

# PROTEC AC PTO Generators

## Two-Bearing Alternators

15-40 kW, 60 Hz  
12-30 kW, 50 Hz



Optional  
LED Display  
Meter

- Heavy-Duty, Field-Proven Design for Long Life
- Capped Voltage Regulation
- Environmental Protection for Adverse Conditions
- Low Harmonic Distortion
- Dual Mounting Configurations
- Remote Mountable Solid State Electronic Voltage Regulator
- 50/60 Hz Switchable

### Model and Ratings

Single Phase Models	15 YD CR 621C		20 YD CR 621C		25 YD CR 621C		30 YD CR 621C		35 YD CR 621C	
Nominal Rating (kW)	12.0	15.0	16.0	20.0	20.0	25.0	25.0	30.0	30.0	35.0
Frequency (Hz)	50	60	50	60	50	60	50	60	50	60
Input Speed (r/min)	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800
Output Voltage	115/230	120/240	115/230	120/240	115/230	120/240	115/230	120/240	115/230	120/240
Recommended Circuit Breaker	70 A, 2-pole	70 A, 2-pole	70 A, 2-pole	85 A, 2-pole	100 A, 2-pole	100 A, 2-pole	150 A, 2-pole	150 A, 2-pole	175 A, 2-pole	175 A, 2-pole
Recommended Control Panel	300-4700	300-4589	300-4700	300-4590	300-4701	300-4591	300-4702	300-4592	300-4703	300-4593
Efficiency, %	80.5	80.6	83.3	82.6	84.5	83.4	84.0	85.9	86.9	86.0
Three Phase Models	15 YD CR 622C		20 YD CR 622C		25 YD CR 622C		32 YD CR 622C		40 YD CR 622C	
Nominal Rating (kW)	12.0	15.0	16.0	20.0	20.0	25.0	25.0	32.0	30.0	40.0
Frequency (Hz)	50	60	50	60	50	60	50	60	50	60
Input Speed (r/min)	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800
Output Voltage Configuration*	12-lead reconnectable broad range voltages		12-lead reconnectable broad range voltages		12-lead reconnectable broad range voltages		12-lead reconnectable broad range voltages		12-lead reconnectable broad range voltages	
Efficiency, %	85	85	85	85	85	85	86	86	87	87

\*See reconnectable voltage chart on page 3.

Note: Three phase control panels currently not available.

## Standard Features

- Precision balanced rotating field generator
- Epoxy impregnated windings with overcoat
- Brushless exciter
- Double-sealed, prelubricated bearings
- Air-cooled with shaft-mounted centrifugal fan
- Bi-directional rotation
- Skewed stator for low harmonic distortion
- Class H insulation, 180° C temp rating
- Reconnectable three phase and single phase

## Accessories

### LED Display Meter

This LED display meter can be used to display amps, volts, and hertz of the system. Kit contains meter, current transformers, voltage transformer, pigtail plugs, and instructions. It does not include circuit breakers and cannot start and stop the genset.



Single Phase



Three Phase

### Protec Lead Kits:

These output lead kits are sized to 120/240 single phase voltage and 120/208 three phase voltage. If the generator is reconnected to a different voltage, select the kit with the appropriate wire size.

These lead kits consist of 12-foot AC output leads to connect generator to the distribution panel and 12-foot leads to connect the generator to the voltage regulator.

60 Hz only

15 kW - 20 kW models, single phase and three phase; 25 kW single phase (part #541-0519)

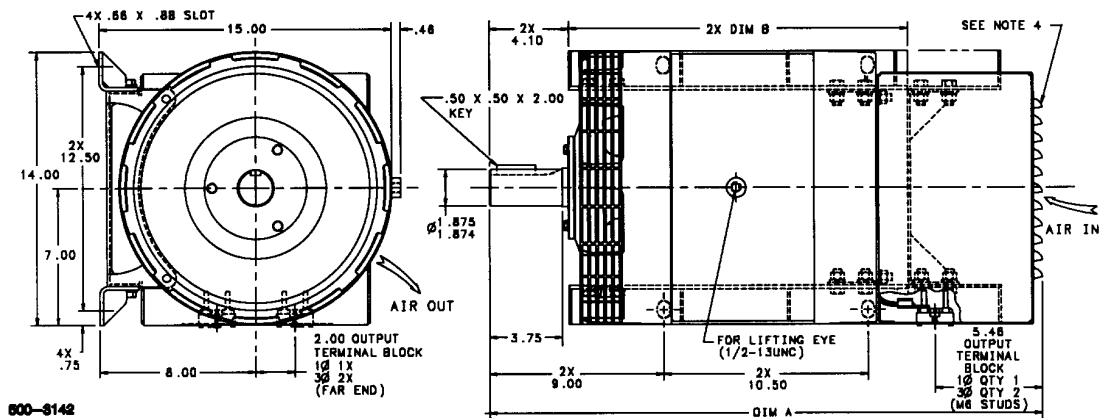
25 kW single phase and 32 kW three phase models (part #541-0520)

30 kW single phase and 40 kW three phase models (part #541-0518)

35 kW model, single phase (part #541-0539)

## Basic Dimensions

Tabulation					
1Ø kW (50/60 Hz)	3Ø kW (50/60 Hz)	Outline Drawing Number	Dim A	Dim B	Weight (lb)
12/15	12/15	0500-3142-01	25.68	17.44	301
16/20	16/20	0500-3142-02	27.12	17.44	351
20/25	20/25	0500-3142-03	28.37	17.44	393
25/30	25/32	0500-3142-04	30.00	22.19	448
30/35	30/40	0500-3142-05	31.75	22.19	507



This outline drawing is provided for general reference only and is not intended for design or installation. For more information see installation manual or obtain outline drawing 500-3142 and wiring diagram from your Distributor/Dealer.

