

ABB low voltage drives

ACS150

0.5 to 3 Hp @ 240Vac

0.5 to 5 Hp @ 480Vac

Product Pricing List





AC DRIVES ACS150

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Specifications and pricing subject to change without notice

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Table of Contents

Overview	3
Guidelines for use of Price Pages	3
General Terms and Conditions of Sale	4
Definition of NEMA and IEC environmental ratings	7
Product Features	7
Product Specifications	8
240Vac & 480Vac Product Selection	10
Option Descriptions	11
Brake Resistor Specifications	12
Product Dimensions	13

Symbols used

U_N = Nominal Input Voltage
 f_s = Switching Frequency
 I_{2N} = Nominal Current – Heavy Duty
 P_N = Power - Heavy Duty (HP)

Trademarks

DriveWindow is a registered trademark of ABB
Modbus is a trademark of Schneider Electric
Profibus is a trademark of Siemens
ControlNet is a trademark of ControlNet International, Ltd.
DeviceNet is a trademark of the Open DeviceNet Vendor Association.
Windows is a registered trademark of Microsoft Corp.



Overview

With drives ranging from 0.5 to 5Hp (0.37 to 4kW), the ACS150 AC Drive also features a built-in control panel. The ACS150 comes with an extensive library of preprogrammed application macros that, at the touch of a button, allow rapid configuration of inputs, outputs, and parameters for specific applications to maximize convenience and minimize start-up time.

Guidelines for use of Price Pages

These Price Pages were developed to allow quick and easy selection of standard ACS150 products. Please contact your local ABB Low Voltage Drives sales representative for information regarding additional configurations.

Application considerations

Because of the variety of application uses for the ACS150 AC Drives, those responsible for the application and control of the drive must satisfy themselves that all necessary steps have been taken to ensure that they meet all safety and installation requirements regarding national and local laws, regulation, codes and standards. Unless otherwise noted, ACS150 AC Drive products found in this document are designed to meet NEMA (National Electrical Manufacturers Association) standards.

ACS150 products carry third party approval as follows;

Product	Approval
ACS150	240 & 480V UL / cUL / CE Directive

Ordering CE product

All ACS150 AC Drives ship with CE EMC Directive compliance for immunity and emissions for the 2nd Environment.

Selecting the correct drive rating

ACS150 AC Drives are current rated devices. The Hp ratings are provided for your reference only and are based on typical 4-pole squirrel cage motors at nominal voltages per NEC table 430-150. When selecting the drive ensure the drive has a continuous current rating equal or greater than the full load amp rating of the motor (if full motor torque is required).

Technical Support

ACS150 AC Drive Technical Support is available 24 hours per day 7 days a week. To reach Technical Support call 1-800-HELP 365 (1-800-435-7365).



General Terms and Conditions of Sale

1. General.

The terms and conditions contained herein, together with any additional or different terms contained in ABB's Proposal, if any, submitted to Purchaser (which Proposal shall control over any conflicting terms), constitute the entire agreement (the "Agreement") between the parties with respect to the order and supersede all prior communications and agreements regarding the order. Acceptance by ABB of the order, or Purchaser's acceptance of ABB's Proposal, is expressly limited to and conditioned upon Purchaser's acceptance of these terms and conditions, payment for or acceptance of any performance by ABB being acceptance. These terms and conditions may not be changed or superseded by any different or additional terms and conditions proposed by Purchaser to which terms ABB hereby objects. Unless the context otherwise requires, the term "Equipment" as used herein means all of the equipment, parts, accessories sold, and all software and software documentation, if any, licensed to Purchaser by ABB ("Software") under the order. Unless the context otherwise requires, the term "Services" as used herein means all labor, supervisory, technical and engineering, installation, repair, consulting or other services provided by ABB under the order. As used herein, the term "Purchaser" shall include the initial end use of the Equipment and/or services; provided, however, that Paragraph 13(a) shall apply exclusively to the initial end user.

2. Prices.

(a) Unless otherwise specified in writing, all Proposals expire thirty (30) days from the date thereof.

(b) Unless otherwise stated herein, Services prices are based on normal business hours (8 a.m. to 5 p.m. Monday through Friday). Overtime and Saturday hours will be billed at one and one-half (1 1/2) times the hourly rate; and Sunday hours will be billed at two (2) times the hourly rate; holiday hours will be billed at three (3) times the hourly rate. If a Services rate sheet is attached hereto, the applicable Services rates shall be those set forth in the rate sheet. Rates are subject to change without notice.

(c) The price does not include any federal, state or local property, license, privilege, sales, use, excise, gross receipts, or other like taxes which may now or hereafter be applicable. Purchaser agrees to pay or reimburse any such taxes which ABB or its suppliers are required to pay or collect. If Purchaser is exempt from the payment of any tax or holds a direct payment permit, Purchaser shall, upon order placement, provide ABB a copy, acceptable to the relevant governmental authorities of any such certificate or permit.

