR8i |
| 4560 | 5529 | 8271 | 5450 | 5395 | 5308 | 5179 | 4136 | 4036 | 165 | ACS800-207-5450-7 | 12xR8i |
| **6-pulse diode (DSU)** | | | | | | | | | | | |
| 286 | 350 | 462 | 341 | 316 | 335 | 303 | 280 | 253 | 1.5 | ACS800-307-0340-7 | D3 |
| 408 | 500 | 700 | 488 | 452 | 480 | 434 | 400 | 361 | 2.4 | ACS800-307-0490-7 | D3 |
| 571 | 700 | 924 | 683 | 632 | 670 | 605 | 560 | 506 | 3.8 | ACS800-307-0680-7 | D4 |
| 816 | 1000 | 1400 | 976 | 904 | 960 | 867 | 800 | 723 | 5 | ACS800-307-0980-7 | D4 |
| 1143 | 1400 | 1848 | 1366 | 1265 | 1340 | 1211 | 1120 | 1012 | 7.6 | ACS800-307-1370-7 | 2xD4 |
| 1518 | 1860 | 2604 | 1815 | 1681 | 1790 | 1617 | 1490 | 1346 | 10 | ACS800-307-1810-7 | 2xD4 |
| 2278 | 2790 | 3906 | 2722 | 2521 | 2685 | 2426 | 2230 | 2015 | 15 | ACS800-307-2720-7 | 3xD4 |
| 3037 | 3720 | 5208 | 3629 | 3361 | 3580 | 3235 | 2980 | 2693 | 20 | ACS800-307-3630-7 | 4xD4 |
| 3796 | 4650 | 6510 | 4537 | 4202 | 4475 | 4043 | 3720 | 3361 | 25 | ACS800-307-4540-7 | 5xD4 |
| **6-pulse regenerative (TSU)** | | | | | | | | | | | |
| 711 | 871 | 1411 | 850 | 784 | 824 | 742 | 637 | 574 | 6.3 | ACS800-407-0850-7 | B4 |
| 1171 | 1435 | 2325 | 1400 | 1292 | 1353 | 1219 | 1050 | 946 | 10 | ACS800-407-1400-7 | B4 |
| 2176 | 2664 | 4316 | 2600 | 2399 | 2519 | 2269 | 1993 | 1795 | 17 | ACS800-407-2600-7 | B5 |
| 2858 | 3500 | 5670 | 3415 | 3152 | 3311 | 2982 | 2618 | 2358 | 21 | ACS800-407-3600-7 | B5 |
| **12-pulse diode (DSU)** | | | | | | | | | | | |
| 571 | 700 | 924 | 683 | 632 | 670 | 605 | 560 | 506 | 3.8 | ACS800-507-0680-7 | D4 |
| 816 | 1000 | 1400 | 976 | 904 | 960 | 867 | 800 | 723 | 5 | ACS800-507-0980-7 | D4 |
| 1143 | 1400 | 1848 | 1366 | 1265 | 1340 | 1211 | 1120 | 1012 | 7.6 | ACS800-507-1370-7 | 2xD4 |
| 1518 | 1860 | 2604 | 1815 | 1681 | 1790 | 1617 | 1490 | 1346 | 10 | ACS800-507-1810-7 | 2xD4 |
| 2278 | 2790 | 3906 | 2722 | 2521 | 2685 | 2426 | 2230 | 2015 | 15 | ACS800-507-2720-7 | 3xD4 |
| 3037 | 3720 | 5208 | 3629 | 3361 | 3580 | 3235 | 2980 | 2693 | 20 | ACS800-507-3630-7 | 4xD4 |
| 3796 | 4650 | 6510 | 4537 | 4202 | 4475 | 4043 | 3720 | 3361 | 25 | ACS800-507-4540-7 | 5xD4 |
| **12-pulse regenerative (TSU)** | | | | | | | | | | | |
| 1351 | 1655 | 2681 | 1614 | 1490 | 1564 | 1409 | 1211 | 1091 | 13 | ACS800-807-1615-7 | B4 |
| 2225 | 2726 | 4417 | 2659 | 2455 | 2576 | 2320 | 1996 | 1798 | 20 | ACS800-807-2660-7 | B4 |
| 4134 | 5065 | 8200 | 4941 | 4561 | 4790 | 4314 | 3788 | 3412 | 33 | ACS800-807-4950-7 | B5 |
| 5430 | 6652 | 10773 | 6490 | 5991 | 6292 | 5667 | 4975 | 4481 | 42 | ACS800-807-6500-7 | B5 |

**Nominal ratings:**
**$I_{cont.max}$:** rated current available continuously without overloadability at 40 °C.

**$I_{max}$:** maximum output current.

**Typical ratings:**
**No-overload use**
**$P_{cont.max}$:** power in no-overload use.

**Light-overload use**
**$I_N$:** continuous current allowing 110% $I_N$ for 1min / 5 min at 40 °C.
**$P_N$:** power in light-overload use.

**Heavy-duty use**
**$I_{hd}$:** continuous current allowing 150% $I_{hd}$ for 1min / 5 min at 40 °C.

**$P_{hd}$:** 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 $I_{max}$).

## Dimensions (for ACU, ICU and ISU/DSU/TSU)

| Frame size | Height mm | Width mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[4] | Air flow m³/h |
|---|---|---|---|---|---|---|---|
| **IGBT supply unit (ISU)** | | | | | | | |
| R7i | 2130[1] | 1000 | 644 | 350 | 72 | - | 1300 |
| R8i | 2130[1] | 1400[2] | 644 | 950 | 74 | 62 | 1880 |
| 2xR8i | 2130[1] | 2000[3] | 644 | 1750 | 76 | 64 | 3840 |
| 3xR8i | 2130[1] | 2600[3] | 644 | 2400 | 78 | 66 | 6400 |
| 4xR8i | 2130[1] | 2800[3] | 644 | 2580 | 78 | 66 | 7680 |
| 6xR8i | 2130[1] | 3600[3] | 644 | 3400 | 80 | 68 | 11520 |
| 8xR8i | 2130[1] | 4400[3] | 644 | 4250 | 81 | 69 | 15360 |
| 10xR8i | 2130[1] | 5600[3] | 644 | 5280 | 81 | 69 | 19200 |
| 12xR8i | 2130[1] | 6400[3] | 644 | 6100 | 81 | 69 | 23040 |
| **6-pulse diode (DSU)** | | | | | | | |
| D3 | 2130[1] | 1200 | 644 | 840 | 65 | 55 | 720 |
| D4 | 2130[1] | 1200 | 644 | 840 | 65 | 55 | 720 |
| 2xD4 | 2130[1] | 1800 | 644 | 1060 | 67 | 57 | 1440 |
| 3xD4 | 2130[1] | 2000[3] | 644 | 1330 | 68 | 58 | 2160 |
| 4xD4 | 2130[1] | 2400[3] | 644 | 1900 | 69 | 59 | 2880 |
| 5xD4 | 2130[1] | 3000[3] | 644 | 2170 | 70 | 60 | 3600 |

| Frame size | Height mm | Width mm | Depth mm | Weight kg | Noise level dB(A) | Noise level dB(A)[4] | Air flow m³/h |
|---|---|---|---|---|---|---|---|
| **6-pulse regenerative (TSU)** | | | | | | | |
| B4 | 2130[1] | 2800 | 644 | 1690 | 72 | - | 2500 |
| B5 | 2130[1] | 2800 | 644 | 2090 | 75 | - | 4500 |
| **12-pulse diode (DSU)** | | | | | | | |
| D4 | 2130[1] | 1300 | 644 | 840 | 65 | 55 | 720 |
| 2xD4 | 2130[1] | 1700 | 644 | 1060 | 67 | 57 | 1440 |
| 3xD4 | 2130[1] | 2600[3] | 644 | 1330 | 68 | 58 | 2160 |
| 4xD4 | 2130[1] | 3000[3] | 644 | 1900 | 69 | 59 | 2880 |
| 5xD4 | 2130[1] | 3200[3] | 644 | 2170 | 70 | 60 | 3600 |
| **12-pulse regenerative (TSU)** | | | | | | | |
| B4 | 2130 | 5200 | 644 | 3290 | 74 | - | 5000 |
| B5 | 2130 | 5200 | 644 | 3290 | 77 | - | 9000 |

[1] Cabinet height is 2315 mm for IP54 classification and for IPXXR 2051 mm. An additional 10 mm is required for marine supports.
[2] Width 1600 mm if UL or CSA approved
[3] An additional 300 mm cabinet is required when top connection of supply cables is needed.
[4] Average noise level with controlled cooling fan.

# ACS800 liquid-cooled multidrives

## ACS800-X07LC, 1.1 to 5600 kW

ACS800 - X07LC - XXXX - X + XXXX

### Advanced liquid cooling

The ACS800 liquid-cooled multidrive with direct liquid cooling and robust design is an ultimate solution for various applications where space savings and silent operation is a must.

Since the coolant takes care of 98% of the heat losses, no additional filtered air-cooling is needed. This decreases the noise level and increases the total efficiency of the converter installation. The high-efficiency liquid cooling removes the need for air-conditioning in the installation rooms, bringing the installation and operation costs down. The totally enclosed cabinet structure makes the ACS800 liquid-cooled multidrives perfect for harsh environmental conditions.

The ACS800 liquid-cooled multidrives are available from 1.1 kW up to 5,600 kW at 380 to 690V supply voltage.

### Customer specific design

The modular hardware design and advanced software features of the liquid-cooled multidrive enable the most sophisticated drive solutions for both induction and permanent magnet motors. Our customized solutions provide the optimum customer benefits. The design meets the international standards and marine classification requirements. ABB's extensive application and product know-how is at your service.

### Intelligence and high availability

The ABB ACS800 liquid-cooled series has a number of unique features as standard, and which are not available in previous generations of ABB drives, nor in existing competitors' drives. These include:

- Inbuilt redundancy through parallel connected modules - each module is a complete three-phase inverter.
- Ability to run with partial load even when one of the modules is not operating- enabling higher drive availability and greater process uptime.

With ABB drives, you get more than the most reliable equipment and systems. ABB drives are backed by our full service and support network, which covers field service and training as well as spare parts. This ensures reliable and economic operation under all conditions.

"Compact and easy" – are the watchwords to describe the entire ACS800 liquid-cooled drive range. They demonstrate how technology enables ABB to add more and more features into a shrinking space – and still give the benefits of easy installation, access and use.

# ACS800 liquid-cooled multidrives
# Ratings, types and voltages
## Drive unit, $U_N$ = 400 V

ACS800 - X07LC - XXXX - X + XXXX

| Nominal ratings | | No-overload use | Light-overload use | | Heavy-duty use | | Noise level | Dissipation to liquid | Massflow | Liquid Qty | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.max}$ A (AC) | $I_{max}$ A (AC) | $P_{cont.max}$ kW | $I_N$ A | $P_N$ kW | $I_{hd}$ A | $P_{hd}$ kW | dB(A) | kW | l/min | l | | |
| **$U_N$ = 400 V (Range 380-415 V)** | | | | | | | | | | | | |
| 5.1 | 6.5 | 1.5 | 4.7 | 1.5 | 3.4 | 1.1 | 60 | 0.1 | 6 [1] | 2.3 [1] | ACS800-107LC-0003-3 | R2i |
| 6.5 | 8.2 | 2.2 | 5.9 | 2.2 | 4.3 | 1.5 | 60 | 0.1 | 6 [1] | 2.3 [1] | ACS800-107LC-0004-3 | R2i |
| 8.5 | 10.8 | 3.0 | 7.7 | 3.0 | 5.7 | 2.2 | 60 | 0.1 | 6 [1] | 2.3 [1] | ACS800-107LC-0005-3 | R2i |
| 11 | 13.8 | 4.0 | 10 | 4.0 | 7.5 | 3.0 | 60 | 0.1 | 6 [1] | 2.3 [1] | ACS800-107LC-0006-3 | R2i |
| 14 | 17.6 | 5.5 | 13 | 5.5 | 9.3 | 4.0 | 60 | 0.2 | 6 [1] | 2.3 [1] | ACS800-107LC-0009-3 | R2i |
| 19 | 24 | 7.5 | 18 | 7.5 | 14 | 5.5 | 60 | 0.3 | 6 [1] | 2.3 [1] | ACS800-107LC-0011-3 | R3i |
| 25 | 32 | 11 | 24 | 11 | 19 | 7.5 | 60 | 0.3 | 6 [1] | 2.3 [1] | ACS800-107LC-0016-3 | R3i |
| 34 | 46 | 15 | 31 | 15 | 23 | 11 | 60 | 0.4 | 6 [1] | 2.3 [1] | ACS800-107LC-0020-3 | R3i |
| 44 | 62 | 22 | 41 | 18.5 | 32 | 15 | 60 | 0.5 | 6 [1] | 2.3 [1] | ACS800-107LC-0025-3 | R4i |
| 55 | 72 | 30 | 50 | 22 | 37 | 18.5 | 60 | 0.6 | 6 [1] | 2.3 [1] | ACS800-107LC-0030-3 | R4i |
| 72 | 86 | 37 | 69 | 30 | 49 | 22 | 63 | 0.8 | 6 [1] | 2.3 [1] | ACS800-107LC-0040-3 | R5i |
| 86 | 112 | 45 | 80 | 37 | 60 | 30 | 63 | 1.0 | 6 [1] | 2.3 [1] | ACS800-107LC-0050-3 | R5i |
| 103 | 138 | 55 | 94 | 45 | 69 | 37 | 63 | 1.2 | 6 [1] | 2.3 [1] | ACS800-107LC-0060-3 | R5i |
| 176 | 251 | 90 | 169 | 90 | 132 | 55 | 53 | 1.6 | 13 | 2.3 | ACS800-107LC-0120-3 | R7i |
| 214 | 251 | 110 | 205 | 110 | 160 | 75 | 53 | 2.0 | 13 | 2.3 | ACS800-107LC-0150-3 | R7i |
| 250 | 335 | 132 | 240 | 132 | 187 | 90 | 53 | 2.3 | 13 | 2.3 | ACS800-107LC-0170-3 | R7i |
| 300 | 448 | 160 | 288 | 160 | 224 | 110 | 53 | 2.5 | 13 | 2.3 | ACS800-107LC-0210-3 | R7i |
| 350 | 524 | 200 | 336 | 200 | 262 | 132 | 53 | 3.7 | 13 | 2.5 | ACS800-107LC-0240-3 | R8i |
| 444 | 558 | 250 | 426 | 250 | 332 | 160 | 53 | 4.9 | 13 | 2.5 | ACS800-107LC-0310-3 | R8i |
| 563 | 674 | 315 | 540 | 315 | 421 | 200 | 53 | 5.8 | 13 | 2.5 | ACS800-107LC-0390-3 | R8i |
| 678 | 837 | 355 | 651 | 355 | 507 | 250 | 53 | 7.1 | 13 | 2.5 | ACS800-107LC-0470-3 | R8i |
| 889 | 1037 | 500 | 853 | 400 | 665 | 355 | 53 | 9.0 | 13 | 2.5 | ACS800-107LC-0620-3 | R8i |
| 1103 | 1279 | 630 | 1059 | 560 | 825 | 450 | 55 | 11.2 | 26 | 5 | ACS800-107LC-0760-3 | 2xR8i |
| 1329 | 1590 | 710 | 1276 | 710 | 994 | 500 | 55 | 13.9 | 26 | 5 | ACS800-107LC-0920-3 | 2xR8i |
| 1742 | 1994 | 900 | 1673 | 900 | 1303 | 710 | 55 | 17.5 | 26 | 5 | ACS800-107LC-1210-3 | 2xR8i |
| 1973 | 2347 | 1120 | 1894 | 1120 | 1476 | 900 | 57 | 20.5 | 39 | 7.5 | ACS800-107LC-1370-3 | 3xR8i |
| 2587 | 2941 | 1400 | 2484 | 1400 | 1935 | 1120 | 57 | 26.0 | 39 | 7.5 | ACS800-107LC-1790-3 | 3xR8i |
| 3414 | 3906 | 2000 | 3277 | 2000 | 2553 | 1400 | 58 | 34.1 | 52 | 10 | ACS800-107LC-2370-3 | 4xR8i |
| 4245 | 4858 | 2500 | 4075 | 2240 | 3175 | 1800 | 59 | 42.4 | 65 | 12.5 | ACS800-107LC-2940-3 | 5xR8i |
| 5067 | 5799 | 2800 | 4865 | 2800 | 3790 | 2000 | 59 | 50.4 | 78 | 15 | ACS800-107LC-3510-3 | 6xR8i |

[1] Massflow and liquid quantity per 400 mm cabinet (see also [4] below)

### Dimensions
### Inverter units

| Frame size | Height [2] [3] mm | Width mm | Depth [1] mm | Weight kg |
|---|---|---|---|---|
| R2i | 2003 | 400 [4] | 644 | 180 |
| R3i | 2003 | 400 [4] | 644 | 180 |
| R4i | 2003 | 400 [4] | 644 | 180 |
| R5i | 2003 | 400 [4] | 644 | 180 |
| R7i | 2003 | 300 [5] | 644 | 220 |
| R8i | 2003 | 300 [5] | 644 | 300 |
| 2xR8i | 2003 | 500 | 644 | 450 |
| 3xR8i | 2003 | 700 | 644 | 600 |
| 4xR8i | 2003 | 1000 | 644 | 900 |
| 5xR8i | 2003 | 1200 | 644 | 1100 |
| 6xR8i | 2003 | 1400 | 644 | 1300 |

[2] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[3] Pressure release lids require an additional 400 mm.
[4] R2i+R2i to R3i+R5i fit in one 400 mm cabinet, R4i+R4i to R5i+R5i need two 400 mm cabinets.
[5] Width with DC-switch is 400 mm.

