SEN06598-03

# Shop Manual

HYDRAULIC
EXCAVATOR

## HB365LC-3

SERIAL NUMBERS 5001 and up

## Hybrid

KOMATSU®

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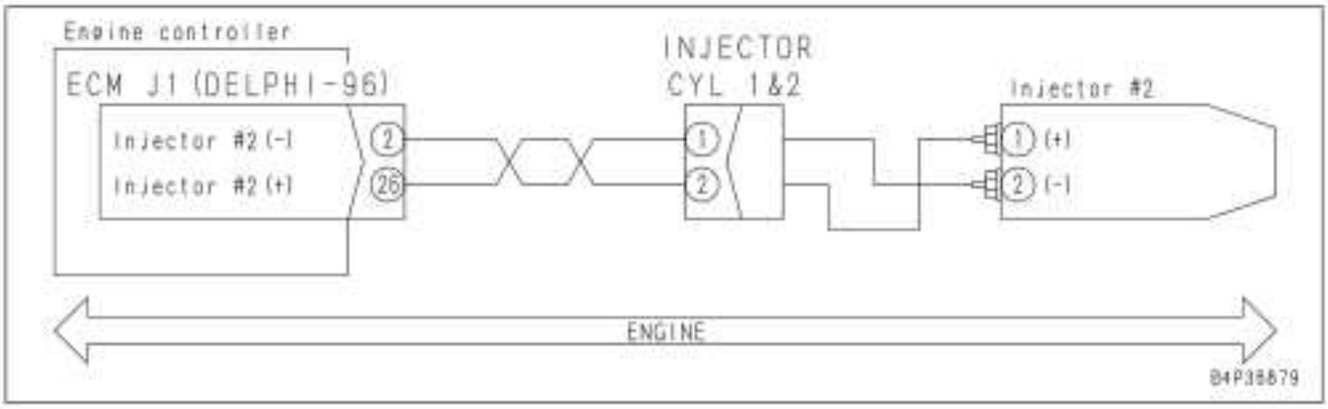
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| No. | Cause | Procedure, measuring location, criteria and remarks | | |
|---|---|---|---|---|
| 5 | Ground fault in wiring harness (contact with ground circuit) | If failure code is still displayed after above checks on cause 3, this check is not required.<br>1. Turn starting switch to OFF position.<br>2. Disconnect connectors ECM J1 and INJECTOR CYL 1 & 2, and connect T-adapter to either female side. | | |
| | | Resistance | Between ground and ECM J1 (female) (26) or INJECTOR CYL 1 & 2 (female) (1) | Min. 100 kΩ |
| | | | Between ground and ECM J1 (female) (2) or INJECTOR CYL 1 & 2 (female) (2) | Min. 100 kΩ |
| 6 | Short circuit in wiring harness | 1. Turn starting switch to OFF position.<br>2. Disconnect connectors ECM J1 and INJECTOR CYL 1 & 2, and connect T-adapter to female side of ECM J1. | | |
| | | Continuity | Between ECM J1 (female) (26) and each pin other than pin (26) | No continuity (no sound is heard) |
| | | | Between ECM J1 (female) (2) and each pin other than pin (2) | No continuity (no sound is heard) |
| 7 | Hot short circuit in wiring harness | 1. Turn starting switch to OFF position.<br>2. Insert T-adapter to connector ECM J1.<br>3. Turn starting switch to ON position. | | |
| | | Voltage | Between ECM J1 (26) and ground | Max. 6 V |
| | | If measured voltage is abnormal, disconnect connector INJECTOR CYL 1 & 2 and measure the voltage at the same point again.<br>If the abnormality persists, a positive (+) line is defective.<br>If the voltage is restored back to a normal range, a negative (-) line is defective. | | |
| 8 | Defective another cylinder's injector or wiring harness | When failure code for abnormality in multiple injectors is displayed, perform troubleshooting these first. | | |
| 9 | Defective engine controller | If no failure is found by above checks, engine controller is defective. (Since this is an internal defect, troubleshooting cannot be performed.) | | |

