User Guide

Residential/Commercial Generator Sets



OnCue® Plus

Generator Management System for Kohler[®] Residential/Light Commercial Generator Sets equipped with the following controllers:

> RDC/DC RDC2/DC2 VSC



TP-7006 2/21a

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Notes

IMPORTANT SAFETY INSTRUCTIONS. Electromechanical equipment, including generator sets and accessories, can cause bodily harm and pose life-threatening danger when improperly installed, operated, or maintained. To prevent accidents be aware of potential dangers and act safely. Read and follow all safety precautions and instructions. SAVE THESE INSTRUCTIONS.

This manual has several types of safety precautions and instructions: Danger, Warning, Caution, and Notice.



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Safety decals affixed to the equipment in prominent places alert the operator or service technician to potential hazards and explain how to act safely. The decals are shown throughout this publication to improve operator recognition. Replace missing or damaged decals.

Accidental Starting



Can cause severe injury or death.

Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or equipment connected to the set, disable the generator set as follows: (1) Press the generator set off/reset button to shut down the generator set. (2) Disconnect the power to the battery charger, if equipped. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent the starting of the generator set by the remote start/stop switch.

Hazardous Voltage/ Moving Parts



Short circuits. Hazardous voltage/current will cause severe injury or death. Short circuits can cause bodily injury and/or equipment damage. Do not contact electrical connections with tools or jewelry while making adjustments or repairs. Remove all jewelry before servicing the equipment.

NOTICE

Electrostatic discharge damage. Electrostatic discharge (ESD) damages electronic circuit boards. Prevent electrostatic discharge damage by wearing an approved grounding wrist strap when handling electronic circuit boards or integrated circuits. An approved grounding wrist strap provides a high resistance (about 1 megohm), *not a direct short*, to ground.

Notes

This manual provides operation instructions for the OnCue[®] Plus Generator Management System. OnCue Plus is a cloud-based application that allows you to remotely monitor your generator set using a web browser or mobile application on a smart phone or tablet.

OnCue Plus applies to Kohler[®] Residential and Light Commercial generator sets equipped with the following controllers:

- RDC/DC
- RDC2/DC2
- VSC
- **Note:** The RDC2, DC2, and VSC controllers require an activation code, which is included with the OnCue Plus kit provided with the generator set.
- **Note:** The RDC and DC controllers must be equipped with the Ethernet option board kit GM62465-KP1. Contact your Kohler authorized distributor or dealer for more information.

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change this publication and the products represented without notice and without any obligation or liability whatsoever.

Read this manual and carefully follow all procedures and safety precautions to ensure proper equipment operation and to avoid bodily injury. Read and follow the Safety Precautions and Instructions section at the beginning of this manual. Keep this manual with the equipment for future reference.

List of Related Literature

Figure 1 lists related literature.

Literature Type	Part Number
OnCue Plus Specification Sheet	G6-179
OnCue Plus Technical manual	TP-7007
Ethernet Option Board Installation Instructions (RDC/DC only)	TT-1566
USB Utility Instructions	TT-1636

Figure 1 Related Literature

Service Assistance

For professional advice on generator set power requirements and conscientious service, please contact your nearest Kohler distributor or dealer.

- Visit the Kohler Generators website at KOHLERGenerators.com.
- Look at the labels and decals on your Kohler product or review the appropriate literature or documents included with the product.
- Call toll free in the US and Canada 1-800-544-2444.
- Outside the US and Canada, call the nearest regional office.

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Japan, Korea

North Asia Regional Office Tokyo, Japan Phone: (813) 3440-4515 Fax: (813) 3440-2727

1.1 Introduction

Kohler[®] OnCue[®] Plus monitors the generator set continuously via an Internet connection from the generator controller through a local router to a cloud solution. After the application has been configured, the OnCue Plus application will continue to operate when the router is powered and providing Internet connection to the generator controller.

Note: Sample screens are shown in this document. The actual screens may vary.

OnCue Plus is available as a web version and as an app for Apple[®] and Android[™] devices. For smart phones or tablets, obtain the Kohler OnCue Plus app from the App StoreSM (for Apple devices) or Google Play[™] (for Android[™] devices). App screens are similar to the web screens shown in this manual.

1.2 Start OnCue Plus

On your Smart Phone or Tablet

For smart phones or tablets, obtain the Kohler OnCue Plus app from the App StoreSM (for Apple devices) or Google Play^m (for Android devices).

Note: OnCue Plus works with Android version 5.0 or higher and iOS version 11.0 or higher.

On your PC or Laptop

To use the OnCue Plus web application, use your computer to navigate to the OnCue Plus website www.kohlergenerators.com/oncueplus. The OnCue Plus log-in window opens. See Figure 1-1. Operation of the web application is similar to using the app as described in this manual.

- Note: OnCue Plus works with the following web browsers:
 - Google Chrome
 - Safari
 - Microsoft Edge (version 79 or higher)
 - Firefox
 - Opera

Pop-up blockers may need to be disabled.

1.3 Home Page

After you sign in, you will need to add the generator to your OnCue Plus account. Multiple generators can be added to your OnCue Plus account. Customers who have more than one generator set can monitor them on one account, and Kohler distributors and dealers can monitor generators for multiple customers. Customers can control the dealer's or distributor's access by providing the generator password.



Figure 1-1 OnCue Plus Sign In Screen

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Android and Google Play are trademarks of Google Inc.

1.3.1 Create Account

When you start OnCue Plus for the first time, select Create Account. See TP-7007, OnCue Plus Technical Manual, for Instructions to create an account.

OnCue Plus will remember your generator set and connect to it each time you use OnCue Plus.

1.3.2 Log In

Once you have set up your OnCue Plus account, log in to your account. Enter your OnCue Plus username and password, and tap SIGN IN.

1.3.3 DEMO

To preview the OnCue Plus screens and operation without creating an account or logging in, select DEMO. See Figure 1-1. The demo allows you to navigate through menus and review the information available through OnCue Plus without connecting to an actual generator set. You can "start" and "stop" the demo generator set from the menu, view the generator parameters, and rename inputs and outputs.

1.3.4 Forgot Password/Username

You can retrieve your username or password if you forget them. Tap or click on FORGOT USERNAME/ PASSWORD at the bottom of the screen. A window like the one shown in Figure 1-2 opens.



Figure 1-2 Forgot Password/Username Window

Reset My Password

Select "Reset My Password." In the next window, enter your OnCue Plus username or the email address associated with your account, and tap NEXT. See Figure 1-3. You will receive an email with a code and password reset instructions. Enter the code in the Change Password window and follow the instructions in the email. See Figure 1-4.

	OnCue Plus	
	Reset Password	
Enter your OnCue F	Plus username, or the email address that you used to register. We'll send you an email with password reset instructions	
Email address or u	isername	
	NEXT	
g	BACK	

Figure 1-3 Reset Password

Change Password We emailed you a code. Please enter it below.	code. Please enter it below.	0	Cue Plus	
	confirm Rescuerd	Chi	nge Password	
Haund you code? Recent Code	Confirm Pacsword	We emailed you	a code. Please enter it below	
Haven't received your code? Recent Code	Confirm Pacsword			
Haven received your code? Resend Code	Confirm Password	Haven't received your code? Resen	Code	
Password d Confirm Password d		Password	Confirm Password	Ø

Figure 1-4 Change Password

Find Username

If you forget your username, select "Find Username" and enter the email address associated with your account. A confirmation message similar to the window shown in Figure 1-6 will appear. If the email address matches an OnCue Plus account, a username recovery email will be sent to that address. Follow the steps in the email to retrieve your username.

	On <u>C</u> ue Plus
	Find Username
	Enter your email address and we'll send you an email with your username Email address
l	NEXT
	васк

Figure 1-5 Find Username





1.4 Device Actions

Device Actions allows you to add and remove generators as well as change the name, location, and password for the generator.