2xR8i
inverter unit

# ACS800 liquid-cooled multidrives
# Ratings, types and voltages
## Supply unit, $U_N$ = 400 V

ACS800 - X07LC - XXXX - X + XXXX

| Nominal ratings | | | | No overload use | Light overload use | | Heavy-duty use | | Noise level | Dissipation to liquid | Massflow | Liquid Qty | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{contmax}$ A (AC) | $I_{contmax}$ A (DC) | $I_{max}$ A (DC) | $S_N$ kVA | $P_{contmax}$ kW (DC) | $I_n$ A (DC) | $P_N$ kW | $I_{hd}$ A (DC) | $P_{hd}$ kW | dB(A) | kW | l/min | l | | |
| **$U_N$ = 400 V (Range 380-415 V)** | | | | | | | | | | | | | | |
| **IGBT supply unit** | | | | | | | | | | | | | | |
| 341 | 413 | 471 | 245 | 243 | 397 | 233 | 309 | 181 | 57 | 7.2 | 32 | 7.8 | ACS800-207LC-0240-3 | R8i |
| 454 | 550 | 627 | 326 | 323 | 528 | 310 | 411 | 241 | 57 | 8.5 | 32 | 7.8 | ACS800-207LC-0330-3 | R8i |
| 567 | 687 | 784 | 408 | 403 | 660 | 387 | 514 | 302 | 57 | 9.9 | 32 | 7.8 | ACS800-207LC-0410-3 | R8i |
| 756 | 917 | 1046 | 543 | 538 | 880 | 516 | 686 | 402 | 57 | 12.6 | 32 | 7.8 | ACS800-207LC-0540-3 | R8i |
| 1134 | 1375 | 1568 | 815 | 807 | 1320 | 775 | 1028 | 604 | 59 | 18.7 | 53 | 11.1 | ACS800-207LC-0820-3 | 2xR8i |
| 1482 | 1797 | 2049 | 1065 | 1054 | 1725 | 1012 | 1344 | 789 | 59 | 24.8 | 53 | 11.1 | ACS800-207LC-1070-3 | 2xR8i |
| 2200 | 2667 | 3042 | 1581 | 1565 | 2560 | 1503 | 1995 | 1171 | 61 | 37.0 | 77 | 14.6 | ACS800-207LC-1580-3 | 3xR8i |
| 2903 | 3520 | 4015 | 2087 | 2066 | 3379 | 1983 | 2633 | 1545 | 62 | 48.7 | 100 | 18.9 | ACS800-207LC-2090-3 | 4xR8i |
| 4309 | 5225 | 5960 | 3097 | 3066 | 5016 | 2944 | 3908 | 2294 | 64 | 72.4 | 148 | 25.9 | ACS800-207LC-3100-3 | 6xR8i |
| **Diode supply unit** | | | | | | | | | | | | | | |
| **6-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 572 | 700 | 980 | 396 | 378 | 672 | 363 | 560 | 303 | 56 | 2.2 | 19 | 2.2 | ACS800-307LC-0400-3 | D3 |
| 898 | 1100 | 1540 | 622 | 594 | 1056 | 570 | 880 | 475 | 56 | 3.5 | 19 | 2.2 | ACS800-307LC-0620-3 | D3 |
| 1143 | 1400 | 1960 | 792 | 756 | 1344 | 726 | 1120 | 605 | 56 | 4.4 | 19 | 2.3 | ACS800-307LC-0790-3 | D4 |
| 1796 | 2200 | 3080 | 1245 | 1188 | 2112 | 1141 | 1760 | 951 | 56 | 7.0 | 19 | 2.3 | ACS800-307LC-1240-3 | D4 |
| 2126 | 2604 | 3646 | 1473 | 1407 | 2500 | 1350 | 2083 | 1125 | 58 | 8.3 | 38 | 4.6 | ACS800-307LC-1470-3 | 2xD4 |
| 3200 | 3919 | 5487 | 2217 | 2117 | 3762 | 2032 | 3135 | 1694 | 58 | 12.4 | 38 | 4.6 | ACS800-307LC-2220-3 | 2xD4 |
| 5000 | 6124 | 8574 | 3464 | 3308 | 5879 | 3176 | 4899 | 2646 | 60 | 19.5 | 57 | 6.9 | ACS800-307LC-3460-3 | 3xD4 |
| **12-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 1143 | 1400 | 1960 | 792 | 756 | 1344 | 726 | 1120 | 605 | 56 | 4.4 | 19 | 2.3 | ACS800-507LC-0790-3 | D4 |
| 1796 | 2200 | 3080 | 1245 | 1188 | 2112 | 1141 | 1760 | 951 | 56 | 7.0 | 19 | 2.3 | ACS800-507LC-1240-3 | D4 |
| 2126 | 2604 | 3646 | 1473 | 1407 | 2500 | 1350 | 2083 | 1125 | 58 | 8.3 | 38 | 4.6 | ACS800-507LC-1470-3 | 2xD4 |
| 3200 | 3919 | 5487 | 2217 | 2117 | 3762 | 2032 | 3135 | 1694 | 58 | 12.4 | 38 | 4.6 | ACS800-507LC-2220-3 | 2xD4 |
| 5000 | 6124 | 8574 | 3464 | 3308 | 5879 | 3176 | 4899 | 2646 | 60 | 19.5 | 57 | 6.9 | ACS800-507LC-3460-3 | 3xD4 |
| **18-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 1595 | 1953 | 2734 | 1105 | 1055 | 1875 | 1013 | 1562 | 844 | 58 | 6.2 | 38 | 4.5 | ACS800-1107LC-1100-3 | D3+D4 |
| 2506 | 3069 | 4297 | 1736 | 1658 | 2946 | 1592 | 2455 | 1326 | 58 | 9.7 | 38 | 4.5 | ACS800-1107LC-1740-3 | D3+D4 |
| 3189 | 3906 | 5468 | 2210 | 2110 | 3750 | 2026 | 3125 | 1688 | 60 | 12.4 | 57 | 6.9 | ACS800-1107LC-2210-3 | 3xD4 |
| 5000 | 6124 | 8574 | 3464 | 3308 | 5879 | 3176 | 4899 | 2646 | 60 | 19.5 | 57 | 6.9 | ACS800-1107LC-3460-3 | 3xD4 |
| **24-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 2126 | 2604 | 3646 | 1473 | 1407 | 2500 | 1350 | 2083 | 1125 | 58 | 8.3 | 38 | 4.6 | ACS800-1207LC-1470-3 | 2xD4 |
| 3200 | 3919 | 5487 | 2217 | 2117 | 3762 | 2032 | 3135 | 1694 | 58 | 12.4 | 38 | 4.6 | ACS800-1207LC-2220-3 | 2xD4 |

### Supply units

| Frame size | Height [1)2)] mm | Width mm | Width with main breaker mm | Depth [1)] mm | Weight kg |
|---|---|---|---|---|---|
| **IGBT supply unit** | | | | | |
| R8i | 2003 | - | 1000/1200 [3)] | 644 | 850/1150 [3)] |
| 2xR8i | 2003 | - | 1400 | 644 | 1500 |
| 3xR8i | 2003 | - | 2400 | 644 | 2350 |
| 4xR8i | 2003 | - | 2200 | 644 | 2450 |
| 6xR8i | 2003 | - | 3400 | 644 | 3650 |
| **6-pulse diode (DSU)** | | | | | |
| D3 | 2003 | 400 | 800/1000 [4)] | 644 | 920/1120 [4)] |
| D4 | 2003 | 400 | 1000 | 644 | 1120 |
| 2xD4 | 2003 | 800 | 1400 | 644 | 1540 |
| 3xD4 | 2003 | 1200 | 2200 | 644 | 2160 |
| **12-pulse diode (DSU)** | | | | | |
| D4 | 2003 | 400 | 1200 | 644 | 1420 |
| D4 | 2003 | 400 | 1600 | 644 | 1820 |
| 2xD4 | 2003 | 800 | 2000 | 644 | 2240 |
| 3xD4 | 2003 | 1200 | 2400 | 644 | 2660 |
| **18-pulse diode (DSU)** | | | | | |
| D3+D4 | 2003 | 800 | 2000 | 644 | 2340 |
| D3+D4 | 2003 | 800 | 2600 | 644 | 2940 |
| 3xD4 | 2003 | 1200 | 3000 | 644 | 3360 |
| **24-pulse diode (DSU)** | | | | | |
| 2xD4 | 2003 | 800 | 2400 | 644 | 2840 |
| 2xD4 | 2003 | 800 | 3200 | 644 | 3640 |

[1)] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[2)] Pressure release lids require an additional 400 mm.
[3)] The latter values only for type 0540-3.
[4)] The latter values only for type 0620-3.

# ACS800 liquid-cooled multidrives
# Ratings, types and voltages
## Drive unit, $U_N$ = 500 V

ACS800 - X07LC - XXXX - X + XXXX

| Nominal ratings | | No-overload use | Light-overload use | | Heavy-duty use | | Noise level | Dissipation to liquid | Massflow | Liquid Qty | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.max}$ A (AC) | $I_{max}$ A (AC) | $P_{cont.max}$ kW | $I_N$ A | $P_N$ kW | $I_{hd}$ A | $P_{hd}$ kW | dB(A) | kW | l/min | l | | |
| **$U_N$ = 500 V (Range 380-500 V)** | | | | | | | | | | | | |
| 4.9 | 6.5 | 2.2 | 4.5 | 2.2 | 3.4 | 1.5 | 60 | 0.1 | 6 [1] | 2.3 [1] | ACS800-107LC-0004-5 | R2i |
| 6.2 | 8.2 | 3.0 | 5.6 | 3.0 | 4.2 | 2.2 | 60 | 0.1 | 6 [1] | 2.3 [1] | ACS800-107LC-0005-5 | R2i |
| 8.1 | 10.8 | 4.0 | 7.7 | 4.0 | 5.6 | 3.0 | 60 | 0.2 | 6 [1] | 2.3 [1] | ACS800-107LC-0006-5 | R2i |
| 11 | 14 | 5.5 | 10 | 5.5 | 7.5 | 4.0 | 60 | 0.2 | 6 [1] | 2.3 [1] | ACS800-107LC-0009-5 | R2i |
| 13 | 18 | 7.5 | 12 | 7.5 | 9.2 | 5.5 | 60 | 0.3 | 6 [1] | 2.3 [1] | ACS800-107LC-0011-5 | R2i |
| 19 | 24 | 11 | 18 | 11 | 13 | 7.5 | 60 | 0.3 | 6 [1] | 2.3 [1] | ACS800-107LC-0016-5 | R3i |
| 25 | 32 | 15 | 23 | 15 | 18 | 11 | 60 | 0.4 | 6 [1] | 2.3 [1] | ACS800-107LC-0020-5 | R3i |
| 34 | 46 | 18.5 | 31 | 18.5 | 23 | 15 | 60 | 0.5 | 6 [1] | 2.3 [1] | ACS800-107LC-0025-5 | R3i |
| 42 | 62 | 22 | 39 | 22 | 32 | 18.5 | 60 | 0.6 | 6 [1] | 2.3 [1] | ACS800-107LC-0030-5 | R4i |
| 48 | 72 | 30 | 44 | 30 | 36 | 22 | 60 | 0.8 | 6 [1] | 2.3 [1] | ACS800-107LC-0040-5 | R4i |
| 65 | 86 | 37 | 61 | 37 | 50 | 30 | 63 | 1.0 | 6 [1] | 2.3 [1] | ACS800-107LC-0050-5 | R5i |
| 79 | 112 | 45 | 75 | 45 | 60 | 37 | 63 | 1.2 | 6 [1] | 2.3 [1] | ACS800-107LC-0060-5 | R5i |
| 96 | 138 | 55 | 88 | 55 | 69 | 45 | 63 | 1.4 | 6 [1] | 2.3 [1] | ACS800-107LC-0070-5 | R5i |
| 138 | 206 | 90 | 132 | 90 | 103 | 55 | 53 | 1.3 | 13 | 2.3 | ACS800-107LC-0120-5 | R7i |
| 162 | 242 | 110 | 156 | 110 | 121 | 75 | 53 | 1.5 | 13 | 2.3 | ACS800-107LC-0140-5 | R7i |
| 199 | 252 | 132 | 191 | 132 | 149 | 90 | 53 | 2.0 | 13 | 2.3 | ACS800-107LC-0170-5 | R7i |
| 250 | 335 | 160 | 240 | 160 | 187 | 110 | 53 | 2.4 | 13 | 2.3 | ACS800-107LC-0220-5 | R7i |
| 300 | 448 | 200 | 288 | 200 | 224 | 160 | 53 | 2.6 | 13 | 2.3 | ACS800-107LC-0260-5 | R7i |
| 378 | 558 | 250 | 363 | 250 | 283 | 200 | 53 | 4.3 | 13 | 2.5 | ACS800-107LC-0330-5 | R8i |
| 438 | 558 | 315 | 420 | 315 | 328 | 250 | 53 | 5.1 | 13 | 2.5 | ACS800-107LC-0380-5 | R8i |
| 546 | 673 | 355 | 524 | 355 | 408 | 315 | 53 | 5.9 | 13 | 2.5 | ACS800-107LC-0470-5 | R8i |
| 630 | 838 | 400 | 605 | 400 | 471 | 355 | 53 | 6.9 | 13 | 2.5 | ACS800-107LC-0550-5 | R8i |
| 840 | 1042 | 560 | 806 | 560 | 628 | 400 | 53 | 8.8 | 13 | 2.5 | ACS800-107LC-0730-5 | R8i |
| 1070 | 1280 | 710 | 1027 | 710 | 800 | 560 | 55 | 11.3 | 26 | 5.0 | ACS800-107LC-0930-5 | 2xR8i |
| 1235 | 1589 | 900 | 1185 | 900 | 924 | 630 | 55 | 13.3 | 26 | 5.0 | ACS800-107LC-1070-5 | 2xR8i |
| 1646 | 1996 | 1120 | 1581 | 1120 | 1232 | 710 | 55 | 17.0 | 26 | 5.0 | ACS800-107LC-1430-5 | 2xR8i |
| 1833 | 2344 | 1250 | 1760 | 1250 | 1371 | 900 | 57 | 19.7 | 39 | 7.5 | ACS800-107LC-1590-5 | 3xR8i |
| 2444 | 2943 | 1600 | 2347 | 1600 | 1828 | 1250 | 57 | 25.4 | 39 | 7.5 | ACS800-107LC-2120-5 | 3xR8i |
| 3226 | 3885 | 2240 | 3097 | 2240 | 2413 | 1600 | 58 | 33.2 | 52 | 10.0 | ACS800-107LC-2790-5 | 4xR8i |
| 4011 | 4830 | 2800 | 3851 | 2800 | 3000 | 2000 | 59 | 41.3 | 65 | 12.5 | ACS800-107LC-3470-5 | 5xR8i |
| 4788 | 5801 | 3360 | 4596 | 3200 | 3581 | 2500 | 59 | 49.0 | 78 | 15.0 | ACS800-107LC-4150-5 | 6xR8i |

[1] Massflow and liquid quantity per 400 mm cabinet (see also [4] below)

### Dimensions
### Inverter units

| Frame size | Height [2] [3] mm | Width mm | Depth [2] mm | Weight kg |
|---|---|---|---|---|
| R2i | 2003 | 400[4] | 644 | 180 |
| R3i | 2003 | 400[4] | 644 | 180 |
| R4i | 2003 | 400[4] | 644 | 180 |
| R5i | 2003 | 400[4] | 644 | 180 |
| R7i | 2003 | 300[5] | 644 | 220 |
| R8i | 2003 | 300[5] | 644 | 300 |
| 2xR8i | 2003 | 500 | 644 | 450 |
| 3xR8i | 2003 | 700 | 644 | 600 |
| 4xR8i | 2003 | 1000 | 644 | 900 |
| 5xR8i | 2003 | 1200 | 644 | 1100 |
| 6xR8i | 2003 | 1400 | 644 | 1300 |

[2] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[3] Pressure release lids require an additional 400 mm.
[4] R2i+R2i to R3i+R5i fit in one 400 mm cabinet, R4i+R4i to R5i+R5i need two 400 mm cabinets.
[5] Width with DC-switch is 400 mm.