## Circuit diagram related to injector #2






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# FAILURE CODE [CA3563] AdBlue/DEF LineHeater Relay 1 Voltage Low Error

| Action level | Failure code | Failure | AdBlue/DEF LineHeater Relay 1 Voltage Low Error (Engine controller system) |
|---|---|---|---|
| L01 | CA3563 | | |
| Detail of failure | Low voltage error occurs in the AdBlue/DEF line heater relay 1 circuit. | | |
| Action of controller | Advances to Inducement strategy. | | |
| Phenomenon on machine | • AdBlue/DEF line stops thawing.<br>• NOx emission increases because AdBlue/DEF injection is disabled at low temperature.<br>• Engine power deration according to inducement strategy. | | |
| Related information | • This failure code is displayed if connector of AdBlue/DEF heater relay is removed while the AdBlue/DEF line heater relay 1 is OFF.<br>• The AdBlue/DEF line heater relay 1 operates in AdBlue/DEF supply system thawing, warning, or implementation of AdBlue/DEF line heater relay 1 test.<br>• The AdBlue/DEF line heater relay 1 is built in the AdBlue/DEF heater relay.<br>• Troubleshooting of this failure code covers circuits from engine controller through AdBlue/DEF heater relay to power supply.<br>• This failure code is detected only when the AdBlue/DEF line heater relay 1 is OFF.<br>• After repairing, check if the failure code is cleared by the following procedure.<br>Procedure: Turn starting switch to ON position. | | |

| No. | Cause | Procedure, measuring location, criteria and remarks | | |
|---|---|---|---|---|
| 1 | Defective wiring harness connector | 1. See descriptions of wiring harness and connectors in "Electrical equipment" in "CHECKS BEFORE TROUBLESHOOTING" of "RELATED INFORMATION ON TROUBLESHOOTING", and check it.<br>2. Perform the "AdBlue/DEF Line Heater Relay 1 Test" by staring the engine in low ambient temperature (5 °C or below), or by referring "SERVICE MODE" of setting and operating machine monitor, "METHOD FOR OPERATING TESTING MENU (SCR SERVICE TEST)". | | |
| | | If this failure code is cleared, wiring harness connector is defective. | | |
| 2 | Defective fuse No. 4 in fuse box F02 | Check if fuse No. 4 in fuse box F02 is blown.<br>**REMARK**<br>If blown, perform troubleshooting for ground fault in wiring harness. | | |
| 3 | Open circuit in wiring harness (sensor relay power supply side) | 1. Turn starting switch to OFF position.<br>2. Turn the battery disconnect switch to OFF position.<br>3. Disconnect connector R53B, and connect T-adapter to female side.<br>4. Turn the battery disconnect switch ON.<br>5. Turn starting switch to ON position | | |
| | | Voltage | Between ground and R53B (female) (1) or (2) | Min. 22 V |



