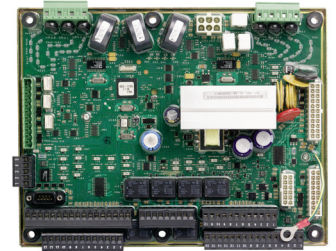


PowerCommand® 3.3 Upgrade Kit

For generators with PCC 3100
or Detector controls



The PowerCommand® control system is a microprocessor-based generator monitoring, metering and control system designed to meet the demands of today's engine-driven generator sets. The integration of all control functions into a single control system provides enhanced reliability and performance compared to conventional generator control systems. The PowerCommand control systems have been designed and tested to withstand the harsh environment typical of generator set installations.

The PowerCommand 3.3 control is compatible with shunt or PMG excitation style. It is suitable for use with reconnectable or non-reconnectable generators, and it can be configured for any frequency, voltage and power connection from 120-600 VAC line-to-line, 601-45,000 VAC with external PT.

Features

- 320x240 pixel LED-backlit LCD display with bar-graph
- Digital engine-speed governing, voltage regulation, synchronizing and load sharing
- AmpSentry™ alternator overcurrent protection
- Analog and digital AC bus metering
- Digital power transfer control for open, closed or soft (ramping) load transfer
- Digital frequency synchronization and voltage matching
- Isochronous load share
- Droop kW and kVAR control
- Real-time clock for fault and event time stamping
- User-programmable exerciser clock
- Modbus RTU communication interface
- Ability to configure the control through the HMI
- Ability to expand I/Os using optional modules
- 12V and 24V DC battery operation
- Suitable for gensets that are designed, manufactured, tested and certified to relevant UL, CSA, NFPA, IEC and CE standards

For specifications and additional information related to PowerCommand 3.3, see S-1570

How to use this specification sheet:

STEP 1: Determine the following information about the generator set to be upgraded:

1. Control type upgrading from (PCC 3100 basic, PCC 3100 paralleling, Detector)
2. Generator engine type (K50, K38, V28, etc.)
3. Alternator size (HC5, HC6, etc.)
4. Generator battery voltage (12V or 24V DC)
5. Generator networking interfaces (Modbus RTU, LonWorks, etc.)

STEP 2: Select parts from the appropriate section:

Section 1: PCC 3100 paralleling control

Section 2: PCC 3100 basic control

Section 3: Detector control

STEP 3: Select one or more of the optional accessory kits from Section 4

STEP 4: Select one or more of the additional PowerCommand generator set kits from Section 5

SECTION 1: Upgrade from PCC 3100 paralleling control

Section 1 provides information regarding the availability of various kits depending on engine type and alternator size. Additional equipment may be required; see **Sections 4 and 5** for details.

Upgrade kits include all required controls, harnesses, mounting hardware, labels and documentation necessary to upgrade a genset with a generator housing-mounted PCC3100 control to the PowerCommand 3.3 control system.

TABLE 1

Description	Engine / alternator type						
	12V B & C*	L10/HC4	855/HC4	855/HC5	K19/HC5	V28/HC5	
Paralleling Control Kit	A040H851						
Description	K19/HC6	V28/HC6	K38/HC6	K38/HC7	K50/HC6	K50/HC7	K50/HC8
Paralleling Control Kit	A040H852						

* Requires 12V Relay Kit (A040B144)

SECTION 2: Upgrade from PCC 3100 basic control

Section 2 provides information regarding the availability of various kits depending on engine type and alternator size. Additional equipment may be required; see **Sections 4 and 5** for details.

TABLE 2

Description	Engine / alternator type						
	12V B & C*	L10/HC4	855/HC4	855/HC5	K19/HC5	V28/HC5	
Paralleling Control Kit	A040H851						
Mounting Rail Kit	0300-5171			0300-4765			
Description	K19/HC6	V28/HC6	K38/HC6	K38/HC7	K50/HC6	K50/HC7	K50/HC8
Paralleling Control Kit	A040H852						
Mounting Rail Kit	0300-4766						

* Requires 12V Relay Kit (A040B144)

NOTE: Instead of the Mounting Rail Kit, the following parts may be ordered, if needed:

TABLE 3

Description	Part Number	Quantity
Terminal jumper	0332-2843-05	1
Terminal block	0332-3125-02	2
Terminal block	0332-3125-04	10
Terminal end plate	0332-3126-01	1
Terminal tag	0332-2842-21	1
Terminal tag	0332-2842-20	1

SECTION 3: Upgrade from Detector/Sentinal control

Section 3 provides information regarding the availability of various kits depending on engine type. Additional equipment may be required. See **Sections 4 and 5** for details