(d) The price includes customs duties and other importation or exportation fees, if any, at the rates in effect on the date of ABB's Proposal. Any change after that date in such duties, fees, or rates, shall increase the price by ABB's additional cost.

3. Payment.

(a) Unless specified to the contrary in writing by ABB, payment terms are net cash, payable without offset, in United States Dollars, 30 days from date of invoice by wire transfer to the account designated by ABB in the Proposal.

(b) If in the judgment of ABB the financial condition of Purchaser at any time prior to delivery does not justify the terms of payment specified, ABB may require payment in advance, payment security satisfactory to ABB, or may terminate the order, whereupon ABB shall be entitled to receive reasonable cancellation charges. If delivery is delayed by Purchaser, payment shall be due on the date ABB is prepared to make delivery. Delays in delivery or nonconformities in any installments delivered shall not relieve Purchaser of its obligation to accept and pay for remaining installments.

(c) Purchaser shall pay, in addition to the overdue payment, a late charge equal to the lesser of 1 1/2% per month or any part thereof or the highest applicable rate allowed by law on all such overdue amounts plus ABB's attorneys' fees and court costs incurred in connection with collection.

4. Changes.

(a) Any changes requested by Purchaser affecting the ordered scope of work must be accepted by ABB and resulting adjustments to affected provisions, including price, schedule, and guarantees mutually agreed in writing prior to implementation of the change.

(b) ABB may, at its expense, make such changes in the Equipment or Services as it deems necessary, in its sole discretion, to conform the Equipment or Services to the applicable specifications. If Purchaser objects to any such changes, ABB shall be relieved of its obligation to conform to the applicable specifications to the extent that conformance may be affected by such objection.

5. Delivery.

(a) All Equipment manufactured, assembled or warehoused in the continental United States is delivered F.O.B. point of shipment. Equipment shipped from outside the continental United States is delivered F.O.B. United States port of entry. Purchaser shall be responsible for any and all demurrage or detention charges.

(b) If the scheduled delivery of Equipment is delayed by Purchaser or by Force Majeure, ABB may move the Equipment to storage for the account of and at the risk of Purchaser whereupon it shall be deemed to be delivered.

(c) Shipping and delivery dates are contingent upon Purchaser's timely approvals and delivery by Purchaser of any documentation required for ABB's performance hereunder.

(d) Claims for shortages or other errors in delivery must be made in writing to ABB within ten days of delivery. Equipment may not be returned except with the prior written consent of and subject to terms specified by ABB. Claims for damage after delivery shall be made directly by Purchaser with the common carrier.

6. Title & Risk of Loss.

Except with respect to Software (for which title shall not pass, use being licensed) title to Equipment shall remain in ABB until fully paid for. Notwithstanding any agreement with respect to delivery terms or payment of transportation charges, risk of loss or damage shall pass to Purchaser upon delivery.

7. Inspection, Testing and Acceptance.

(a) Any inspection by Purchaser of Equipment on ABB's premises shall be scheduled in advance to be performed during normal working hours.

(b) If the order provides for factory acceptance testing, ABB shall notify Purchaser when ABB will conduct such testing prior to shipment. Unless Purchaser states specific objections in writing within ten (10) days after completion of factory acceptance testing, completion of the acceptance test constitutes Purchaser's factory acceptance of the Equipment and its authorization for shipment.

(c) If the order provides for site acceptance testing, testing will be performed by ABB personnel to verify that the Equipment has arrived at site complete, without physical damage, and in good operating condition. Completion of site acceptance testing constitutes full and final acceptance of the Equipment. If, through no fault of ABB, acceptance testing is not completed within thirty (30) days after arrival of the Equipment at the site, the site acceptance test shall be deemed completed and the Equipment shall be deemed accepted.



General Terms and Conditions of Sale

8. Warranties and Remedies.

(a) Equipment and Services Warranty. ABB warrants that Equipment (excluding Software, which is warranted as specified in paragraph (d) below) shall be delivered free of defects in material and workmanship and that Services shall be free of defects in workmanship. The Warranty Remedy Period for Equipment (excluding Software, Spare Parts and Refurbished or Repaired Parts) shall end twelve (12) months after installation or eighteen (18) months after date of shipment, whichever first occurs. The Warranty Remedy Period for new spare parts shall end twelve (12) months after date of shipment. The Warranty Remedy Period for refurbished or repaired parts shall end ninety (90) days after date of shipment. The Warranty Remedy Period for Services shall end ninety (90) days after the date of completion of Services.