To access device actions, select the notepad icon in the lower right corner. See Figure 1-7.



Figure 1-7 Device Actions

1.4.1 Add Generator

To add a generator, select Add Generator from Device Actions. See Figure 1-7. Enter the Generator Serial Number and password. Refer to the OnCue Plus Installation/Technical Manual, TP-7007, for instructions to obtain this information. See Figure 1-8.

Add Gen	erator		
Generator	Serial Numbe	r	
Password		••••	
	CANCEL	ADD	



1.4.2 Change Generator Information

The generator display name, location, dealer, and password can be adjusted in OnCue Plus. To change these settings, select Generator Information from Device Actions. See Figure 1-7.

To adjust any of the settings, select the appropriate section as shown in Figure 1-9.

CLOSE	
Display Name BASHOFF RESIDENCE	>
Location 5029 North Shoreland Avenue, Whitefish Bay, WI, USA	>
Dealer Local Technician Company	>
Password	>

Figure 1-9 Generator Information

Display Name

When a generator is connected for the first time, the generator name displayed in OnCue Plus will be the generator serial number. Use the Display Name setting to change the name to something that identifies the generator. For example, you can rename the unit using your name or a location. If your dealer or distributor will be monitoring the generator, use a name that distinguishes your unit from other customers' equipment. Names must contain at least four characters, and can use letters and numbers.

To assign the name to the generator set, select Display Name. Type in the new name and select SAVE.

Note: Changing the display name will change it on all accounts that monitor the generator. The customer and the dealer cannot have different names for the same generator.

See Figure 1-10.

CLOSE	
Change Display Name New Display Name BASHOFF RESIDENCE	
SAVE	

Figure 1-10 Display Name

Generator Location

It is best to include the address of the generator location. This allows the dealer to use a map function to easily find the generator location.

Select Location. Begin typing in the address and select the correct address when you see it in the list. Select SAVE.

See Figure 1-11.

CL	OSE		
	Chan	ge Device Location	
	Q	444 High	×
	f	444 Highland Drive, Kohler, WI, USA	
	Î	444 North Michigan Avenue, Chicago, IL, USA	
	f	444 West Fullerton Parkway, Chicago, IL, USA	
	Î	444 West Lake Street, Chicago, IL, USA	
	Î	444 East Corcoran Street, Milwaukee, WI, USA	
		SAVE	

Figure 1-11 Location

Dealer

Enter your dealer's information. See Figure 1-12. This allows you to email and call your dealer directly from OnCue Plus using the Dealer view described earlier.

Note: If no dealer information is entered from Generator Information, the Dealer view will not appear on the main screen. Once dealer information is entered, it can be edited from the main screen, as described earlier, or from Generator Information.

CLOSE	
Dealer Name Local Technician Company	ă.
Email service@example.com	
Dealer Phone Number 3333333333	
Dealer Address N7650 County Road LS	
Dealer City	
Dealer State	
Dealer Zip Code	
SAVE CHANGES	

Figure 1-12 Dealer Information

Generator Password

Change the generator password from the 4-digit controller password to a password of your choice. If the password is changed, other users will lose the OnCue Plus connection to that generator. If your dealer is monitoring your generator, be sure to give the dealer the new password.

Select Password. See Figure 1-13. Type the new password into both boxes and select SAVE. The controller will restart after the password is changed.

CLOSE	
Change Device Password	
Password	٩
Confirm Password	٩
SAVE	

Figure 1-13 Generator Password

1.4.3 Remove a Generator

You can remove a generator from your list of monitored units.

To delete a generator, make sure you are on the generator system view before selecting Device Actions. From Device Actions, select Remove {Display Name}. The name of the generator you are removing will be listed. See Figure 1-7.

A confirmation box appears to make sure you want to delete the generator. Select DELETE. See Figure 1-14.

Note: Once deleted, the generator no longer appears in your account.

After a unit has been removed, you will need to follow the Add Generator procedure to add it again if you want to put it back on your list.



Figure 1-14 Remove a Generator

1.5 Select Generator

Multiple generators can be added to your OnCue Plus account. Customers who have more than one generator set can monitor them on one account, and Kohler distributors and dealers can monitor generators for multiple customers. Customers control the dealer's or distributor's access by providing the generator password. See Section 1.4.

At the top of OnCue Plus, scrolling left and right will cycle through the generators that have been added to your account. The selected generator set is displayed at the top. See Figure 1-15.

	≡ ⊘
	BASHOFF RESIDENCE Standby, Your generator is ready for next power outage Updated: Jun 4, 11:03:18 AM
	Active Alerts Warning: Maintenance Required VIEW EVENTS
	My Dealer Local Technician Company (333) 333-3333 Address N7650 County Road LS Email service@example.com
	Power Status
1. To scroll left and right to	view each generator, select the tab at the top and swipe.

Figure 1-15 Select Generator - Single-Page Scrolling View

1.6 Fleet View

If an account has 10 or more generators, a Fleet view is provided. See Figure 1-16.From the Fleet View, you can select a generator and have the same information as shown in Section 1.7, OnCue Plus Views. Fleet View allows for generators to be sorted by name, priority (the generator with the most active alerts will be at the top) and by status through the Filter. You can also search for a generator by display name or serial number.

=				¢
	Flee 12 DEVIC			
	A-Z A PRIORITY Y FILTERS	(Q Search	
		1 Active Alert	Connected Last Connected	
	BUCKWAY GEN	0 Active Alerts	9 months ago Last Connected	
	GRANITE VIEW COTTAGE	0 Active Alerts	4 years ago Last Connected	
	JOHNSON FAMILY	2 Active Alerts	2 months ago Last Connected	
		1 Active Alert	Connected Last Connected	
	MEADOW BROOK CHATEAU	0 Active Alerts	9 months ago Last Connected	
	SGMTESTLAB2	4 Active Alerts	A month ago Last Connected	
	SLOAN RESIDENCE	2 Active Alerts	10 days ago Last Connected	
		3 Active Alerts	Connected Last Connected	>
	TANGLESPRINGS RESIDENCE	0	9 months ago	+

Figure 1-16 Select Generator - Fleet View

1.7 OnCue Plus Views

OnCue Plus provides provides a scrolling view of key information about the generator system. The following information is available:

- Active Alerts
- My Dealer -- if configured
- Power Status if using RXT transfer switch
- Loads if PIM and/or Load Shed installed
- Exercise
- Favorite Parameters

See Figure 1-17.

=			Q
			×.
		BASHOFF RESIDENCE	
	Stan	dby, Your generator is ready for next power outage	Standt
		Updated: Jun 4, 11:30:13 AM	
	Active Alerts	Warning: Maintenance Required	
		VIEW EVENTS	
	My Dealer		
	 Local Technic 	cian Company	
	(333) 333-333	3	
	Address N7650 County	Road LS	
	Email		
	service@exan	nple.com	
		EDIT DEALER	
	Power Status		
		GEN GEN	
		Your home is running on utility power	
	Loads		
	PI	A LOAD SHED	
	Air Conditioner		ACTIVE
	Heater		ACTIVE
	Storm Shutters		ACTIVE
	Hall Lights		ACTIVE
	Hot Tub		ACTIVE
	Garage		ACTIVE
		RENAME LOADSHED LABELS	
	Exercise	START EXERCISE	
		START EXERCISE	
	Loaded Full Speed Exercise Type		
	6-15-2020 7:03 AM		
	Next Exercise		
	6-1-2020 7:15 AM Last Exercise		
		EDIT DETAILS	
	Favorite Parameters		
	6.11.2 Current Firmware	6.12.2 Latest Firmware	
	0 R/min Engine Speed	13.4 ∨ Battery Voltage	
	0.0 W	MGM12345	
	Generator True Total Power	Generator Serial Number	
	0 Psi Engine Oll Pressure	NA Engine Coolant Temperature	
	147.2 F		
	147.2 F Lube Oil Temperature	116.6 F Generator Controller Temperatu	ILE
		CUSTOMIZE PARAMETERS	
	·		

Figure 1-17 Generator System Information

1.8 Active Alerts

If the generator system has any active fault conditions, including warnings or shutdowns, they will appear in the Active Alerts section. If there are no active faults, "No Active Alerts" is displayed. See Figure 1-18.

