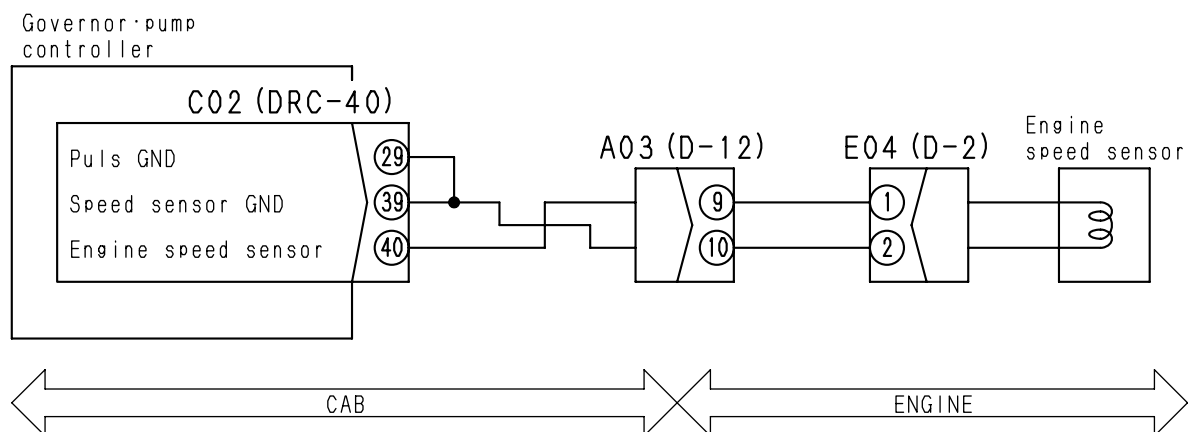


**Service Code in Electrical System E227****(Abnormality in engine rotation sensor in governor • pump controller system)**

User Code	Service Code	Failure Code	Failure phenomenon	Abnormality in engine rotation sensor (in governor • pump controller system)
—	<b>E227</b>	<b>DLE2MA</b>		
Failure content	• A normal pulse signal is not inputted to the signal circuit in the engine rotation sensor.			
Response from controller	• The controller exercises a control equivalent to E mode. • If the failure cause disappears of itself, the signal input returns to normalcy.			
Phenomenon occurring on machine	• The machine lacks power a bit.			
Relative information	• Input from the engine rotation sensor (rpm) can be confirmed in the monitor function. (Code No. 010: Engine RPM)			

Cause		Standard value in normalcy and references for troubleshooting				
Presumed cause and standard value in normalcy	1	Engine rotation sensor fault (Internal short-circuiting or disconnection)	★ Turn the engine starting switch OFF for the preparations, and hold it in the OFF position during the troubleshooting.			
			E04 (male)		Resistance value	
			Between ① and ②		500 – 1,000 Ω	
			Between ① and grounding		Above 1 MΩ	
	2	Engine rotation sensor adjustment improper	For the inspection and adjustment, refer to the section of "Adjusting Engine Rotation Sensor" in this manual.			
	3	Disconnection of wiring harness (Disconnection or defective contact with connector)	★ Turn the engine starting switch OFF for the preparations, and hold it in the OFF position during the troubleshooting.			
			Wiring harness between C02 (female) ④⑩ and E04 (female) ①		Resistance value	Below 1 Ω
			Wiring harness between C02 (female) ②⑨ ③⑨ and E04 (female) ②		Resistance value	Below 1 Ω
	4	Short-circuiting of wiring harness (Contact with 24 V circuit)	★ Turn the engine starting switch OFF for the preparations, and hold it in the ON position during the troubleshooting.			
			Between wiring harness between C02 (female) ④⑩ and E04 (female) ① and grounding		Voltage	Below 1 V
	5	Governor • pump controller defective	★ Turn the engine starting switch OFF for the preparations, and hold it in the ON position during the troubleshooting.			
			C02 (female)		Resistance value	
			Between ④⑩ and ②⑨ ③⑨		500 – 1,000 Ω	
			Between ④⑩ and grounding		Above 1 MΩ	

