Component identifiers (CID[1]) and Module Identifier (MID[2]) for Power Train ECM (MID No. 081)	
CID	Component
0041	+8 Volts Sensor Supply
0070	Parking Brake Switch
0149	Ride Control Solenoid #2
0168	Electrical Systems Voltage
0177	Transmission Oil Temperature Sensor
0190	Engine Speed Sensor
0270	Cat Monitor Systems Harness Code
0363	Ride Control Solenoid
0367	Ride Control Switch
0368	Transmission AUTOMAN Switch
0444	Start Relay
0562	Unable to Communicate With Cat Monitor System
0582	Transmission Output Speed Sensor 1
0617	Air Heater Relay
0621	Downshift Switch
0622	Up Shift Switch
0623	Direction Switch
0631	Transmission Clutch Solenoid #1
0632	Transmission Clutch Solenoid #2
0633	Transmission Clutch Solenoid #3
0634	Transmission Clutch Solenoid #4
0635	Transmission Clutch Solenoid #5
0636	Transmission Clutch Solenoid #6
0668	Transmission Shift Lever
0672	Torque Convert Output Speed Sensor
0673	Torque Output Speed Sensor
0674	Transmission Intermediate Speed Sensor 1
0675	Trans a coil that makes Speed Sensor 2
0688	Variable Horsepower Solenoid
0793	Primary Steering Pressure Switch
0794	Secondary Steering Pressure Switch
0795	Secondary Steering Intermediate Relay

[1] The CID is a diagnostic code that indicates which component is faulty.

[2] The MID is a diagnostic code that indicates which electronic control module diagnosed the fault.

Failure Mode Identifiers (FMI)[1]	
FMI No.	Failure Description
0	Data valid but above normal operational range.
1	Data valid but below normal operational range.
2	Data erratic, intermittent, or incorrect.
3	Voltage above normal or shorted high.
4	Voltage below normal or shorted low.
5	Current below normal or open circuit.
6	Current above normal or grounded circuit.
7	Mechanical system not responding properly.
8	Abnormal frequency, pulse width, or period.
9	Abnormal update.
10	Abnormal rate of change.
11	Failure mode not identifiable.
12	Bad device or component.
13	Out of calibration.
14	Parameter failures.
15	Parameter failures.
16	Parameter not available.
17	Module not responding.
18	Sensor supply fault.
19	Condition not met.
20	Parameter failures.

[1]The FMI is a diagnostic code that indicates what type of failure has occurred.

Component identifiers (CID[1]) and Module Identifier (MID[2]) for Caterpillar Monitoring System (MID No. 030)	
CID	Component
0084	Ground Speed Sensor
0096	Fuel LEvel Sensor
0100	Engine Oil Pressure Sensor
0110	Engine Coolant Temperature Sensor
0177	Torque Converter Oil Temperature Sensor
0248	Data Link
0263	+8 Volts Sensor Supply
0271	Action Alarm
0324	Action Lamp
0523	Engine Speed Sensor
0600	Hydraulic Oil Temperature Sensor
0601	Brake Air Pressure Sensor
0819	Display Data Link
0821	9 Volt Display Power Supply
0830	Brake Oil Temperature Sensor

[1] The CID is a diagnostic code that indicates which component is faulty.

[2] The MID is a diagnostic code that indicates which electronic control module diagnosed the fault.

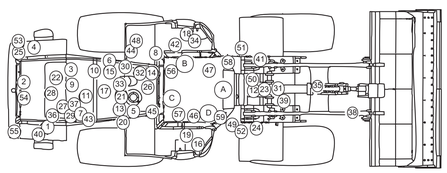
Payload Control Fault Codes	
Code	Fault
16800	Battery voltage too high
16801	Battery voltage too low
25413	PCS not calibrated
35001	Position sensor out of range
35002	Loss of position sensor signal
36401	Pressure sensor out of range
36402	Loss of pressure sensor signal
76901	Pressure sensor out of range
76902	Loss of pressure sensor signal
81704	Backup battery error
81708	Real time clock not running
82002	Loss of Keypad Data Link