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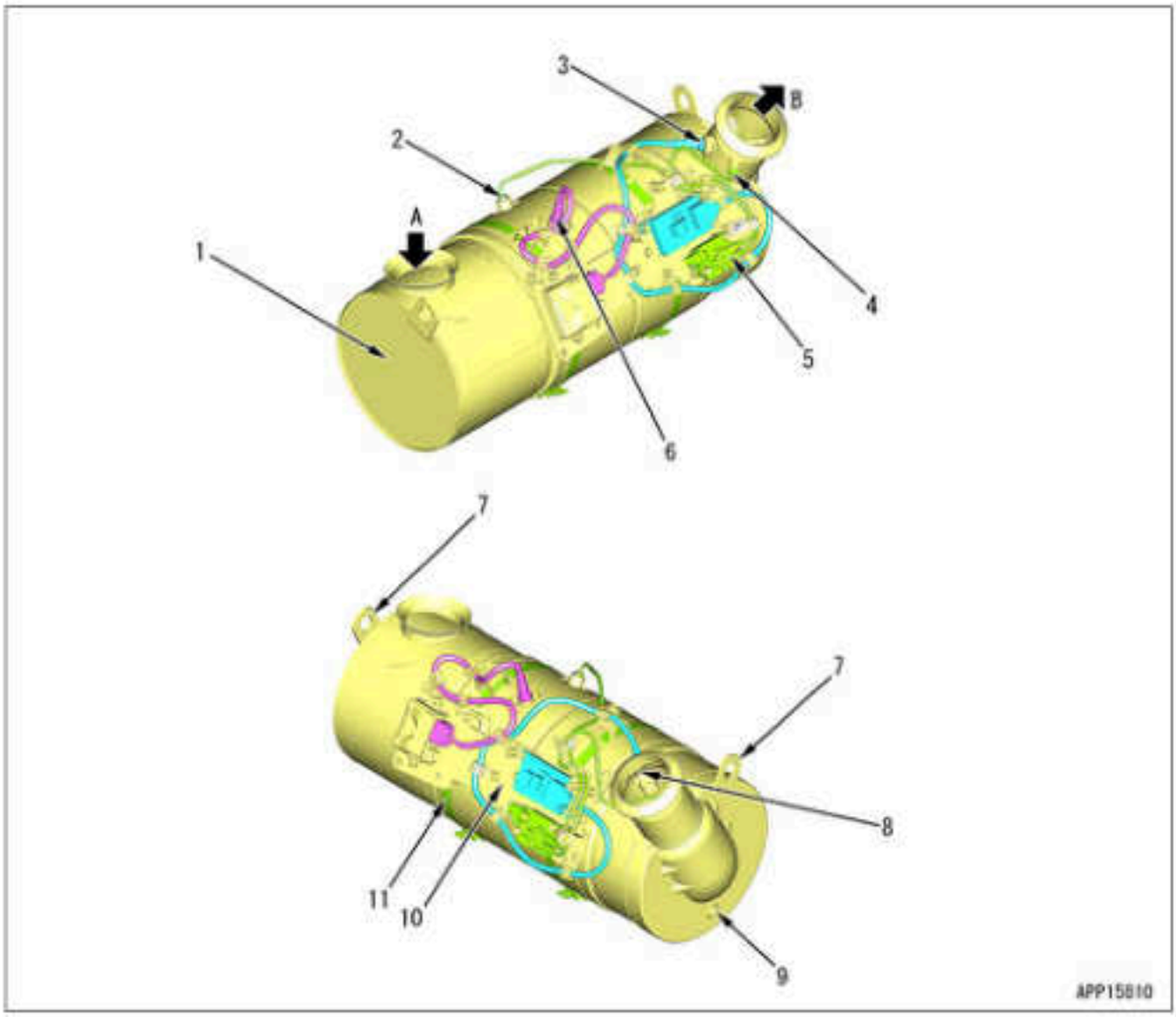
# FAILURE CODE [GA1UKZ] Capacitor Temperature Sensor Open and short Circuit