# ACS800 liquid-cooled multidrives
# Ratings, types and voltages
## Supply unit, $U_N$ = 500 V

ACS800 - X07LC - XXXX - X + XXXX

| Nominal ratings | | | | No overload use | Light overload use | | Heavy-duty use | | Noise level | Dissipation to liquid | Massflow | Liquid Qty | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{contmax}$ A (AC) | $I_{contmax}$ A (DC) | $I_{max}$ A (DC) | $S_N$ kVA | $P_{contmax}$ kW (DC) | $I_n$ A (DC) | $P_N$ kW | $I_{hd}$ A (DC) | $P_{hd}$ kW | dB(A) | kW | l/min | l | | |
| **$U_N$ = 500 V (Range 380-500 V)** | | | | | | | | | | | | | | |
| **IGBT supply unit** | | | | | | | | | | | | | | |
| 324 | 393 | 475 | 281 | 278 | 377 | 267 | 294 | 208 | 57 | 7.3 | 32 | 7.8 | ACS800-207LC-0280-5 | R8i |
| 432 | 524 | 633 | 374 | 370 | 503 | 356 | 392 | 277 | 57 | 8.6 | 32 | 7.8 | ACS800-207LC-0370-5 | R8i |
| 540 | 655 | 792 | 468 | 463 | 629 | 444 | 490 | 346 | 57 | 10.0 | 32 | 7.8 | ACS800-207LC-0470-5 | R8i |
| 720 | 873 | 1056 | 624 | 617 | 838 | 593 | 653 | 462 | 57 | 12.8 | 32 | 7.8 | ACS800-207LC-0620-5 | R8i |
| 1080 | 1309 | 1584 | 935 | 926 | 1257 | 889 | 980 | 693 | 59 | 18.9 | 53 | 11.1 | ACS800-207LC-0940-5 | 2xR8i |
| 1411 | 1711 | 2069 | 1222 | 1210 | 1643 | 1162 | 1280 | 905 | 59 | 25.0 | 53 | 11.1 | ACS800-207LC-1220-5 | 2xR8i |
| 2095 | 2540 | 3072 | 1814 | 1796 | 2439 | 1724 | 1900 | 1344 | 61 | 37.4 | 77 | 14.6 | ACS800-207LC-1810-5 | 3xR8i |
| 2765 | 3352 | 4054 | 2394 | 2370 | 3218 | 2276 | 2508 | 1773 | 62 | 49.2 | 100 | 18.9 | ACS800-207LC-2390-5 | 4xR8i |
| 4104 | 4976 | 6017 | 3554 | 3519 | 4777 | 3378 | 3722 | 2632 | 64 | 73.1 | 148 | 25.9 | ACS800-207LC-3550-5 | 6xR8i |
| **Diode supply unit** | | | | | | | | | | | | | | |
| **6-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 572 | 700 | 980 | 495 | 473 | 672 | 454 | 560 | 378 | 56 | 2.8 | 19 | 2.2 | ACS800-307LC-0490-5 | D3 |
| 898 | 1100 | 1540 | 778 | 743 | 1056 | 713 | 880 | 594 | 56 | 4.4 | 19 | 2.2 | ACS800-307LC-0780-5 | D3 |
| 1143 | 1400 | 1960 | 990 | 945 | 1344 | 908 | 1120 | 756 | 56 | 5.6 | 19 | 2.3 | ACS800-307LC-0990-5 | D4 |
| 1796 | 2200 | 3080 | 1556 | 1486 | 2112 | 1426 | 1760 | 1188 | 56 | 8.7 | 19 | 2.3 | ACS800-307LC-1560-5 | D4 |
| 2126 | 2604 | 3646 | 1841 | 1758 | 2500 | 1688 | 2083 | 1407 | 58 | 10.3 | 38 | 4.6 | ACS800-307LC-1840-5 | 2xD4 |
| 3200 | 3919 | 5487 | 2771 | 2646 | 3762 | 2540 | 3135 | 2117 | 58 | 15.6 | 38 | 4.6 | ACS800-307LC-2770-5 | 2xD4 |
| 5000 | 6124 | 8574 | 4330 | 4135 | 5879 | 3970 | 4899 | 3308 | 60 | 24.3 | 57 | 6.9 | ACS800-307LC-4330-5 | 3xD4 |
| **12-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 1143 | 1400 | 1960 | 990 | 945 | 1344 | 908 | 1120 | 756 | 56 | 5.6 | 19 | 2.3 | ACS800-507LC-0990-5 | D4 |
| 1796 | 2200 | 3080 | 1556 | 1486 | 2112 | 1426 | 1760 | 1188 | 56 | 8.7 | 19 | 2.3 | ACS800-507LC-1560-5 | D4 |
| 2126 | 2604 | 3646 | 1841 | 1758 | 2500 | 1688 | 2083 | 1407 | 58 | 10.3 | 38 | 4.6 | ACS800-507LC-1840-5 | 2xD4 |
| 3200 | 3919 | 5487 | 2771 | 2646 | 3762 | 2540 | 3135 | 2117 | 58 | 15.6 | 38 | 4.6 | ACS800-507LC-2770-5 | 2xD4 |
| 5000 | 6124 | 8574 | 4330 | 4135 | 5879 | 3970 | 4899 | 3308 | 60 | 24.3 | 57 | 6.9 | ACS800-507LC-4330-5 | 3xD4 |
| **18-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 1595 | 1953 | 2734 | 1381 | 1319 | 1875 | 1266 | 1562 | 1055 | 58 | 7.8 | 38 | 4.5 | ACS800-1107LC-1380-5 | D3+D4 |
| 2506 | 3069 | 4297 | 2170 | 2072 | 2946 | 1989 | 2455 | 1658 | 58 | 12.2 | 38 | 4.5 | ACS800-1107LC-2170-5 | D3+D4 |
| 3189 | 3906 | 5468 | 2762 | 2637 | 3750 | 2532 | 3125 | 2110 | 60 | 15.5 | 57 | 6.9 | ACS800-1107LC-2760-5 | 3xD4 |
| 5000 | 6124 | 8574 | 4330 | 4135 | 5879 | 3970 | 4899 | 3308 | 60 | 24.3 | 57 | 6.9 | ACS800-1107LC-4330-5 | 3xD4 |
| **24-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 2126 | 2604 | 3646 | 1841 | 1758 | 2500 | 1688 | 2083 | 1407 | 58 | 10.3 | 38 | 4.6 | ACS800-1207LC-1840-5 | 2xD4 |
| 3200 | 3919 | 5487 | 2771 | 2646 | 3762 | 2540 | 3135 | 2117 | 58 | 15.6 | 38 | 4.6 | ACS800-1207LC-2770-5 | 2xD4 |

### Supply units

| Frame size | Height [1)2)] mm | Width mm | Width with main breaker mm | Depth [1)] mm | Weight kg |
|---|---|---|---|---|---|
| **IGBT supply unit** | | | | | |
| R8i | 2003 | - | 1000/1200 [3)] | 644 | 850/1150 [3)] |
| 2xR8i | 2003 | - | 1400 | 644 | 1500 |
| 3xR8i | 2003 | - | 2400 | 644 | 2350 |
| 4xR8i | 2003 | - | 2200 | 644 | 2450 |
| 6xR8i | 2003 | - | 3400 | 644 | 3650 |
| **6-pulse diode (DSU)** | | | | | |
| D3 | 2003 | 400 | 800/1000 [4)] | 644 | 920/1120 [4)] |
| D4 | 2003 | 400 | 1000 | 644 | 1120 |
| 2xD4 | 2003 | 800 | 1400 | 644 | 1540 |
| 3xD4 | 2003 | 1200 | 2200 | 644 | 2160 |
| **12-pulse diode (DSU)** | | | | | |
| D4 | 2003 | 400 | 1200 | 644 | 1420 |
| D4 | 2003 | 400 | 1600 | 644 | 1820 |
| 2xD4 | 2003 | 800 | 2000 | 644 | 2240 |
| 3xD4 | 2003 | 1200 | 2400 | 644 | 2660 |
| **18-pulse diode (DSU)** | | | | | |
| D3+D4 | 2003 | 800 | 2000 | 644 | 2340 |
| D3+D4 | 2003 | 800 | 2600 | 644 | 2940 |
| 3xD4 | 2003 | 1200 | 3000 | 644 | 3360 |
| **24-pulse diode (DSU)** | | | | | |
| 2xD4 | 2003 | 800 | 2400 | 644 | 2840 |
| 2xD4 | 2003 | 800 | 3200 | 644 | 3640 |

[1)] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[2)] Pressure release lids require an additional 400 mm.
[3)] The latter values only for type 0620-5.
[4)] The latter values only for type 0780-5.

D3/D4
diode supply unit

# ACS800 liquid-cooled multidrives
# Ratings, types and voltages
## Drive unit, $U_N$ = 690 V

ACS800 - X07LC - XXXX - X + XXXX

| Nominal ratings | | No-overload use | Light-overload use | | Heavy-duty use | | Noise level | Dissipation to liquid | Massflow | Liquid Qty | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.max}$ A (AC) | $I_{max}$ A (AC) | $P_{cont.max}$ kW | $I_N$ A | $P_N$ kW | $I_{HD}$ A | $P_{HD}$ kW | dBA | kW | l/min | l | | |
| **$U_N$ = 690 V (Range 525-690 V)** | | | | | | | | | | | | |
| 13 | 14 | 11 | 12 | 7.5 | 8.5 | 5.5 | 60 | 0.3 | 6 [1] | 2.3 [1] | ACS800-107LC-0011-7 | R4i |
| 17 | 19 | 15 | 16 | 11 | 11 | 7.5 | 60 | 0.3 | 6 [1] | 2.3 [1] | ACS800-107LC-0016-7 | R4i |
| 22 | 28 | 18.5 | 21 | 15 | 15 | 11 | 60 | 0.4 | 6 [1] | 2.3 [1] | ACS800-107LC-0020-7 | R4i |
| 25 | 38 | 22 | 24 | 18.5 | 19 | 15 | 60 | 0.5 | 6 [1] | 2.3 [1] | ACS800-107LC-0025-7 | R4i |
| 33 | 44 | 30 | 32 | 22 | 22 | 18.5 | 60 | 0.6 | 6 [1] | 2.3 [1] | ACS800-107LC-0030-7 | R4i |
| 36 | 54 | 30 | 35 | 30 | 27 | 22 | 60 | 0.7 | 6 [1] | 2.3 [1] | ACS800-107LC-0040-7 | R4i |
| 51 | 68 | 45 | 49 | 37 | 34 | 30 | 63 | 0.8 | 6 [1] | 2.3 [1] | ACS800-107LC-0050-7 | R5i |
| 57 | 84 | 55 | 55 | 45 | 42 | 37 | 63 | 1.0 | 6 [1] | 2.3 [1] | ACS800-107LC-0060-7 | R5i |
| 83 | 124 | 75 | 79 | 55 | 62 | 55 | 53 | 1.2 | 13 | 2.3 | ACS800-107LC-0100-7 | R7i |
| 106 | 158 | 90 | 101 | 90 | 79 | 75 | 53 | 1.5 | 13 | 2.3 | ACS800-107LC-0130-7 | R7i |
| 126 | 188 | 110 | 121 | 110 | 94 | 90 | 53 | 1.8 | 13 | 2.3 | ACS800-107LC-0150-7 | R7i |
| 158 | 236 | 132 | 152 | 132 | 118 | 110 | 53 | 2.3 | 13 | 2.3 | ACS800-107LC-0190-7 | R7i |
| 180 | 270 | 160 | 173 | 160 | 135 | 132 | 53 | 2.7 | 13 | 2.3 | ACS800-107LC-0220-7 | R7i |
| 204 | 306 | 200 | 196 | 200 | 153 | 160 | 53 | 2.4 | 13 | 2.3 | ACS800-107LC-0240-7 | R7i |
| 258 | 386 | 250 | 248 | 250 | 193 | 200 | 53 | 4.7 | 13 | 2.5 | ACS800-107LC-0310-7 | R8i |
| 347 | 518 | 315 | 333 | 315 | 259 | 250 | 53 | 5.3 | 13 | 2.5 | ACS800-107LC-0410-7 | R8i |
| 403 | 604 | 355 | 387 | 355 | 302 | 315 | 53 | 6.3 | 13 | 2.5 | ACS800-107LC-0480-7 | R8i |
| 458 | 686 | 450 | 440 | 400 | 343 | 355 | 53 | 8.0 | 13 | 2.5 | ACS800-107LC-0550-7 | R8i |
| 583 | 872 | 560 | 560 | 500 | 436 | 400 | 53 | 8.7 | 13 | 2.5 | ACS800-107LC-0700-7 | R8i |
| 790 | 1182 | 710 | 759 | 710 | 591 | 560 | 55 | 12.4 | 26 | 5.0 | ACS800-107LC-0940-7 | 2xR8i |
| 898 | 1344 | 900 | 863 | 900 | 672 | 630 | 55 | 15.6 | 26 | 5.0 | ACS800-107LC-1070-7 | 2xR8i |
| 1143 | 1710 | 1120 | 1097 | 1120 | 855 | 710 | 55 | 17.1 | 26 | 5.0 | ACS800-107LC-1370-7 | 2xR8i |
| 1334 | 1996 | 1250 | 1281 | 1250 | 998 | 900 | 57 | 23.5 | 39 | 7.5 | ACS800-107LC-1590-7 | 3xR8i |
| 1697 | 2538 | 1600 | 1629 | 1600 | 1269 | 1250 | 57 | 25.3 | 39 | 7.5 | ACS800-107LC-2030-7 | 3xR8i |
| 2239 | 3350 | 2240 | 2150 | 2000 | 1675 | 1600 | 58 | 33.6 | 52 | 10.0 | ACS800-107LC-2680-7 | 4xR8i |
| 2785 | 4166 | 2800 | 2673 | 2500 | 2083 | 2000 | 59 | 41.6 | 65 | 12.5 | ACS800-107LC-3330-7 | 5xR8i |
| 3324 | 4974 | 3200 | 3191 | 3200 | 2487 | 2500 | 59 | 49.3 | 78 | 12.0 | ACS800-107LC-3970-7 | 6xR8i |
| 3878 | 5802 | 3750 | 3723 | 3600 | 2901 | 2800 | 60 | 58.1 | 91 | 17.5 | ACS800-107LC-4630-7 | 7xR8i |
| 4432 | 6630 | 4480 | 4255 | 4200 | 3315 | 3200 | 60 | 66.0 | 104 | 20.0 | ACS800-107LC-5300-7 | 8xR8i |
| 4986 | 7460 | 5000 | 4787 | 4800 | 3730 | 3600 | 61 | 74.0 | 117 | 22.5 | ACS800-107LC-5960-7 | 9xR8i |
| 5540 | 8288 | 5600 | 5319 | 5300 | 4144 | 4200 | 61 | 82.0 | 130 | 25.0 | ACS800-107LC-6620-7 | 10xR8i |

[1] Massflow and liquid quantity per 400 mm cabinet (see also [4] below)

### Dimensions
### Inverter units

| Frame size | Height [2][3] mm | Width mm | Depth [2] mm | Weight kg |
|---|---|---|---|---|
| R4i | 2003 | 400[4] | 644 | 180 |
| R5i | 2003 | 400[4] | 644 | 180 |
| R7i | 2003 | 300[5] | 644 | 220 |
| R8i | 2003 | 300[5] | 644 | 300 |
| 2xR8i | 2003 | 500 | 644 | 450 |
| 3xR8i | 2003 | 700 | 644 | 600 |
| 4xR8i | 2003 | 1000 | 644 | 900 |
| 5xR8i | 2003 | 1200 | 644 | 1100 |
| 6xR8i | 2003 | 1400 | 644 | 1300 |
| 7xR8i | 2003 | 1700 | 644 | 1550 |
| 8xR8i | 2003 | 1900 | 644 | 1750 |
| 9xR8i | 2003 | 2100 | 644 | 1950 |
| 10xR8i | 2003 | 2400 | 644 | 2200 |

[2] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[3] Pressure release lids require an additional 400 mm.
[4] R2i+R2i to R3i+R5i fit in one 400 mm cabinet, R4i+R4i to R5i+R5i need two 400 mm cabinets.
[5] Width with DC-switch is 400 mm.