TABLE 4

Description	Engine / alternator type					
	12V B & C*	L10/HC4	855/HC4	855/HC5	K19/HC5	K19/HC6
Paralleling control kit	A040H851	A040H851	A040H851	A040H851	A040H851	A040H851
Control box kit	A040N964	A040N964	A040N964	A040N964	A040N964	A040N964
Mounting rail kit	0300-5171	0300-4765	0300-4765	0300-4765	0300-4765	0300-4766
Customer connection box	0300-5011	0300-4611	0300-4611	0300-4612	0300-4612	0300-4613
Engine harness kit	4B, 0300-5004-01 6B, 0300-5004-02 6C, 0300-5004-03	0300-4622-01	0300-4622-02	0300-4622-02	0300-4622-03	0300-4622-06
Engine accessories kit	4B, 0300-5005 6B, 0300-5005 6C, 0300-5006	0300-4630	0300-4628	0300-4628	0300-4629	0300-4629
Current transformer kit	Select from Section 6A	Select from Section 6				
Optional		Select from Sections 4 and 5				

* Requires 12V Relay Kit (A040B144)

(TABLE 4 continues on next page)

SECTION 3: Upgrade from Detector/Sentinal control (cont)**TABLE 4 continued**

Description	Engine / alternator type					
	V28/HC5			V28/HC6		
Paralleling control kit	A040H851			A040H852		
Mounting rail kit	0338-3200			0338-3202		
Customer connection box	0300-4612			0300-4613		
Engine harness kit	0300-4622-04			0300-4622-05		
Engine accessories kit	0300-4631			0300-4631		
Current transformer kit	Select from Section 6					
Control box kit	A040N964			A040N964		
Optional	Select from Sections 4 and 5					
Description	Engine / alternator type					
	K38/HC6	K38/HC7	K50/HC6	K50/HC6	K50/HC7	K50/HC8
Paralleling control kit	A040H852	A040H852	A040H852	A040H852	A040H852	A040H852
Mounting rail kit	0338-3202	0338-3202	0338-3202	0338-3202	0338-3202	0338-3202
Customer connection box	0300-4613	0300-4614	0300-4613	0300-4613	0300-4614	0300-4614
Engine harness kit	0300-4622-07	0300-4622-07	0300-4622-08	0300-4622-08	0300-4622-08	0300-4622-08
Engine accessories kit	0300-4632	0300-4632	0300-4633	0300-4633	0300-4633	0300-4633
Current transformer kit	Select from Section 6					
Control box kit	A040N964					
Optional	Select from Sections 4 and 5					

SECTION 4: Optional accessory kits

Depending upon the engine and the installation, the following optional kits may be required.

TABLE 5

Description	Application	Kit part number
12V relay kit	Required when applying the upgrade kit to a 12V genset	A040B144
RS485 Network Connection Kit	Required when connecting genset to remote Modbus RTU network	A040U145
Lonworks Connection Kit: FT-10	Required in addition to the Network Connection Kit A040U145 if connecting genset to an existing Lonworks FT-10 network	A040G225 See document 900-0529 for the FT-10 Installation Manual and a list of additional required equipment.
Lonworks Connection Kit: TP-78	Required in addition to the Network Connection Kit A040U145 if connecting genset to an existing Lonworks TP-78 network	A040G225 See document 900-0366 and C577 for the TP-78 Installation Manual and a list of additional required equipment (i.e. Lonworks router 300-4919-01).
HMI LCD Heater Kit	Required for LCD operation below -20°C	A026J556
Remote HMI kit	Additional HMI for remote mounting	A41J589
Aux101 kit	I/O expansion module	A030K633
Annunciator kit	Annunciator kit without enclosure	0300-5929-01
Annunciator kit	Annunciator kit with enclosure	0300-5929-02

SECTION 5: Additional PowerCommand genset accessory kits

Section 5 contains information about PowerCommand genset accessory kits that may be needed depending on the installation requirements. The following kits can be used on any PowerCommand genset with digital paralleling option. Select as needed to meet application needs.

TABLE 6

Description	Kit number 24 VDC	Kit number 12 VDC	Instruction Sheet
RTD sensor	0300-4627	NA	C481
Thermistor Kit- 1 relay	0300-4929-01	NA	C544
Thermistor Kit- 2 relays	0300-4929-02	NA	C544
Run relay	0300-4621	0300-5013	C483
Common alarm relay	0300-4620	0300-5014	C484
Audible alarm	0300-4000	0300-3999	C357
Battery- PCCM	0416-1032-01	0416-1032-01	none
Battery- PCIL	0541-0861	0541-0861	C636

Description	Engine	Kit Number	Instruction sheet
Exhaust gas sensor	L10, 855, K19	0300-5210 (qty 1)	G392
Exhaust gas sensor	V28, K38, QST30, K50	0300-5210 (qty 2)	G392