Select VIEW EVENTS to view recent activity on your generator. All events are listed in chronological order, with most recent at top, and an indication of how long ago the event occurred. Events include generator

operation, such as exercise runs or other generator set starts, as well as generator fault conditions, both active and inactive. See Figure 1-19.

If you would like more information about a particular event, select the arrow to the right to expand the event details. See Figure 1-20 for event details. Select the arrow again to reduce the event details.

Select BACK in the upper left corner to return to the main generator system view.



Figure 1-18 Power System Status

← васк	Events	
	Q Search	
	3d ago Status: Engine Stopped	O
	3d ago Status: Unavailable Source2 Voltage AB	O
	3d ago Status: Ats Exercise Ended	O
	3d ago Status: Ats Position Source1	O
	3d ago Status: Ats Position Source2	O
	3d ago Status: Available Source2 Voltage AB	O
	3d ago Status: Engine Started	o
	3d ago Status: Ats Exercise Active Loaded	o
	7d ago Status: Engine Stopped	o
	7d ago Status: Unavailable Source2 Voltage AB	O
	7d ago	Ø

Figure 1-19 Event History

BACK	Events		
	Q Search		
	3d ago Status: Engine Stopped		٢
	3d ago Status: Unavailable Source2 Voltage AB		0
	Event Time: Controller Hours: Engine Run Time: Parameter Name:	06-01 07:15 AM 38477.2 140.6 Source2 Voltage AB	
	3d ago Status: Ats Exercise Ended		ø
	3d ago Status: Ats Position Source1		ø
	3d ago Status: Ats Position Source2		o
	3d ago Status: Available Source2 Voltage AB		Ø
	3d ago Status: Engine Started		Ø
	3d ago Status: Ats Exercise Active Loaded		ø
	7d ago Status: Engine Stopped		ø

Figure 1-20 Event Details

1.9 My Dealer

If dealer information is set up for the generator system, the My Dealer section will appear as shown in Figure 1-22. If the dealer information is not set up, this section will not appear.

You can contact the dealer directly through the OnCue Plus app.

- Call If on a device that supports cellular calls, select the phone number to initiate a call.
- Email To initiate an email directly from OnCue Plus, select the email address.
- Map To pull up a map, select the Address.

To set up dealer information for the first time, see Section 1.4.2.

To edit dealer information, select EDIT DEALER and update the information as needed. Select SAVE CHANGES at the bottom when complete. See Figure 1-21.

← Eo	lit Dealer		
	Dealer Name Local Technician Company	E	
	Email service@example.com		
	Dealer Phone Number 3333333333		
	Dealer Address N7650 County Road LS		
	Dealer City		
	Dealer State		
	Dealer Zip Code		
	SAVE CHANGES		



My Deal	er
¢	Local Technician Company (333) 333-3333
۴	Address N7650 County Road LS
\geq	Email service@example.com
	EDIT DEALER

Figure 1-22 My Dealer

1.10 Power Status

The Power Status screen is shown in Figure 1-23.

The Power Status view indicates power source (utility or generator) availability and which source is providing power to the house.

Green indicates active, meaning that source is providing power. Note that the GEN symbol will be green when the generator is running but the generator will not be supplying power to the home unless the connection between the home and the generator is green. The generator could be running due to an unloaded exercise or a cooldown.

If the utility is not available, the utility symbol will be grey. If the house does not have power, it will be grey.

If the generator is in Standby, meaning it is not running but ready to run when commanded, the GEN symbol is grey. If the generator has a warning it will be yellow. The generator can still run but it has a condition that should be evaluated and fixed. If the generator has a shutdown, it will be red. When the generator has a shutdown, it will not run and is not available to provide power. The generator requires immediate attention.





1.10.1 Loads

If the generator system has a Programmable Interface Module (PIM) or Load Shed option, the Loads section will appear. If the generator system does not have either, this section will not appear. Figure 1-24 shows a system with both a PIM and Load Shed. To switch between the two, select the PIM or Load Shed label at the top. If a system only has a PIM, only the PIM information will appear. If a system only has a Load Shed, only the Load Shed information will appear.

PIM	LOAD SHED
Run	OFF
Common Fault	OFF
Hot Tub	OFF
Storm Shutters	NO
Kitchen Fridge	NO
Sprinkler System	OFF

Figure 1-24 Loads, PIM

1.10.2 PIM

OnCue Plus allows remote control of items in your home. Controlling items remotely requires an installed and properly connected Programmable Interface Module (PIM). The Programmable Interface Module is available for purchase as an optional kit.

Electrical items such as appliances, outdoor lighting, storm shutters, etc. can be connected to outputs on the PIM and then turned on and off using OnCue Plus.

Note: The PIM provides six outputs. PIM outputs 1 and 2 are factory-set to generator running and common fault. Outputs 1 and 2 cannot be programmed to a different function and cannot be controlled remotely through OnCue Plus. OnCue Plus shows the status.

Control items in your home connected to outputs 3 through 6 through OnCue Plus.

- 1. Select the output label or status in the PIM section.
- 2. In the dialog box, select the status desired. See Figure 1-26.
- 3. OnCue Plus will indicate in a green box at the bottom that the command was sent successfully. See Figure 1-27. Select OK. It will take several seconds for the system to receive confirmation that the command was executed. Once confirmation is received, the status of the output will change.



Figure 1-25 Manual PIM Control



Figure 1-26 Command Sent Successfully

Once OnCue Plus is used to turn a PIM output on or off, the output will no longer be controlled by the generator set. For example, output 4 may initially be set to the engine oil low pressure warning. If OnCue Plus is used to turn that output on or off, the output will no longer turn on when the generator's low oil pressure warning is activated. The output must be operated through OnCue Plus. Use OnCue Plus to change the output label to identify the equipment connected to each output. To change the label, select RENAME PIM LABELS at the bottom of the Loads section. The four outputs that can be reprogrammed and controlled are shown. See Figure 1-27.

← васк	Edit Labels	
	Hot Tub	>
	Storm Shutters	>
	Kitchen Fridge	>
	Sprinkler System	>

Figure 1-27 Rename Pim Labels

Select the label or the arrow on the far right to bring up the label change dialog. Enter the new label and select RENAME. See Figure 1-28.

Rename Label
Hot Tub
CANCEL RENAME



1.10.3 Load Shed

OnCue Plus shows the status of items connected to the load control module (LCM) or load shed kit. The LCM and load shed kit are available for purchase as optional kits. Non- essential loads connected to the load control relays are disconnected automatically when essential equipment is running to prevent generator set overload. See Figure 1-29.

PIM	LOAD SHED
Air Conditioner	ACTIVE
Heater	ACTIVE
Storm Shutters	ACTIVE
Hall Lights	ACTIVE
Hot Tub	ACTIVE
Garage	ACTIVE

Figure 1-29 Loads, Load Shed

Loads are prioritized from priority 1 to priority 6. Priorities are fixed and cannot be changed using OnCue Plus. Priority 1 is considered the most critical; it will add first and shed last. Priority 6 is considered the least critical; it will add last and shed first. For more information about the load shed options, refer to the instructions provided with the kits.

- TT-1574, Load Control Module for generator sets equipped with the RDC2 or DC2 controller
- TT-1609, Load Shed Kit for RDT and RXT automatic transfer switches

Use OnCue Plus to change the output label to identify the equipment connected to each output. To change the label, select RENAME LOADSHED LABELS at the bottom of the Loads section. See Figure 1-30.

