



07/19/2013 10:52



1993

CAUTION  
DO NOT TOUCH  
HOT SURFACES  
KEEP OUT

CAUTION  
HOT SURFACES  
KEEP OUT

6066

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**CATERPILLAR®**

LOW OIL PRESSURE

EMERGENCY STOP

HIGH WATER TEMP

ENGINE OVERSPEED

OVERCRANK

SPARE 1

SPARE 2

SPARE 3

FAULT SHUTDOWN

FAULT ALARM

POWER METER AC METER ENGINE METER LAMP TEST ALARM CODES EXIT SERVICE MODE

STARTING AID

OFF RESET

COOLDOWN STOP

AUT AUTO

MAN. START

Hz

V

EMERGENCY STOP

PANEL LIGHTS

**EMCP II - SYSTEM DIAGNOSTIC CODES**

Diagnostic codes are displayed on upper display and consist of three parts:

- Component ID (CID) - tells which component in the system has a fault.
- Failure Mode Identifier (FMI) - describes the type of fault (short circuit etc.)
- Count - tells how many times a logged fault has occurred.

CID COMPONENT	FMI Failure Mode
100 Engine Oil Pressure	3 Short to short, over voltage, or open circuit.
110 Engine Coolant Temperature	4 Short to ground or under voltage
111 Engine Coolant Level	7 Mechanical system (invald shutdown)
108 Battery Voltage	8 Abnormal Frequency
170 Engine Oil Temperature	8 Abnormal Update
190 Engine Speed Sensor	12 Failed Component
248 Cat Data Link (Formerly 260)	
260 Programmable Transducer	
266 Sensor Power Supply	
322 Annunciator Output	
324 Spare Output	
326 Engine Control Switch	
441 Electronic Governor Relay	
442 Control Fault Relay	
443 Charge Terminate Relay	
444 Starter Motor Relay	
445 Fuel Relay	
446 Air Shutoff Relay	
447 Fuel Control Relay	
448 Programmable Spare Relay	
475 Fuel Control Module	
500 Generator Control (GSCC)	
580 Underdrives Electronic Component	
586 Communication Link From ACSM	
858 Close Breaker Output	

**To View Logged Faults:**

- Press the SERVICE MODE REQUEST key to enter Service Mode.
- Press the SELECT key and any logged faults will be displayed for 2 seconds each. The upper display will show the CID, FMI and total occurrence count. The lower display will show the hourmeter reading at the last occurrence.
- To stop scrolling, press the SELECT key.
- The faults can then be manually scrolled through using the SCROLL UP and SCROLL DOWN keys.
- Pressing the SELECT key again will resume auto scrolling.
- Pressing the SCROLL RIGHT key will change the display from the total counts and latest hourmeter to the hourmeter reading at the first occurrence of the fault.
- To exit fault log display back to the option selection, press the EXIT key to back up to the 100% display.
- To completely exit, press EXIT again.

**EMCP II - EMPCC + P SYSTEM - AL CODES AND SPARE FAULT CODES**

All fault codes are shown as "AL 1" through "AL 18" on the upper display. They indicate specific engine fault conditions and protective relaying functions. The SP codes are associated with four spare inputs and are either alarm or shutdown faults.

FAULT CODE	CONDITION
AL 1	HIGH ENGINE COOLANT TEMPERATURE ALARM
AL 2	LOW ENGINE COOLANT TEMPERATURE ALARM
AL 3	LOW ENGINE OIL PRESSURE ALARM
AL 4	FAULT DETECTED BY ENGINE ECU
AL 5	LOW ENGINE COOLANT LEVEL FAULT
AL 6	HIGH ENGINE OIL TEMPERATURE FAULT
AL 7	GENERATOR OVER VOLTAGE FAULT
AL 8	GENERATOR UNDER VOLTAGE FAULT
AL 9	GENERATOR OVER FREQUENCY FAULT
AL 10	GENERATOR UNDER FREQUENCY FAULT
AL 11	GENERATOR REVERSE POWER FAULT
AL 12	GENERATOR PHASE OVER CURRENT FAULT
AL 13	GENERATOR TOTAL OVER CURRENT FAULT
AL 14	PHASE ROTATION NOT MATCHED
AL 15	SGCC CONFIGURATION ERROR
AL 16	FAULT TO SERVO DRIVE
AL 17	GENERATOR OR BUS VOLTAGE FAULT
AL 18	FAULT TO SERVO DRIVE
SP 1	SPARE FAULT INPUT 1
SP 2	SPARE FAULT INPUT 2
SP 3	SPARE FAULT INPUT 3
SP 4	SPARE FAULT INPUT 4

**SERVICE MODE OPERATIONS & ALTERNATE KEYPAD FUNCTIONS**

The Keypad Switch on the back of the Generator Set Control (GSCC) has alternate functions when the GSCC is placed in the Service Mode. These functions are illustrated below:

POWER METER AC METER ENGINE METER LAMP TEST ALARM CODES EXIT SERVICE MODE

SCROLL RIGHT SCROLL UP SCROLL DOWN SELECT

**RELAY STATUS INDICATORS**

Status indicators for the Relay Outputs are provided at the bottom of the Engine Meter display. An active indicator means the relay is energized. The indicators are as follows:

Start Stop	Oil Set	Crane Term.	Starter	Rail	Air Shutoff	Fuel Control	Programmable
Oil Relay <td>Fault Relay <td>Relay <td>Motor Relay <td>Relay <td>Relay <td>Relay <td>Spare Relay </td></td></td></td></td></td></td>	Fault Relay <td>Relay <td>Motor Relay <td>Relay <td>Relay <td>Relay <td>Spare Relay </td></td></td></td></td></td>	Relay <td>Motor Relay <td>Relay <td>Relay <td>Relay <td>Spare Relay </td></td></td></td></td>	Motor Relay <td>Relay <td>Relay <td>Relay <td>Spare Relay </td></td></td></td>	Relay <td>Relay <td>Relay <td>Spare Relay </td></td></td>	Relay <td>Relay <td>Spare Relay </td></td>	Relay <td>Spare Relay </td>	Spare Relay
K1	K2	K3	K4	K5	K6	K7	K8

**SEE OPERATION AND MAINTENANCE MANUAL PRIOR TO STARTING**

**STARTING PROCEDURE**

- CHECK OIL AND COOLANT LEVELS IN ENGINE.
- IF ENGINE DOES NOT START, REPEAT STEPS 1 & 2.
- OPEN THE MAIN CIRCUIT BREAKER.
- CHECK THAT ENGINE READINGS ARE IN OPERATING RANGE.
- IF SFCP (i.e., PUT ENGINE-ARMORED MODE SWITCH TO DESIRED POSITION IF PARALLELING OPTION IS INSTALLED).
- RESET ALL SHUTOFF DEVICES.
- TURN ENGINE CONTROL SWITCH TO START POSITION.
- USE STARTING AIDS AS DIRECTED.
- IF ENGINE READINGS ARE IN OPERATING RANGE.
- ADJUST VOLTAGE AND FREQUENCY.
- CLOSE MAIN CIRCUIT BREAKER - AUTOMATIC IF PARALLELING OPTION IS INSTALLED AND SMS IN AUTO SYNC.
- ADJUST VOLTAGE AND FREQUENCY IF NECESSARY TO COMPENSATE FOR LOAD.

**NOTE: REFER TO THE APPROPRIATE EMCP II - / EMCP II + P SERVICE MANUAL FOR ADDITIONAL INFORMATION.**

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