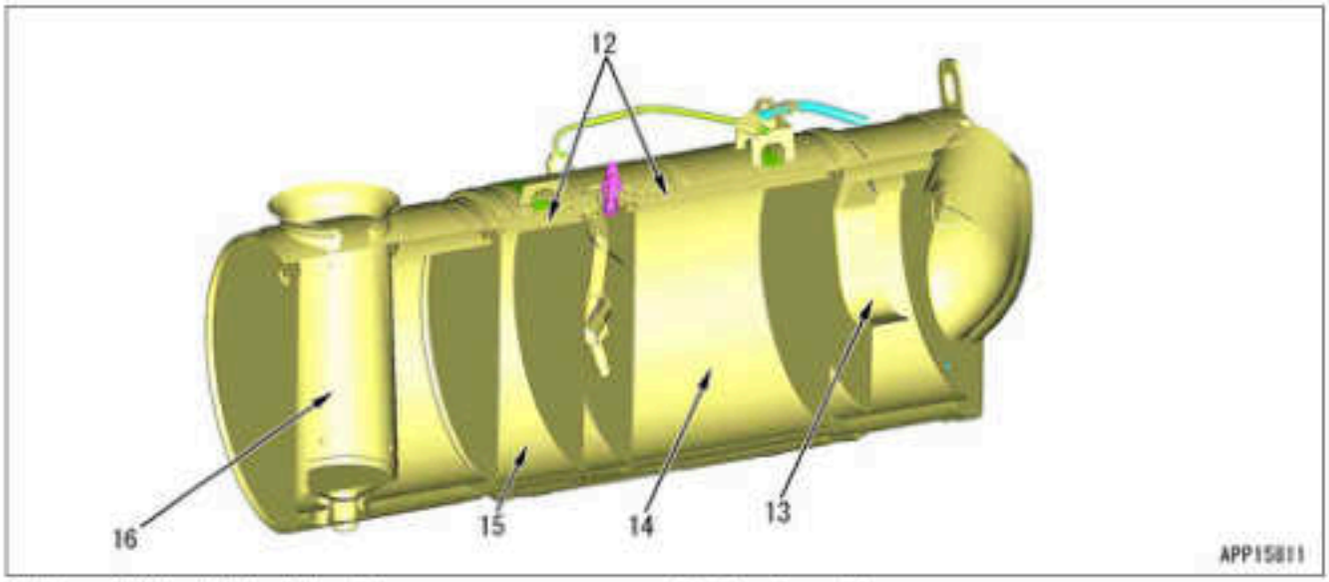
| Action level | Failure code | Failure | Capacitor temperature sensor open and short circuit (Hybrid controller system) |
|---|---|---|---|
| L01 | GA1UKZ | | |
| Detail of failure | Difference between capacitor base temperature and capacitor bus bar temperature 54.4 °C or higher. | | |
| Action of controller | • Restricts swing speed.<br>• If cause of failure is eliminated, machine becomes normal by itself. | | |
| Phenomenon on machine | Swing speed, etc. is restricted. | | |
| Related information | • Capacitor base temperature and capacitor bus bar temperature can be checked with monitoring function. (Code: 09304, 09305)<br>• After completion of repair, check that the failure code is cleared by the following operation. Procedure: Turn the starting switch to ON position or start the engine. | | |

| No. | Cause | Procedure, measuring location, criteria and remarks | | |
|---|---|---|---|---|
| 1 | Defective capacitor base temperature sensor | 1. Turn the starting switch to OFF position.<br>2. Disconnect the connector HP01, and connect the T-adapter to male side. | | |
| | | Resistance | Between HP01 (male) (4) and (8) | 0.1 to 500 kΩ |
| | | | Between HP01 (male) (4) and ground | Min. 1 MΩ |
| 2 | Defective capacitor bath bar temperature sensor | 1. Turn the starting switch to OFF position.<br>2. Disconnect the connector HP01, and connect the T-adapter to male side. | | |
| | | Resistance | Between HP01 (male) (5) and (8) | 0.1 to 500 kΩ |
| | | | Between HP01 (male) (5) and ground | Min. 1 MΩ |
| 3 | Open circuit in wiring harness | 1. Turn the starting switch to OFF position.<br>2. Disconnect the connectors HC01, HC02 and HP01, and connect the T-adapter to each female side. | | |
| | | Resistance | Between HC01 (female) (1) and HP01 (female) (1) | Max. 1 Ω |
| | | | Between HC01 (female) (7) and HP01 (female) (1) | Max. 1 Ω |
| | | | Between HC01 (female) (13) and HP01 (female) (12) | Max. 1 Ω |
| | | | Between HC01 (female) (19) and HP01 (female) (12) | Max. 1 Ω |
| | | | Between HC02 (female) (27) and HP01 (female) (4) | Max. 1 Ω |
| | | | Between HC02 (female) (37) and HP01 (female) (5) | Max. 1 Ω |
| 4 | Hot short circuit in wiring harness | 1. Turn the starting switch to OFF position.<br>2. Disconnect the connector HP01, and connect the T-adapter to female side.<br>3. Turn the starting switch to ON position. | | |
| | | Voltage | Between HP01 (female) (4) and ground | Max. 5.5 V |
| | | | Between HP01 (female) (5) and ground | Max. 5.5 V |
| 5 | Defective hybrid cooling system circuit | See "CAPACITOR TEMPERATURE INCREASES ABNORMALLY" in Y mode, and check the radiator coolant level of the hybrid system cooling circuit and clogging of the radiator fin and the water pump operation. | | |