Select the label or the arrow on the far right to bring up the label change dialog. Enter the new label and select RENAME. See Figure 1-28 as an example.

← васк	Edit Labels	
	Air Conditioner	
	Heater	
	Storm Shutters	
	Hall Lights	
	Hot Tub	
	Garage	



1.11 Exercise

The exercise settings are displayed in the Exercise section as shown in Figure 1-31.

Exercise	START EXERCISE	
Loaded Full Speed Exercise Type		
6-15-2020 7:03 AM Next Exercise		
6-1-2020 7:15 AM Last Exercise		
	EDIT DETAILS	

Figure 1-31 Exercise

1.11.1 Changing a Scheduled Exercise

Select EDIT DETAILS to change the exercise settings for the generator. See the generator operation and installation manuals for recommended exercise settings.

Note: The exercise start time and day can only be changed at the controller.

The following settings can be changed:

Exercise Interval

Use the drop-down arrows to select weekly or every other week.

Exercise Run Duration

Choose how long the generator will run during exercise. Use the drop-down arrows to select from 10 to 30 minutes. 20 minutes is the default setting and is typically the minimum recommended duration.

Exercise Mode

Use the drop- down arrows to select the exercise mode.

- Unloaded Full-Speed Exercise. Runs the generator set at full speed without transferring the load from utility. The model VSG generator set runs at rated no-load speed.
- Unloaded Cycle Exercise. Runs the unloaded cycle exercise with complete system diagnostics. See generator set Operation Manual for information about the unloaded cycle exercise and diagnostics.
- Loaded Full- Speed Exercise. Runs the generator set at full speed and transfers the load from utility to the generator. At the end of the exercise cycle, the load is transferred back to utility before the generator stops.

Save Changes

Be sure to select SAVE CHANGES at the bottom of the screen to save your settings.

← васк	Exercise Details			
	Exercise Info			
3	Exercise Start Time	6-01 7:03 AM		
	Last Exercise	6-017:15 AM		
	Next Exercise	6-15 7:03 AM		
	Exercise Interval	Every Other Week -		
	Exercise Duration	12 Minutes -		
	Exercise Mode	Loaded Full Speed -		
	2			
SAVE CHANGES				
. Select SAVE CHAN	arrows to select the desired settings. IGES to save the settings. urn to the Generator System Informat	See the generator set Operation Manual for recommended setting		

Figure 1-32 Edit Exercise Details

1.11.2 Start Exercise

The generator set controller must be in AUTO mode for remote start/stop using OnCue Plus.

To start an exercise, select START EXERCISE in the Exercise section. See Figure 1-31. The dialog box shown in Figure 1-33 opens. Select START to confirm you want to start the generator set or CANCEL to exit and not start an exercise.

Note: Exercise runs started through this command are unscheduled. Starting and stopping the engine using these commands does not change the exercise schedule on the generator set.

It will take several moments for OnCue Plus to send the command to the generator and receive confirmation back that the generator is started. While waiting for confirmation, OnCue Plus will still show START EXERCISE. When OnCue Plus receives confirmation, the status will change to STOP EXERCISE. See Section 1.11.3 for more information on stopping an exercise.

The exercise runs for the duration time (10-30 minutes) and then stops. Use the stop exercise command to stop the generator earlier, if necessary.

The exercise mode and duration can be changed through Edit Exercise Details. See Figure 1-32.





1.11.3 Stop Exercise

After starting the engine using START EXERCISE, select STOP EXERCISE to stop the engine before the programmed stop time, if necessary. See Figure 1-34.



Figure 1-34 Stop Exercise

The dialog box shown in Figure 1-35 opens. Select STOP to confirm you want to stop the generator set or CANCEL to exit and let the exercise finish.

Stop Generator Exercise?		
This may take a fe stop	ew mome	ents to
CA	NCEL	STOP

Figure 1-35 STOP EXERCISE

The generator set controller must be in AUTO mode for remote start/stop using OnCue Plus.

Note: The Stop Exercise command will not stop the generator set if it was started at the controller by pressing RUN or by a remote start command from an ATS. A scheduled exercise set at the controller will stop if a STOP command is sent using OnCue Plus. If communication is lost, the generator will automatically shut down after the exercise period is elapsed.

1.12 Favorite Parameters

Favorite Parameters displays details about specific generator readings and settings. The list of parameters can be different for each unit. See Figure 1-36 for an example.

Favorite Parameters		
6.11.2	6.12.2	
Current Firmware	Latest Firmware	
0 R/min	13.4 V	
Engine Speed	Battery Voltage	
0.0 W	MGM12345	
Generator True Total Power	Generator Serial Number	
0 Psi	NA	
Engine Oil Pressure	Engine Coolant Temperature	
147.2 F	116.6 F	
Lube Oil Temperature	Generator Controller Temperature	
CUSTOMIZE PARAMETERS		

Figure 1-36 Favorite Parameters

If the value of a parameter changes, the parameter will be bold to signal a change to the value.

To customize, select CUSTOMIZE PARAMETERS at the bottom. Select each parameter you want to include. Parameters with a box around them will be displayed. Select SAVE CHANGES at the bottom to update Favorite Parameters. See Figure 1-37.

← Customize Parameters						
	Engine Speed	Engine Coolant Temperature	Current Firmware			
	Engine Oil Pressure	Battery Voltage	Lube Oil Temperature			
	Generator Controller Temperature	Engine Compartment Temperature	Generator True Total Power			
	Generator Serial Number	Latest Firmware	Controller Type			
	Generator Voltage Average Line To Line	Generator Frequency	Genset Model Number Select			
	Generator State	Generator Controller Clock Time	Generator Controller Total Operation Time			
	Engine Total Run Time	Connected Server IP Address	Network Connection Established			
		SAVE CHANGES				

Figure 1-37 Customize Favorite Parameters

1.13 Settings

Settings allows you to change your user information as well as adjust the theme and notifications. To access Settings, select the gear icon in the upper right corner. See Figure 1-38.

=	1
EASHOFF RESIDENCE Standby, Your generative is ready for next power outage Updated Jun 5, 8 58 25 AM	Ø
 Select the gear icon to access Settings 	

Note: Settings are universal, so changes will apply to all generators linked to your account. For example, if you change the notification email address or the events that will cause a notification, this will apply to all generators on the account.

To adjust a setting, select the line to be adjusted. See Figure 1-39.

Figure 1-38 Access Settings

	← номе Settir	ngs			1
	Settin	gs			2
	+	User		Jane Smith $>$	3
	8	Theme		Light >	
	((:-	Notifications			
	More				
	0	About			
		Feedback			
			LOG OUT		
 Select the User line to chang Select the Theme line to chang 	ose Light or [Dark			
3. Select the Notifications line t	to adjust emai	Il notifications			

Figure 1-39 Settings

1.13.1 User Information

Select the User line in Settings to change your information. See Figure 1-39.

Edit the information and then select SAVE CHANGES. See Figure 1-40.

Edit User	
Full Name Jane Smith	
Email Address jane.smith@email.com	
Confirm Email Address jane.smith@email.com	
Address 444 Highland Drive	
city Kohler	
State WI	
Zip Code 53085	
SAVE CHANGES	

Figure 1-40 Edit User Settings

1.13.2 Theme

OnCue Plus allows you to use a Light Theme (as shown in most examples in this document) or a Dark Theme. To adjust, select the Theme line in Settings. See Figure 1-39.

Select the desired theme color. See Figure 1-41.

The	me
Select -	Theme
۲	Light
0	Dark

Figure 1-41 Theme

Figure 1-42 is an example of OnCue Plus with the Dark theme.