# ACS800 liquid-cooled multidrives
# Ratings, types and voltages
## Supply unit, $U_N$ = 690 V

ACS800 - X07LC - XXXX - X + XXXX

| Nominal ratings | | | | No overload use | Light-overload use | | Heavy-duty use | | Noise level | Dissipation to liquid | Massflow | Liquid Qty | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_{cont.\ max}$ A (AC) | $I_{cont.\ max}$ A (DC) | $I_{max}$ A (DC) | $S_N$ kVA | $P_{cont.max}$ kW (DC) | $I_N$ A (DC) | $P_N$ kW | $I_{hd}$ A (DC) | $P_{hd}$ kW | dBA | kW | l/min | l | | |
| **$U_N$ = 690 V (Range 525-690 V)** | | | | | | | | | | | | | | |
| **IGBT supply unit** | | | | | | | | | | | | | | |
| 216 | 262 | 327 | 258 | 256 | 251 | 245 | 196 | 191 | 57 | 7.4 | 32 | 7.8 | ACS800-207LC-0260-7 | R8i |
| 300 | 364 | 453 | 359 | 355 | 349 | 341 | 272 | 266 | 57 | 8.5 | 32 | 7.8 | ACS800-207LC-0360-7 | R8i |
| 360 | 436 | 544 | 430 | 426 | 419 | 409 | 327 | 319 | 57 | 10.8 | 32 | 7.8 | ACS800-207LC-0430-7 | R8i |
| 480 | 582 | 726 | 574 | 568 | 559 | 545 | 435 | 425 | 57 | 11.8 | 32 | 7.8 | ACS800-207LC-0570-7 | R8i |
| 720 | 873 | 1088 | 860 | 852 | 838 | 818 | 653 | 637 | 59 | 19.2 | 53 | 11.1 | ACS800-207LC-0860-7 | 2xR8i |
| 941 | 1141 | 1422 | 1124 | 1113 | 1095 | 1069 | 853 | 833 | 59 | 22.5 | 53 | 11.1 | ACS800-207LC-1120-7 | 2xR8i |
| 1397 | 1694 | 2111 | 1669 | 1653 | 1626 | 1587 | 1267 | 1236 | 61 | 30.8 | 77 | 14.6 | ACS800-207LC-1670-7 | 3xR8i |
| 1843 | 2235 | 2786 | 2203 | 2181 | 2145 | 2094 | 1672 | 1631 | 62 | 44.3 | 100 | 18.9 | ACS800-207LC-2200-7 | 4xR8i |
| 2736 | 3317 | 4136 | 3270 | 3237 | 3185 | 3108 | 2481 | 2421 | 64 | 60.7 | 148 | 25.9 | ACS800-207LC-3270-7 | 6xR8i |
| 3648 | 4423 | 5514 | 4360 | 4316 | 4246 | 4144 | 3309 | 3228 | 65 | 87.9 | 200 | 37.0 | ACS800-207LC-4360-7 | 8xR8i |
| 4104 | 4976 | 6204 | 4905 | 4856 | 4777 | 4661 | 3722 | 3632 | 66 | 91.0 | 225 | 39.7 | ACS800-207LC-4900-7 | 9xR8i |
| 4560 | 5529 | 6893 | 5450 | 5395 | 5308 | 5179 | 4136 | 4036 | 67 | 109.9 | 247 | 44.8 | ACS800-207LC-5450-7 | 10xR8i |
| **6-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 572 | 700 | 980 | 683 | 652 | 672 | 626 | 560 | 522 | 56 | 3.8 | 19 | 2.2 | ACS800-307LC-0680-7 | D3 |
| 898 | 1100 | 1540 | 1073 | 1025 | 1056 | 984 | 880 | 820 | 56 | 6.0 | 19 | 2.2 | ACS800-307LC-1070-7 | D3 |
| 1143 | 1400 | 1960 | 1366 | 1305 | 1344 | 1252 | 1120 | 1044 | 56 | 7.7 | 19 | 2.3 | ACS800-307LC-1370-7 | D4 |
| 1796 | 2200 | 3080 | 2147 | 2050 | 2112 | 1968 | 1760 | 1640 | 56 | 12.1 | 19 | 2.3 | ACS800-307LC-2150-7 | D4 |
| 2126 | 2604 | 3646 | 2541 | 2426 | 2500 | 2329 | 2083 | 1941 | 58 | 14.3 | 38 | 4.6 | ACS800-307LC-2540-7 | 2xD4 |
| 3200 | 3919 | 5487 | 3824 | 3652 | 3762 | 3506 | 3135 | 2921 | 58 | 21.5 | 38 | 4.6 | ACS800-307LC-3820-7 | 2xD4 |
| 5000 | 6124 | 8574 | 5976 | 5707 | 5879 | 5478 | 4899 | 4565 | 60 | 33.6 | 57 | 6.9 | ACS800-307LC-5980-7 | 3xD4 |
| **12-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 1143 | 1400 | 1960 | 1366 | 1305 | 1344 | 1252 | 1120 | 1044 | 56 | 7.7 | 19 | 2.3 | ACS800-507LC-1370-7 | D4 |
| 1796 | 2200 | 3080 | 2147 | 2050 | 2112 | 1968 | 1760 | 1640 | 56 | 12.1 | 19 | 2.3 | ACS800-507LC-2150-7 | D4 |
| 2126 | 2604 | 3646 | 2541 | 2426 | 2500 | 2329 | 2083 | 1941 | 58 | 14.3 | 38 | 4.6 | ACS800-507LC-2540-7 | 2xD4 |
| 3200 | 3919 | 5487 | 3824 | 3625 | 3762 | 3506 | 3135 | 2921 | 58 | 21.5 | 38 | 4.6 | ACS800-507LC-3820-7 | 2xD4 |
| 5000 | 6124 | 8574 | 5976 | 5707 | 5879 | 5478 | 4899 | 4565 | 60 | 33.6 | 57 | 6.9 | ACS800-507LC-5980-7 | 3xD4 |
| **18-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 1595 | 1953 | 2734 | 1906 | 1820 | 1875 | 1747 | 1562 | 1456 | 58 | 10.7 | 38 | 4.5 | ACS800-1107LC-1910-7 | D3+D4 |
| 2506 | 3069 | 4297 | 2995 | 2860 | 2946 | 2745 | 2455 | 2288 | 58 | 16.8 | 38 | 4.5 | ACS800-1107LC-2990-7 | D3+D4 |
| 3189 | 3906 | 5468 | 3812 | 3640 | 3750 | 3494 | 3125 | 2912 | 60 | 21.4 | 57 | 6.9 | ACS800-1107LC-3810-7 | 3xD4 |
| 5000 | 6124 | 8574 | 5976 | 5707 | 5879 | 5478 | 4899 | 4565 | 60 | 33.6 | 57 | 6.9 | ACS800-1107LC-5980-7 | 3xD4 |
| **24-pulse diode (DSU)** | | | | | | | | | | | | | | |
| 2126 | 2604 | 3646 | 2541 | 2426 | 2500 | 2329 | 2083 | 1941 | 58 | 14.3 | 38 | 4.6 | ACS800-1207LC-2540-7 | 2xD4 |
| 3200 | 3919 | 5487 | 3824 | 3652 | 3762 | 3506 | 3135 | 2921 | 58 | 21.5 | 38 | 4.6 | ACS800-1207LC-3820-7 | 2xD4 |

## Supply units

| Frame size | Height [1)2)] mm | Width mm | Width with main breaker mm | Depth [1)] mm | Weight [3)] kg |
|---|---|---|---|---|---|
| **IGBT supply unit** | | | | | |
| R8i | 2003 | - | 1000 | 644 | 850 |
| 2xR8i | 2003 | - | 1400 | 644 | 1500 |
| 3xR8i | 2003 | - | 1700 | 644 | 1750 |
| 4xR8i | 2003 | - | 2200 | 644 | 2450 |
| 6xR8i | 2003 | - | 2800 | 644 | 2950 |
| 8xR8i | 2003 | - | 4200 | 644 | 4600 |
| 9xR8i | 2003 | - | 4300 | 644 | 4250 |
| 10xR8i | 2003 | - | 5000 | 644 | 5550 |
| **6-pulse diode (DSU)** | | | | | |
| D3 | 2003 | 400 | 800/1000 [4)] | 644 | 920/1120 [4)] |
| D4 | 2003 | 400 | 1000 | 644 | 1120 |
| 2xD4 | 2003 | 800 | 1400 | 644 | 1540 |
| 3xD4 | 2003 | 1200 | 2200 | 644 | 2160 |

| Frame size | Height [1)2)] mm | Width mm | Width with main breaker mm | Depth [1)] mm | Weight [3)] kg |
|---|---|---|---|---|---|
| **12-pulse diode (DSU)** | | | | | |
| D4 | 2003 | 400 | 1200 | 644 | 1420 |
| D4 | 2003 | 400 | 1600 | 644 | 1820 |
| 2xD4 | 2003 | 800 | 2000 | 644 | 2240 |
| 3xD4 | 2003 | 1200 | 2400 | 644 | 2660 |
| **18-pulse diode (DSU)** | | | | | |
| D3+D4 | 2003 | 800 | 2000 | 644 | 2340 |
| D3+D4 | 2003 | 800 | 2600 | 644 | 2940 |
| 3xD4 | 2003 | 1200 | 3000 | 644 | 3360 |
| **24-pulse diode (DSU)** | | | | | |
| 2xD4 | 2003 | 800 | 2400 | 644 | 2840 |
| 2xD4 | 2003 | 800 | 3200 | 644 | 3640 |

[1)] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[2)] Pressure release lids require an additional 400 mm.
[3)] Weight includes main breaker.
[4)] The latter values only for type 1070-7.

195 kW liquid cooling unit.

## Liquid cooling unit

| Nominal ratings | | | | Noise level | Losses | | | Cooling media | | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Max dissipated losses kW | Internal massflow at 120 kPa l/min | External massflow l/min | External pressure loss kPa | dB(A) | Ploss kW | Ploss coolant kW | Ploss air kW | Internal liquid Qty l | External liquid Qty l | | |
| **Range 380-690 V** | | | | | | | | | | | |
| 70 | 100 | 103 | 125 | 51 | 0.4 | 0.3 | 0.1 | 8.0 | 3.0 | ACS800-1007LC-0070 | 70 |
| 195 | 300 | 380 | 130 | 53 | 0.9 | 0.7 | 0.2 | 28.0 | 8.0 | ACS800-1007LC-0195 | 195 |

| Frame size | Height mm | Depth mm | Width [1)] mm | Weight kg |
|---|---|---|---|---|
| 70 | 2003 | 644 | 300/- | 200 |
| 195 | 2003 | 644 | 600/630 | 400 |

[1)] The first values for line-up connected unit and the latter values for stand alone unit.

# Brake option

## Multidrive brake units

ACS800 - 607 - XXXX - 3 5 7 + XXXX

| Nominal ratings | | | | | Duty cycle (1min/5min) | | Duty cycle (10s/60s) | | | | | | | Type code | Module type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $P_{br.max}$ | $R$ | $I_{max}$ | $I_{rms}$ | $P_{cont.}$ | $P_{br.}$ | $I_{rms}$ | $P_{br.}$ | $I_{rms}$ | Height[2] | Width[1) 3)] | Weight | Noise | Air flow | | |
| kW | ohm | A | A | kW | kW | A | kW | A | mm | mm | kg | dB(A) | m³/h | | |
| **$U_N$ = 400 V (Range 380 - 415 V)** | | | | | | | | | | | | | | | |
| 353 | 1.2 | 545 | 149 | 96 | 303 | 468 | 353 | 545 | 2130 | 400 | 110 | 64 | 660 | ACS800-607-0320-3 | NBRA659 |
| 706 | 0.6 | 1090 | 298 | 192 | 606 | 936 | 706 | 1090 | 2130 | 800 | 220 | 67 | 1320 | ACS800-607-0640-3 | 2 x NBRA659 |
| 1411 | 0.3 | 2180 | 596 | 384 | 1212 | 1872 | 1412 | 2180 | 2130 | 1600 | 440 | 69 | 2640 | ACS800-607-1280-3 | 4 x NBRA659 |
| 1764 | 0.24 | 2725 | 745 | 480 | 1515 | 2340 | 1765 | 2725 | 2130 | 2000 | 550 | 70 | 3300 | ACS800-607-1600-3 | 5 x NBRA659 |
| 2117 | 0.2 | 3270 | 894 | 576 | 1818 | 2808 | 2118 | 3270 | 2130 | 2400 | 660 | 71 | 3960 | ACS800-607-1920-3 | 6 x NBRA659 |
| 353 | 1.2 | 545 | 84 | 54 | 167 | 257 | 287 | 444 | 2130 | 1200 | 340 | 66 | 2500 | ACS800-607-0320-3+D151 | NBRA659 |
| 706 | 0.6 | 1090 | 168 | 108 | 333 | 514 | 575 | 888 | 2130 | 2400 | 680 | 69 | 5000 | ACS800-607-0640-3+D151 | 2 x NBRA659 |
| 1058 | 0.4 | 1635 | 252 | 162 | 500 | 771 | 862 | 1332 | 2130 | 3600 | 1020 | 70 | 7500 | ACS800-607-0960-3+D151 | 3 x NBRA659 |
| 1411 | 0.3 | 2180 | 336 | 216 | 667 | 1028 | 1150 | 1776 | 2130 | 4800[1)] | 1360 | 71 | 10000 | ACS800-607-1280-3+D151 | 4 x NBRA659 |
| 1764 | 0.24 | 2725 | 420 | 270 | 833 | 1285 | 1437 | 2220 | 2130 | 6000[1)] | 1700 | 72 | 12500 | ACS800-607-1600-3+D151 | 5 x NBRA659 |
| 2117 | 0.2 | 3270 | 504 | 324 | 1000 | 1542 | 1724 | 2664 | 2130 | 7200[1)] | 2040 | 73 | 15000 | ACS800-607-1920-3+D151 | 6 x NBRA659 |
| **$U_N$ = 500 V (Range 380 - 500 V)** | | | | | | | | | | | | | | | |
| 403 | 1.43 | 571 | 136 | 109 | 317 | 391 | 403 | 498 | 2130 | 400 | 110 | 64 | 660 | ACS800-607-0400-5 | NBRA659 |
| 806 | 0.72 | 1142 | 272 | 218 | 634 | 782 | 806 | 996 | 2130 | 800 | 220 | 67 | 1320 | ACS800-607-0800-5 | 2 x NBRA659 |
| 1208 | 0.48 | 1713 | 408 | 327 | 951 | 1173 | 1209 | 1494 | 2130 | 1200 | 330 | 68 | 1980 | ACS800-607-1200-5 | 3 x NBRA659 |
| 1611 | 0.36 | 2284 | 544 | 436 | 1268 | 1564 | 1612 | 1992 | 2130 | 1600 | 440 | 69 | 2640 | ACS800-607-1600-5 | 4 x NBRA659 |
| 2014 | 0.29 | 2855 | 680 | 545 | 1585 | 1955 | 2015 | 2490 | 2130 | 2000 | 550 | 70 | 3300 | ACS800-607-2000-5 | 5 x NBRA659 |
| 2417 | 0.24 | 3426 | 816 | 654 | 1902 | 2346 | 2418 | 2988 | 2130 | 2400 | 660 | 71 | 3960 | ACS800-607-2400-5 | 6 x NBRA659 |
| 403 | 1.35 | 605 | 67 | 54 | 167 | 206 | 287 | 355 | 2130 | 1200 | 340 | 66 | 2500 | ACS800-607-0400-5+D151 | NBRA659 |
| 806 | 0.68 | 1210 | 134 | 108 | 333 | 412 | 575 | 710 | 2130 | 2400 | 680 | 69 | 5000 | ACS800-607-0800-5+D151 | 2 x NBRA659 |
| 1208 | 0.45 | 1815 | 201 | 162 | 500 | 618 | 862 | 1065 | 2130 | 3600 | 1020 | 70 | 7500 | ACS800-607-1200-5+D151 | 3 x NBRA659 |
| 1611 | 0.34 | 2420 | 268 | 216 | 667 | 824 | 1150 | 1420 | 2130 | 4800[1)] | 1360 | 71 | 10000 | ACS800-607-1600-5+D151 | 4 x NBRA659 |
| 2014 | 0.27 | 3025 | 335 | 270 | 833 | 1030 | 1437 | 1775 | 2130 | 6000[1)] | 1700 | 72 | 12500 | ACS800-607-2000-5+D151 | 5 x NBRA659 |
| 2417 | 0.23 | 3630 | 402 | 324 | 1000 | 1236 | 1724 | 2130 | 2130 | 7200[1)] | 2040 | 73 | 15000 | ACS800-607-2400-5+D151 | 6 x NBRA659 |
| **$U_N$ = 690 V (Range 525 - 690 V)** | | | | | | | | | | | | | | | |
| 404 | 2.72 | 414 | 107 | 119 | 298 | 267 | 404 | 361 | 2130 | 400 | 110 | 64 | 660 | ACS800-607-0400-7 | NBRA669 |
| 807 | 1.36 | 828 | 214 | 238 | 596 | 534 | 808 | 722 | 2130 | 800 | 220 | 67 | 660 | ACS800-607-0800-7 | 2 x NBRA669 |
| 1211 | 0.91 | 1242 | 321 | 357 | 894 | 801 | 1212 | 1083 | 2130 | 1200 | 330 | 68 | 1320 | ACS800-607-1200-7 | 3 x NBRA669 |
| 1615 | 0.68 | 1656 | 428 | 476 | 1192 | 1068 | 1616 | 1444 | 2130 | 1600 | 440 | 69 | 1980 | ACS800-607-1600-7 | 4 x NBRA669 |
| 2019 | 0.54 | 2070 | 535 | 595 | 1490 | 1335 | 2020 | 1805 | 2130 | 2000 | 550 | 70 | 2640 | ACS800-607-2000-7 | 5 x NBRA669 |
| 2422 | 0.45 | 2484 | 642 | 714 | 1788 | 1602 | 2424 | 2166 | 2130 | 2400 | 660 | 71 | 3300 | ACS800-607-2400-7 | 6 x NBRA669 |
| 404 | 1.35 | 835 | 97 | 54 | 167 | 149 | 287 | 257 | 2130 | 1200 | 340 | 66 | 2500 | ACS800-607-0400-7+D151*) | NBRA669 |
| 807 | 0.68 | 1670 | 194 | 108 | 333 | 298 | 575 | 514 | 2130 | 2400 | 680 | 69 | 5000 | ACS800-607-0800-7+D151*) | 2 x NBRA669 |
| 1211 | 0.45 | 2505 | 291 | 162 | 500 | 447 | 862 | 771 | 2130 | 3600 | 1020 | 70 | 7500 | ACS800-607-1200-7+D151*) | 3 x NBRA669 |
| 1615 | 0.34 | 3340 | 388 | 216 | 667 | 596 | 1150 | 1028 | 2130 | 4800[1)] | 1360 | 71 | 10000 | ACS800-607-1600-7+D151*) | 4 x NBRA669 |
| 2019 | 0.27 | 4175 | 485 | 270 | 833 | 745 | 1437 | 1285 | 2130 | 6000[1)] | 1700 | 72 | 12500 | ACS800-607-2000-7+D151*) | 5 xNBRA669 |
| 2422 | 0.23 | 5010 | 582 | 324 | 1000 | 894 | 1724 | 1542 | 2130 | 7200[1)] | 2040 | 73 | 15000 | ACS800-607-2400-7+D151*) | 6 x NBRA669 |