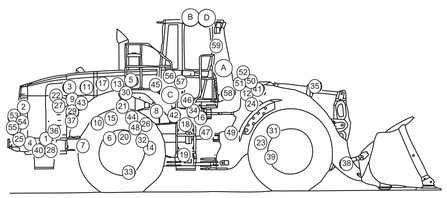
Wire Description					
Wire Number	Wire Color	Description	Wire Number	Wire Color	Description
		Power Distribution Circuits	A524	BR	Temp Potentiometer Pos 2
101	RD	Bat (+) (Not Application Specific)	A525	GN	Temp Potentiometer Pos 3
102	RD	Ht Lmp	A528	PK	Electronic Water Valve Actuator
105	RD	Key Start Sw	A527	BU	Electronic Water Valve Actuator
108	BU	Aux Ckt	A541	PU	Flasher To Indicator Lights
109	RD	Alt Output (+) Term.	A550	BU	Blend Door Motor (A)
112	PU	Main Power Rly Output	A593	OR	Blend Door Motor (B)
113	OR	Opr Mon Panel VMS B+ Switched	A594	WH	Blend Door Position Feedback (+)
114	GN	Warning Horn (Forward)	A595	GN	Blend Door Position Feedback (Signal)
118	GY	Aux Ckt	A596	YL	Blend Door Position Feedback (-)
120	YL	Aux Ckt	C529	GY	Lift Press Sensor (WAS B413)
122	BU	Aux Ckt	C530	BU	Lift Position Sensor (WAS B412)
123	WH	Aux Ckt			**Lighting Circuits**
124	GN	A/C	603	PK	Rotary Beacon
126	PK	Xmsn Ctrl	604	OR	Stop Lamp
127	OR	Aux Ckt	605	YL	Turn Lamp - Left
128	PK	Aux Ckt	605	YL	Turn Lamp - Left
129	BU	Aux Ckt	606	GY	Turn Lamp - Right
130	GN	Aux Ckt	608	GN	Flood Lamp - Rear
133	OR	Aux Ckt	610	OR	Head Lamp Basic
134	YL	Aux Ckt	611	PU	Head Lamp Hi
135	BU	Aux Ckt	612	GY	Backup Lamp
136	GN	Sec Ster	614	PU	Park/Tail/Dash/Lamp
138	GN	Auto Lube Pump To Payload Mon	615	YL	Cab Flood Lamp/Rops
144	GN	Aux Ckt	617	BR	Tail/Position Lamp - Left (Road Pkg)/Width
146	GY	Aux Ckt	619	BN	Head Lamp Lo
158	BR	Aux Ckt	633	BU	Attach Lighting Ckt
167	OR	Aux Ckt	646	OR	Light SW To Front Flood Relay
175	PK	Aux Ckt	647	OR	Light SW To Rear Flood Relay
177	OR	Main Brkr	651	GN	Tachometer Lamp - Smart EMS
188	WH	Aux Ckt	662	YL	Speedometer Lamp - Smart EMS
		Ground Circuits	663	GY	Gauge Lamps - Smart EMS
200	BK	Main Chassis	691	GY	Warning Lights To Blkr
201	BK	Operator Monitor Return	692	YL	Flasher Bkr To Flasher
202	BK	XMSN Ctrl			**Control Circuits**
250	BK	Payload Mon - Customer Gnd	709	OR	Sensor Power Supply
251	BK	Payload Mon - System Gnd	720	PU	XMSN Brake SW
270	BK	CMS Ident Code 0	727	GN	Sec Ster Motor Relay
271	BK	CMS Ident Code 1	728	BU	Sec Ster Cont SW
272	BK	CMS Ident Code 2	751	GN	XMSN Shift Sol No. 1 Or 3
273	BK	CMS Ident Code 3	752	YL	XMSN Shift Sol No. 2
274	BK	CMS Ident Code 4	754	BU	XMSN Shift Sol No. 3 Or 1
275	BK	CMS Ident Code 5	755	OR	XMSN Shift Sol No. 4 Or 5
290	BK	CMS Service	761	GY	Lift Kickout Sol SW
299	BK	CMS Clear	762	YL	Bucket Positioner Sol SW
A219	BK	ETAC Ctrl Gnd	795	YL	Dual Hp Sol
A273	BK	MAC-14 Trans Ctrl B-	E701	PK	Auto Ride Cntl SW
		Basic Machine Circuits	E702	OR	Auto Ride Cntl SW
301	BU	Starter No. 1 Sol	E707	GN	VMIS Display +V
304	WH	Starter Relay No. 1 Output	E708	PK	VMIS Display Clock
306	GN	Starter Relay Coil	E735	PU	Smart Ems Tack/Serv Mr/Odometer Select
307	OR	Key Start SW	F781	BR	Downshift SW (N.O.)
308	YL	Main Power Relay Coil	F784	YL	Downshift SW (N.C.)
310	PU	Start Aid SW To Start Aid Sol	F793	OR	Air Inlet Heater Relay
311	WH	Start Aid Sol To Temp SW	G728	YL	SW To SW (Generic)
321	BR	Backup Alarm Lamp Travel Alarm	G750	BU	XMSN Cont Fwd SW To Gnd (Was D728)
322	GY	Warning Horn (Forward)	G755	GY	XMSN Cont Rev SW To Gnd (Was D729)
326	PU	Key Start SW "C" Term.	G760	WH	XMSN Cont Speed 2 SW To Gnd (Was D731)
334	BU	Start Aid Sol #2	G761	YL	XMSN Cont Speed 3 SW To Gnd (Was D732)
373	GN	Start Aid Switch To Timer	G762	BR	XMSN Cont Speed 4 SW To Gnd (Was D733)
397	OR	Hood Raise Motor	G763	PU	XMSN Cont Neut SW To Gnd (Was D734)