≡		Ø
	BASHOFF RESIDENCE Standby, Your generator is ready for next power outlage	Standby
	Updated Jun 5, 10:44:46 AM	
Active A	Jerts Warning: Maintenance Required	
	VIEW EVENTS	
My Deal	ler	
<u>ь</u>	Local Technician Company (333) 333-3333	
	Address N7650 County Road LS	
	Email service@example.com	
	EDIT DEALER	
Power S	Status	

Figure 1-42 Dark Theme Example

1.13.3 Notifications

OnCue Plus can be configured to send email or SMS text messages alerting the recipient of generator set faults, exercise updates, and maintenance reminders.

Email and text messages include:

- Display name
- Generator state
- Description of the event

The events shown in Figure 1-43 will generate an email message.

A separate message is sent for each active warning and shutdown. If multiple warnings clear or shutdowns reset at the same time, you will receive one email indicating all information. See the generator set Operation Manual for a list of warnings and shutdowns.

Event	Notes
Exercise start/exercise ended	Exercise messages are available if a Kohler Model RXT transfer switch is connected to the generator.
Generator running/generator stopped	If a Kohler Model RXT transfer switch is connected to the generator, you will see these messages and the exercise messages when the generator exercises, if both messages are selected.
Generator in auto / not in auto	If the OFF or RUN buttons on the generator controller are pressed, the unit is not in AUTO. Remote start/stop commands will not work and scheduled exercises will not run when the unit is not in AUTO. When AUTO is pressed again, a message is sent to notify you that the generator has returned to AUTO mode.
Utility loss / utility restored	If a Kohler Model RXT transfer switch is connected to the generator, you will see these messages indicating utility power outage and restoration.
Communication loss/restored	Loss of communication has no bearing on the generator functioning as a standby source of power.
Warnings active/cleared	Warning messages are dependent on the generator set. The message will include information about the cause of the warning; for example, low oil pressure. Note: Maintenance reminders are considered warnings. Turn on Warnings active/cleared to receive notifications of maintenance reminders.
Shutdown active/reset	Shutdown messages are dependent on the generator set. The message will include information about the cause of the shutdown; for example, high engine temperature.

Figure 1-43 Power System Events that Can Generate an Email or Text Message

1.13.4 Add or Delete Email Recipients

To set up email notifications, select the Notifications line in Settings. See Figure 1-39.

To add a new recipient, select NEW RECIPIENT. See Figure 1-44.

Note: A recipient does not have to have an OnCue Plus account or have access to the generator through OnCue Plus in order to receive email notifications. However, if the recipient does not have access to the generator through OnCue Plus, they will not be able to follow the links through the notification message that link into OnCue Plus for the generator.

Notifications
No email recipients have been added to your account. You can add one by clicking 'New Recipient'
NEW RECIPIENT

Figure 1-44 New Recipient Notification

Enter the recipient information and select SAVE at the bottom. See Figure 1-45.

Name Jane Smith)	
jane smith@email.com Contrm Email	
SAVE	

Figure 1-45 New Recipient Information

To remove an email address from the list, select the recipient to be removed. See Figure 1-46.

Notifications		
jane.smith@email.com		Edit >
	NEW RECIPIENT	

Figure 1-46 Recipient List in Notifications

At the bottom of the screen, select DELETE. See Figure 1-47 in the next section.

1.13.5 Select Event Notifications

You can customize the email notifications sent to each recipient by selecting the events that will send an email notification for each email address. After adding email recipients, select the recipient name from the Notifications recipient list. See Figure 1-46. For each event listed, move the slider to turn notification ON or OFF for each event. Each recipient can have a different combination of event notifications. Select SAVE after making the selections. See Figure 1-47.

Maintenance Reminders. To receive notifications for maintenance reminders for your generator set, turn ON Warnings active/cleared. See the generator Operation Manual for a list of scheduled maintenance tasks that must be performed at regular intervals.

The default selection will send notifications for all events. Selecting RESTORE DEFAULTS turns on all notifications for the selected recipient.

Selecting DELETE will remove the recipient from the email notification list.



Figure 1-47 Edit Email Recipients to Select Events for Notification or Delete an Address from the List

1.13.6 Text Message Configuration

Text messages can be sent by sending an email to your cell phone.

SMS text messaging to a cellular telephone or other device is accomplished by sending an email to the cellular provider's email- to- SMS system. For example, if the customer is a subscriber of Verizon Wireless with the cellular telephone number 920-555-1212, a text message can be sent to their cell phone by sending an email to 9205551212@vtext.com. Contact your cell service provider for the email address to use for SMS text messaging.

Determine the customer's cellular telephone service provider and verify that their cell phone is equipped to receive SMS messages. Consult the cell phone provider or the provider's website for the email address configurations for text messaging. Make sure that the customer is aware of any text messaging charges the cellular telephone provider may charge for received text messages.



Figure 1-48 Sample Text Message

1.13.7 Push Notifications (Mobile App Only)

The OnCue Plus mobile app includes a Push notification setting for your smart phone or tablet. The default setting will send notifications for all generator events shown in Figure 1-43. You can turn off the push notifications for events in the same manner as email notifications. See Figure 1-49.

See Figure 1-50 for an example of a push notification.



Figure 1-49 Push Notification Settings



Figure 1-50 Push Notification

1.13.8 Viewing Notifications

Notifications can be viewed within the OnCue Plus application. Selecting the three lines in the upper right corner exposes a drop down that includes notifications. If there are new notifications since the last time the notifications screen was viewed, the bell will be red and have a number indicating the amount of new notifications.

Note: Notifications is a system setting and includes notifications from all generators in one list.

See Figure 1-51.

^	Jane Smith Home Notifications
	BASHOFF RESIDENCE Standby, Your generator is ready for next power outage Updated: Jun 5, 12:30:30 PM
Active My De	Warning: Maintenance Required VIEW EVENTS

Figure 1-51 Notifications

Select the bell icon to view all notifications. The list includes notifications from all generators linked to the user account. See Figure 1-52.

≡		
	Q Search Notifications	
	MGM12345 Notice - Activity summary for BASHOFF RESIDENCE	
	3h ago	
	MGM12345	
	Notice - Activity summary for BASHOFF RESIDENCE	
	3h ago	
	MGM12345 Notice - Communication with the OnCue Plus Server has been restored to the generator BASHOFF RESIDENCE, serial number MGM12345.	
	17h ago	
	SGMT207 Notice - Communication with the OnCue Plus Server has been restored to the generator KOHLER GEN, serial number SGMT207.	
	MGM12345 Action Required - The OnCue Plus Server cannot communicate with the generator BASHOFF RESIDENCE. This will not prevent the generator from providing power in case of utility power loss; however, no messages will be sent until communication with the OnCue Plus server is restored.	
	22h ago	

Figure 1-52 Notification List

To clear the list, select the garbage can in the upper right corner and then select Clear. See Figure 1-53.

1	
Q Search Notifications	
MGM12345 Notice - Activity summary for BASHOFF RESIDENCE 3h ago MGM12345 Notice - Activity summary for BASHOFF RESIDENCE 3h ago MGM12345	
Notice - Communication with the OnCue Plus Server has been restored to the generator BASHOFF RESIDENCE, serial number MGM12345	
SGMT207 Notice - Communication with the OnCue Plus Server has been restored to the generator KOHLER ORS, serial number SGMT207. Th ago 2 I112345 Ciear Notifications HOFF Exception	
Clear Clear 22h ago 1. Select garbage can 2. Select Clear	

Figure 1-53 Clear Notifications

1.14 HELP/FAQ

Select HELP/FAQ to find answers to commonly asked questions. See Figure 1-54. If your question is not answered, select MY ISSUE ISN'T LISTED ABOVE on the bottom of the screen to be directed to multiple options for contacting Kohler Co. The Feedback window shown in Figure 1-55 will open.

