

Feature	Data
Line Regeneration	Yes (no external components)
Line Harmonic Current Distortion	<7% (no external components)
Motor Friendly Output	Yes (3-level; no external components)
Maximum Output Frequency	120Hz
Maximum Output Voltage	Input x 0.86 (worst case)
Input Frequency Range	50 / 60Hz
Allowable Input Frequency Fluctuation	+/-3% Instantaneous, 1Hz / 100ms or less
Input Voltage Range	3 Phase, 200- 220 VAC, 380-460 VAC
Allowable Input Voltage Fluctuation	+10%, -15%
Allowable Voltage Imbalance Between Phases	Within 2%
Continuous Rating	100% (motoring or regenerating)
Overload	150% / 30s (motoring or regenerating)
Overcurrent	200% (motoring or regenerating)
Overvoltage	250 / 550 VAC
Undervoltage	150 / 300 VAC
SCCR	100 kAIC
Powerloss Ride Through	2ms (default), 2s (with setting)
Power Regeneration	Same Overloads as Motoring
Speed Control Range	10:1 Open Loop, 1000:1 Closed Loop

Voltage (V)	NEC HP	NEC Amps	Model CIMR-	Amps (A)
220	7.5	22	ACA25P51A	27
	15	42	ACA20111A	49
	30	80	ACA20221A	96
	60	154	ACA20451A	183
480	10	14	ACA45P51A	15
	20	27	ACA40111A	27
	40	52	ACA40221A	52
	60	77	ACA40451A	97
	125	156	ACA40751A	165

Important Notes:

1. All customer opportunities must be approved by Product and Sales Management.
2. There is limited stock at YEA. You must account for a possible long lead time for the product sample and the first order. The customer must forecast. We will stock for established customers.
3. The AC7 may require a custom motor for certain applications due to the output voltage drop inherent with the matrix topology.
4. The AC7 is only available as a NEMA 1. It can be converted to Open Chassis by removing the top and bottom covers.
5. The AC7 requires no external components or special handling.
6. There are no additional models planned at this time.
7. The AC7 supports DeviceNet (CM059) and Profibus-DP (CM061) only.

AC7 NEMA 1 Enclosed Chassis								
Voltage (V)	Drive Model Number CIMR-ACA	Physical Dimensions (in.)			Weight (lbs.)	Heat Loss (watts)		
		H	W	D		Heatsink	Internal	Total
220	25P51A	22.20	11.81	11.42	66.2	160	143	303
	20111A	22.20	11.81	11.42	70.6	326	200	526
	20221A	28.54	14.17	11.81	105.8	615	314	929
	20451A	50.08	18.90	15.87	308.7	1255	642	1897
480	45P51A	22.20	11.81	11.42	68.4	160	138	298
	40111A	22.20	11.81	11.42	70.6	303	185	488
	40221A	28.54	14.17	11.81	105.8	665	310	975
	40451A	50.08	18.90	15.87	308.7	949	572	1521
	40751A	50.08	18.90	15.87	319.7	1674	811	2485

AC7 Open Chassis ⁽¹⁾								
Voltage (V)	Drive Model Number CIMR-ACA	Physical Dimensions (in.)			Weight (lbs.)	Heat Loss (watts)		
		H	W	D		Heatsink	Internal	Total
220	25P50A	20.87	11.81	11.42	61.7	160	143	303
	20110A	20.87	11.81	11.42	66.2	326	200	526
	20220A	22.05	14.17	11.81	99.2	615	314	929
	20450A	34.06	18.90	15.87	286.7	1255	642	1897
480	45P50A	20.87	11.81	11.42	63.9	160	138	298
	40110A	20.87	11.81	11.42	66.2	303	185	488
	40220A	22.05	14.17	11.81	99.2	665	310	975
	40450A	34.06	18.90	15.87	286.7	949	572	1521
	40750A	34.06	18.90	15.87	297.7	1674	811	2485

(1) Convert NEMA 1 to Open Chassis by removing top and bottom covers.