398	BU	Hood Raise Motor	G764	PK	XMSN Cont Pk Blk Lever SW To Gnd (Was D735)
A300	GN	Hood Raise Relay Coil	G766	GN	Impl Cont SW To Gnd N.O. (Was D743)
A301	WH	Hood Raise Relay Coil	G767	WH	Impl Cont SW To Gnd N.C. (Was D744)
		Monitoring Circuits	G768	GN	XMSN Cont Speed 1 SW To Gnd (Was D730)
403	GN	Alternator (R) Term.	G785	OR	Injector Diode To Injector 14
405	GY	Opr Mon Oil Press. (Low Setting)	H713	PK	Impl Cont Lift Proportional Sol (Was D713)
410	WH	Opr Mon Action Alarm	H714	OR	Impl Cont Lower Proportional Sol (Was D714)
411	PK	Opr Mon Master	H716	WH	Impl Cont Sol Return (Was D716)
416	OR	Sec Ster SW	H717	BR	Impl Cont Pilot Press Sol (Was D717)
417	GY	Primary Ster SW	818	BR	Serial Data (Transmit)
419	YL	Opr Mon Parking Brake	819	GY	Serial Data (Receive)
432	PK	Opr Mon Brake Press. (Oil)	900	PU	XMSN Shift Sol No. 5 or 4
441	OR	Eng Coolant Temp Gauge	901	WH	XMSN Shift Sol No. 6
442	GY	Hyd System Temp Gauge	910	YL	XMSN Neutralizer Override Indicator
443	YL	Power Train Temp Gauge	944	OR	Data Link + (CAT)
447	PK	Fuel Level Gauge	945	BR	Data Link - (CAT)
450	YL	Tach Sender (+)	961	BR	Selector SW
453	PK	Sec Ster Action Lamp	964	BU	Fork Position Select
484	YL	Primary Ster Lamp	973	BR	CST Autoshift- Auto/Manual SW 2
496	WH	Opr Mon Panel Hyd Oil Level	975	WH	CST Autoshift- Sol Return
499	GY	Opr Mon Implement Oil Filter	976	OR	Rde Cont Solenoid 1
C413	YL	VMIS Display Data	977	YL	CST Autoshift- Auto/Manual SW 1
C414	BU	VMIS Display Load	E900	WH	ECPC Trans Output SPD +
E416	PU	PMS Lift Cyl Press Sensor (Was B413)	E901	GN	ECPC Trans Output SPD -
G485	BU	Opr Mon Front Brake Temperature	E902	PU	ECPC Trans Intermediate SPD +
G486	GN	Opr Mon Rear Brake Temperature	E903	YL	ECPC Trans Intermediate SPD -
		Accessory Circuits	E904	BR	ECPC Trans Intermediate SPD Q+
500	BR	Wiper - Front (Park)	E905	BU	ECPC Trans Intermediate SPD Q-
501	GN	Wiper - Front (Low)	E906	OR	ECPC Trans Output SPD Q+
502	OR	Wiper - Front (Hi)	E907	GY	ECPC Trans Output SPD Q-
503	BR	Wiper - Rear (Park)	E908	BR	ECPC Trans Input SPD +
504	YL	Wiper - Rear (Low)	E909	WH	ECPC Trans Input SPD -
505	BU	Wiper - Rear (Hi)	E919	YL	AUX Lower Proportional Sol
506	PU	Washer - Front	E920	BR	AUX Lift Proportional Sol
507	WH	Washer - Rear	E922	GN	Dump Proportional Solenoid
508	PU	Radio Speaker - Left	E923	PK	ETAC Front Left Wheel Proportional Solenoid
509	WH	Radio Speaker - Left (Common)	E924	YL	ETAC Front Right Wheel Proportional Solenoid
511	BR	Radio Speaker - Right	E925	OR	ETAC Rear Left Wheel Proportional Solenoid
512	GN	Radio Speaker - Right (Common)	E926	BU	ETAC Rear Right Wheel Proportional Solenoid
513	OR	A/C Compressor/Refrigerant Pressure SW	E927	GN	ETAC Test Mode SW (N/C)
515	GY	Blower Motor (Hi)	E928	WH	ETAC Test Mode SW (N/O)
516	GN	Blower Motor (Medium)	E930	BU	ETAC Front Axle Pilot Solenoid
517	BU	Blower Motor (Low)	E932	PK	ETAC Front Left Wheel Speed Sensor
518	OR	Hazard Flasher To SW	E933	YL	ETAC Front Right Wheel Speed Sensor
521	YL	A/C SW To Refrigerant SW	E936	WH	ETAC Solenoid Return
522	WH	A/C Clutch To Thermostat SW	E955	OR	WLPMS PHII Keypad Data
537	GN	Turn Signal SW To Flasher	G939	PK	MAC14 Switch Return
538	BR	Hazard Indicator	G954	GN	Dual Low Idle Sol
539	BU	Turn Signal Indicator Basic/Right	K933	GN	Stick 2 Bypass Sol
540	WH	Turn Signal Indicator Left	K937	PK	ECPC Trans Oil Temp Sensor (Was D968)
A513	PK	DC/DC Converter Memory Output	N939	GN	Rde Control Solenoid 2
A523	PU	Temp Potentiometer Pos 1	P910	BR	Secondary Steering Test Sw Input