(b) Equipment and Services Remedy. If a nonconformity to the foregoing warranty is discovered in the Equipment or Services during the applicable Warranty Remedy Period, as specified above, under normal and proper use and provided the Equipment has been properly stored, installed, operated and maintained and written notice of such nonconformity is provided to ABB promptly after such discovery and within the applicable Warranty Remedy Period, ABB shall, at its option, either (i) repair or replace the nonconforming portion of the Equipment or re-perform the nonconforming Services or (ii) refund the portion of the price applicable to the nonconforming portion of Equipment or Services. If any portion of the Equipment or Services so repaired, replaced or re-performed fails to conform to the foregoing warranty, and written notice of such nonconformity is provided to ABB promptly after discovery and within the original Warranty Remedy Period applicable to such Equipment or Services or 30 days from completion of such repair, replacement or re-performance, whichever is later, ABB will repair or replace such nonconforming Equipment or re-perform the nonconforming Services. The original Warranty Remedy Period shall not otherwise be extended.

(c) Exceptions. ABB shall not be responsible for providing working access to the nonconforming Equipment, including disassembly and re-assembly of non-ABB supplied equipment, or for providing transportation to or from any repair facility, all of which shall be at Purchaser's risk and expense. ABB shall have no obligation hereunder with respect to any Equipment which (i) has been improperly repaired or altered; (ii) has been subjected to misuse, negligence or accident; (iii) has been used in a manner contrary to ABB's instructions; (iv) is comprised of materials provided by or a design specified by Purchaser; or (v) has failed as a result of ordinary wear and tear. Equipment supplied by ABB but manufactured by others is warranted only to the extent of the manufacturer's warranty, and only the remedies, if any, provided by the manufacturer will be allowed.

(d) Software Warranty and Remedies. ABB warrants that, except as specified below, the Software will, when properly installed, execute in accordance with ABB's published specification. If a nonconformity to the foregoing warranty is discovered during the period ending one (1) year after the date of shipment and written notice of such nonconformity is provided to ABB promptly after such discovery and within that period, including a description of the nonconformity and complete information about the manner of its discovery, ABB shall correct the nonconformity by, at its option, either (i) modifying or making available to the Purchaser instructions for modifying the Software; or (ii) making available at ABB's facility necessary corrected or replacement programs. ABB shall have no obligation with respect to any nonconformities resulting from (i) unauthorized modification of the Software or (ii) Purchaser-supplied software or interfacing. ABB does not warrant that the functions contained in the software will operate in combinations which may be selected for use by the Purchaser, or that the software products are free from errors in the nature of what is commonly categorized by the computer industry as "bugs".

(e) THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF QUALITY AND PERFORMANCE, WHETHER WRITTEN, ORAL OR IMPLIED, AND ALL OTHER WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USAGE OF TRADE ARE HEREBY DISCLAIMED. THE REMEDIES STATED HEREIN CONSTITUTE PURCHASER'S EXCLUSIVE REMEDIES AND ABB'S ENTIRE LIABILITY FOR ANY BREACH OF WARRANTY.

9. Patent Indemnity.

(a) ABB shall defend at its own expense any action brought against Purchaser alleging that the Equipment or the use of the Equipment to practice any process for which such Equipment is specified by ABB (a "Process") directly infringes any claim of a patent of the United States of America and to pay all damages and costs finally awarded in any such action, provided that Purchaser has given ABB prompt written notice of such action, all necessary assistance in the defense thereof and the right to control all aspects of the defense thereof including the right to settle or otherwise terminate such action in behalf of Purchaser.

(b) ABB shall have no obligation hereunder and this provision shall not apply to: (i) any other equipment or processes, including Equipment or Processes which have been modified or combined with other equipment or process not supplied by ABB; (ii) any Equipment or Process supplied according to a design, other than an ABB design, required by Purchaser; (iii) any products manufactured by the Equipment or Process; (iv) any patent issued after the date hereof; or (v) any action settled or otherwise terminated without the prior written consent of ABB.

(c) If, in any such action, the Equipment is held to constitute an infringement, or the practice of any Process using the Equipment is finally enjoined, ABB shall, at its option and its own expense, procure for Purchaser the right to continue using said Equipment; or modify or replace it with non-infringing equipment or, with Purchaser's assistance, modify the Process so that it becomes non-infringing; or remove it and refund the portion of the price allocable to the infringing Equipment. THE FOREGOING PARAGRAPHS STATE THE ENTIRE LIABILITY OF ABB AND EQUIPMENT MANUFACTURER FOR ANY PATENT INFRINGEMENT.

(d) To the extent that said Equipment or any part thereof is modified by Purchaser, or combined by Purchaser with equipment or processes not furnished hereunder (except to the extent that ABB is a contributory infringer) or said Equipment or any part thereof is used by Purchaser to perform a process not furnished hereunder by ABB or to produce an article, and by reason of said modification, combination, performance or production, an action is brought against ABB, Purchaser shall defend and indemnify ABB in the same manner and to the same extent that ABB would be obligated to indemnify Purchaser under this "Patent Indemnity" provision.