Select the relevant feedback topic and follow the instructions on the screen.



Figure 1-54 OnCue Plus HELP/FAQ Screen



Figure 1-55 Feedback Window

Notes

2.1 Voice Control Options

Using the OnCue Plus Action on Google or the OnCue Plus skill on Amazon Alexa, you can control your generator(s) using just your voice. Get helpful information like generator status or active alerts or simply ask it to start or stop an exercise.

2.2 Generator Connection

The generator must be connected to the Internet and OnCue Plus.

• Use a network cable to connect the generator controller to the owner's router. See the generator set installation manual for instructions to connect the generator set to the owner's router.

or

• Use the OnCue Plus Wireless kit to connect the generator set to the router. See the installation instructions provided with the wireless kit.

Set up an OnCue plus account. See the OnCue Plus Technical Manual TP- 7007, provided with the generator set or OnCue Plus kit. Contact your local distributor or dealer for assistance, if necessary.

2.3 Getting Started

If you are using any Alexa or Google smart device at your home, you probably already have an account with them. Follow the steps below to link your OnCue Plus account.

If you have not used Alexa or Google assistant before, Download Amazon Alexa or Google Assistant from the Apple App or Google Play store.

For detailed instructions, look for demo videos on how to get started with Google Assistant and Amazon Alexa on our KOHLER Power YouTube channel.

2.3.1 Getting Started with Amazon Alexa

- 1. Open the Amazon Alexa app and sign in with your Amazon account credentials.
- 2. Go to More > Skills & Games.
- 3. Search for "OnCue Plus."
- 4. Tap LAUNCH. You will then be redirected to the OnCue Plus sign-in page.

5. Authorize your OnCue Plus account with Amazon Alexa using your OnCue Plus username and password.

Now your OnCue Plus is linked with your Alexa app and connected devices.

Start talking to your generator(s) anytime, anywhere by saying, "Alexa, ask OnCue Plus."

CONCUE PLUS	CREATE ACCOUNT	ACCOUNT LINKING
Start By Saying English (US) \checkmark "Alexa, ask OnCue Plus to check the status of my generator" "Does my generator have any active alerts?" "Check battery voltage of my generator"	Password Ø	Close this window to return to the skill page.
About Rated Guidance Suggested This skill contains dynamic content More Communicate Pily Device More	SIGN IN -2 DEMO HELP/FAQ FORGOT PASSWORD/USERNAME?	CLOSE
LAUNCH	SIGN IN	Linked

Figure 2-1 Getting Started with Amazon Alexa

2.3.2 Getting Started with Google Assistant

There are two ways to get started with Google Assistant.

Method 1

- 1. Open the Google Assistant app and sign in with your Google credentials.
- 2. Tap the Explore button.
- 3. Search for "OnCue Plus."
- 4. On the OnCue Plus Assistant page, tap LINK.
- 5. You will be redirected to the OnCue Plus log-in page. Authorize your OnCue Plus account with Google by using your OnCue Plus username and password.
- 6. You will see a confirmation message. Tap TRY IT.

Now your OnCue Plus is linked with Google and connected devices.

Start talking to your generator(s) anytime, anywhere by saying, "Hey Google, ask OnCue Plus."

Method 2

- 1. Open the Google Assistant app and sign in with your Google credentials.
- 2. Start by saying, "Hey Google, ask OnCue Plus."
- 3. When you activate for the first time, the voice response will be, "To use OnCue Plus, I need to link your OnCue Plus account to Google. Is that OK?" Say "Yes" or "OK" to proceed to the next step.
- You will be redirected to the OnCue Plus log-in page. Authorize your OnCue Plus account with Google by using your OnCue Plus username and password.

Now your OnCue Plus is linked with Google and connected devices.

Start talking to your generator(s) anytime, anywhere by saying, "Hey Google, ask OnCue Plus."

▲ App Store	▲ App Store	▲ App Store
•: 🐠	🗙 OnCue Plus 🛛 式 🔍	K OnCue Plus 🔲 式 🔍
Hi, how can I help? Here are some things you can ask What's the weather today Open Google News website	OnCue.Plus Assistant	OnCue Plus Assistant
	Concue Plus Kohler Co. LINK Paired with a standby KOHLER® generator, the OnCue® Plus Assistant will allow you to receive the following MORE	Colue Plus Colue Plus TRY IT Paired with a standby KOHLER® generator, the OnCue® Plus Assistant will allow you to receive the following more
	ASK YOUR ASSISTANT Ask OnCue Plus	ASK YOUR ASSISTANT
	DETAILS Home control	DETAILS
		Accounts now linked.
Explore, search for OnCue Plus	LINK	TRY IT

Figure 2-2 Getting Started with Google Assistant, Method 1



Figure 2-3 Getting Started with Google Assistant, Method 2

2.4 Voice Commands

Use this document as a guide to understand how to use voice commands to monitor and control your Kohler standby generator with OnCue Plus. Start by waking up your smart device by saying "Alexa, ask OnCue Plus" or "Hey Google, ask OnCue Plus."

If your generator name has more than one word, pause between the words when speaking to your Google Assistant or Alexa smart devices.

If you have only ONE generator in your account, you can refer to it by its name or say "my generator." For example, "Alexa, ask OnCue Plus to check active alerts for my generator" or "Hey Google, ask OnCue Plus to check the status of my generator."

Sample Voice Commands

- What is the status of my generator?
- List my generators.
- Does my generator have any active alerts?
- What is the battery voltage?
- What is the oil temperature?
- What is the engine temperature?
- When was my last exercise?
- Start an exercise.
- Stop an exercise.
- Change my next exercise details
- Switch generators

2.5 Unlinking your OnCue Plus Voice Assistant Account

If you no longer want to use voice control with OnCue Plus and would like to unlink your OnCue Plus account from your Alexa or Google devices, please follow the steps below:

2.5.1 Unlinking from Amazon Alexa

- 1. Open the Amazon Alexa app.
- 2. Go to More > Skills & Games.
- 3. Search for "OnCue Plus."
- 4. Tap SETTINGS.
- 5. Tap DISABLE SKILL.
- 6. Tap DISABLE to confirm.



Figure 2-4 Unlinking your Account from Amazon Alexa

2.5.2 Unlinking from Google Assistant

- 1. Open the Google Assistant app and tap the Explore button.
- 2. Search for "OnCue Plus."
- 3. Scroll down on the OnCue Plus Action page to find the UNLINK Button. Tap UNLINK.
- 4. A dialog box opens. Tap UNLINK.



Figure 2-5 Unlinking your Account from Google Assistant

The following list contains abbreviations that may appear in this publication.