Related Electrical Service Manuals	
Title	Form Number
Alternator: 107-7977	SENR4757
Caterpillar Monitoring System	SENR1394
Electric Starting Motor: 106-8558 Consist: 106-8557 Consist: 106-8559	 SENR3559 SENR3581
Payload Control System	SENR6614
Power Train ECM	SENR1380

Component Location							
Component	Schematic Location	Part No.	Machine Location	Component	Schematic Location	Part No.	Machine Location
Actuator - Blend Door	H-11	126-5611	56	Sensor - Tran Intermediate Speed (1)	B-13	3E-8848	26
Actuator - Hood As.	A-14	161-4002	1	Sensor - Tran Intermediate Speed (2)	B-13	3E-8848	26
Actuator - Water Valve	H-11	126-5610	56	Sensor - Tran Output Speed 1	C-13	3E-8848	26
Alarm - Action	E-10	3E-6328	C	Sensor - Tran Output Speed 2	B-13	3E-8848	26
Alarm - Backup	C-15	123-6449	2	Sensor - Trans Oil Temp	B-13	100-3055	26
Alternator	D-15	107-7977	3	Solenoid - 4th Function (1)	E-1	152-8346	31
Batteries	F-15	115-2422	4	Solenoid - 4th Function (2)	D-1	152-8346	31
Breaker - Alt	A-15	95-4693	5	Solenoid - A/C Clutch	B-15	106-5122	27
Breaker - Hood	A-14	9H-1958	5	Solenoid - Axle Oil Cooler Clutch Assy.	C-14	152-5409	28
Breaker - Main	A-15	95-4693	5	Solenoid - Shutdown	C-15	155-4652	29
Breaker - Running Lamp	A-14	3T-2662	5	Solenoid - Start Aid	F-14	3E-6332	30
Breakers - 15A	D-11	6T-3643	C	Solenoid - Dual HP	B-15	129-7707	27
Control - Cat Monitoring System	E-5	166-7237	A	Solenoids - Prop Valve	C-13	159-0932	26
Control - Power Train ECM	I-10	142-3363	57	Solenoids - Pilot Valve Gp	F-9	152-6480	46
Control - Transmission Shift Lever	G-5	139-4702	A	Solenoid - Ride Control	D-1	3E-8574	31
Control - Water Valve/Blend Door	G-11	126-6010	A	Solenoid - Ride Control	G-1	3E-8574	31
Control - WLPCS ECM	C-4	112-1572	59	Stud - Terminal	D-11	9G-8451	C
Converter - Voltage	H-5	119-1733	B	Suppressor - ARC	B-2	106-8704	32
Dimmer - Control	E-11	103-5526	C	Suppressor - ARC A/C	B-15	106-8704	27
Fuses	A-14	3K-8782	5	Suppressors - ARC	E-6	106-8704	A
Fuses - 10A	D-11	3K-8782	C	Switch - 4th Function Implement	F-7	116-4509	46
Fuses - 15A	D-11	8M-8948	C	Switch - A/C Refrigerant	B-15	114-5333	27
Gauge - Quad	E-4	100-5895	A	Switch - AIH	G-5	112-6169	A
Ground - Cab	A-8	----	D	Switch - Auto Ride Control	B-5	103-6333	D
Ground - Cab	F-9	----	57	Switch - Auto/Manual Gear Selector	B-6	147-1402	D
Ground - Cab	F-10	----	57	Switch - Axle Oil Cooler Temp	C-14	155-8998	33
Ground - Cab	H-8	----	57	Switch - Beacon	B-9	9X-9839	D
Ground - Cab	H-10	----	57	Switch - Blower	B-9	3E-7156	D
Ground - Left Frame Boss	E-14	----	6	Switch - Brake Oil Pressure	H-2	3E-7693	34
Ground - Right Rear Frame	A-15	----	7	Switch - Bucket Positioner	F-1	116-2025	35
Ground - Steer Column	E-5	----	A	Switch - Bucket Positioner	I-1	116-2025	35
Ground - Strap Frame to Cab	G-12	8X-5804	8	Switch - Bucket/Fork Select	G-7	135-9968	B
Ground - To Engine	D-15	----	9	Switch - Dimmer	B-3	2H-1855	58