10. Limitation of Liability.

(a) In no event shall ABB, its suppliers or subcontractors be liable for special, indirect, incidental or consequential damages, whether in contract, warranty, tort, negligence, strict liability or otherwise, including, but not limited to, loss of profits or revenue, loss of use of the Equipment or any associated equipment, cost of capital, cost of substitute equipment, facilities or services, downtime costs, delays, and claims of customers of the Purchaser or other third parties for any damages. ABB's liability for any claim whether in contract, warranty, tort, negligence, strict liability, or otherwise for any loss or damage arising out of, connected with, or resulting from this Agreement or the performance or breach thereof, or from the design, manufacture, sale, delivery, resale, repair, replacement, installation, technical direction of installation, inspection, operation or use of any equipment covered by or furnished under this Agreement, or from any services rendered in connection therewith, shall in no case (except as provided in the section entitled "Patent Indemnity") exceed one-half (1/2) of the purchase price allocable to the equipment or part thereof or Services which gives rise to the claim.

(b) All causes of action against ABB arising out of or relating to this Agreement or the performance or breach hereof shall expire unless brought within one year of the time of accrual thereof.

(c) In no event, regardless of cause, shall ABB be liable for penalties or penalty clauses of any description or for indemnification of Purchaser or others for costs, damages, or expenses arising out of or related to the Equipment and/Services.



General Terms and Conditions of Sale

11. Laws and Regulations. ABB does not assume any responsibility for compliance with federal, state or local laws and regulations, except as expressly set forth herein, and compliance with any laws and regulations relating to the operation or use of the Equipment or Software is the sole responsibility of the Purchaser. All laws and regulations referenced herein shall be those in effect as of the Proposal date. In the event of any subsequent revisions or changes thereto, ABB assumes no responsibility for compliance therewith. If Purchaser desires a modification as a result of any such change or revision, it shall be treated as a change per Article 4. Nothing contained herein shall be construed as imposing responsibility or liability upon ABB for obtaining any permits, licenses or approvals from any agency required in connection with the supply, erection or operation of the Equipment. This Agreement shall be governed by the laws of the State of New York, but excluding the provisions of the United Nations Convention on Contracts for the International Sale of Goods and excluding New York law with respect to conflicts of law. Purchaser agrees that all causes of action against ABB under this Agreement shall be brought in the State Courts of the State of New York, or the U.S. District Court for the Southern District of New York. If any provision hereof, partly or completely, shall be held invalid or unenforceable, such invalidity or unenforceability shall not affect any other provision or portion hereof and these terms shall be construed as if such invalid or unenforceable provision or portion thereof had never existed.

12. OSHA. ABB warrants that the Equipment will comply with the relevant standards of the Occupational Safety and Health Act of 1970 ("OSHA") and the regulations promulgated thereunder as of the date of the Proposal. Upon prompt written notice from the Purchaser of a breach of this warranty, ABB will replace the affected part or modify it so that it conforms to such standard or regulation. ABB's obligation shall be limited to such replacement or modification. In no event shall ABB be responsible for liability arising out of the violation of any OSHA standards relating to or caused by Purchaser's design, location, operation, or maintenance of the Equipment, its use in association with other equipment of Purchaser, or the alteration of the Equipment by any party other than ABB.

13. Software License.(a) ABB owns all rights in or has the right to sublicense all of the Software, if any, to be delivered to Purchaser under this Agreement. As part of the sale made hereunder Purchaser hereby obtains a limited license to use the Software, subject to the following: (i) The Software may be used only in conjunction with equipment specified by ABB; (ii) The Software shall be kept strictly confidential; (iii) The Software shall not be copied, reverse engineered, or modified; (iv) The Purchaser's right to use the Software shall terminate immediately when the specified equipment is no longer used by the Purchaser or when otherwise terminated, e.g. for breach, hereunder; and (v) the rights to use the Software are non-exclusive and non-transferable, except with ABB's prior written consent.

(b) Nothing in this Agreement shall be deemed to convey to Purchaser any title to or ownership in the Software or the intellectual property contained therein in whole or in part, nor to designate the Software a "work made for hire" under the Copyright Act, nor to confer upon any person who is not a named party to this Agreement any right or remedy under or by reason of this Agreement. In the event of termination of this License, Purchaser shall immediately cease using the Software and, without retaining any copies, notes or excerpts thereof, return to ABB the Software and all copies thereof and shall remove all machine readable Software from all of Purchaser's storage media.

14. Inventions and Information. Unless otherwise agreed in writing by ABB and Purchaser, all right, title and interest in any inventions, developments, improvements or modifications of or for Equipment and Services shall remain with ABB. Any design, manufacturing drawings or other information submitted to the Purchaser remains the exclusive property of ABB. Purchaser shall not, without ABB's prior written consent, copy or disclose such information to a third party. Such information shall be used solely for the operation or maintenance of the Equipment and not for any other purpose, including the duplication thereof in whole or in part.