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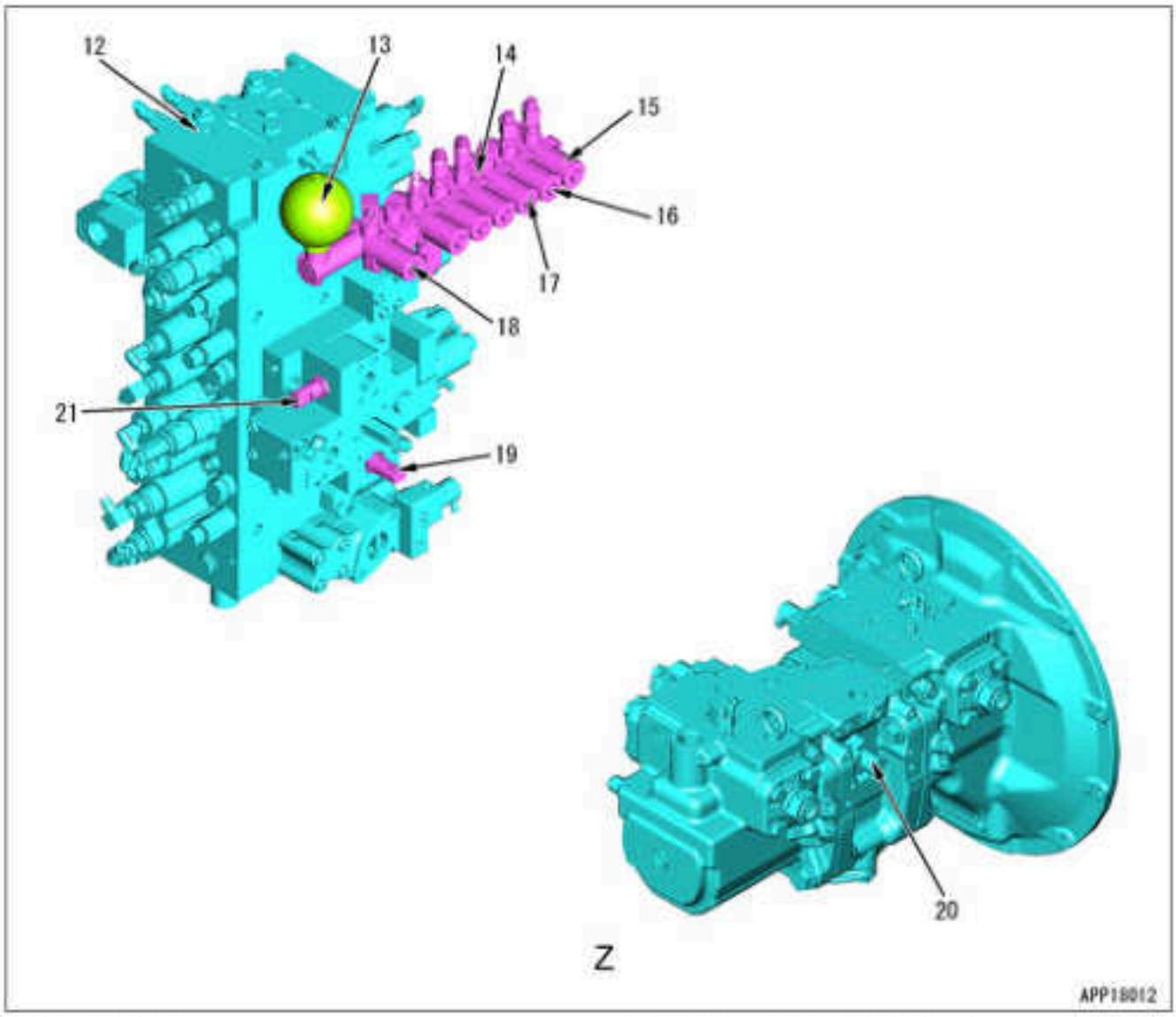



A: From AdBlue/DEF mixing tube
B: To exhaust pipe
1: SCR body
3: SCR outlet NOx sensor
2: SCR temperature sensor
4: SCR outlet temperature sensor



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12: Control valve
13: Pilot circuit accumulator
14: Solenoid valve
15: 2-stage relief solenoid valve
16: 1st line attachment solenoid valve
17: Machine push-up solenoid valve
18: PPC lock solenoid valve
19: Rear pump pressure sensor
20: Front pump PC-EPC valve
21: Front pump pressure sensor