Ground - To Engine Block	D-14	----	10	Switch - Disconnect	B-15	7N-0718	36
Ground - To Engine Cyl Head	D-14	----	11	Switch - Down Shift	F-8	158-5626	46
Heater - Air Inlet	D-14	107-9652	11	Switch - Engine Oil	C-15	3E-6455	37
Horn	H-1	71-0970	12	Switch - Fork Positioner	F-1	116-2025	38
Horn	I-1	71-0970	12	Switch - Forward Horn	G-4	2T-3360	A
Horn	I-3	4Y-7882	12	Switch - Front Axle Temp	G-1	155-8999	39
Horns - Forward	E-1	77-0970	12	Switch - Front Axle Temp	E-1	155-8999	39
Horns - Forward	I-2	77-0970	12	Switch - Front Intermittent Wiper	B-4	110-7886	D
Keypad - WLPCS	B-4	129-0419	59	Switch - Grapple Function	F-7	167-6915	46
Motor - Actuator	A-14	117-1557	1	Switch - Hazard lamp	G-9	112-6167	B
Motor - Blower	G-11	3E-6392	56	Switch - Hood Actuator	A-14	146-0204	40
Motor - Front Wiper	D-5	147-7973	A	Switch - Hyd Filter Bypass	A-3	7X-8549	16
Motor - Priming Pump	B-14	151-6342	13	Switch - Hyd Oil Level	A-2	123-2993	19
Motor - Rear Wiper	F-10	137-8709	C	Switch - Impl Detent Override	F-9	7X-1886	46
Motor - Sec Steer Pump	B-2	154-2563	19	Switch - Key Start	D-5	9G-7641	A
Motor - Starter	D-14	106-8558	15	Switch - Kickout VMS On/Off	C-8	118-0638	B
Motors - Washers	A-3	7T-8891	16	Switch - Lift Position	F-1	145-8670	41
Relay - Alt	B-14	3E-0075	17	Switch - Lift Position	I-1	145-8670	41
Relay - Backup Lamp	I-15	4Y-6135	25	Switch - Neutralizer	B-3	105-6118	C
Relay - Front Flood	E-10	3E-5239	C	Switch - Park Brake	H-2	3E-6452	A
Relay - Hood Raise Lower	A-13	149-2612	5	Switch - Primary Steer Pressure	B-2	3E-6450	14
Relay - Main	B-15	167-138	5	Switch - Rear Axle Temp	C-14	155-8999	33
Relay - Rear Flood	E-11	3E-5239	C	Switch - Rear Wiper	C-9	112-6174	D
Relay - Sec Steer	B-2	139-2599	14	Switch - Run/Work/Panel/Tail	C-8	108-3320	D
Relay - Sec Steering Intermediate	F-11	3E-5239	C	Switch - Sec Steer Test	H-8	143-3001	B
Relay - Start Switch	B-14	125-1302	5	Switch - Secondary Steer Pressure	B-2	3E-6450	14
Relay - Turn Signals	F-11	3E-5239	C	Switch - Selector AC/Heat	B-9	3E-7155	D
Resistor	G-11	9G-1950	56	Switch - Service Brake Pedal As.	B-3	110-8029	58
Sender - Fuel Level	H-2	152-7248	18	Switch - Start Aid	G-5	3E-7176	A
Sender - Hyd Temp	A-3	4W-9972	19	Switch - Start Aid Coolant	D-15	3E-6449	22
Sender - Torque Converter Oil Temp	B-14	4W-9972	20	Switch - Stop Lamp	B-3	105-6117	C
Sensor - Coolant Temp	D-15	131-427	22	Switch - Tach/Speedo/Serv Meter	G-5	112-6171	A
Sensor - Engine Speed	B-14	6V-2455	21	Switch - Temp Selector	B-9	127-4540	D
Sensor - Lift Cyl Head End	D-1	124-4672	23	Switch - Thermostat	G-11	3E-5464	56
Sensor - Lift Cyl Head End Press	G-1	124-4672	23	Switch - Tran Neutralizer Override	B-5	112-6156	D
Sensor - Lift Position	F-1	121-0284	24	Switch - Turn Signal	F-6	134-9569	A
Sensor - Lift Position	I-1	121-0284	24	Tach/Speedometer	E-4	100-5888	A
Sensor - Input Speed	B-13	3E-8848	26	Terminal Block	A-14	121-1023	5