15. Force Majeure. ABB shall neither be liable for loss, damage, detention or delay nor be deemed to be in default for failure to perform when prevented from doing so by causes beyond its reasonable control including but not limited to acts of war (declared or undeclared), Acts of God, fire, strike, labor difficulties, acts or omissions of any governmental authority or of Purchaser, compliance with government regulations, insurrection or riot, embargo, delays or shortages in transportation or inability to obtain necessary labor, materials, or manufacturing facilities from usual sources or from defects or delays in the performance of its suppliers or subcontractors due to any of the foregoing enumerated causes. In the event of delay due to any such cause, the date of delivery will be extended by period equal to the delay plus a reasonable time to resume production, and the price will be adjusted to compensate ABB for such delay.

16. Cancellation. Any order may be cancelled by Purchaser only upon prior written notice and payment of termination charges, including but not limited to, all costs identified to the order incurred prior to the effective date of notice of termination and all expenses incurred by ABB attributable to the termination, plus a fixed sum of ten (10) percent of the final total price to compensate for disruption in scheduling, planned production and other indirect costs.

17. Termination. No termination by Purchaser for default shall be effective unless, within fifteen (15) days after receipt by ABB of Purchaser's written notice specifying such default, ABB shall have failed to initiate and pursue with due diligence correction of such specified default.

18. Export Control.

(a) Purchaser represents and warrants that the Equipment and Services provided hereunder and the "direct product" thereof are intended for civil use only and will not be used, directly or indirectly, for the production of chemical or biological weapons or of precursor chemicals for such weapons, or for any direct or indirect nuclear end use. Purchaser agrees not to disclose, use, export or re-export, directly or indirectly, any information provided by ABB or the "direct product" thereof as defined in the Export Control Regulations of the United States Department of Commerce, except in compliance with such Regulations.

(b) If applicable, ABB shall file for a U.S. export license, but only after appropriate documentation for the license application has been provided by Purchaser. Purchaser shall furnish such documentation within a reasonable time after order acceptance. Any delay in obtaining such license shall suspend performance of this Agreement by ABB. If an export license is not granted or, if once granted, is thereafter revoked or modified by the appropriate authorities, this Agreement may be canceled by ABB without liability for damages of any kind resulting from such cancellation. At ABB's request, Purchaser shall provide to ABB a Letter of Assurance and End-User Statement in a form reasonably satisfactory to ABB.

19. Assignment. Any assignment of this Agreement or of any rights or obligations under the Agreement without prior written consent of ABB shall be void.

20. Nuclear Insurance – Indemnity. For applications in nuclear projects, the Purchaser and/or its end user customer shall have complete insurance protection against liability and property damage resulting from a nuclear incident to and shall indemnify ABB, its subcontractors, suppliers and vendors against all claims resulting from a nuclear incident.

21. Resale. If Purchaser resells any of the Equipment, the sale terms shall limit ABB's liability to the buyer to the same extent that ABB's liability to Purchaser is limited hereunder.

22. Entire Agreement. This Agreement constitutes the entire agreement between ABB and Purchaser. There are no agreements, understandings, restrictions, warranties, or representations between ABB and Purchaser other than those set forth herein or herein provided.

Definition of NEMA and IEC environmental ratings

IEC environmental ratings can be confusing at times. Below is a summary of the rating definitions and recommendations for application of each type supported by the ACS150 Drive product family.

IP 2 0	Intended for use indoors, primarily to prevent accidental contact of personnel with the enclosed equipment in areas where unusual service conditions do not exist.
<ul style="list-style-type: none"> └ (2) Protection of personnel from finger contact with active or internal moving parts. Protection from access of solid foreign object larger than 12mm in diameter └ (0) No special protection 	
Recommendation	Installation in clean environment such as a clean room or in another enclosure with higher degree of protection

Product Features

- UL, cUL and CE
- Integral Control Panel
- Motor Control
 - Scalar Control
- One (1) programmable Analog Input
- Five (5) Digital inputs
- One (1) Programmable Form C Relay Output
- Input Speed Signals
 - One (1) Current 0 (4) - 20 mA, 0 (2)- 10VDC
 - Increase/Decrease reference Contacts
- Start/Stop
 - 2 wire control (dry contact closure)
 - 3 wire control (momentary dry contacts)
- Adjustable Current Limit
- Nine (9) Supervision Functions
- Electronic Reverse
- Power Loss Ride-Through
- DC Injection Braking
- DC Magnetizing Start (provides maximum starting torque)
- Seven (7) Preset Speeds
- Three (3) Critical Speed Lockout Bands
- Two (2) Independently Adjustable Accel and Decel Ramps
- Linear or Adjustable "S" Curve Accel/Decel Ramps
- Internal braking chopper
- Ramp to Stop or Coast to Stop
- Maximum Frequency Programmable up to 500 Hz