Terms and Conditions

YASKAWA ELECTRIC AMERICA, INC. - STANDARD TERMS AND CONDITIONS OF SALE

1. GENERAL:

(a) Any sale of products or services by Yaskawa Electric America, Inc. ("YEA") is governed exclusively by these Standard Terms and Conditions of Sale ("Standard Terms") and shall supersede any inconsistent or additional terms on Buyer's purchase order or any other document. These Standard Terms constitute the final, complete and exclusive agreement between YEA and the Buyer as to the subject matter hereof. YEA hereby objects to any inconsistent or additional terms. This Agreement may be amended only in writing signed by an authorized representative of YEA.

(b) Any order placed with YEA must be in the form of a written purchase order or letter from Buyer ("Order") and shall set forth all information necessary for YEA to fill the Order, if accepted. All proposals, quotations or similar communications from YEA will be considered invitations to Buyer to submit an Order. A binding sales contract will result only when YEA accepts Buyer's Order, at YEA's office in Waukegan, Illinois or such other place as designated by YEA. YEA reserves the right to bill any Order at a minimum of \$100, plus any additional charges provided for herein.

(c) All products shall be packaged for domestic shipment in accordance with YEA's standard specifications. If special packaging is required, it must be clearly requested on Buyer's Order. The price for any special packaging shall be billed to Buyer.

2. WARRANTY:

(a) YEA warrants that each new and unused product sold by YEA shall be free of defects in material workmanship for a period of one (1) year from the date the product is first used by Buyer, or 18 months from the date of shipment, whichever occurs first. YEA warrants that its services shall be free of defects in workmanship for a period of ninety (90) days from the date they are first provided. Within the applicable warranty period, YEA will, at its sole discretion, either repair, replace or return the purchase price paid to YEA for any product, part or service found by YEA to be defective; provided that the subject product is used under normal conditions for which it was designed and installed, operated and maintained in accordance with YEA's instructions and (subject always to such instructions) in accordance with generally accepted industrial practices.

(b) YEA's warranty obligation shall be conditioned upon receipt by YEA of written notice of any alleged defects within sixty (60) days after discovery. YEA will not be responsible or accept invoices for unauthorized repairs to any products, even if defective. YEA shall not be responsible for any products which have been altered, abused, misused, or improperly installed or repaired, or for any loss, damage, defect, claim or non-performance resulting from or attributable to Buyer's specifications.

(c) Where Buyer requests that YEA supply non-stock products or component parts manufactured by a third-party, YEA will, to the extent permitted, pass through to Buyer any warranty of the manufacturer. As to such items, Buyer's sole remedy for breach of warranty shall be the remedy offered by and available from the manufacturer. YEA shall have no liability, whether in contract, tort or otherwise, for such products.

(d) YEA does not guarantee production rates or the quality of goods made using YEA's products or services, nor shall any longer warranty periods apply, except as agreed in writing signed by an authorized YEA representative.

(e) YEA's WARRANTY HEREIN IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES OF YEA AND ALL PARENT OR AFFILIATED COMPANIES OF YEA. ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE HEREBY EXCLUDED.

(f) UNDER NO CIRCUMSTANCES SHALL YEA, OR ANY PARENT OR AFFILIATED COMPANY OF YEA, BE LIABLE TO

BUYER OR ANY ENTITY FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER ARISING FROM BREACH OF CONTRACT, TORT, NEGLIGENCE, MISREPRESENTATION, STRICT LIABILITY OR OTHERWISE, INCLUDING FOR LOST PROFITS, IMPAIRMENT OF GOODS, WORK STOPPAGE OR OTHERWISE, IN ANY WAY ARISING OUT OF OR RELATED TO GOODS OR SERVICES SUPPLIED BY YEA OR ANY TRANSACTION TO WHICH THESE STANDARD TERMS APPLY. THE MAXIMUM LIABILITY OF YEA, INCLUDING, BUT NOT LIMITED TO, WITH RESPECT TO THE DESIGN, MANUFACTURE, SALE, DELIVERY, RESALE, INSPECTION, ASSEMBLY, INSTALLATION, TESTING, REPAIR, REPLACEMENT, MAINTENANCE OR USE OF ANY PRODUCT OR THE PERFORMANCE OF ANY SERVICE, SHALL NOT EXCEED THE PURCHASE PRICE PAID TO YEA FOR THE DEFECTIVE PRODUCT OR SERVICE.