Machine locations are repeated for components located close together.
A = Located in the cab.
B = Located in the left hand console.
C = Located in the right hand console.
D = Located on or near relay panel.





Machine Harness Connector and Component Locations

Connector Location		
Connector Number	Schematic Location	Machine Location
CONN 1	A-15	53
CONN 2	B-15	43
CONN 3	C-15	54
CONN 4	F-15	55
CONN 5	D-14	44
CONN 6	A-13	5
CONN 7 Monitor Harness Code Plug	H-9, 13	C
CONN 8	F-12	45
CONN 9	E-12	45
CONN 10	D-12	45
CONN 11	C-12	45
CONN 12 Fuse Panel	C-11	C
CONN 13 HVAC Unit	G-10	56
CONN 14 Service Tool Conn.	F-10	C
CONN 15	G-8	B
CONN 16	I-5, 6	51
CONN 17	F-8	A
CONN 18 Xmsn Shift	G-4	A
CONN 19	A-4	D
CONN 20	A-3	46
CONN 21 Left Brake Pedal	B-3	45
CONN 22	C-3	58
CONN 23	E-3	A
CONN 24	E-3	A
CONN 25	I-2, 3	51
CONN 26	I-2, 3	52
CONN 27	G-2	47
CONN 28	F-2	47
CONN 29	C-2	48
CONN 30	E-1	49
CONN 31	E-1	49
CONN 32	F-1	50
CONN 33	G-1	49
CONN 34	G-1	49
CONN 35	I-1	50
CONN 36 Service Mode Plug	H-9	C
CONN 37 Customer Data Conn.	C-4	C

The connectors shown in this chart are for harness to harness connectors. Connectors that join a harness to a component are generally located at or near the component. See the Component Location Chart.

Machine Codes	
Sales Model	Machine Code
950G	7, 13, 15, 38
962G	14, 16

Monitoring System Mode	
Mode of Operation	Mode Number
Normal	0
Harness Code	1
Parameter Display	2
Service	3
Units	4
Calibration	5, 6, 7

CATERPILLAR®

SENR1393-02
December 2002

Schematic

950G Wheel Loader and 962G Wheel Loader and IT62G Integrated Toolcarrier Electrical System

950G:
3JW1-2153
5FW1-1999
8JW1-406
5MW1-1077

962G:
4PW1-503
7BW1-799
6EW1-414
6HW1-623

IT62G:
AKP1-512
6PS1-UP

Machines Equipped with Pilot Hydraulics and Conventional Steering

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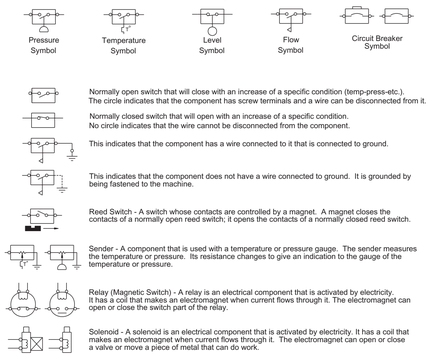
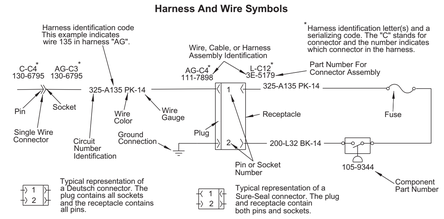
Electrical Schematic Symbols And Definitions