Programmable Fault Functions

- AI<Min
- Panel Loss
- External Fault
- Motor Thermal Protection
- Stall
- Communications Fault
- Preprogrammed Protections:
 - Overcurrent
 - Short Circuit
 - Overvoltage (Intermediate Circuit)
 - Undervoltage (Intermediate Circuit)
 - Input Phase Loss
 - Ambient temperature
 - Drive overtemperature

Available options

- NEMA 1 Enclosure Kit
- Programming Case
- Display Case
- Flashdrop

Specifications

Input Connection

Input Voltage (U1, V1, W1)	208/220/230/240Vac 1-phase or 3-phase +/-10% 380/400/415/440/460/480Vac 3-phase +/-10%
Input Frequency	48 to 63 Hz, maximum rate of change 17%/second
Line Imbalance	Max +/-3% of nominal phase to phase input voltage
Fundamental Power Factor	0.98 (at nominal load)
Connection	Terminals U1, V1, W1 (1-phase L, N)

Output Connection

Output Voltage	0 to U1, 3-phase symmetrical
Output Frequency	0 to 500 Hz
Frequency Resolution	0.01 Hz
Continuous Current	Rated I_{2N} for $f_s=4$ kHz
Short Term Overload Capacity	$1.5 * I_{2N}$ (at least 1 min / 10 min)
Field Weakening Point	30 to 500 Hz
Switching Frequency	4, 8 or 12 kHz (derate I_{2N} to 80% for 8 kHz, derate ambient temp to 30°C and I_{2N} to 65% for 12 kHz)
Acceleration & Deceleration Time	0.1 to 1800 s
Efficiency	98% at nominal power level
Short circuit withstand rating	65,000 AIC
Connection	Terminals U2, V2, W2

Ambient Conditions, Operation

Air Temperature	-10° (14°F) to 40°C (104°F), no frost allowed, above 40°C the maximum output current is de-rated 1% for every additional 1°C (up to 50°C (122°F) maximum limit)
Relative Humidity	5 to 95%, no condensation allowed, maximum relative humidity is 60% in the presence of corrosive gasses
Contamination Levels	
IEC	60721-3-3
Chemical Gasses	3C2
Solid Particles	3S2
Installation Site Altitude	0 to 1000 m (3300 ft) above sea level. At sites from 1000 m to 2000 m (3300 ft to 6600 ft) above sea level, the maximum power is de-rated 1% for every additional 100 m (330 ft).

Ambient Conditions, Storage & Transportation (in Protective Shipping Package)

Air Temperature	-40° to 70°C (-40° to 158°F)
Relative Humidity	Less than 95%, no condensation allowed
Atmospheric Pressure	70 to 106 kPa (10.2 to 15.4 PSI)

Cooling Information

Cooling Method	Internal Fan except for Frame R0
Power Loss	Approximately 3% of rated power

Analog Inputs

One (1) Programmable	
Current Reference	0 (4) to 20 mA, $R_{in} = 100 \text{ ohm}$
Voltage Reference	0 (2) to 10 V, $R_{in} > 312 \text{ kohm}$
Resolution	0.1%
Accuracy	+/-1%

Digital Inputs

Five (5) Programmable Digital Inputs	
Signal Level	12-24 VDC, (10 V Logic 0)
Input Current	15 mA at 24VDC
Input Updating Time	8 ms +/- 1ms
Internal 24 VDC Supply for Digital Inputs	
Voltage	24 VDC, +/- 10%
Maximum Current	200 mA

Relay Outputs

One Programmable Relay Outputs	
Switching Capacity	12-250VAC/30VDC
Maximum Switching Current	0.5A / 30VDC; 5A / 230VAC
Maximum Continuous Current	$I_c = 2 \text{ Amps RMS}$

Protections

Single Phase	Input Protected
Overvoltage Trip Limit	1.3 * Input Voltage
Undervoltage Trip Limit	0.65 * Input Voltage
Overtemperature	Protected
Auxiliary Voltage	Short Circuit Protected
Microprocessor Fault	Protected
Motor Stall Protection	Protected
Motor Overtemperature	Protected (I^2t)

Notes for product selection

General Notes

- I_{2N} : continuous base current at 40°C (104°F) and 50°C (120°F). Overload cycle 150% for 1 minute / 10 minutes allowed.
- Continuous output current at 50°C (120°F) shown for 230Vac NEC motor ratings.
When used at 50°C (120°F) at input voltages less than 230Vac may require larger drive.
- Current ratings do not change with different supply voltages.
- The rated current of the ACS150 must be greater than or equal to the rated motor current to achieve the rated motor power given in the table.
- Horsepower ratings are based on NEMA motor ratings for typical 4-pole motors (1800 rpm).
Check motor nameplate current for compatibility.