SECTION 6: PowerCommand current transformer kits**TABLE 7**

Model	Volts (line-to-line)	Kit numbers
DFAA	600	0300-4623-05
DFAA	BR (0-480)	0300-4623-17
DFAB	600	0300-4623-06
DFAB	BR (0-480)	0300-4623-19
DFAC	600	0300-4623-07
DFAC	BR (0-480)	0300-4623-21
DFBF	600	0300-4623-08
DFBF	BR (0-480)	0300-4623-23
DFCB	600	0300-4623-09
DFCB	BR (0-480)	0300-4623-24
DFCC	600	0300-4623-10
DFCC	BR (0-480)	0300-4623-27
DFEB	600	0300-4623-11
DFEB	BR (0-480)	0300-4623-29
DFEC	600	0300-4623-13
DFEC	BR (0-480)	0300-4623-31
DFFB/DFGA	600	0300-4623-15
DFEB/DFGA	BR (0-480)	0300-4623-33
DFGB	600	0300-4623-18
DFGB	BR (0-480)	0300-4623-34
DFGB (6 lead)	600	0300-4623-18
DFGB (6 lead)	BR (0-480)	0300-4623-42
DFJA/DFHA	600	0300-4623-21
DFJA/DFHA	BR (0-480)	0300-4623-38
DFJA/DFHA (6 lead)	600	0300-4623-22
DFJA/DFHA (6 lead)	BR (0-480)	0300-4623-46
DFJB/DFHB	600	0300-4623-23
DFJB/DFHB	BR (0-480)	0300-4623-39
DFJB/DFHB (6 lead)	600	0300-4623-23

(TABLE 7 continues on next page)

SECTION 6: PowerCommand current transformer kits (cont)**TABLE 7 continued**

Model	Volts (line-to-line)	Kit numbers
DFJB/DFHB (6 lead)	BR (0-480)	0300-4623-47
DFJC/DFHC	600	0300-4623-25
DFJC/DFHC	BR (0-480)	0300-4623-41
DFJC/DFHC (6 lead)	600	0300-4623-25
DFJC/DFHC (6 lead)	BR (0-480)	0300-4623-49
DFJD (6 lead)	600	0300-4623-26
DFJD (6 lead)	BR (0-480)	0300-4623-51
DFLB (6 lead)	600	0300-4623-29
DFLB (6 lead)	BR (0-480)	0300-4623-52
DFLC (6 lead)	600	0300-4623-30
DFLC (6 lead)	BR (0-480)	0300-4623-54
DFLD (6 lead)	380	0300-4623-54
DFLE (6 lead)	600	0300-4623-33
DFLE (6 lead)	BR (0-480)	0300-4623-57
DFMB (6 lead)	600	0300-4623-33
DFMB (6 lead)	BR (0-480)	0300-4623-57
DQAA	600	0300-4623-05
DQAA	BR (0-480)	0300-4623-17
DQAB	600	0300-4623-07
DQAB	BR (0-480)	0300-4623-21
DQBA	600	0300-4623-09
DQBA	BR (0-480)	0300-4623-24
DQBB	600	0300-4623-10
DQBB	BR (0-480)	0300-4623-27

SECTION 6A: Sentinel/Detector current transformer kits**TABLE 8**

Model	Volts (line-to-line)	Kit numbers
DGBB	BR (0-480) and 1PH	0300-5012-01
DGBB	600	0300-5012-14
DGBC	BR (0-480) and 1PH	0300-5012-02
DGBC	600	0300-5012-15
DGCA	BR (0-480) and 1PH	0300-5012-03
DGCA	600	0300-5012-12
DGCB	BR (0-480) and 1PH	0300-5012-04
DGCB	600	0300-5012-13
DGCC	BR (0-480) and 1PH	0300-5012-05
DGCC	600	0300-5012-14
DGDA	BR (0-480) and 1PH	0300-5012-06
DGDA	600	0300-5012-15
DGDB	BR (0-480) and 1PH	0300-5012-07
DGDB	600	0300-5012-16
DGEA	BR (0-480) and 1PH	0300-5012-08
DGEA	600	0300-5012-17
DGFA	BR (0-480) and 1PH	0300-5012-09
DGFA	600	0300-5012-18
DGFB	BR (0-480) and 1PH	0300-5012-10
DGFB	600	0300-5012-19
DGFC	BR (0-480) and 1PH	0300-5012-11
DGFC	600	0300-5012-20



Our energy working for you.™
www.cumminspower.com

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA

Phone 763 574 5000
Fax 763 574 5298

Asia Pacific
10 Toh Guan Road #07-01
TT International Tradepark
Singapore 608838

Phone 65 6417 2388
Fax 65 6417 2399

Brazil
Rua Jati, 310
Guarulhos – Sao Paulo
CEP – 07180-140
Phone 55 11 2186 4195
Fax 55 11 2186 4729

**Europe, CIS, Middle East and
Africa**
Manston Park Columbus Ave.
Manston Ramsgate
Kent CT 12 5BF United Kingdom

Phone 44 1843 255000
Fax 44 1843 255902

PCCNet

COMPATIBLE

©2012 Cummins Power Generation All rights reserved. Cummins Power Generation and Cummins are registered trademarks of Cummins Inc. PowerCommand and "Our energy working for you." are trademarks of Cummins Power Generation.

Specifications are subject to change without notice.