		5 1141 114	iy appear in this publication
A, amp	ampere	cfm	cubic feet per minute
ABDC	after bottom dead center	CG	center of gravity
AC	alternating current	CID	cubic inch displacement
A/D	analog to digital	CL	centerline
ADC	advanced digital control;	cm	centimeter
adi	analog to digital converter	CMOS	complementary metal oxide
adj.	adjust, adjustment		substrate (semiconductor)
ADV	advertising dimensional drawing	com	communications (port)
Ah	amp-hour	coml Coml/Poo	commercial Commercial/Recreational
AHWT	anticipatory high water	conn.	connection
/	temperature	cont.	continued
AISI	American Iron and Steel	CPVC	chlorinated polyvinyl chloride
	Institute	crit.	critical
ALOP	anticipatory low oil pressure	CSA	Canadian Standards
alt.	alternator	00/1	Association
AI	aluminum	СТ	current transformer
ANSI	American National Standards	Cu	copper
	Institute (formerly American	cUL	Canadian Underwriter's
10	Standards Association, ASA)		Laboratories
AO APDC	anticipatory only Air Pollution Control District	CUL	Canadian Underwriter's
APDC	American Petroleum Institute		Laboratories
		cu. in.	cubic inch
approx. APU	approximate, approximately Auxiliary Power Unit	CW.	clockwise
APU	Air Quality Management District	CWC	city water-cooled
AGINID	as required, as requested	cyl.	cylinder
AN	as supplied, as stated, as	D/A	digital to analog
70	suggested	DAC	digital to analog converter
ASE	American Society of Engineers	dB	decibel
ASME	American Society of	dB(A)	decibel (A weighted)
	Mechanical Engineers	DC	direct current
assy.	assembly	DCR	direct current resistance
ASŤM	American Society for Testing	deg., ° dopt	degree
	Materials	dept. dia.	department diameter
ATDC	after top dead center	DI/EO	dual inlet/end outlet
ATS	automatic transfer switch	DI/LO	Deutsches Institut fur Normung
auto.	automatic		e. V. (also Deutsche Industrie
aux.	auxiliary		Normenausschuss)
avg.	average	DIP	dual inline package
AVR	automatic voltage regulator	DPDT	double-pole, double-throw
AWG	American Wire Gauge	DPST	double-pole, single-throw
AWM	appliance wiring material	DS	disconnect switch
bat.	battery	DVR	digital voltage regulator
BBDC	before bottom dead center	E ² PROM,	EEPROM
BC	battery charger, battery charging		electrically-erasable
BCA	battery charging alternator		programmable read-only
BCI	Battery Council International	E omor	memory
BDC	before dead center	E, emer. ECM	emergency (power source) electronic control module,
BHP	brake horsepower	LOW	engine control module
blk.	black (paint color), block	EDI	electronic data interchange
2	(engine)	EFR	emergency frequency relay
blk. htr.	block heater	e.g.	for example (<i>exempli gratia</i>)
BMEP	brake mean effective pressure	EĞ	electronic governor
bps	bits per second	EGSA	Electrical Generating Systems
br.	brass		Association
BTDC	before top dead center	EIA	Electronic Industries
Btu	British thermal unit		Association
Btu/min.	British thermal units per minute	EI/EO	end inlet/end outlet
С	Celsius, centigrade	EMI	electromagnetic interference
	calorie	emiss.	emission
cal.	culture		
cal. CAN	controller area network	eng.	engine
CAN CARB	controller area network California Air Resources Board	eng. EPA	Environmental Protection
CAN CARB CAT5	controller area network California Air Resources Board Category 5 (network cable)	EPĂ	Environmental Protection Agency
CAN CARB CAT5 CB	controller area network California Air Resources Board Category 5 (network cable) circuit breaker	EPĂ EPS	Environmental Protection Agency emergency power system
CAN CARB CAT5 CB CC	controller area network California Air Resources Board Category 5 (network cable) circuit breaker crank cycle	EPA EPS ER	Environmental Protection Agency emergency power system emergency relay
CAN CARB CAT5 CB CC cc	controller area network California Air Resources Board Category 5 (network cable) circuit breaker crank cycle cubic centimeter	EPĂ EPS	Environmental Protection Agency emergency power system emergency relay engineering special,
CAN CARB CAT5 CB CC cc CCA	controller area network California Air Resources Board Category 5 (network cable) circuit breaker crank cycle cubic centimeter cold cranking amps	EPA EPS ER ES	Environmental Protection Agency emergency power system emergency relay engineering special, engineered special
CAN CARB CAT5 CB CC CC CCA CCA ccw.	controller area network California Air Resources Board Category 5 (network cable) circuit breaker crank cycle cubic centimeter cold cranking amps counterclockwise	EPĂ EPS ER ES ESD	Environmental Protection Agency emergency power system emergency relay engineering special, engineered special electrostatic discharge
CAN CARB CAT5 CB CC cc CCA ccw. CEC	controller area network California Air Resources Board Category 5 (network cable) circuit breaker crank cycle cubic centimeter cold cranking amps counterclockwise Canadian Electrical Code	EPA EPS ER ES	Environmental Protection Agency emergency power system emergency relay engineering special, engineered special electrostatic discharge estimated
CAN CARB CAT5 CB CC CC CCA CCA ccw.	controller area network California Air Resources Board Category 5 (network cable) circuit breaker crank cycle cubic centimeter cold cranking amps counterclockwise	EPA EPS ER ES ESD est.	Environmental Protection Agency emergency power system emergency relay engineering special, engineered special electrostatic discharge

exh.	exhaust
ext.	external
F	
-	Fahrenheit, female
FHM	flat head machine (screw)
fl. oz.	fluid ounce
flex.	flexible
freq.	frequency
FS	full scale
ft.	foot, feet
ft. lb.	foot pounds (torque)
ft./min.	feet per minute
ftp	file transfer protocol
g	gram
-	gauge (meters, wire size)
ga.	
gal.	gallon
gen.	generator
genset	generator set
ĞFI	ground fault interrupter
	•
GND, 🕀	ground
gov.	governor
gph	gallons per hour
	gallons per minute
gpm	
gr.	grade, gross
GRD	equipment ground
gr. wt.	gross weight
	height by width by depth
HC	hex cap
HCHT	high cylinder head temperature
HD	heavy duty
HET	high exhaust temp., high
	engine temp.
hex	hexagon
Hg	
	mercury (element)
HH	hex head
HHC	hex head cap
HP	horsepower
hr.	hour
HS	heat shrink
hsg.	housing
HVAC	heating, ventilation, and air
	conditioning
HWT	high water temperature
Hz	hertz (cycles per second)
IBC	International Building Code
IC	integrated circuit
ID	inside diameter, identification
IEC	International Electrotechnical
	Commission
IEEE	Institute of Electrical and
	Electronics Engineers
IMS	improved motor starting
in.	inch
in. H ₂ O	inches of water
in. Hg	inches of mercury
in. lb.	inch pounds
Inc.	incorporated
ind.	industrial
int.	internal
int./ext.	internal/external
I/O	input/output
IP	internet protocol
ISO	International Organization for
	Standardization
J	joule
JIS	Japanese Industry Standard
k	kilo (1000)
K	kelvin
kA	kiloampere
KB	kilobyte (2 ¹⁰ bytes)
KBus	Kohler communication protocol
kg	kilogram