240Vac Ratings

3-phase supply voltage 208, 230 or 240 V. The power ratings are valid at nominal voltage, 208Vac at 40°C (104°F) or 230Vac at 50°C (120°F).

Type Code	Nominal ratings					IP 20
	40°C (104°F)		50°C (120°F)		Frame Size	
	Continuous Rating		Continuous Rating			List Price
I_{2N} A	P_N HP	I_{2N} A	P_N HP			
1-Phase U_n = 200...240V (200, 208, 230, 240V)						
ACS150-01U-02A4-2	2.4	0.5	2.2	0.50	R0	\$240
ACS150-01U-04A7-2	4.7	1	4.2	1.0	R1	\$300
ACS150-01U-06A7-2	6.7	1.5	6.0	1.5	R1	\$346
ACS150-01U-07A5-2	7.5	2	6.8	2	R2	\$391
ACS150-01U-09A8-2	9.8	3	8.8	2	R2	\$463
3-Phase U_n = 200...240V (200, 208, 230, 240V)						
ACS150-03U-02A4-2	2.4	0.50	2.2	0.50	R0	\$240
ACS150-03U-03A5-2	3.5	0.75	3.2	0.75	R0	\$270
ACS150-03U-04A7-2	4.7	1	4.2	1	R1	\$300
ACS150-03U-06A7-2	6.7	1.5	6.0	1.5	R1	\$346
ACS150-03U-07A5-2	7.5	2	6.8	2	R1	\$391
ACS150-03U-09A8-2	9.8	3	8.8	2	R2	\$463

480Vac Ratings

3-phase supply voltage 380, 400, 415, 440 or 480 V. The power ratings are valid at nominal voltage, 480Vac at 50°C (120°F).

Type Code	Nominal ratings					IP 20
	40°C (104°F)		50°C (120°F)		Frame Size	
	Continuous Rating		Continuous Rating			List Price
	I _{2N} A	P _N HP	I _{2N} A	P _N HP		
3-Phase U _n = 380...480V (380, 400, 415, 440, 460, 480V)						
ACS150-03U-01A2-4	1.2	0.5	1.1	0.5	R0	\$339
ACS150-03U-01A9-4	1.9	0.75	1.7	0.75	R0	\$351
ACS150-03U-02A4-4	2.4	1	2.2	1	R0	\$364
ACS150-03U-03A3-4	3.3	1.5	3.0	1.5	R1	\$402
ACS150-03U-04A1-4	4.1	2	3.7	2	R1	\$440
ACS150-03U-05A6-4	5.6	3	5.0	3	R1	\$490
ACS150-03U-08A8-4	8.8	5	7.9	5	R1	\$627



AC DRIVES ACS150

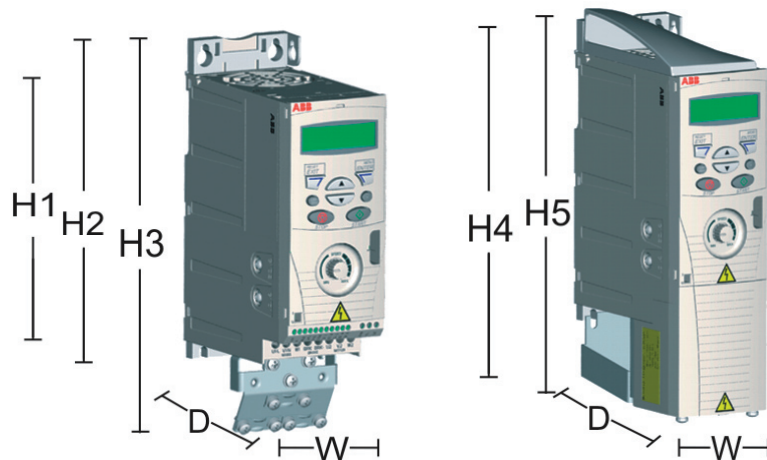
Options

Name	Description	Field Kit Code	Field Kit List Price
ACS150/350 Programming Case	Powered by 115VAC, the Programming Case includes an ACS150 and ACS350 drive mounted on a panel. Included is an I/O board with switches, pots, meters and LEDs permitting remote operation.	ACS150/350-PROGCASE	\$2,100
ACS150/350 Display Case	The Display Case provides an ACS50, ACS150 and an ACS350 along with options ACS50-POT, MPOT-01, one Fieldbus Adapter, ACS-CP-A, ACS-CP-C, MFDT-01 and MTAC-01 mounted loosely inside a foam packed suitcase	AC150/S350-DISPCASE	\$2,500
NEMA 1 Enclosure Kit	This option provides the necessary hardware to modify the ACS150 drive from the standard fingersafe protected chassis to NEMA 1 protection capable of landing conduit. MUL1-R1 is used for frame sizes R0 through R2.	MUL1-R1	\$75
Flashdrop	FlashDrop is a powerful palm sized tool for fast and easy parameter selecting and setting. It gives the possibility to hide selected parameters to protect the machine. Only the parameters needed in the application are shown. The tool can copy parameters between two drives or between a PC and a drive. Includes DrivePM (Drive parameter manager) which is a tool to create, edit and copy parameter sets for FlashDrop. The parameter sets can consist of all parameters (incl. motor parameters and ID run results) or only a set of the user parameters.	MFDT-01	\$600