$E_r$ = Energy pulse that the resistor assembly will withstand with the 400 seconds duty cycle.
This energy will heat the resistor element from 40 °C to the maximum allowable temperature.

$P_{br,max}$ = Maximum braking power of the NBRA-6xx chopper and SAFUR resistor combination.

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

Thus, the standard resistor 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 the same as braking power.

1) Additional 200 mm junction section needed.
2) 2130 mm + additional 10 mm is required for marine supports.
3) Total width of the line-up is the sum of widths of the sections + 30 mm for the end plates.

*) D151 = braking resistor, degree of protection IP21

# Multidrive 3-phase high power brake units

| Resistors values | | Ratings $R_{min}$ | | | | | | | Ratings $R_{max}$ | | | | | | | Type code | Frame size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No-overload use | | | | Cycle load (1min/5min) | | | No-overload use | | | | Cycle load (1min/5min) | | | | |
| $R_{min}$ Ohm | $R_{max}$ Ohm | $I_{dc}$ A DC | $I_{rms}$ A DC | $P_{contmax}$ kW | $I_{max}$ A DC | $I_{dc}$ A DC | $I_{rms}$–$R_{min}$ A DC | $P_{br}$–$R_{min}$ kW | $I_{dc}$ A DC | $I_{rms}$ A DC | $P_{contmax}$ kW | $I_{max}$ A DC | $I_{dc}$ A DC | $I_{rms}$–$R_{max}$ A DC | $P_{br}$–$R_{max}$ kW | | |
| **$U_N$ = 400 V** | | | | | | | | | | | | | | | | | |
| 3.5 | 4.1 | 390 | 155 | 250 | 185 | 500 | 176 | 320 | 390 | 143 | 250 | 156 | 422 | 148 | 270 | ACS800-607-0250-3 | R7i |
| 1.7 | 2.1 | 781 | 310 | 500 | 370 | 999 | 351 | 640 | 781 | 282 | 500 | 312 | 827 | 291 | 530 | ACS800-607-0500-3 | R8i |
| 1.2 | 1.4 | 1171 | 465 | 750 | 555 | 1499 | 527 | 960 | 1171 | 424 | 750 | 468 | 1241 | 436 | 800 | ACS800-607-0750-3 | R8i |
| 1.7 | 2.1 | 1562 | 621 | 1000 | 740 | 1998 | 702 | 1290 | 1562 | 565 | 1000 | 625 | 1655 | 581 | 1060 | ACS800-607-1000-3 | 2xR8i |
| 1.2 | 1.4 | 2342 | 931 | 1510 | 1110 | 2997 | 1053 | 1930 | 2342 | 847 | 1510 | 937 | 2482 | 872 | 1600 | ACS800-607-1510-3 | 2xR8i |
| 1.2 | 1.4 | 3514 | 1396 | 2260 | 1665 | 4496 | 1580 | 2890 | 3514 | 1271 | 2260 | 1405 | 3723 | 1308 | 2400 | ACS800-607-2260-3 | 3xR8i |
| 1.2 | 1.4 | 4685 | 1862 | 3010 | 2220 | 5994 | 2106 | 3860 | 4685 | 1694 | 3010 | 1874 | 4964 | 1744 | 3190 | ACS800-607-3010-3 | 4xR8i |
| 1.2 | 1.4 | 5856 | 2327 | 3770 | 2775 | 7493 | 2633 | 4820 | 5856 | 2118 | 3770 | 2342 | 6205 | 2180 | 3990 | ACS800-607-3770-3 | 5xR8i |
| **$U_N$ = 500 V** | | | | | | | | | | | | | | | | | |
| 4.3 | 5.2 | 390 | 155 | 310 | 185 | 500 | 176 | 400 | 390 | 143 | 310 | 156 | 422 | 148 | 340 | ACS800-607-0310-5 | R7i |
| 2.2 | 2.6 | 781 | 310 | 630 | 370 | 999 | 351 | 800 | 781 | 284 | 630 | 312 | 835 | 293 | 670 | ACS800-607-0630-5 | R8i |
| 1.4 | 1.7 | 1171 | 465 | 940 | 555 | 1499 | 527 | 1210 | 1171 | 430 | 940 | 468 | 1277 | 449 | 1030 | ACS800-607-0940-5 | R8i |
| 2.2 | 2.6 | 1562 | 621 | 1260 | 740 | 1998 | 702 | 1610 | 1562 | 568 | 1260 | 625 | 1671 | 587 | 1340 | ACS800-607-1260-5 | 2xR8i |
| 1.4 | 1.7 | 2342 | 931 | 1880 | 1110 | 2997 | 1053 | 2410 | 2342 | 860 | 1880 | 937 | 2555 | 898 | 2060 | ACS800-607-1880-5 | 2xR8i |
| 1.4 | 1.7 | 3514 | 1396 | 2830 | 1665 | 4496 | 1580 | 3620 | 3514 | 1289 | 2830 | 1405 | 3832 | 1347 | 3080 | ACS800-607-2830-5 | 3xR8i |
| 1.4 | 1.7 | 4685 | 1862 | 3770 | 2220 | 5994 | 2106 | 4820 | 4685 | 1719 | 3770 | 1874 | 5110 | 1795 | 4110 | ACS800-607-3770-5 | 4xR8i |
| 1.4 | 1.7 | 5856 | 2327 | 4710 | 2775 | 7493 | 2633 | 6030 | 5856 | 2149 | 4710 | 2342 | 6387 | 2244 | 5140 | ACS800-607-4710-5 | 5xR8i |
| **$U_N$ = 690 V** | | | | | | | | | | | | | | | | | |
| 6.0 | 7.1 | 390 | 155 | 430 | 185 | 500 | 176 | 550 | 390 | 143 | 430 | 156 | 422 | 148 | 470 | ACS800-607-0430-7 | R7i |
| 3.0 | 3.6 | 781 | 310 | 870 | 370 | 999 | 351 | 1110 | 781 | 283 | 870 | 312 | 833 | 293 | 920 | ACS800-607-0870-7 | R8i |
| 2.0 | 2.4 | 1171 | 465 | 1300 | 555 | 1499 | 527 | 1660 | 1171 | 425 | 1300 | 468 | 1249 | 439 | 1390 | ACS800-607-1300-7 | R8i |
| 3.0 | 3.6 | 1562 | 621 | 1730 | 740 | 1998 | 702 | 2220 | 1562 | 567 | 1730 | 625 | 1665 | 585 | 1850 | ACS800-607-1730-7 | 2xR8i |
| 2.0 | 2.4 | 2342 | 931 | 2600 | 1110 | 2997 | 1053 | 3330 | 2342 | 850 | 2600 | 937 | 2498 | 878 | 2770 | ACS800-607-2600-7 | 2xR8i |
| 2.0 | 2.4 | 3514 | 1396 | 3900 | 1665 | 4496 | 1580 | 4990 | 3514 | 1275 | 3900 | 1405 | 3746 | 1316 | 4160 | ACS800-607-3900-7 | 3xR8i |
| 2.0 | 2.4 | 4685 | 1862 | 5200 | 2220 | 5994 | 2106 | 6650 | 4685 | 1700 | 5200 | 1874 | 4995 | 1755 | 5540 | ACS800-607-5200-7 | 4xR8i |
| 2.0 | 2.4 | 5856 | 2327 | 6500 | 2775 | 7493 | 2633 | 8320 | 5856 | 2125 | 6500 | 2342 | 6244 | 2194 | 6930 | ACS800-607-6500-7 | 5xR8i |

| Frame size | Dimensions | | | | Noise level | | Cooling media |
|---|---|---|---|---|---|---|---|
| | Height [1] | Width bottom entry | Width top exit | Depth 1 | | | Air flow |
| | mm | mm | mm | mm | dB(A) | dB(A)[2] | $m^3/h$ |
| **$U_N$ = 400 V** | | | | | | | |
| R7i | 2003 | 400 | 400 | 644 | 72 | - | 800 |
| R8i | 2130 | 500 | 700 | 644 | 72 | 60 | 1280 |
| R8i | 2130 | 500 | 700 | 644 | 72 | 60 | 1280 |
| 2xR8i | 2130 | 1000 | 1400 | 644 | 74 | 62 | 2560 |
| 2xR8i | 2130 | 1000 | 1400 | 644 | 74 | 62 | 2560 |
| 3xR8i | 2130 | 1500 | 2100 | 644 | 76 | 64 | 3840 |
| 4xR8i | 2130 | 2000 | 2800 | 644 | 76 | 64 | 5120 |
| 5xR8i | 2130 | 2500 | 3500 | 644 | 77 | 65 | 6400 |
| **$U_N$ = 500 V** | | | | | | | |
| R7i | 2003 | 400 | 400 | 644 | 72 | - | 800 |
| R8i | 2130 | 500 | 700 | 644 | 72 | 60 | 1280 |
| R8i | 2130 | 500 | 700 | 644 | 72 | 60 | 1280 |
| 2xR8i | 2130 | 1000 | 1400 | 644 | 74 | 62 | 2560 |
| 2xR8i | 2130 | 1000 | 1400 | 644 | 74 | 62 | 2560 |
| 3xR8i | 2130 | 1500 | 2100 | 644 | 76 | 64 | 3840 |
| 4xR8i | 2130 | 2000 | 2800 | 644 | 76 | 64 | 5120 |
| 5xR8i | 2130 | 2500 | 3500 | 644 | 77 | 65 | 6400 |
| **$U_N$ = 690 V** | | | | | | | |
| R7i | 2003 | 400 | 400 | 644 | 72 | - | 800 |
| R8i | 2130 | 500 | 700 | 644 | 72 | 60 | 1280 |
| R8i | 2130 | 500 | 700 | 644 | 72 | 60 | 1280 |
| 2xR8i | 2130 | 1000 | 1400 | 644 | 74 | 62 | 2560 |
| 2xR8i | 2130 | 1000 | 1400 | 644 | 74 | 62 | 2560 |
| 3xR8i | 2130 | 1500 | 2100 | 644 | 76 | 64 | 3840 |
| 4xR8i | 2130 | 2000 | 2800 | 644 | 76 | 64 | 5120 |
| 5xR8i | 2130 | 2500 | 3500 | 644 | 77 | 65 | 6400 |

[1] IP21 and IP42. IP54 additional 190 mm to the height of each R8i cabinet.
[2] Average noise level with controlled cooling fan.

Note: 400 mm free space needed above cabinet.

**Resistor**

$R_{min}$ Minimum allowed resistance value of the brake resistor for one phase of the brake module.

$R_{max}$ Resistance value of the brake resistor for one phase of the brake module corresponding to the maximum achieved continuous braking power.

**Note:** Connect one resistor per brake module phase. For example, a brake unit of frame size 2xR8i including two brake modules –> 2 x 3 resistors are needed.

**Typical ratings for no-overload use**

$I_{dc}$ Total input DC current of brake unit.

$I_{rms}$ Total rms DC output phase current of brake unit.

$I_{max}$ Peak brake current (DC) per chopper module phase.

$P_{cont.max}$ Maximum continuous braking power per brake unit.

**Cyclic load (1 min / 5 min)**

$I_{dc}$ Total input DC current of brake unit during a period of 1 minute with braking power $P_{br}$.

$I_{rms}$ Total rms DC current per brake unit phase during a period of 1 minute with braking power $P_{br}$.

$P_{br}$ Short term braking power per brake unit allowed for one minute every 5 minutes.