Harness And Wire Symbols



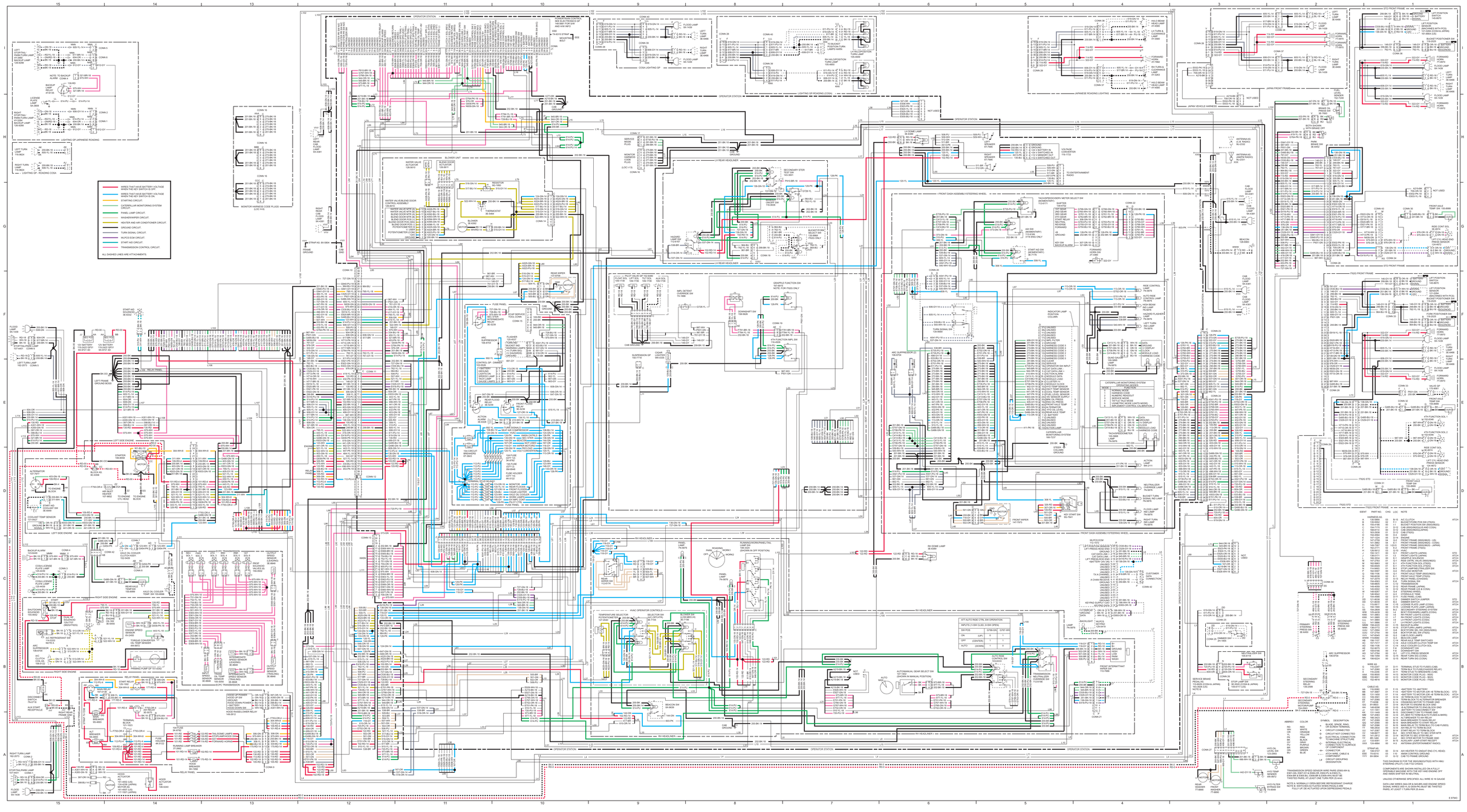
Resistor, Sender and Solenoid Specifications		
Part No.	Component Description	Resistance (Ohms)[1]
4W-9972	Sender: Hydraulic Oil Temperature	54.0° C (130° F) - 569 to 716 110.0° C (230° F) - 72 to 82
3E-6332	Solenoid: Valve - Start Aid	6.0
3E-8574	Solenoid: Valve - Ride Control	34.3 ± 1.7
8C-3663	Solenoid: Engine Shutdown	1.55 ± 0.15 10.3 ± 1.03
106-5122	Solenoid: A/C Clutch	17.6 ± 0.6
121-4298	Solenoid: Clutch Modulating Valves	7.75 ± 1.0
129-7707	Solenoid: Dual HP	31.1 ± 2.4
152-5409	Solenoid: Axle Oil Cooler	9.4 ± 5
9G-1950	Resistor: A/C, Heater Blower Motor	Overall 2.0 ± .1 Tap 1.0 ± .05

[1] At room temperature.

