SEN05629-04

Shop Manual

ARTICULATED
DUMP TRUCK

HM300-3

SERIAL NUMBERS 3001 and up

KOMATSU®

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Failure code [CA1883] KDPF Delta P Sens In Range Error

(HM300_3-CA1883-400-A-Z0-A)

Action level	Failure code	Failure	KDPF Delta Pressure Sensor In Range Error (Engine controller system)
L03	CA1883		
Detail of failure	• Signal voltage from KDPF differential pressure sensor does not indicate correct value. (Signal voltage is within operating range.)		
Action of controller	• Sets KDPF differential pressure to estimated value and runs engine. (If another failure code is also generated, controller may use differential pressure of 0 kPa to run engine.) • Closes EGR valve and opens KVGT fully. • Limits engine output and runs engine. • Stops KDPF regeneration control. ★ Above measures can be canceled by "turning starting switch to OFF position once, then turning starting switch to ON position" after failure code is generated.		
Problem on machine	• Engine output lowers.		
Related information	⚠ **Since KDPF is heated to 500°C or above, take care not to get burn injury.** • KDPF differential pressure sensor and KDPF outlet pressure sensor are integrated. • Signal voltage from KDPF delta pressure sensor can be checked with monitoring function. (Code: 47101(V)) • Differential pressure sensed by KDPF differential pressure sensor can be checked with monitoring function. (Code: 47100 (kPa)) • Temperature sensed by KDOC inlet temperature sensor can be checked with monitoring function. (Code: 47300 (°C)) • Temperature sensed by KDOC outlet temperature sensor can be checked with monitoring function. (Code: 47400 (°C)) • Temperature sensed by KDPF outlet temperature sensor can be checked with monitoring function. (Code: 47200 (°C)) ★ Use "Short-circuit connector: 799T-601-4611". • As to procedure for accessing KDPF differential pressure sensor, wiring harness, and tube, see 50 Disassembly and assembly, "Removal and installation of KDPF assembly" and "Disassembly and assembly of KDPF assembly". • Engine controller stops approximately 30 seconds after starting switch is turned to OFF position. So when you restart engine, wait 1 minute and more before turning starting switch to ON position again.		
Machine operation for clearing failure code	• When this failure code appears, perform troubleshooting according to the following work flow. A. Identification of cause and repair ↓ B. Machine operation for clearing failure code ★ This failure code does not disappear by simply turning starting switch to ON position from OFF position after repair. You must perform machine operation for clearing failure code after repair. ★ In machine operation for clearing failure code, "dummy temperature sensor: 799T-601-4680" is used.		

A. Identification of cause and repair

No.	Cause	Procedure, measuring location, criteria, and remarks		
1	Defective sensor power supply system	If failure code [CA1695] or [CA1696] is displayed, perform troubleshooting for [CA1695] or [CA1696] first.		
		1. Turn starting switch to OFF position. 2. Disconnect connector KDPF and connect T-adapter to female side. 3. Turn starting switch to ON position.		
		Voltage	Between KDPF (female) (4) and (1)	4.75 to 5.25 V