**Electrical Circuit Diagram for Monitor Panel Power Source**

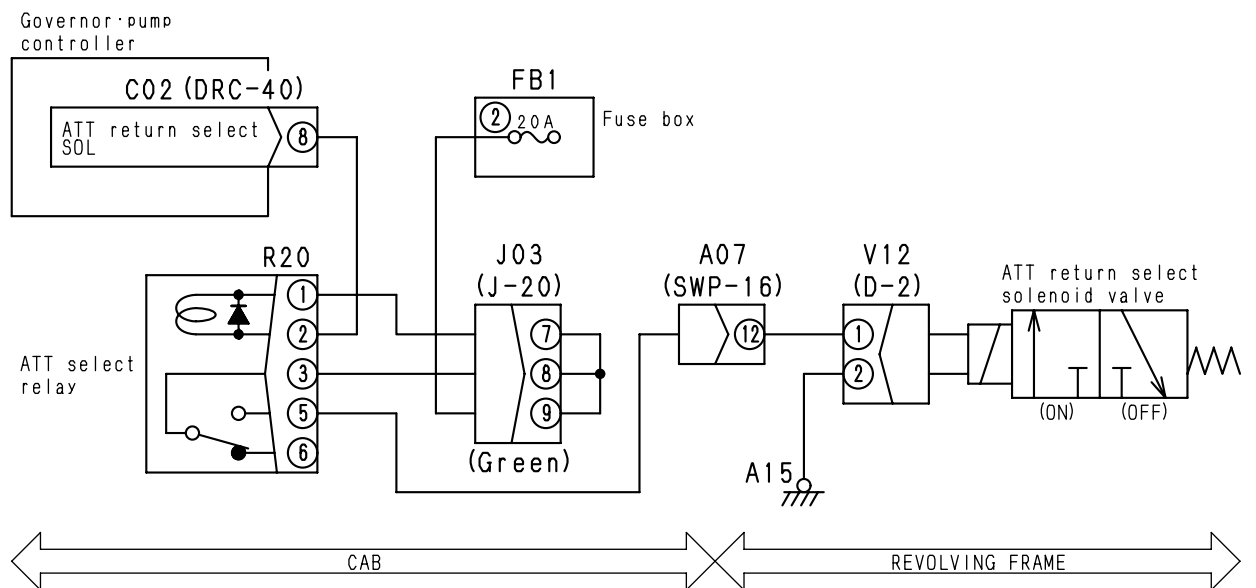
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## Service Code in Electrical System **E228** (Short-circuiting in attachment return switching relay)

User Code	Service Code	Failure Code	Failure phenomenon	Short-circuiting in attachment return switching relay (in governor • pump controller system)
—	<b>E228</b>	<b>D196KB</b>		
Failure content	• Abnormal current flew to the attachment return switching relay circuit , when it was grounded (power ON).			
Response from controller	• The controller turned OFF power to the attachment return switching relay circuit. • Even when the failure cause disappears of itself, the current does not return to normalcy.			
Phenomenon occurring on machine	• The hydraulic circuit for attachments is not switched to the single operation circuit.			
Relative information	• It can be confirmed in the monitor function how the attachment return switching relay circuit works (ON or OFF). (Code No. 024:Solenoid 2)			

Presumed cause and standard value in normalcy	Cause		Standard value in normalcy and references for troubleshooting		
	1	Attachment return switching relay defective (Internal short-circuiting)	★ Turn the engine starting switch OFF for the preparations, and hold it in the OFF position during the troubleshooting.		
			R20 (male)		Resistance value
			Between ① and ②		100 – 500 Ω
	2	Short-circuiting of wiring harness (Contact with 24 V circuit)	★ Turn the engine starting switch OFF for the preparations, and hold it in the ON position during the troubleshooting.		
			Between wiring harness between C02 (female) ⑧ and R20 (female) ② and grounding	Voltage	Below 1 V
	3	Governor • pump controller defective	★ Turn the engine starting switch OFF for the preparations, and hold it in the ON position during the troubleshooting.		
			C03	Working mode	Voltage
			Between ⑧ and grounding	Other than B mode	20 – 30 V
				B mode	Below 1 V

### Electrical Circuit Diagram for Attachment Return Switching Relay and Solenoid



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