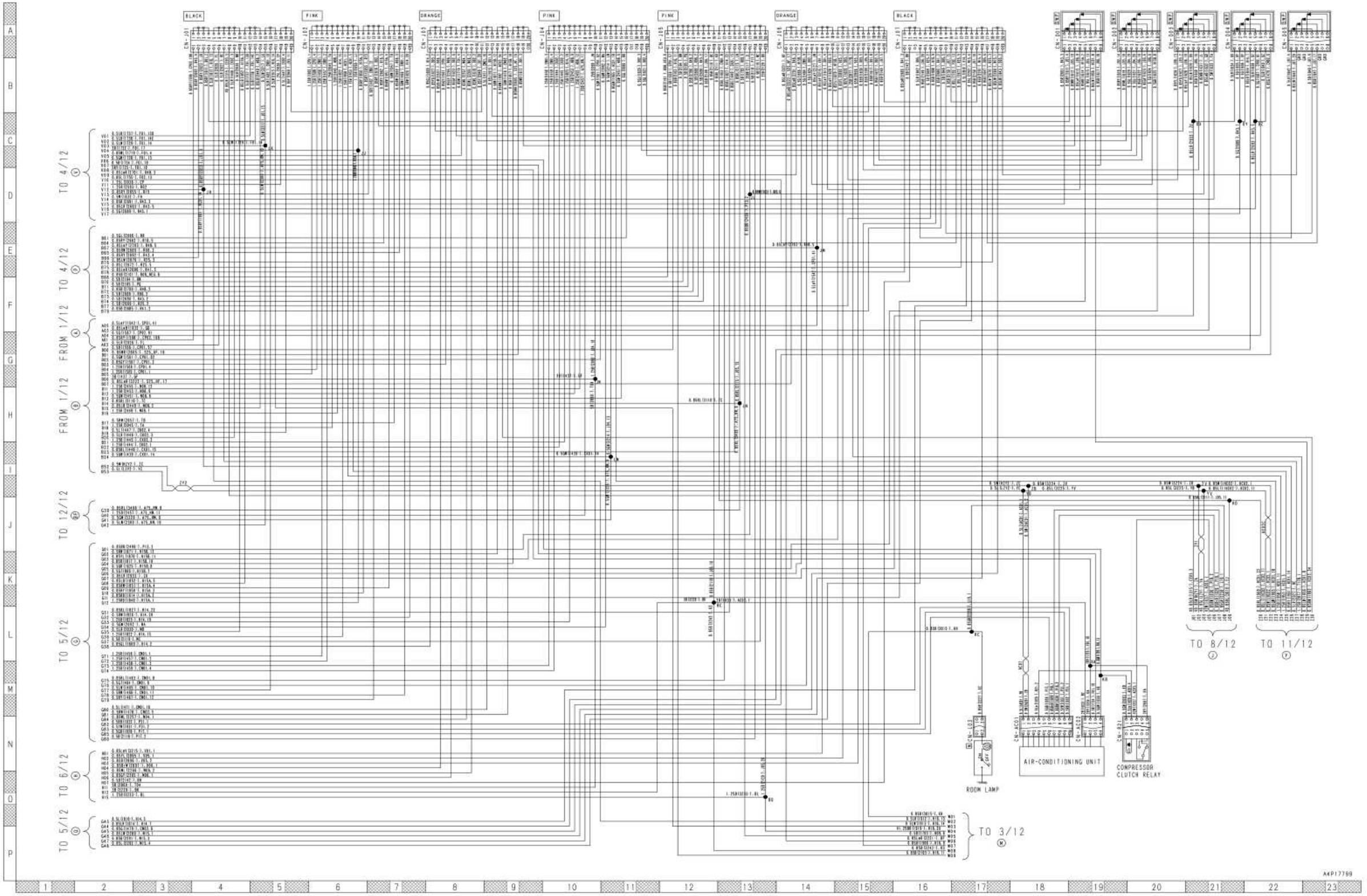
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## ELECTRICAL CIRCUIT DIAGRAM (2/12)

HB365LC-3

**REMARK**

This figure includes the equipment and device that are unavailable as optional items in some areas.






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