3. DRAWINGS/MEASUREMENTS:

All drawings, tables, graphs and the like submitted by YEA or contained in YEA's publications shall be regarded as approximations only. Weights, measurements, capacities and all other particulars of products or services offered by YEA are approximations only. YEA is not responsible for such approximations, including, in particular, based on data supplied by Buyer.

4. INFRINGEMENT:

YEA's liability for infringement (and the liability of any parent or affiliated company of YEA) is limited to YEA's defense of any suit or proceeding brought against Buyer based on a claim that products sold hereunder, when employed in the manner intended by YEA, constitutes an infringement of any patent of the United States. If Buyer's use of the products in the manner intended by YEA is finally enjoined in such action, YEA shall, at its option, procure for Buyer the right to continue using the products, replace the same with non-infringing products, modify the products so that they become non-infringing equivalent products, or refund the purchase price (less allowance for use, damage or obsolescence). YEA makes no warranty against patent infringement resulting from portions of the products made to Buyer's specifications or the use of products in combination with any other products or in the practice of any process, and if a claim, suit or action is brought against YEA or any parent or affiliate of YEA, Buyer shall defend, indemnify and save YEA (and its parent/affiliates) harmless from and against any and all claims, losses or damages arising therefrom.

5. SHIPMENT, FORCE MAJEURE, PRICES AND ERROR:

(a) Shipment/delivery dates are approximations only. YEA shall not be liable to pay any penalty or damages, including consequential damages, for any delay in shipment.

(b) In no event shall YEA be liable for any damages, including consequential damages, caused by delays or non-performance resulting from or related to force majeure or other causes beyond YEA's reasonable control, including, but not limited to, war, blockade, civil disturbances, strikes and lockouts, labor shortages, fire and other casualties, acts of nature, accidents and governmental acts (including regulations concerning export and import licensing and currency exchange). In case of non-delivery, YEA's obligation shall be limited to the refund of any advance payment received from Buyer.

(c) All claims for loss of or damage to products, whether concealed or obvious, must be made, in writing, to the carrier and to YEA by Buyer as soon as possible after receipt of shipment, and in no case beyond 30 days of shipment, or such claims shall be deemed waived. YEA will render reasonable assistance in providing information necessary for Buyer to process such damage claims with the carrier or any insurance company.

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(d) YEA's quoted prices are firm for thirty (30) days from the date of YEA's written proposal. Thereafter, the applicable prices are those in effect at the time Buyer's Order is placed with YEA. YEA will notify Buyer of any price changes for incorporation into a revised Order prior to acceptance by YEA. Pricing based on volume discounts is subject to adjustment by YEA if actual shipping volumes do not meet minimum volume requirements of agreement. Clerical errors in any element of a proposal, purchase order, invoice or contract are subject to correction by YEA.

(e) (1) Buyer agrees to accept delivery within fifteen (15) days following the anticipated date of delivery. If Buyer refuses to take delivery within the fifteen (15) day period, YEA reserves the right to charge Buyer for storage charges plus interest.

(f) (2) All shipments are F.O.B. YEA's (or its suppliers') manufacturing plant or warehouse. YEA will, at Buyer's expense, arrange for the transportation of the products from the manufacturing plant or warehouse designated by YEA. Buyer is responsible to timely procure all necessary export and import licenses and all permits required for the consummation of the transaction.

6. TERMS OF PAYMENT:

(a) All payments are due within thirty (30) days of YEA's invoice. YEA reserves the right to require payment in advance, or satisfactory security, for any shipment or sale. YEA may cancel any shipment or Order for any Buyer which has failed to make payment or comply with any other provision of these Standard Terms. YEA reserves the right to seek any other remedy available at law or equity. Payment shall be made at the agreed time, to the place specified, and in the currency indicated on YEA's invoice. Buyer's failure to pay at the agreed time and place constitutes a waiver of Buyer's right to demand YEA's performance under the contract.

(b) When an account becomes past due according to its payment terms, Buyer shall pay interest on the balance due, at the greater of 1.50% per month (18% per annum) or the maximum permitted by law, until paid in full.

(c) If delivery and/or payment in installments are accepted by YEA, Buyer's failure to pay any installment when due shall give YEA the right to suspend work or delivery until such payment is made. In the event that any such default by Buyer continues for more than fifteen (15) days, YEA may then cancel the contract by written notice to Buyer. Upon cancellation of an installment contract, all items already delivered to and paid for in full by Buyer will be transferred to Buyer "AS IS, WHERE IS," without any warranty.