Off Machine Switch Specification				
Part No.	Function	Actuate	Deactuate	Contact Position
3E-6449	Start Aid Coolant Temperature	38 ± 3° C (100 ± 5° F)	27° C Min. (80.6° F)	Normally Closed
3E-6450	Primary Steering Oil Pressure Secondary Steering Oil Pressure	1200 kPa MAX (175 psi MAX)	700 ± 100 kPa (100 ± 15 psi)	A-C, Normally Closed A-B, Normally Open
3E-6452	Park Brake Oil Pressure	8270 kPa MAX (1200 psi MAX)	6890 ± 345 kPa (1000 ± 50psi)	A-C, Normally Closed A-B, Normally Open
3E-7693	Service Brake Oil Pressure	10700 kPa MAX (1500 psi MAX)	8960 ± 345 kPa (1300 ± 50 psi)	A-B, Normally Open A-C, Normally Closed
114-5333	Refrigerant Pressure (AC)	275 to 1750 kpa[1] (40 to 255 psi)	-- --	Normally Open [2]
123-2993	Hydraulic Oil Level	21.0 ± 3.0° C (69.8 ± 5.4° F)	13.0° C (55.4° F)	Normally Closed
155-8998	Axle Oil Cooler Temperature	65.0° C ± 3.0 (149.0° F)	58° C (136.4° F) Min.	Normally Closed
155-8999	Rear Axle Temperature Front Axle Temperature	125.0° C ± 3.0 (257.0° F)	117° C Min. (242.6° F) Min.	Normally Closed

[1] A hysteresis band exists: with increasing pressure the closed condition can be maintained up to 2800 kpa (405 psi), with decreasing pressure theclosed condition can be maintained down to 170 kpa (25 psi).

[2] Contact position at the contacts of the harness connector.


WIRES THAT HAVE BATTERY VOLTAGE WHEN THE KEY SWITCH IS OFF
WIRES THAT HAVE BATTERY VOLTAGE WHEN THE KEY SWITCH IS ON.
STARTING CIRCUIT.
CATERPILLAR MONITORING SYSTEM CIRCUIT.
FIXED LAMP CIRCUIT.
WASHER/WIPER CIRCUIT.
HEATER AND AIR CONDITIONER CIRCUIT.
GROUND CIRCUIT.
TURN SIGNAL CIRCUIT.
BLIPS EVR CIRCUIT.
START AID CIRCUIT.
TRANSMISSION CONTROL CIRCUIT.
ALL DASHED LINES ARE ATTACHMENTS.
OPERATOR STATION
LIGHTING OP-JAPANESE READING
LIGHTING OP-READING COSA
LIGHTING OP-READING
JAPANESE READING LIGHTING
JAPAN VEHICLE HARNESS
JAPAN FRONT FRAME
STD FRONT FRAME
PSSS FRONT FRAME
FRONT DASH ASSEMBLY/STEERING WHEEL
BLOWER UNIT
LH REAR HEADLINER
RH HEADLINER
HVAC OPERATOR CONTROLS
LEFT SIDE ENGINE
RIGHT SIDE ENGINE
FUSE RELAY PANEL
RELAY PANEL
CATERPILLAR MONITORING SYSTEM
ENGINE SPEED SENSOR
ECPC TRANSMISSION
MONITOR HARNESS CODE PLUGS (CDE PIN)
CAB GND
FRAME GROUND
LEFT FRAME GROUND BOSS
ALL WIRES ARE 14 GAUGE UNLESS OTHERWISE SPECIFIED.
DATA LINK WIRES (544-DR & 545-BR) AND ENGINE SPEED SIGNAL WIRES (487-YL & 488-PU) MUST BE TWISTED PAIRS, AT LEAST 1 TURN PER 25 mm.
TRANSMISSION SPEED SENSOR WIRE PAIRS (5363-WH & 5361-GN, 5367-GY & 5364-OR, 5362-PU & 5365-YL) MUST BE TWISTED PAIRS, AT LEAST ONE TURN PER 25 mm.
NOTE A NORMALLY OPEN BEFORE REFRIGERANT CHARGE NOTE B SWITCH IS ACTUATED WHEN PEDALS ARE FULLY UP, OR ACTUATED UPON DEPRESSING PEDALS
E 5760