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No.	Cause	Procedure, measuring location, criteria, and remarks		
3	Open or short circuit in wiring harness	Resistance	Between MCM2 (female) (113) and (105)	Approximately 120 Ω
			Between BRC2 (female) (33) and (23)	Approximately 60 Ω
			Between ATC2 (female) (33) and (23)	Approximately 60 Ω
			Between RES2 (female) (A) and (B)	Approximately 120 Ω
			Between J1 (female) (8) and (18)	Approximately 120 Ω
			Between J2 (female) (24) and (25)	Approximately 120 Ω
4	Open circuit in wiring harness (Wire breakage or defective contact of connector)	• ACC signal of starting switch (start of CAN communication is not recognized) 1. Turn starting switch to OFF position, and set battery disconnect switch to OFF position. 2. Disconnect connectors MCM1, ATC3 and BRC3 and J3, and insert T-adapter into them. 3. Turn battery disconnect switch to ON position, and turn starting switch to ON position.		
		Voltage	Between MCM1 (24), (43) and (3)	20 to 30 V
			Between J3 (3) and (21)	20 to 30 V
			Between BRC3 (14), (24) and (21)	20 to 30 V
			Between ATC3 (14), (24) to (21)	20 to 30 V
		★ If no failure is found by check on cause 3, this check is not required. 1. Turn starting switch to OFF position, and set battery disconnect switch to OFF position. 2. Disconnect connectors MCM2, ATC2, BRC2, J1, J2 and RES2 one by one, and connect T-adapter to female side of each connector.		
		Resistance	Between MCM2 (female) (113) and ATC2 (female) (33)	Max. 1 Ω
			Between MCM2 (female) (105) and ATC2 (female) (23)	Max. 1 Ω
			Between MCM2 (female) (113) and BRC2 (female) (33)	Max. 1 Ω
			Between MCM2 (female) (105) and BRC2 (female) (23)	Max. 1 Ω
			Between MCM2 (female) (113) and J1 (female) (8)	Max. 1 Ω
			Between MCM2 (female) (105) and J1 (female) (18)	Max. 1 Ω
			Between J2 (female) (24) and RES2 (female) (A)	Max. 1 Ω
			Between J2 (female) (25) and RES2 (female) (B)	Max. 1 Ω

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H-5 Gear is not shifted up (HM300_3-EF1-400-A-Z0-A)

Failure	Gear is not shifted up
Related information	• If failure code is displayed, perform troubleshooting for it first. (15SCMA, 15SDMA, 15SEMA, 15SFMA, 15SGMA, 15SJMA)

No.	Cause	Procedure, measuring location, criteria and remarks			
1	Defective power train pump main relief valve	★ Be ready with engine stopped, then perform troubleshooting with engine running at low idle and rated speed.			
		Main relief pressure	Engine speed	Low idle	2.50 ± 0.20 MPa {25.5 ± 2.0 kg/cm²}
			Engine speed	2000 rpm (rated speed)	2.58 ± 0.20 MPa {26.3 ± 2.0 kg/cm²}
		If main relief pressure does not become normal after adjustment, check main relief valve for malfunction (deteriorated spring) or internal defects (defective valve seat).			
2	Malfunction of lockup solenoid valve	★ Be ready with engine stopped, then troubleshoot with engine at full speed.			
		Lockup solenoid output pressure	When lockup clutch is engaged		2.16 ± 0.15 MPa {22 ± 1.5 kg/cm²}
			When lockup clutch is disengaged		0 MPa {0 kg/cm²}
3	Malfunction of lockup clutch	Lockup clutch may slip if machine upshifts when traveling on a downhill.			
4	Defective speed clutch ECMV	★ Be ready with engine stopped, then troubleshoot with engine at full speed.			
		Hi clutch ECMV output pressure	Gear shift lever position (Gear speed)	2(F2)	2.40 ± 0.25 MPa {24.5 ± 2.5 kg/cm²}
		Lo clutch ECMV output pressure	Gear shift lever position (Gear speed)	1(F1)	2.55 ± 0.25 MPa {26 ± 2.5 kg/cm²}
		1st clutch ECMV output pressure	Gear shift lever position (Gear speed)	1(F1)	2.55 ± 0.25 MPa {26 ± 2.5 kg/cm²}
		2nd clutch ECMV output pressure	Gear shift lever position (Gear speed)	3(F3)	2.30 ± 0.25 MPa {23.5 ± 2.5 kg/cm²}
		3rd clutch ECMV output pressure	Gear shift lever position (Gear speed)	5(F5)	2.40 ± 0.25 MPa {24.5 ± 2.5 kg/cm²}
		R clutch ECMV output pressure	Gear shift lever position (Gear speed)	R1	2.55 ± 0.25 MPa {26 ± 2.5 kg/cm²}
		* Gear speed is determined by engaging two clutches, so find combination of engaged clutches in table 1.			
5	Defective speed clutch	• If measured oil pressure is low in check on cause (4), seal ring of clutch piston or ring groove may be worn. • If measured oil pressure is normal in check on cause (4), clutch may slip.			