kg/cm ²	kilograms per square
kana	centimeter
kgm kg/m3	kilogram-meter
kg/m ³	kilograms per cubic meter
kHz	kilohertz
kJ	kilojoule
km	kilometer
kOhm, kΩ	
kPa	kilopascal
kph	kilometers per hour
kV	kilovolt
kVA	kilovolt ampere
kVAR	kilovolt ampere reactive
kW	kilowatt
kWh	kilowatt-hour
kWm	kilowatt mechanical
kWth	kilowatt-thermal
L	liter
LAN	local area network
L×W×H	
lb.	pound, pounds
lbm/ft ³	pounds mass per cubic feet
LCB	line circuit breaker
LCD	liquid crystal display
LED	light emitting diode
Lph	liters per hour
Lpm	liters per minute
LOP	low oil pressure
LP	liquefied petroleum
LPG	liquefied petroleum gas
LS	left side
L _{wa}	sound power level, A weighted
LWL	low water level
LWT	low water temperature
m	meter, milli (1/1000)
М	mega (10 ⁶ when used with SI
2	units), male
m ³	cubic meter
m ³ /hr.	cubic meters per hour
m ³ /min.	cubic meters per minute
mA	milliampere
mA man.	milliampere manual
mA man. max.	milliampere manual maximum
mA man. max. MB	milliampere manual maximum megabyte (2 ²⁰ bytes)
mA man. max. MB MCCB	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker
mA man. max. MB MCCB MCM	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils
mA man. max. MB MCCB MCM meggar	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter
mA man. MB MCCB MCM meggar MHz	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz
mA man. MB MCCB MCM meggar MHz mi.	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile
mA man. MB MCCB MCM meggar MHz mi. mil	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch
mA man. max. MB MCCB MCM meggar MHz mi. mil min.	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute
mA man. max. MB MCCB MCM meggar MHz mi. mil min. misc.	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous
mA man. max. MB MCCB MCM meggar MHz mi. mil min. misc. MJ	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule
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mA man. max. MB MCCB MCM meggar MHz mil min. misc. MJ mJ mm	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. mi. misc. MJ mJ mm mOhm, mΩ	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millimeter
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. mi. misc. MJ mJ mm mOhm, mG MOhm, MS	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millimeter 2milliohm
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. mi. mi. misc. MJ mJ mm mOhm, mΩ MOhm, MS	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millijohm 2megohm metal oxide varistor
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. mi. misc. MJ mm mOhm, mΩ MOhm, MS MOV MPa	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millijoule millijohm 2megohm metal oxide varistor megapascal
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. misc. MJ mJ mm MOhm, MS MOV MPa mpg	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millijoule millijoule millijoule millijoule millijohm 2megohm metal oxide varistor megapascal miles per gallon
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. misc. MJ mJ mJ mOhm, mG MOhm, MS MOV MPa mpg mph	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millimeter 2milliohm 2megohm metal oxide varistor megapascal miles per gallon miles per hour
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. misc. MJ mJ mJ mJ mOhm, mG MOhm, MS MOV MPa mpg mph MS	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millimeter 2milliohm 2megohm metal oxide varistor megapascal miles per gallon miles per hour milliary standard
mA man. max. MB MCCB MCM meggar MHz mi. mil min. misc. MJ mJ mM MOhm, MS MOV MPa mpg mph MS ms	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millimeter 2milliohm 2megohm metal oxide varistor megapascal miles per gallon miles per gallon miles per hour military standard millisecond
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mA man. max. MB MCCB MCM meggar MHz mi. min. misc. MJ mJ mm mOhm, mS MOV MPa mpg mph MS ms m/sec. mtg.	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millipole millimeter millimeter milleneter milleneter milleneter milleneter milleneter milles per gallon miles per hour millisecond meters per second mounting
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. mi. misc. MJ mJ mm mOhm, mG MOV MPa mpg mph MS ms m/sec. mtg. MTU	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millimeter millimeter milleneter milleneter milleneter milleneter milleneter millisper gallon miles per hour milles per hour millispecond meters per second mounting Motoren-und Turbinen-Union
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. mi. misc. MJ mJ mm mOhm, mS MOV MPa mpg mph MS ms m/sec. mtg. MTU MW	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millipole millimeter millimeter milleneter milleneter milleneter milleneter milleneter milles per gallon miles per hour millisecond meters per second mounting
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. misc. MJ mJ mm MOhm, MS MOV MPa mpg mph MS ms m/sec. mtg. MTU MW mW	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millijoule millijoule millimeter 2 megohm metal oxide varistor megapascal miles per gallon miles per hour millisecond meters per second mounting Motoren-und Turbinen-Union megawatt milliwatt
mA man. max. MB MCCB MCM meggar MHz mi. mi. mi. misc. MJ mJ ms. MJ mMOhm, MS MOV MPa mpg mph MS ms mssc. mtg. MTU MW MW mW μF	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millipoule millipoule millimeter 2milliohm 2megohm metal oxide varistor megapascal miles per gallon miles per gallon miles per hour millisecond meters per second mounting Motoren-und Turbinen-Union megawatt milliwatt milliwatt
mA man. max. MB MCCB MCM meggar MHz mi. mil min. misc. MJ mJ mM MOhm, MS MOV MPa mph MS ms m/sec. mtg. MTU MW MW μF N, norm.	milliampere manual maximum megabyte (2 ²⁰ bytes) molded-case circuit breaker one thousand circular mils megohmmeter megahertz mile one one-thousandth of an inch minimum, minute miscellaneous megajoule millijoule millijoule millimeter 20 milliohm 20 megohm metal oxide varistor megapascal miles per gallon miles per gallon millisecond meters per second mounting Motoren-und Turbinen-Union megawatt milliwatt microfarad normal (power source)
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NC	normally closed
NEC	National Electrical Code
NEMA	National Electrical
	Manufacturers Association
NFPA	National Fire Protection
	Association
Nm	newton meter
NO	normally open
no., nos.	number, numbers
NPS	National Pipe, Straight
NPSC	National Pipe, Straight-coupling
NPT	National Standard taper pipe
	thread per general use
NPTF	National Pipe, Taper-Fine
NR	not required, normal relay
ns	nanosecond
OC	overcrank
OD	outside diameter
OEM	original equipment
0	manufacturer
OF	overfrequency
opt.	option, optional
OS	oversize, overspeed
OSHA	Occupational Safety and Health
CONA	Administration
OV	overvoltage
oz.	ounce
р., pp. РС	page, pages
	personal computer printed circuit board
PCB	•
pF	picofarad
PF	power factor
ph., Ø	phase
PHC	Phillips [®] head Crimptite [®]
 .	(screw)
PHH	Phillips® hex head (screw)
PHM	pan head machine (screw)
PLC	programmable logic control
PMG	permanent magnet generator
pot	potentiometer, potential
ppm	parts per million
PROM	programmable read-only
	memory
psi	pounds per square inch
psig	pounds per square inch gauge
pt.	pint
PTC	positive temperature coefficient
PTO	power takeoff
PVC	polyvinyl chloride
qt.	quart, quarts
qty.	quantity
R R	replacement (emergency)
	power source
rad.	radiator, radius
RAM	random access memory
RBUS	RS-485 proprietary
11200	communications
RDO	relay driver output
ref.	reference
rem.	remote
Res/Coml	Residential/Commercial
RFI	radio frequency interference
RH	round head
RHM	round head machine (screw)
rly.	relay
rms	root mean square
rnd.	round
RO	read only
ROM	read only memory
rot.	rotate, rotating
rpm	revolutions per minute
RS	right side
RTDs	Resistance Temperature
	Detectors

RTU	remote terminal unit
RTV	room temperature vulcanization
RW	read/write
SAE	Society of Automotive
(Engineers
scfm	standard cubic feet per minute
SCR	silicon controlled rectifier second
s, sec. Sl	Systeme international d'unites,
01	International System of Units
SI/EO	side in/end out
sil.	silencer
SMTP	simple mail transfer protocol
SN	serial number
SNMP	simple network management
ODDT	protocol
SPDT	single-pole, double-throw
SPST	single-pole, single-throw specification
spec specs	specification(s)
sq.	square
sq. cm	square centimeter
sq. in.	square inch
SMS	short message service
SS	stainless steel
std.	standard
stl.	steel
tach. TB	tachometer
TCP	terminal block transmission control protocol
TD	time delay
TDC	top dead center
TDEC	time delay engine cooldown
TDEN	time delay emergency to
TDEO	normal
TDES TDNE	time delay engine start
IDNE	time delay normal to emergency
TDOE	time delay off to emergency
TDON	time delay off to normal
temp.	temperature
term.	terminal
THD TIF	total harmonic distortion telephone influence factor
tol.	tolerance
turbo.	turbocharger
typ.	typical (same in multiple
	locations)
UF	underfrequency
UHF	ultrahigh frequency user interface
UIF UL	Underwriter's Laboratories, Inc.
UNC	unified coarse thread (was NC)
UNF	unified fine thread (was NF)
univ.	universal
URL	uniform resource locator
	(web address)
US	undersize, underspeed
UV V	ultraviolet, undervoltage volt
VAC	volts alternating current
VAR	voltampere reactive
VDC	volts direct current
VFD	vacuum fluorescent display
VGA	video graphics adapter
VHF	very high frequency
W WCR	watt
wcr w/	withstand and closing rating with
WO	write only
w/o	without
wt.	weight
xfmr	transformer



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