# Liquid-cooled multidrive 3-phase high power brake units

| Resistor data | | Nominal ratings | | No-overload use | Cycle load* (1min/5min) | | | Noise level | Dissipation to liquid | | | Dynamic Braking Unit | Frame |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $R_{min}$ Ohm | $R_{max}$ Ohm | $I_{dc\ peak}$ A DC | $I_{rms}$ A DC | $P_{contmax}$ kW | $I_{dc\ peak}$ A DC | $I_{rms}$ A DC | $P_{br}$ kW | dB(A) | (chopper) kW | Massflow l/min | Liquid Qty l | Type | INU |
| **$U_N$ = 400 V (Range 380-415 V)** | | | | | | | | | | | | | |
| 3 x 3.5 Ohm | 3 x 4.1 Ohm | 390 | 155 | 250 | 500 | 176 | 320 | 53 | 2.5 | 13 | 3 | ACS800-607LC-0250-3 | R7i |
| 3 x 1.7 Ohm | 3 x 2.1 Ohm | 781 | 310 | 500 | 999 | 351 | 640 | 53 | 7.1 | 13 | 3 | ACS800-607LC-0500-3 | R8i |
| 3 x 1.2 Ohm | 3 x 1.4 Ohm | 1171 | 465 | 750 | 1499 | 527 | 960 | 53 | 9.0 | 13 | 3 | ACS800-607LC-0750-3 | R8i |
| 2 x (3 x 1.7) Ohm | 2 x (3 x 2.1) Ohm | 1562 | 621 | 1000 | 1998 | 702 | 1290 | 55 | 13.9 | 26 | 6 | ACS800-607LC-1000-3 | 2xR8i |
| 2 x (3 x 1.2) Ohm | 2 x (3 x 1.4) Ohm | 2342 | 931 | 1510 | 2997 | 1053 | 1930 | 55 | 17.5 | 26 | 6 | ACS800-607LC-1510-3 | 2xR8i |
| 3 x (3 x 1.2) Ohm | 3 x (3 x 1.4) Ohm | 3514 | 1396 | 2260 | 4496 | 1580 | 2890 | 57 | 26.0 | 39 | 9 | ACS800-607LC-2260-3 | 3xR8i |
| 4 x (3 x 1.2) Ohm | 4 x (3 x 1.4) Ohm | 4685 | 1862 | 3010 | 5994 | 2106 | 3860 | 58 | 34.1 | 52 | 12 | ACS800-607LC-3010-3 | 4xR8i |
| 5 x (3 x 1.2) Ohm | 5 x (3 x 1.4) Ohm | 5856 | 2327 | 3770 | 7493 | 2633 | 4820 | 59 | 42.4 | 65 | 15 | ACS800-607LC-3770-3 | 5xR8i |
| **$U_N$ = 500 V (Range 380-500 V)** | | | | | | | | | | | | | |
| 3 x 4.3 Ohm | 3 x 5.2 Ohm | 390 | 155 | 310 | 500 | 176 | 400 | 53 | 2.6 | 13 | 3 | ACS800-607LC-0310-5 | R7i |
| 3 x 2.2 Ohm | 3 x 2.6 Ohm | 781 | 310 | 630 | 999 | 351 | 800 | 53 | 6.9 | 13 | 3 | ACS800-607LC-0630-5 | R8i |
| 3 x 1.4 Ohm | 3 x 1.7 Ohm | 1171 | 465 | 940 | 1499 | 527 | 1210 | 53 | 8.8 | 13 | 3 | ACS800-607LC-0940-5 | R8i |
| 2 x (3 x 2.2) Ohm | 2 x (3 x 2.6) Ohm | 1562 | 621 | 1260 | 1998 | 702 | 1610 | 55 | 13.3 | 26 | 6 | ACS800-607LC-1260-5 | 2xR8i |
| 2 x (3 x 1.4) Ohm | 2 x (3 x 1.7) Ohm | 2342 | 931 | 1880 | 2997 | 1053 | 2410 | 55 | 17.0 | 26 | 6 | ACS800-607LC-1880-5 | 2xR8i |
| 3 x (3 x 1.4) Ohm | 3 x (3 x 1.7) Ohm | 3514 | 1396 | 2830 | 4496 | 1580 | 3620 | 57 | 25.4 | 39 | 9 | ACS800-607LC-2830-5 | 3xR8i |
| 4 x (3 x 1.4) Ohm | 4 x (3 x 1.7) Ohm | 4685 | 1862 | 3770 | 5994 | 2106 | 4820 | 58 | 33.2 | 52 | 12 | ACS800-607LC-3770-5 | 4xR8i |
| 5 x (3 x 1.4) Ohm | 5 x (3 x 1.7) Ohm | 5856 | 2327 | 4710 | 7493 | 2633 | 6030 | 59 | 41.3 | 65 | 15 | ACS800-607LC-4710-5 | 5xR8i |
| **$U_N$ = 690 V (Range 525-690 V)** | | | | | | | | | | | | | |
| 3 x 6 Ohm | 3 x 7.1 Ohm | 390 | 155 | 430 | 500 | 176 | 550 | 53 | 2.4 | 13 | 3 | ACS800-607LC-0430-7 | R7i |
| 3 x 3 Ohm | 3 x 3.6 Ohm | 781 | 310 | 870 | 999 | 351 | 1110 | 53 | 8.0 | 13 | 3 | ACS800-607LC-0870-7 | R8i |
| 3 x 2 Ohm | 3 x 2.4 Ohm | 1171 | 465 | 1300 | 1499 | 527 | 1660 | 53 | 8.7 | 13 | 3 | ACS800-607LC-1300-7 | R8i |
| 2 x (3 x 3) Ohm | 2 x (3 x 3.6) Ohm | 1562 | 621 | 1730 | 1998 | 702 | 2220 | 55 | 15.6 | 26 | 6 | ACS800-607LC-1730-7 | 2xR8i |
| 2 x (3 x 2) Ohm | 2 x (3 x 2.4) Ohm | 2342 | 931 | 2600 | 2997 | 1053 | 3330 | 55 | 17.1 | 26 | 6 | ACS800-607LC-2600-7 | 2xR8i |
| 3 x (3 x 2) Ohm | 3 x (3 x 2.4) Ohm | 3514 | 1396 | 3900 | 4496 | 1580 | 4990 | 57 | 25.3 | 39 | 9 | ACS800-607LC-3900-7 | 3xR8i |
| 4 x (3 x 2) Ohm | 4 x (3 x 2.4) Ohm | 4685 | 1862 | 5200 | 5994 | 2106 | 6650 | 58 | 33.6 | 52 | 12 | ACS800-607LC-5200-7 | 4xR8i |
| 5 x (3 x 2) Ohm | 5 x (3 x 2.4) Ohm | 5856 | 2327 | 6500 | 7493 | 2633 | 8320 | 59 | 41.6 | 65 | 15 | ACS800-607LC-6500-7 | 5xR8i |

| Frame Size | Dimensions | | | |
|---|---|---|---|---|
| | Height[1) 2)] mm | Width[3)] mm | Depth[1)] mm | Weight kg |
| R7i | 2003 | 400/700 | 644 | 300 |
| R8i | 2003 | 400/700 | 644 | 300 |
| 2xR8i | 2003 | 800/1400 | 644 | 600 |
| 3xR8i | 2003 | 1200/2100 | 644 | 900 |
| 4xR8i | 2003 | 1600/2800 | 644 | 1200 |
| 5xR8i | 2003 | 2000/3500 | 644 | 1500 |

[1)] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[2)] Pressure release lids require an additional 400 mm.
[3)] First values for bottom exit and latter values for top exit.

**Resistor**

$R_{min}$ Minimum allowed resistance value of the brake resistor for one phase of the brake module.

$R_{max}$ Resistance value of the brake resistor for one phase of the brake module corresponding to the maximum achieved continuous braking power.

**Note:** Connect one resistor per brake module phase.
For example, a brake unit of frame size 2xR8i including two brake modules –> 2 x 3 resistors are needed.

**Typical ratings for no-overload use**

$I_{dc}$ Total input DC current of brake unit.

$I_{rms}$ Total rms DC output phase current of brake unit.

$I_{max}$ Peak brake current (DC) per chopper module phase.

$P_{cont.max}$ Maximum continuous braking power per brake unit.

**Cyclic load (1 min / 5 min)**

$I_{dc}$ Total input DC current of brake unit during a period of 1 minute with braking power $P_{br}$.

$I_{rms}$ Total rms DC current per brake unit phase during a period of 1 minute with braking power $P_{br}$.

$P_{br}$ Short term braking power per brake unit allowed for one minute every 5 minutes.

# EMC filters

## 1st environment vs 2nd environment

**1st environment (category C1 & C2)**
"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 (category C3 & C4)**
"2nd environment includes all establishments other than those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes."

## EMC - Electromagnetic compatibility and ACS800

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

## EMC standards

The EMC product standard (EN 61800-3 + Amendment A11(2000)) covers the specific EMC requirements stated for drives (tested with motor and cable) within the EU.

EMC standards such as EN 55011 or EN 61000-6-3/4 apply to industrial and household equipment and systems containing a drive component. Drive units complying with requirements of EN 61800-3 are always compliant with the comparable categories in EN 55011 and EN 61000-6-3/4, but not necessarily vice versa. EN 55011 and EN 61000-6-3/4 do not specify cable length nor require a motor to be connected as a load. The emission limits are comparable according to the following table showing EMC standards.

## Selecting an EMC filter

The following table gives the correct filter selection.

### EMC standards

| EN61800-3 (2004) product standard | EN 55011, product family standard for industrial, scientific and medical (ISM) equipment | EN61000-6-4, generic emission standard for industrial environments | EN61000-6-3, generic emission standard for residential, commercial and light-industrial environment |
|---|---|---|---|
| Category C1 (1st environment) | Group 1 Class B | Not applicable | Applicable |
| Category C2 (1st environment) | Group 1 Class A | Applicable | Not applicable |
| Category C3 (2nd environment) | Group 2 Class A | Not applicable | Not applicable |
| Category C4 (2nd environment) | Not applicable | Not applicable | Not applicable |

| Type | Voltage | Frame sizes | 1st environment, restricted distribution, C2, grounded network (TN) up to 1000A | 2nd environment, C3, grounded network (TN) |
|---|---|---|---|---|
| ACS800-207 ACS800-207LC | 400-500 | R7i-nxR8i | +E202 | Standard |
| | 690 | | - | Standard |
| ACS800-307 ACS800-307LC | 400-500 | D3-nxD4 | +E202 | Standard |
| | 690 | | - | Standard |

# Du/dt filters

As with all frequency converters employing the most modern IGBT inverter technology, the ACS800 output comprises - regardless of output frequency - pulses of approximately 1.35 times the mains network voltage with a very short rise time. The voltage can be almost double at the motor terminals, depending on motor cable properties.

Du/dt filtering suppresses inverter output voltage spikes and rapid voltage changes that stress motor insulation. Additionally, du/dt filtering reduces capacitive leakage currents and high frequency emission of the motor cable as well as high frequency losses and bearing currents in the motor.

When is it needed? The need for du/dt filtering depends on the motor insulation. For information on the construction of the motor insulation, consult the manufacturer. If the motor does not fulfil the following requirements, the lifetime of the motor might shorten.

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 see the ACS800 hardware manuals.

### Filter selection table for ACS800

| Motor type | Nominal mains voltage ($U_N$) | Motor insulation requirement |
|---|---|---|
| ABB M2 and M3 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 | Insulation 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 $\Delta t$=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 withstand $\hat{U}_{LL}$=1600 V. |
| | 600 V < $U_N \leq 690$ V | If the motor insulation system withstands $\hat{U}_{LL}$=2000 V and $\Delta t$=0.3 µs, du/dt filtering is not required. With du/dt filtering, the insulation system must withstand $\hat{U}_{LL}$=1800 V. |

| Symbol | Explanation |
|---|---|
| $U_N$ | Nominal mains voltage. |
| $\hat{U}_{LL}$ | Peak line to line voltage at motor terminals. |
| $\Delta t$ | Rise time, i.e. interval during which line to line voltage at motor terminals changes from 10% to 90% of full voltage range. |

# Standard user interface
## Standard I/O

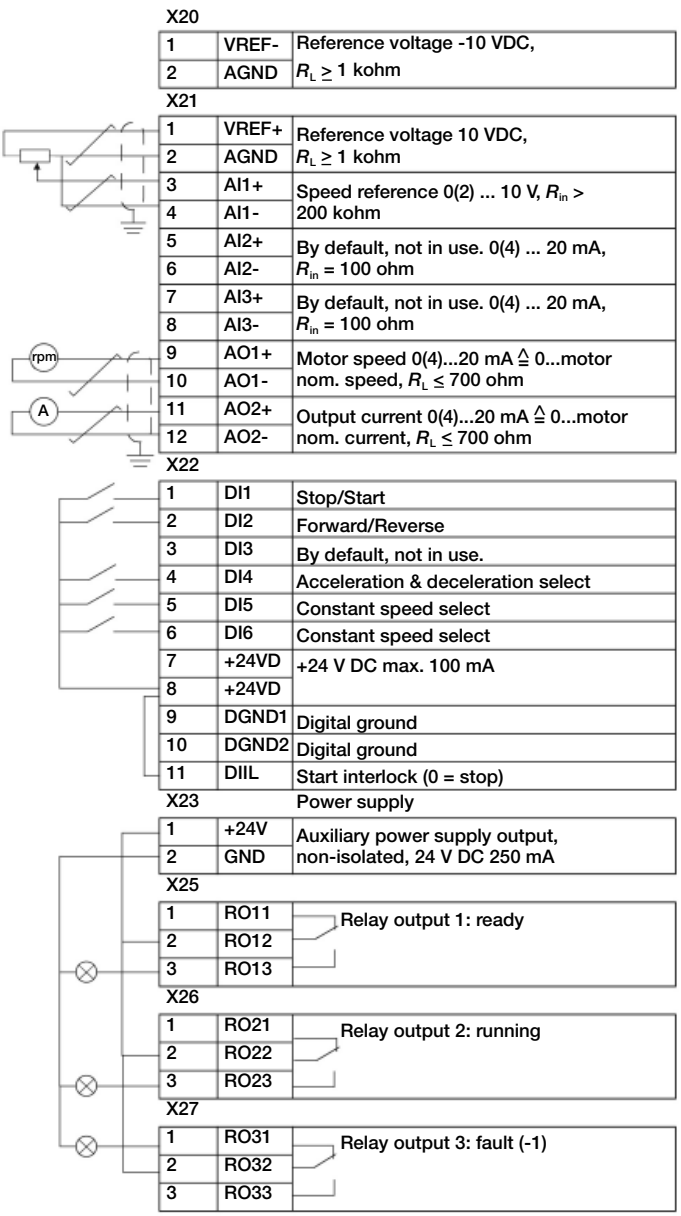
Analog and digital I/O channels are used for different functions such as control, monitoring and measurement purposes (e.g. motor temperature). In addition, optional I/O extension modules are available providing additional analog or digital I/O connections.

Below are the standard drive control I/O of the ABB industrial drive with factory macro. For other ACS800 application macros the functions may be different.

### Standard I/O on RMIO-11 and RMIO-12 board

- R2i - R5i: RMIO-11 at 400 V and 500 V
- R7i, R8i -nxR8i and all 690 V units: RMIO-12
- 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:
  - Changeover contact
  - 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

Drive control unit RDCU-12C (motor control unit RMIO-12 is inside the RDCU).

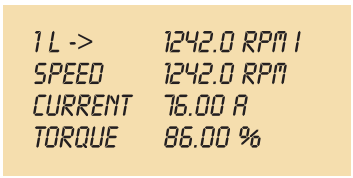



| | | |
|---|---|---|
| **X20** | | |
| 1 | VREF- | Reference voltage -10 VDC, $R_L \geq 1$ kohm |
| 2 | AGND | |
| **X21** | | |
| 1 | VREF+ | Reference voltage 10 VDC, $R_L \geq 1$ kohm |
| 2 | AGND | |
| 3 | AI1+ | Speed reference 0(2) ... 10 V, $R_{in}$ > 200 kohm |
| 4 | AI1- | |
| 5 | AI2+ | By default, not in use. 0(4) ... 20 mA, $R_{in}$ = 100 ohm |
| 6 | AI2- | |
| 7 | AI3+ | By default, not in use. 0(4) ... 20 mA, $R_{in}$ = 100 ohm |
| 8 | AI3- | |
| 9 | AO1+ | Motor speed 0(4)...20 mA ≙ 0...motor nom. speed, $R_L \leq 700$ ohm |
| 10 | AO1- | |
| 11 | AO2+ | Output current 0(4)...20 mA ≙ 0...motor nom. current, $R_L \leq 700$ ohm |
| 12 | AO2- | |
| **X22** | | |
| 1 | DI1 | Stop/Start |
| 2 | DI2 | Forward/Reverse |
| 3 | DI3 | By default, not in use. |
| 4 | DI4 | Acceleration & deceleration select |
| 5 | DI5 | Constant speed select |
| 6 | DI6 | Constant speed select |
| 7 | +24VD | +24 V DC max. 100 mA |
| 8 | +24VD | |
| 9 | DGND1 | Digital ground |
| 10 | DGND2 | Digital ground |
| 11 | DIIL | Start interlock (0 = stop) |
| **X23** | | Power supply |
| 1 | +24V | Auxiliary power supply output, non-isolated, 24 V DC 250 mA |
| 2 | GND | |
| **X25** | | |
| 1 | RO11 | Relay output 1: ready |
| 2 | RO12 | |
| 3 | RO13 | |
| **X26** | | |
| 1 | RO21 | Relay output 2: running |
| 2 | RO22 | |
| 3 | RO23 | |
| **X27** | | |
| 1 | RO31 | Relay output 3: fault (-1) |
| 2 | RO32 | |
| 3 | RO33 | |

# Options
## Control panel
## Control panel mounting platforms

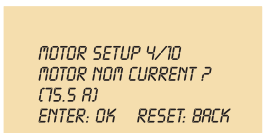
The industrial drive control panel (+J400) has a multilingual alphanumeric display (4 lines x 20 characters) with plain text messages in 14 languages.

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




### Start-up assistant

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



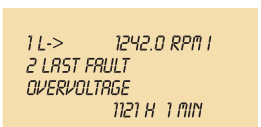

### Actual value display

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

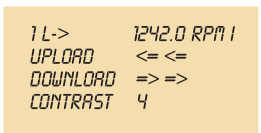
### Fault memory

An inbuilt fault memory stores information relating to the latest 64 faults, each with a time stamp.