ACS150 AC Drives Resistor Specifications

	Resistor			
	R_{min}	R_{max}	P_{BRmax}	
	ohm	ohm	kW	HP
ACS150-01U-02A4-2	70	390	0.37	0.5
ACS150-01U-04A7-2	40	200	0.75	1
ACS150-01U-06A7-2	40	130	1.1	1.5
ACS150-01U-07A5-2	30	100	1.5	2
ACS150-01U-09A8-2	30	70	2.2	3
ACS150-03U-02A4-2	70	390	0.37	0.5
ACS150-03U-03A5-2	70	260	0.55	0.75
ACS150-03U-04A7-2	40	200	0.75	1
ACS150-03U-06A7-2	40	130	1.1	1.5
ACS150-03U-07A5-2	30	100	1.5	2
ACS150-03U-09A8-2	30	70	2.2	3
ACS150-03U-01A2-4	310	1180	0.37	0.5
ACS150-03U-01A9-4	230	800	0.55	0.75
ACS150-03U-02A4-4	210	590	0.75	1
ACS150-03U-03A3-4	150	400	1.1	1.5
ACS150-03U-04A1-4	130	300	1.5	2
ACS150-03U-05A6-4	100	200	2.2	3
ACS150-03U-08A8-4	70	110	4.0	5

Dimensions



Cabinet Mounted Drives (UL Open)

Wall Mounted Drives (NEMA 1)
with MUL1-R1 option

Frame Size	Dimensions and weights												Noise
	IP20 (cabinet) /UL Open												Noise Level
	H1		H2		H3		W		D		Weight		
	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb	
R0	169	6.65	202	7.95	239	9.41	70	2.76	142	5.59	1.1	2.4	50
R1	169	6.65	202	7.95	239	9.41	70	2.76	142	5.59	1.3/1.2 ¹	2.9/2.6 ¹	60
R2	169	6.65	202	7.95	239	9.41	105	4.13	142	5.59	1.5	3.3	60

¹ $U_N = 200...240$ V: 1.3 kg / 2.9 lb, $U_N = 380...480$ V: 1.2 / 2.9 lb.

Frame Size	Dimensions and weights										Noise
	NEMA 1										Noise Level
	H4		H5		W		D		Weight		
	mm	in	mm	in	mm	in	mm	in	kg	lb	
R0	257	10.12	280	11.02	70	2.76	142	5.59	1.5	3.3	50
R1	257	10.12	280	11.02	70	2.76	142	5.59	1.7/1.6 ¹	3.7/3.5 ¹	60
R2	257	10.12	282	11.1	105	4.13	142	5.59	1.9	4.2	60

¹ $U_N = 200...240$ V: 1.7 kg / 3.7 lb, $U_N = 380...480$ V: 1.6 / 3.5 lb.

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



AC DRIVES ACS150

Notes:



Notes:

ABB Product Family

ACS50, ACS150, ACS350 and ACS550 AC Drive Families

Includes the ACS50, ACS150, ACS350 and ACS550 AC drives, covering sizes from ¼ hp to 550 hp and voltages from 110 to 600 V.



ACS800 AC Drive Family

The ACS800 product family includes Single drives, Multi-Drives, Regenerative AC drives, and Ultra Low Harmonic drives in ratings from 0.75 hp to 3,000 hp and voltages from 230 to 690 V.



Medium Voltage Drives

ABB's highly reliable ACS1000 is available from 400 hp to 6,700 hp and voltages of 2.3, 3.3, and 4.16 kV.



DCS 400 and DCS 500 DC Drive Families

DCS 400 and DCS 500 DC Drives are available from 5 hp to 10,000 hp and voltages from 230 to 1,190 V.



Low Voltage AC, DC and Medium Voltage AC Motors

Low-voltage AC motors from ABB range from ¼ hp to 800 hp and voltages from 208 to 480 V. A wide range of medium-voltage AC and low-voltage DC motors are also available.



ABB Control Products

ABB provides the widest range of low voltage products and systems. Our broad product lines include high-quality solutions for industrial controls, circuit protection devices, starters & soft-starters, automation, and wire management & connection systems.



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