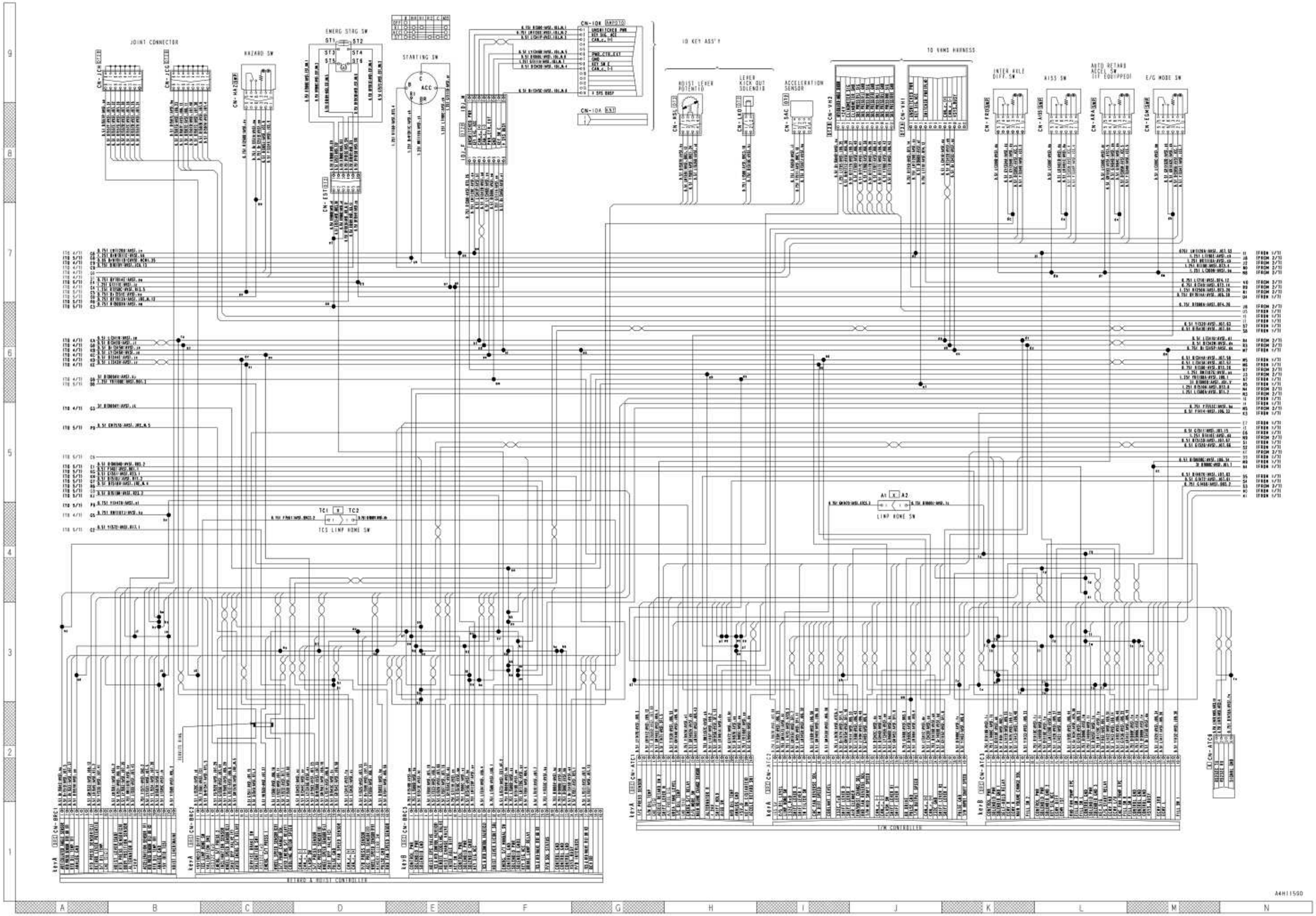
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Inside cab electric circuit diagram (3/7)

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★ This diagram covers optional components that are unavailable in some areas.

*1: Serial number 3376 and up



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