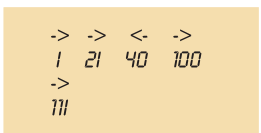

### Parameter copying

The parameter copy feature allows all drive parameters to be copied from one frequency converter to another to simplify commissioning.



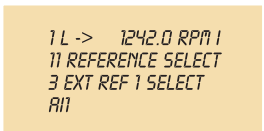

### Centralised control

One panel can control up to 31 drives.




### Easy programming

Parameters are organised into groups for easy programming.




### Control panel mounting platforms (+J410 and +J413)

On the reverse of the control panel are screw holes from where the control panel can be fixed to a cabinet door. Panel-mounting platforms, which allow the panel to be removed, are also available. There are two variants of the panel-mounting platform:

RPMP-11 (+J410) for door mounting
RPMP-21 (+J413) for panel mounting inside the cabinet

# Options
## Optional I/O

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 ACS800 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 slots. The available number and combination of I/O's depends on the control software used. The standard application software supports 1 analog and 3 digital extension modules.

### Optional I/O

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

- 2 analog inputs: galvanically isolated from 24 V supply and ground
  - ± 0(2) to 10 V, 0(4) to 20 mA or ± 0 to 2 V, resolution 12 bits
- 2 analog outputs: galvanically isolated from 24 V supply and ground
  - 0(4) to 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 or 115/230 V AC
- 2 relay (digital) outputs:
  - Changeover contact
  - 24 V DC 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


### I/O extension adapter AIMA-01

- Three slots for I/O extension modules
- Connection to the ACS800 control board through optic link
- Dimensions: 78 × 325 × 28 mm
- Mounting: onto 35 × 7.5 mm DIN rail
- External power supply connection
- Supply voltage: 24 V DC ± 10%
- Current consumption: depends on connected I/O extension modules

# Options
## Fieldbus control

ABB industrial drives have connectivity to 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 also 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 twisted pair 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 |
| CANopen (+K457) | - | Drives and motion control ABB Drives *) | 10 kbit/s - 1 Mbit/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) | Ethernet IP Modbus/TCP | ABB Drives *), AC/DC drives ABB Drives *) | 10 Mbit/s / 100 Mbit/s |
| Ethernet (+K467) | PROFINET IO Modbus/TCP | PROFIdrive ABB Drives *) | 10 Mbit/s / 100 Mbit/s |
| InterBUS-S (+K453) | I/O, PCP | ABB Drives *) | 500 kbit/s |
| LONWORKS® (+K452) | LONTALK® | Variable speed motor drive | 78 kbit/s |
| Ethercat® | Ethercat® | Drive and motion control ABB Drives *) | 100 Mbit/s |

*) Vendor specific profile

# 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. It 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.

It connects to the drive with fiber optic cables. The size of the module is 93 (h) x 35 (w) x 76.5 (d) mm.

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.

# Standard control programs

## System Control Program

Based on Direct Torque Control technology, the ACS800 offers highly advanced features as standard. The ACS800 system control program provides solutions to virtually all AC drives applications.

The software is targeted for multi-motor machines producing or processing metal, paper, plastics, textiles, rubber and cement, and for numerous other demanding applications. The basic control modes are speed control and torque control. Fast communication with the overriding controller can exchange operative data (references, command words) and support data (configuration data, diagnostics). Proprietary (DDCS, Drive bus) and generic (PROFIBUS, InterBus, DeviceNet) protocols enable the drives to be linked to controllers, PLC and PCs.

The major features are the soft changeover between the speed and torque control modes, drooping in speed control, fast and versatile configurable master-follower link between two or more drives, and inertia compensation.

In addition to parameters, industrial drives have the possibility for function block programming as standard. Adaptive programming with 26 programmable function blocks in 2 execution time levels makes it possible to replace, for example, relays or even a PLC in some applications. Adaptive programming can be done either by the standard control panel or DriveAP2, a user-friendly PC tool.

## Benefits with system control

- Extended communication capability, 24 data words available for both directions between the drive and overriding system.
- Two different torsional oscillation damping functions available to damp mechanical oscillations.
- PT100 or PTC measurement (max. 2 motors)
- Thermal model for motor cable protection
- Motor fan control with diagnostics
- Freely programmable outputs: analog (max. 4) and digital (max. 5)
- Speed control gain as a function of output on low speed or as a function of motor frequency for torque controlled application
- Extended internal communication between the line supply unit and inverter unit

## Control features

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

- Accurate speed control
- Accurate torque control without speed feedback
- Adaptive programming
- Controlled torque at zero speed
- DC hold
- DC magnetizing
- Diagnostics
- Reduced run function with parallel connected inverter modules
- Hand/Auto function for local and remote operation selection
- Flux braking
- Flux optimization
- IR compensation
- Motor identification
- Parameter lock
- Power loss ride-through
- Process PID control
- Programmable I/O
- Scalar control
- Speed controller tuning
- User-selectable acceleration and deceleration ramps
- User Macro 1&2 for user's own parameter settings
- Master-Follower applications with several control alternatives:
  - torque-controlled followers
  - speed-controlled followers
  - speed-controlled followers with load share function
  - on-line changeable process master(s) with CACP control program (separate RDCU unit)
  - diagnostics and interlocking to master from 1…3 follower in M/F link. E.g. follower's status can be interlocked for master.

# Standard control programs

## 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

## Safety related functions

- Integrated emergency stop
- Supports functionality of prevention of unexpected start-up

## Standard Control Program

Based on Direct Torque Control technology, the ACS800 offers highly advanced features as standard. The ACS800 standard control program 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, for example, relays or even a PLC in some applications. Adaptive programming can be done either by the standard control panel or DriveAP, a user-friendly PC tool.

## Standard control macros

The ACS800 features inbuilt, 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

# Optional control programs

## Control solutions for different applications

ABB provides a set of ready-made control solutions for specific industrial drive applications. Such software adds application-dedicated features and protection without an external PLC - improving productivity and reducing costs. Function blocks are easy to program using the DriveAP PC tool.

### 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

### Multiblock control program

The multiblock control program has been specially designed for system integrators and local engineering because of its flexibility, easy programming, large number of I/O, master-follower link and fieldbus interfaces. Integrated into the drive control board there are over 200 function blocks on 3 time levels: 20 ms, 100 ms and 500 ms. These benefits mean that it is not always necessary to have separate PLC for drive and process control. Function blocks are easy to program using the DriveAP PC tool.

**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. The maximum number of I/O connections is 62.

### Motion control program

The motion control program is a cost-effective solution for precision positioning and synchronization. Intelligent integrated motion control functions and versatile controllability eliminate the need for an external motion controller, even in the most demanding applications, such as materials handling, packaging, printing and the plastics industry.

Motion control has four operating modes – speed, torque, positioning and synchronization – and also provides the possibility for switching online between two selected modes.

### Pump control program

Incorporating all functions commonly required at pumping facilities, pump control program eliminates the need for an external PLC and can help to save energy, reduce downtime, and prevent pump jamming and pipeline blocking. It is easy-to-use software, designed to meet the needs of water and waste utilities, industrial plants and other pump users.

### Application programming template

The application programming template is a simple, ready-made application that can easily be modified using a special function block programming tool. The application engineer can easily modify the time levels and insert new functions to control the I/O, start/stop commands, and references etc. This is the most flexible software product for tailor-made customer applications.

### Winder and inline control

Winder and inline software products utilize the accurate speed and torque control of the drive in controlling product tension within a process by adjusting the speed or torque, based on the dancer or tension feedback. This precise control ensures high-quality handling of web material. The result is a straightforward, cost-effective solution in web handling applications. Winder control software supports adaptive programming with 15 blocks.

# Optional control programs

## Control solutions for different applications

### Rod pump and PCP/ESP pump control programs

These pump control program products have been specially developed in close cooperation with the oil industry for artificial oil lifting applications. The products not only increase the production and pump efficiency, but also reduce the stress on the complete pump system. The benefits provided include enhanced equipment protection, optimised fluid production, and overall improvement of system performance.

### Permanent magnet synchronous motor (PMSM) control program

This control program is available with standard and system control programs. The motor control program is specially made for permanent magnet low-speed – high-torque motors. This offers precise and reliable control at low speed without speed feedback. Permanent magnet control program supports adaptive programming with 15 blocks using standard program and 26 with the system program.

### 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 fibre optic link between bowl and scroll is used.

### Crane control program

This control program is designed for different kinds of crane motions - mainly for hoist, trolley and long travel motions.

The ABB crane control program is a flexible control platform, which enables a wide range of connectivity for start, stop and reference logic. Adaptive programming with 15 blocks gives additional flexibility for tailor-made modifications outside the ready-made parameter structure. This is like having a small PLC inside the drive.

Reliable, integrated brake control logic for smooth open and close logic without jerks improves operational safety and performance. Brake acknowledge, torque memory and pre-magnetisations are the key software elements that ensure reliable control.

Different functions as standard increase the safety level of the crane. These include integrated speed match, speed monitor, fast stop, slowdown and end limit logic.

The master-follower logic for up to five motors enables common drum or separate motors with load sharing, or with separate drums and separate motors with shaft synchro control. Fast switchover logic between stand-alone and master-follower logic increases the operational productivity. Internal homing control logic for position-controlled cranes can also be done with ready-made parameters. The position measurement enables position actual signals in millimeters for further logic.

The load speed control enables optimization of the hoist speed for different loads.

The integrated service counters for maintenance logic enable the different counters to provide information.

An easy-to-use, ready-made solution specifically for cranes.

## Crane drive control program

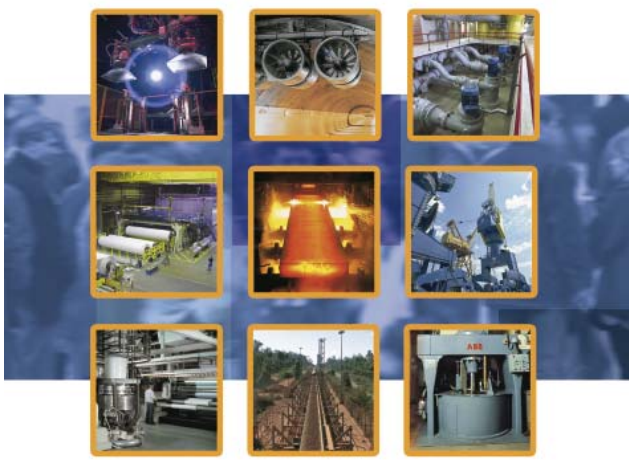
A crane drive control with optimal operational safety and performance built into the drive.

- A fixed, standard and ready-made crane application for different crane applications such as harbor cranes.
- Optimal operational safety and performance built into the drive.
- Ready-to-use with proven crane functionality.
- Available as single-drive or multi-drive with dynamic and regenerative braking.

Standard, ready-to-use crane solution.

## Master/follower control program

Reliable control via the fibre optic link of several drives controlled by one master. This is needed if the motor shafts are coupled together, for example. The master/follower function enables the load to be evenly distributed between the drives.



# Dimensioning tool
## DriveSize

### 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 catalogue 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 catalogues.

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.

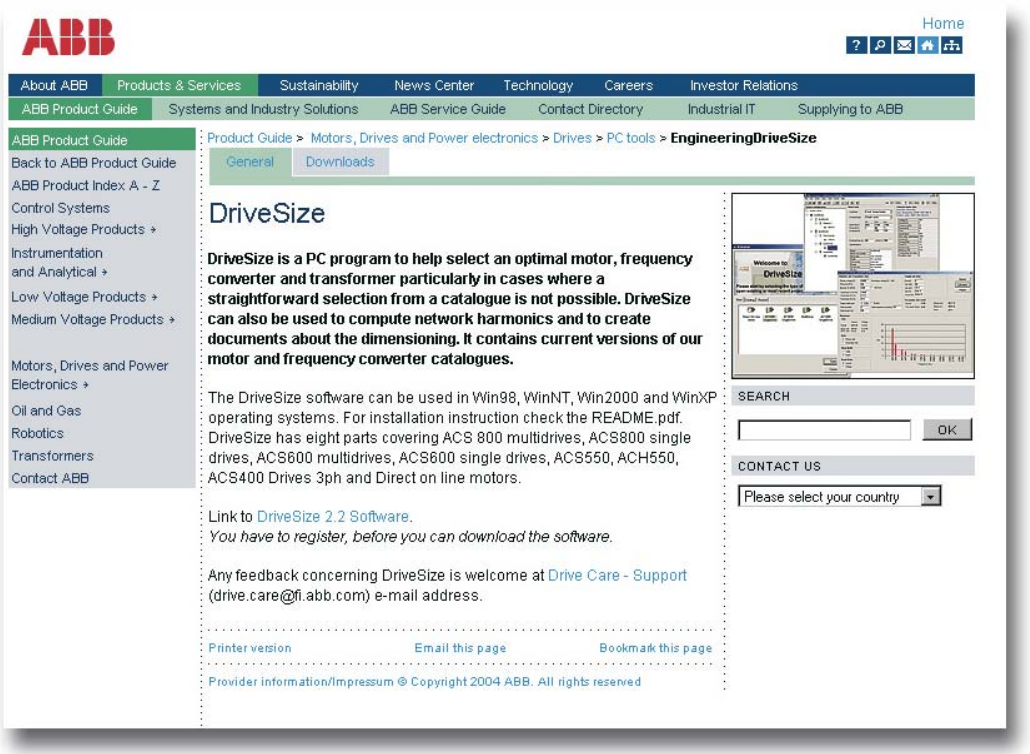
### DriveSize is for drive system components

- 3-phase standard, customized, explosion-proof 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/drives
➡ Drive PC Tools
➡ DriveSize



# Programming tool
## 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 IEC 61131.

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

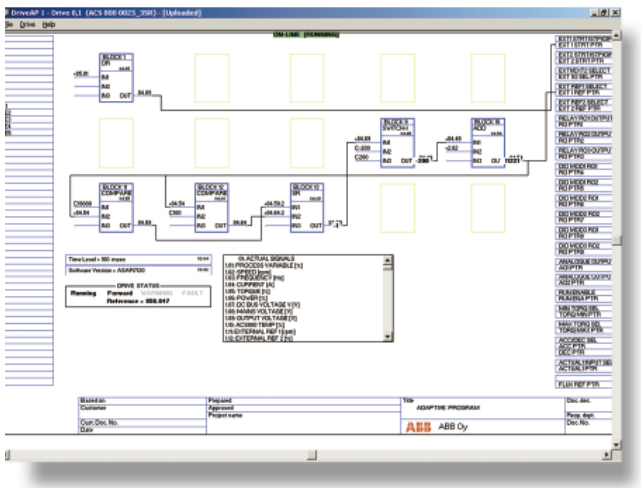
Both program types can be uploaded from connected drives and displayed graphically on a PC screen for service or documentation purposes, for example. The adaptive programs and multiblock programming programs made off-line can be downloaded to any of the connected drives that support corresponding programs.

## Three operating modes

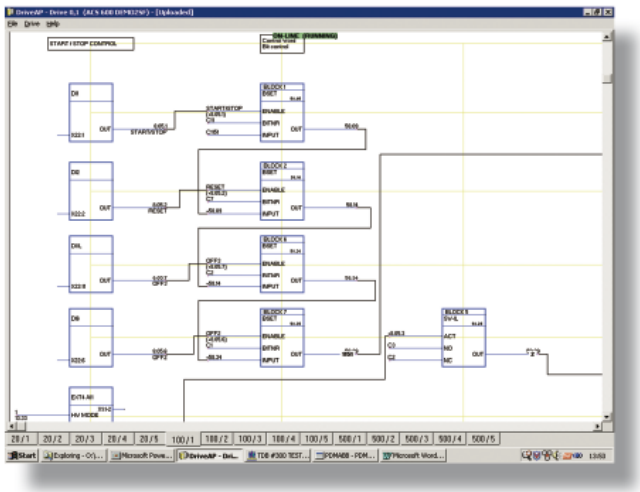
- Stand-alone mode - DriveAP is not connected to a drive. The adaptive programming and multiblock programming can be carried out in the office, for example, and later downloaded to a drive.
- Off-line mode - DriveAP is connected to a drive. The adaptive programming and multiblock programming can be carried 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.

# Start-up and maintenance tool
## 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 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 onto 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 the DDCS communication protocol on a high-speed fibre optic network, enabling very fast communication between the PC and drives. The fibre optic network is safe and highly immune to external disturbances. The fibre optic network can be connected to the PC's USB port using the RUSB-02 adapter or directly to a NDPA-02 fibre optic communications card in the PC.

