

# Commercial mobile alternator Protec PTO™ Series 15-40/12-30 kW



## Cummins Onan



Performance you rely on.™

### Features and benefits

- 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

### Models 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	
<b>Nominal rating (kW)</b>	12.0	15.0	16.0	20.0	20.0	25.0	25.0	30.0	30.0	35.0
<b>Frequency (Hz)</b>	50	60	50	60	50	60	50	60	50	60
<b>Input speed (r/min)</b>	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800
<b>Output voltage</b>	115/230	120/240	115/230	120/240	115/230	120/240	115/230	120/240	115/230	120/240
<b>Recommended circuit breaker</b>	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
<b>Efficiency, %</b>	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	
<b>Nominal rating (kW)</b>	12.0	15.0	16.0	20.0	20.0	25.0	25.0	32.0	30.0	40.0
<b>Frequency (Hz)</b>	50	60	50	60	50	60	50	60	50	60
<b>Input speed (r/min)</b>	1500	1800	1500	1800	1500	1800	1500	1800	1500	1800
<b>Output voltage configuration*</b>	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	
<b>Efficiency, %</b>	85	85	85	85	85	85	86	86	87	87

\* See reconnectable voltage chart on page 2.

### Recommended Protec display panels

#### All single phase



541-1092

#### Three phase



541-1093 (Star)  
541-1095 (Delta)

## Standard features

- Precision balanced rotating field generator set Epoxy impregnated windings with overcoat
- Brushless exciter
- Double-sealed, pre-lubricated 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

## Alternator details

**Design:** Cummins 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 pre-lubricated 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 - 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

## 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	
<b>Max kVA at 90% rated V</b>	25	33	33	43	42	55	60	78	68	89
<b>Rating (kW) at 0.9 PF</b>										
<b>50 Hz</b>	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	
<b>60 Hz</b>	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	
<b>Motor starting hp/kW</b>										
<b>Code F</b>	2/3		2/3		2/3		2/3		2/3	
<b>Code H</b>	1/2		1/2		1/2		1/2		1/2	
<b>Voltage dip % (at .6-.5/unit impedance) *</b>	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
<b>Three phase models</b>	15 YD CR 622C		20 YD CR 622C		25 YD CR 622C		32 YD CR 622C		40 YD CR 622C	
<b>Max kVA at 90% rated V</b>	26	34	35	45	44	56	56	72	68	83
<b>Motor starting hp/kW</b>										
<b>Code F</b>	2/3		2/3		2/3		2/3		2/3	
<b>Code H</b>	1/2		1/2		1/2		1/2		1/2	
<b>Voltage dip % (at .6-.5/unit impedance) *</b>	34.0 at .5	40.0 at .5	34.0 at .5	40.0 at .5	34.0 at .5	40.0 at .5	34.0 at .5	40.0 at .5	34.0 at .5	40.0 at .5

\* Single phase based on 120/240.

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

## Reconnectable voltage configurations

### Single phase

	<u>3-wire</u>	<u>Parallel 2-wire</u>	<u>Series 2-wire</u>
<b>60 Hz</b>	120/240	120	240
<b>50 Hz</b>	110/220	110	220
	115/230	115	230
	120/240	120	240

### Three phase

	<u>3Ø parallel Wye*</u>	<u>3Ø series Wye</u>	<u>3Ø series Delta</u>	<u>1Ø double Delta</u>
<b>60 Hz</b>	120/208-139/240	240/416-277/480	120/240	20/240
<b>50 Hz</b>	110/190-115/200-120/208	220/380-230/400-240/416	110/220-120/240	10/220-120/240

\* Factory wiring

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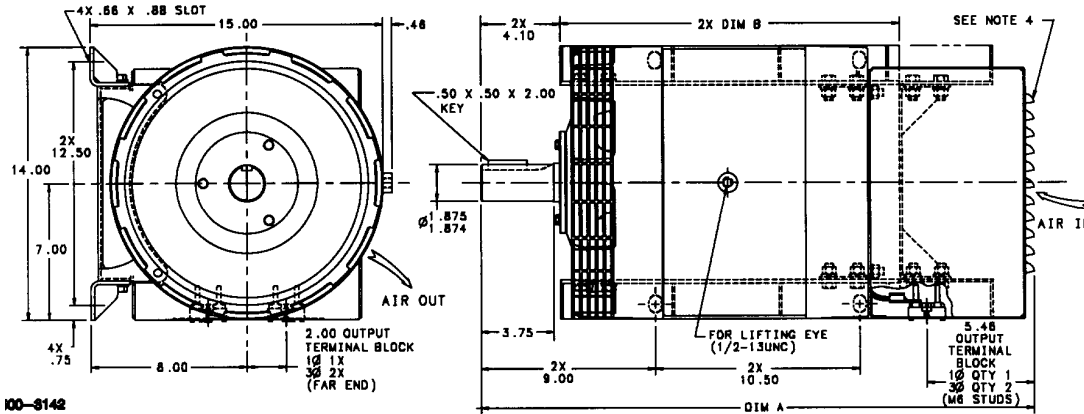
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# Basic dimensions

## Tabulation

10 kW (50/60 Hz)	30 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



**Note:** This outline drawing is provided for general reference only and is not intended for design or installation. For more information see Operation and Installation manuals or obtain drawing 500-3142 and wiring diagram from your distributor/dealer.

## 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 generator set.

### Protec lead kits:

- These output lead kits are sized to 120/240 single phase voltage and 120/208 three phase voltage. If the generator set 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 set to the distribution panel and 12-foot leads to connect the generator set to the voltage regulator.
- 60 Hz only
- 15 kW - 20 kW models, single phase and three phase; 25 kW single phase (P/N 541-0519)
- 25 kW single phase and 32 kW three phase models (P/N 541-0520)
- 30 kW single phase and 40 kW three phase models (P/N 541-0518)
- 35 kW model, single phase (P/N 541-0539)
- Splash shield kit (P/N 026-00362)
- Splash shield and shaft V-seal for added water/salt protection. Recommended for use where the generator could be exposed to water splash.

### Single phase



541-1092

### Three phase



541-1093 (Star)  
541-1095 (Delta)

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## Standards and testing

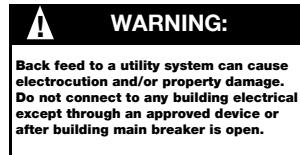
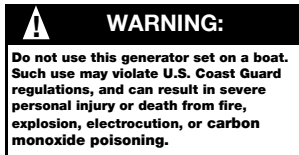
- Tested at extremes of temperature -20° F (-29° C) to 120° F (49° C) for starting and operation
- Tested with commercial loads
- Tested in high humidity conditions
- Tested in salt spray conditions
- Tested in heavy air borne dust conditions
- Field test program
- This generator set was designed and manufactured in facilities certified to ISO 9001
- CSA certified for CSA C22.2 Std 100 and Std 14



## Warranty policy

The Cummins 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 Cummins Inc. will make minor adjustments to your new generator set 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.



## After sale support

### Largest distributor/dealer support network

Cummins Onan generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable Cummins Onan distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

**Manuals:** Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your Cummins Onan distributor/dealer and request the following manual numbers: Operation (929-0101), Installation (929-0601), Parts (929-0201), Service (900-0184).

To easily locate the nearest Cummins Onan distributor/dealer in your area, or for more information, contact us at 1-800-888-6626 (or 763-574-5000), or visit [www.cumminsonan.com](http://www.cumminsonan.com).

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## Contact your distributor/dealer for more information

# Cummins Onan

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