(d) All duties, tariffs, fees, costs and other charges connected with shipment, insurance, exportation and importation of the products are the responsibility of Buyer, and, if paid by YEA, such expenses may be recovered by YEA from Buyer, and Buyer shall indemnify YEA against claims for the same. Buyer is responsible for all taxes applicable or related to this transaction, including all sales, use and excise taxes.

7. RISK OF LOSS:

Risk of loss and/or damage to the products shall pass to Buyer upon delivery thereof to Buyer or its representative, or to a carrier for shipment to Buyer or its designated customer, as the case may be, at the manufacturing plant or warehouse of YEA or its supplier. Buyer is responsible to obtain insurance coverage on all shipments of products supplied by YEA.

8. RETURNS/CANCELLATION CHARGES:

Buyer shall not return any product to YEA without the written consent of, and upon terms agreed to, by YEA. If Buyer refuses to accept delivery, or improperly revokes acceptance of product, Buyer shall be responsible for YEA's cancellation charges and expenses.

Before returning products, a Return Merchandise Authorization ("R.M.A.") number must be obtained from YEA. Products returned without an R.M.A. number clearly marked on the outside of the shipping carton will be refused. Except for approved warranty returns, YEA will only accept for return and credit new, unused, current stock items, in the original packaging and undamaged. Buyer shall be responsible for all freight charges, import/export charges, duties, tariffs, taxes, insurance and risk of loss/damage regarding return shipment to YEA.

9. SECURITY INTEREST:

To secure any indebtedness due and owing from Buyer from time to time, Buyer hereby grants to YEA, and YEA hereby reserves, a continuing purchase money security interest in all Yaskawa-brand and other products heretofore or hereafter sold and delivered to Buyer by YEA, and all related parts, components and accessories therefor, and all proceeds arising from the sale or other disposition of the foregoing, including, but not limited to, cash, accounts, contract rights, accounts receivable, instruments and chattel paper. Buyer shall at no time grant any security interest that conflicts with that granted to YEA herein. Buyer shall cooperate with YEA, and hereby appoints YEA as its attorney-in-fact, to execute and file, on Buyer's behalf, any documents necessary to evidence and perfect YEA's security interest.

10. GOVERNING LAW, FORUM AND JURY WAIVER:

These Standard Terms and the relationship of the parties hereto shall be governed by the internal laws of the State of Illinois, U.S.A., without regard to its choice of law rules. For all claims or disputes arising out of or relating to the sale of products or services by YEA and/or the relationship of Buyer and YEA, Buyer shall file any and all lawsuits or claims exclusively in the state or federal courts located in Cook County, Illinois. Buyer hereby submits to the personal jurisdiction of said courts and waives any claim of improper or inconvenient venue. To the fullest extent permitted by law, Buyer hereby agrees to waive the right to trial by jury for all claims or disputes arising out of or relating to the sale of products or services by YEA and/or the relationship of Buyer and YEA. The parties agree that U.N. Convention of Contracts for the International Sale of Goods shall not apply to their relationship or the sale of products by YEA.

11. MISCELLANEOUS:

(a) Failure on the part of YEA to enforce any of its rights derived from this contract shall never be construed as a waiver of any of YEA's rights.

(b) The invalidity of one or more of the clauses herein shall not affect the validity of the other clauses, which for this purpose are considered severable.

(c) Any use by Buyer of any YEA trademark must be approved by YEA in writing.

(d) Buyer may not delegate its performance or assign its rights under this Agreement except upon the express written consent of YEA. In any case, these Standard Terms shall be binding upon the successors and legal representatives of Buyer.

(e) Buyer shall comply with all applicable laws and regulations regarding the use, import and export of the products sold hereunder. The products and services to be sold hereunder are not intended for use in any nuclear, chemical or weapons production or environmental damage. If Buyer uses the products or services for such or other impermissible purposes, it shall indemnify, hold harmless and defend YEA, all parent and affiliated companies of YEA, from and against all related claims and damages.

(f) All rights and remedies available to YEA under the Uniform Commercial Code and other applicable law are reserved to YEA as remedies in the event of Buyer's default.