### Monitoring drives

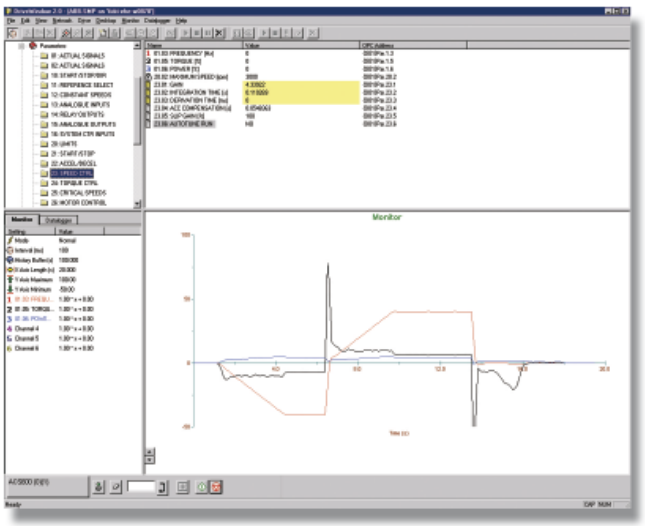
With DriveWindow you can monitor several drives simultaneously. The history buffer makes it possible to record a large amount of data in the PC's memory. The drive's data logger can be accessed with DriveWindow and viewed in graphical form. The fault logger inside the drive automatically documents every 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
- RUSB-02 and Windows Vista support

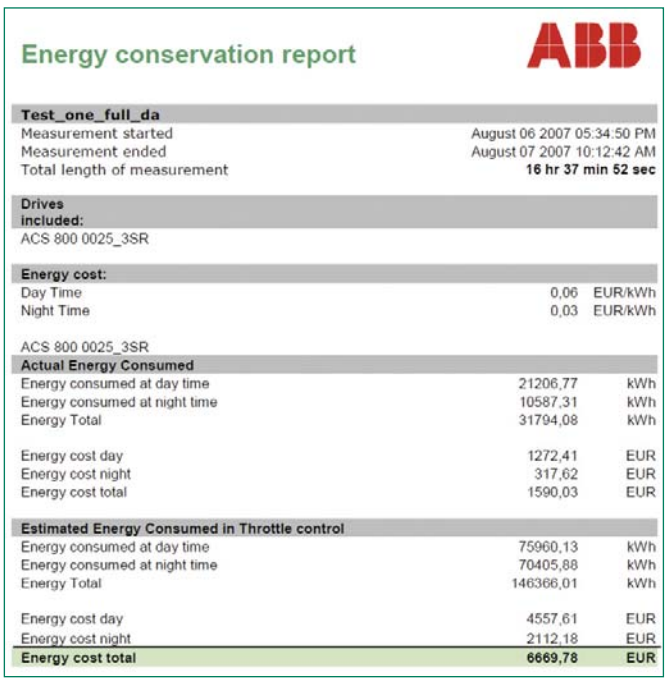


# Maintenance and integration tools
## DriveAnalyzer and DriveOPC

### DriveAnalyzer

DriveAnalyzer is an optional add-on tool for DriveWindow 2 that is designed to collect operational data from up to 200 drives from periods of 1 hour up to periods of 2 weeks. The data is used as the basis for operational analysis of the drive and motor. The collected data can be displayed graphically, helping users to:

- Analyze motor use, load, torque and power versus speed
- Display inverter peak value and amplitude logger data
- Create inverter current versus frequency plots
- Analyze electrical supply and network
- Assess energy use and savings
- Optimize an individual drive and motors performance
- Generate an energy savings report



Energy conservation report

ABB

| | | |
|---|---|---|
| **Test_one_full_da** | | |
| Measurement started | August 06 2007 05:34:50 PM | |
| Measurement ended | August 07 2007 10:12:42 AM | |
| Total length of measurement | **16 hr 37 min 52 sec** | |
| **Drives included:** | | |
| ACS 800 0025_3SR | | |
| **Energy cost:** | | |
| Day Time | 0,06 | EUR/kWh |
| Night Time | 0,03 | EUR/kWh |
| ACS 800 0025_3SR | | |
| **Actual Energy Consumed** | | |
| Energy consumed at day time | 21206,77 | kWh |
| Energy consumed at night time | 10587,31 | kWh |
| Energy Total | 31794,08 | kWh |
| Energy cost day | 1272,41 | EUR |
| Energy cost night | 317,62 | EUR |
| Energy cost total | 1590,03 | EUR |
| **Estimated Energy Consumed in Throttle control** | | |
| Energy consumed at day time | 75960,13 | kWh |
| Energy consumed at night time | 70405,88 | kWh |
| Energy Total | 146366,01 | kWh |
| Energy cost day | 4557,61 | EUR |
| Energy cost night | 2112,18 | EUR |
| **Energy cost total** | **6669,78** | **EUR** |

DriveAnalyzer energy conservation report

### DriveOPC

DriveOPC is an integration tool which allows OLE for Process Control (OPC) communication between Windows applications and ABB industrial drives allowing for PC based drive control and monitoring.

### DriveOPC features

Provides read access to:

- Drive status: local, running, direction, fault, warning and reference
- Drive signals and parameters
- Fault logger content
- Event logger content
- General drive information
- Data logger settings, status and content

Provides write access to:

- Drive control: local start, stop, forward, reverse, coast stop, reset fault, home, contactor on/off, reference
- Parameters
- Clear fault logger
- Data logger initialization, starting, clearing and triggering

Supports OPC's data access standard 1.0A.

### High speed communication

DriveAnalyzer and DriveOPC use the DDCS communication protocol on a high-speed fibre optic network, enabling very fast communication between the PC and drives. The fibre optic network is safe and highly immune to external disturbances. The fibre optic network can be connected to the PC's USB port using the RUSB-02 adapter or directly to a NDPA-02 fibre optic communications card in the PC.

# Summary of features and options

| | Ordering Code | 107 inverters | 207 (ISU) regenerative supply unit | 307 and 507 (6 p & 12 p DSU supply units) | 407 & 807 (6 p & 12 p TSU supply units) | 107LC (inverters) | 207LC (ISU) | 307LC - 1207LC (6p - 24 p DSU supply units) | 607 / 607LC (3-phase brake units) |
|---|---|---|---|---|---|---|---|---|---|
| | | Frame sizes R2i - 12xR8i | Frame sizes R7i - 12xR8i | Frame sizes D3 - 5xD4 | Frame sizes B4-B5 | Frame sizes R2i-10xR8i | Frame sizes R8i-10xR8i | Frame sizes D3 - 3xD4 | Frame sizes R7i - 5xR8i |
| **Mounting** | | | | | | | | | |
| Free-standing | | ● | ● | ● | | ● | ● | ● | ● |
| **Cabling** | | | | | | | | | |
| Supply bottom entry | H350 | - | ● | ● | ● | - | ● | ● | - |
| Supply top entry | H351 | - | □ | □ | □ | - | □ | □ | - |
| Inverter bottom exit | H352 | ● | - | - | - | ● | - | - | ● |
| Inverter top exit | H353 | □ | - | - | - | □ | - | - | □ |
| **Degree of protection** | | | | | | | | | |
| IP21 (UL type 1) | | ● | ● | ● | ● | - | - | - | ●/- |
| IP22 (UL type 1) | B053 | □ | □ | □ | □ | - | - | - | □/- |
| IP42 (UL type 1) | B054 | □ | □ | □ | □ | ● | ● | ● | □/● |
| IP54 (UL type 12) | B055 | □ | □ | □ | □ | □ | □ | □ | □/□ |
| IPXXR air outlet duct connection | C130 | □ | □ | □ | □ | - | - | - | □/- |
| **Motor control** | | | | | | | | | |
| DTC | | ● | ● | - | - | ● | ● | - | - |
| **Software** | | | | | | | | | |
| Start-up assistant | | ● 1) | - | - | - | ● 1) | - | - | - |
| Adaptive programming with Drive AP | | ● | - | - | - | ● | - | - | - |
| Multiblock programming application | | ● | - | - | - | ● | - | - | - |
| Reduced run (redundancy) for parallel connected inverters | | ● | ● | - | - | ● | ● | - | ● |
| Optional sofware optimised for different applications or for enhanced programmability: for more details see section “Application software and programming” | | □ | - | - | - | □ | - | - | - |
| **Control panel** | | | | | | | | | |
| Alphanumeric 4*20 charachter control panel | J400 | □ | □ | - | - | □ | □ | □ | □ |
| Control panel mounting platform | J410 or J413 | □ | □ | - | - | □ | □ | □ | □ |
| LED monitoring display LMD | J401 | □ | □ | - | - | □ | □ | □ | □ |
| **Control connections (I/O) and communications** | | | | | | | | | |
| 3 pcs analog inputs, programmable, galvanically isolated | | ● | ● 2) | ● 2) | ● 2) | ● | ● 2) | ● 2) | ● |
| 2 pcs analog outputs, programmable | | ● | ● 2) | ● 2) | ● 2) | ● | ● 2) | ● 2) | ● |
| 7 pcs digital inputs, programmable, galvanically isolated - can be divided into two groups | | ● | ● 2) | ● 2) | ● 2) | ● | ● 2) | ● 2) | ● |
| 3 pcs relay outputs, programmable | | ● | ● 2) | ● 2) | ● 2) | ● | ● 2) | ● 2) | ● |
| UPS external control voltage | G307 | □ | □ | □ | □ | □ | □ | □ | □ |

# Summary of features and options

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| | | Frame sizes R2i - 12xR8i | Frame sizes R7i - 12xR8i | Frame sizes D3 - 5xD4 | Frame sizes B4-B5 | Frame sizes R2i-10xR8i | Frame sizes R8i-10xR8i | Frame sizes D3 - 3xD4 | Frame sizes R7i - 5xR8i |
| Inbuilt I/O extension and speed feedback modules: for more details see section "control connections and communications" | | □ | - | - | - | □ | - | - | - |
| Adapters for several fieldbuses: for more details see section "Control connections and communications" | | □ | □ | - | - | □ | □ | □ | □ |
| **EMC filters** | | | | | | | | | |
| EMC 1st environment (Category C2) | E202 | - | □ 3) | □ 3) | - | - | □ 3) | □ 3) | - |
| EMC 2nd environment (Category C3) (can be used also in IT-networks) | E210 | □ | □ 4) | □ 4) | - | - | □ 4) | □ 4) | □ |
| **Line filter** | | | | | | | | | |
| AC or DC choke and filter | | - | - | ● 5) | ● 6) | - | - | ● 5) | - |
| LCL | | - | ● | - | - | - | ● | - | - |
| **Output filters** | | | | | | | | | |
| Common mode filter | E208 | ● 7) | ● 7) | - | - | ● 7) | ● 7) | - | - |
| du/dt filter | E205 | ● 8) | - | - | - | ● 9) | ● | - | ● 14) |
| **Braking (see braking unit table)** | | | | | | | | | |
| **Incoming unit apparatus** | | | | | | | | | |
| Disconnector and contactor for single supply units | F253 F250 | - | ● 10) | ● 10) | - | - | ● 11) | ● 11) | - |
| Air circuit breaker | F255 | - | ● 12) | ● 12) | ● | - | ● 11) | ● 11) | - |
| **Drive units** | | | | | | | | | |
| DC switch | F266 | ● | - | - | - | ● | - | - | - |
| **Safety options** | | - | | | | | | | |
| Prevention of unexpected start-up | Q950 | □ | - | - | - | □ | - | - | - |
| Earth fault monitoring, earthed network | Q953 | ● | ● | ● | □ | ● | ● | ● | ● |
| Earth fault monitoring, unearthed mains | Q954 | - | □ | □ | - | - | □ | □ | - |
| **Approvals** | | | | - | - | | | | |
| CE | | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) |
| UL, cUL, CSA | | □ 13) | □ 13) | □ 13) | □ 13) | □ 13) | □ 13) | □ 13) | □ 13) |
| GOST R | | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) | ● 13) |
| C-Tick | | ● | ● | ● | ● | pending | pending | pending | ● 15) |

● Standard
□ Option with ordering code
- Not available

1) Only in standard control program
2) Fixed I/O in ISU, DSU and TSU
3) Option for nxR8i and D4 6-pulse only, 400 V/500 V max 1000 A, only in grounded networks
4) Conducted emission and immunity are fulfilled with standard filtering. Radiated emission and immunity are as option (cabinet construction)
5) In AC side
6) In DC side
7) Standard only in frame sizes R7i-12xR8i
8) Optional in frame sizes R2i-R8i and 400 V/500 V
9) Optional in frame sizes R2i-R7i 400/500 V
10) Frame sizes R7i and 1xR8i, D3, 1xD4
11) Contactor for ≤ 600 A line current, air circuit breaker for > 600 A
12) Frame sizes ≥ 2xR8i and ≥ 2xD4 (DSU 12 p contactor 2xD4)
13) Partly available please check with local ABB representative
14) Optional in frame sizes R7i - R8i 400V/500V for ACS800-607 and optional for 400V/500V for ACS800-607LC
15) ACS800-607LC pending

# Services


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

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

## Maximizing return on investment

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

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

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

### ABB drive lifecycle management model

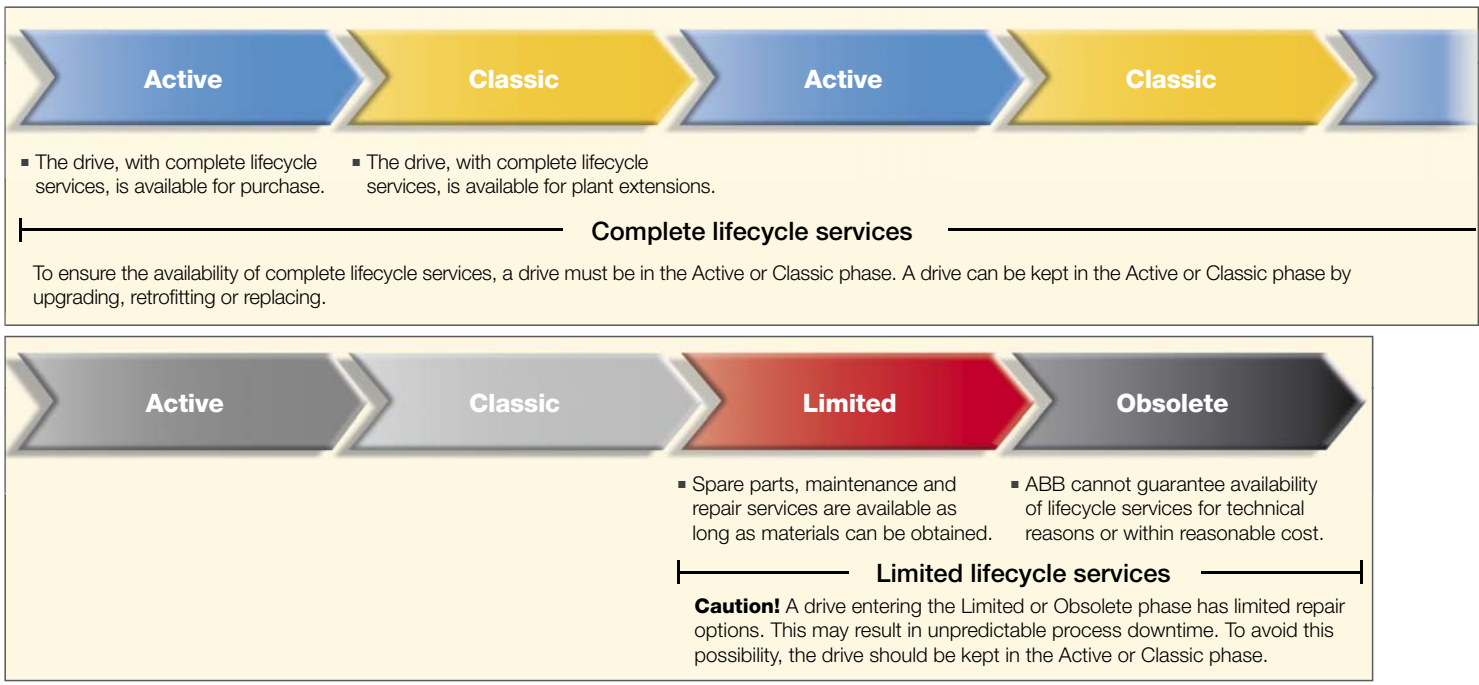


ABB follows a four-phase model for managing drive lifecycles, which brings enhanced customer support and improved efficiency.

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

# Contact and web information

## www.abb.com/drives

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

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

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