## Motor Starting Performance

Single Phase Models	15 YD CR 621C		20 YD CR 621C		25 YD CR 621C		30 YD CR 621C		35 YD CR 621C	
Max kVA at 90% Rated V	25	33	33	43	42	55	60	78	68	89
Rating (kW) at 0.9 PF										
50 Hz	9.0 at 230 V		16.0 at 230 V		16.0 at 230 V		20.0 at 230 V		25.0 at 230 V	
60 Hz	13.5 at 240 V		21.0 at 240 V		21.0 at 240 V		26.0 at 240 V		31.0 at 240 V	
Motor Starting hp/kW Code F Code H	2/3 1/2		2/3 1/2		2/3 1/2		2/3 1/2		2/3 1/2	
Voltage Dip % (at .6-.5/unit impedance) *	32.0 at .6	37.2 at .6	31.0 at .6	36.0 at .6	30.0 at .6	34.8 at .6	32.0 at .5	37.6 at .5	31.0 at .5	36.9 at .5
Three Phase Models	15 YD CR 622C		20 YD CR 622C		25 YD CR 622C		32 YD CR 622C		40 YD CR 622C	
Max kVA at 90% Rated V	26	34	35	45	44	56	56	72	68	83
Motor Starting hp/kW Code F Code H	2/3 1/2		2/3 1/2		2/3 1/2		2/3 1/2		2/3 1/2	
Voltage Dip % (at .6-.5/unit impedance) *	34.0 at 0.5	40.0 at 0.5	34.0 at 0.5	40.0 at 0.5	34.0 at 0.5	40.0 at 0.5	34.0 at 0.5	40.0 at 0.5	34.0 at 0.5	40.0 at 0.5

\*Single phase based on 120/240. \*\*Three phase based on 120/208

## Reconnectable Voltage Configurations

Single Phase				
	3-wire	Parallel 2-wire	Series 2-wire	
60 Hz	120/240	120	240	
50 Hz	110/220	110	220	
	115/230	115	230	
	120/240	120	240	
Three Phase				
	3Ø Parallel Wye*	3Ø Series Wye	3Ø Series Delta	1Ø Double Delta
60 Hz	120/208-139/240	240/416-277/480	120/240	120/240
50 Hz	110/190-115/200-120/208	220/380-230/400-240/416	110/220-120/240	110/220-120/240

\*Factory wiring

## Alternator Detail

**Design:** Onan, revolving field, brushless, drip-proof construction  
**Insulation system rise:** Class H per NEMA MG1-1.65 and BS 2757 insulating varnish conforms to MIL-I-24092, Grade CB, Class 180° C  
**Exciter system:** Brushless with 8-pole stator mounted in endbell; rotating rectifier assemblies are encapsulated for protection from adverse environments; sized for maximum motor starting

**Bearing:** Double sealed prelubricated ball bearing  
**Cooling:** Direct drive centrifugal blower  
**Voltage regulator:** Self regulating, load circuit inductively coupled to exciter circuit for instantaneous response to load changes and boost capability for heavy loads and motor starting

## Unit Performance

**Frequency regulation recommendations:** (not supplied by Onan - installer added)  
 Operative range: 57-63 Hz  
 Typical mechanical governing systems: ±5%  
 Typical electronic governing system: ±1%

**Voltage regulation:** Steady-state voltage regulation: less than 0.5%, no load to full load, with constant speed; overall voltage regulation performance will be directly affected by the performance and accuracy of the governing system used; power ratings comply to NEMA standard MG1-22.

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## Warranty Policy

The ONAN limited warranty covers virtually everything except routine maintenance for the first five years that you own your generator set, or the first 1,000 hours of operation, whichever comes first. In addition, it includes a free 90-day adjustment policy, which provides that Onan will make minor adjustments to your new genset during the first three months you own it - free of charge!

Travel Time Repair Allowance: In addition to the 5-year, 1000-hour warranty, a travel time repair allowance of 2.5 hours and mileage cost up to 100 miles included for the first 2 years.

For complete Onan Limited Warranty details see your Certified Onan Distributor/Dealer.

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## After Sale Support

**EASY TO LOCATE CERTIFIED ONAN SERVICE AND PARTS DEALERS** - Onan has the largest and best-trained worldwide certified Distributor/Dealer network in the industry, offering on-time parts and service, and installation assistance. Cummins Onan Distributor/Dealers stock and sell commonly used Onan GenSet maintenance parts, accessories and products, plus operator manuals and literature on current Onan GenSets. They can help you select and install the right genset or accessories on older models, or provide answers to questions on proper operation and maintenance procedures.

**MANUALS** - Installation and operators manuals are shipped with the genset. To obtain additional copies or other manuals for this model, see your Cummins Onan Distributor/Dealer and request the following part numbers: Operators Manual (929-0101), Parts Manual (929-0201), Service Manual (900-0184), and Installation Manual (929-0601).

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## Standards and Testing

Tested at extremes of temperature -20° F to 120° F for starting and operation.

Tested with commercial loads.

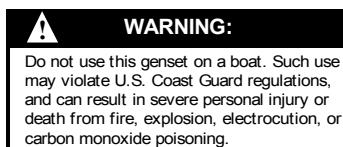
Tested in high humidity conditions.

Tested in salt spray conditions.

Tested in heavy air borne dust conditions.

Field Test Program.

This generator set was designed and manufactured in facilities certified to ISO 9001.



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**Contact your Distributor/Dealer for more information:**



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**WARNING:** Backfeed to utility systems can cause electrocution or property damage. Do not connect to building electrical except through approved device and after building main breaker is opened.