

Table 1: Errors sorted by functional group

Functional group	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV						
Input monitoring	Accelerator pedal	Cable break or short circuit, signal implausible compared to signal of idle sensor (analog pedal)	●	●	12	APP1	2-2-6	91	2, 3, 4, 11	
		Cable break or short circuit, bad PWM signal range or frequency (digital pedal)	●	●	14	APPPwm	2-2-2	91	2, 8	●
		Bad PWM pulse-width repetition rate (digital pedal)	●	●	15	APPPwmPer	2-2-2	91	8, 11	●
	Battery	Voltage below target range	●	●	22	BattCD	3-1-8	168	0, 1, 11	●
	Charge air pressure sensor	Cable break or short circuit	●	●	32	BPSCD	2-2-3	102	2, 3, 4	●
	Charge air temperature sensor	Cable break or short circuit	●	●	149	IATSCD	1-2-8	105	2, 3, 4, 11	●
	Coolant temperature sensor	Cable break or short circuit	●	●	55	CTSCD	2-2-5	110	2, 3, 4	●
	Customer-specific sensor	Cable break or short circuit (sensor 1)	●	●	136	GOTSCD	1-3-3	-	2, 3, 4, 11	●
		Cable break or short circuit (sensor 2)	●	●	139	HOTSCD	3-1-4	1638	3, 4, 11, 12	●
	Engine speed sensor	Engine running with cam-shaft speed signal only	●	●	75	EngMBackUp	2-1-2	190	11, 12	●
		Speed signal from cam-shaft bad or missing	●	●	76	EngMcaS1	2-1-2	190	8, 11, 12	●
		Speed signal from crank-shaft bad or missing	●	●	77	EngMcrS1	2-1-2	190	8, 11, 12	●
		Speed signals of crank-shaft and cam-shaft are phase-shifted	●	●	78	EngMOfsCaScrS	2-1-3	190	2, 11	
	Fuel filter water level sensor	Cable break or short circuit	●	●	87	FIFCD	2-2-8	97	3, 4, 11	●
	Fuel low pressure sensor	Cable break or short circuit	●	●	90	FIPSCD	2-1-6	94	3, 4, 11	●
	Fuel temperature sensor	Fuel temp. sensor: cable break or short circuit	●	●	133	FTSCD	2-2-7	174	3, 4, 11	●
	Hand throttle	Cable break or short circuit, signal implausible compared to signal of idle sensor	●	●	138	HdThrt	1-2-6	29	2, 3, 4, 11	
	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 1)	●	●	189	MSSCD1	1-4-3	523450	2, 3, 4, 11	●
		Cable break or short circuit, input voltage outside target range (switch 2)	●	●	190	MSSCD2	1-4-3	523451	2, 3, 4, 11	●
		Cable break or short circuit, input voltage outside target range (switch 3)	●	●	191	MSSCD3	1-4-3	523452	2, 3, 4, 11	●
	Oil pressure sensor	Cable break or short circuit	●	●	196	OPSCD	2-2-4	100	0, 2, 3, 4	●
		Pressure value implausible low	●	●	197	OPSCD1	2-3-1	100	1, 11	●
	Oil temperature sensor	Cable break or short circuit	●	●	201	OTSCD	1-4-4	175	2, 3, 4	●
Override switch	Switch hangs	●	●	200	OSwCD	1-4-5	1237	2, 11	●	
Terminal 15	Ignition ON not detected	●	●	226	T15CD	5-1-4	158	11, 12		
Terminal 50	Engine start switch hangs	●	●	227	T50CD	5-1-5	523550	11, 12		
Vehicle speed signal	Speed above target range, signal missing or implausible	●	●	232	VSSCD1	5-2-1	84	0, 8, 12, 14	●	

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			DCR	DMV							
Output monitoring	Air heater magnetic valve	Cable break or short circuit	●	●	18	ArHt2	2-6-3	730	3, 4, 5, 11	●	
	Air heater relay	Cable break or short circuit	●	●	17	ArHt1	2-6-3	729	3, 4, 5, 11	●	
		Cable break or wrong connection	●	●	19	ArHtCD_NoLd	2-6-3	676	4, 11		
		Inoperable during shut-off	●	●	20	ArHtCD_RlyErr	2-6-3	676	2, 5, 11		
	Engine brake (internal)	Internal engine brake: cable break or short circuit	●	●	52	CRERCd	5-2-8	1072	3, 4, 5, 11		
	Engine power output	Engine Power output: cable break or short circuit	●	●	74	EngCDTrqCalcOut	5-5-5	923	2, 3, 4, 5		
	Engine brake flap actuator	Engine brake flap actuator: cable break or short circuit	●	●	82	ExFICd	2-1-9	1074	3, 4, 5, 11		
	Fan actuator	Fan actuator: cable break or short circuit	●	●	83	FanCD	2-3-8	975	2, 3, 4, 5		
	Main relay	Main relay	Short circuit to Ubatt (relay 1)	●	●	182	MnRly1_SCB	1-3-7	2634	3, 11	
			Short circuit to ground (relay 1)	●	●	183	MnRly1_SCG	1-3-8	2634	4, 11	
			Short circuit to ground or emergency shut-off (relay 2)	●	●	186	MRlyCD	2-6-1	2634	7, 11, 12	
			Short circuit to ground or emergency shut-off (relay 3)	●	●	187	MRlyCDMnRly2	2-6-1	563	7, 11, 12	
			Short circuit to ground or emergency shut-off (relay 3)	●	●	188	MRlyCDMnRly3	2-6-1	2634	7, 11, 12	
	Reserve output	Reserve output	Short circuit to Ubatt (output 1)	●	●	57	Dummy1CD_Max	-	701	11	
			Short circuit to ground (output 1)	●	●	58	Dummy1CD_Min	-	701	11	
			Cable break or ECU internal error (output 1)	●	●	59	Dummy1CD_SigNpl	-	701	11	
			Short circuit to Ubatt (output 2)	●	●	60	Dummy2CD_Max	-	702	11	
			Short circuit to ground (output 2)	●	●	61	Dummy2CD_Min	-	702	11	
			Cable break or ECU internal error (output 2)	●	●	62	Dummy2CD_SigNpl	-	702	11	
	Start relay	Start relay	Start relay (high side): short circuit	●	●	223	StrtCDHS	5-1-2	677	3, 4, 11	
			Start relay (low side): cable break or short circuit, disabled by ECU	●	●	224	StrtCDLS	5-1-2	677	3, 4, 5, 11	

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Functional group	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	SPN	FMI	Self-curing ¹	
			DCR	DMV							
Engine protection	Air filter condition	Pressure loss above target range with system reaction	●	●	11	AirFitSysReac	1-3-6	107	1, 11	●	
	Battery voltage	Above target range with system reaction	●	●	23	BattCDSysReac	3-1-8	168	2, 11	●	
	Charge air pressure	Outside target range with system reaction	●	●	33	BPSCDSysReac	2-2-3	102	2, 11	●	
	Charge air temperature	Above target range with system reaction	●	●	150	IATSCDSysReac	2-3-3	105	0, 11	●	
	Coolant level	Outside target range with system reaction	●	●	37	CLSCDSysReac	2-3-5	111	1, 11		
	Coolant temperature	Outside target range with system reaction	●	●	56	CTSCDSysReac	2-3-2	110	0, 11	●	
	Customer-specific temperature	Outside target range with system reaction (temperature 1)	Outside target range with system reaction (temperature 2)	●	●	137	GOTSCDSysReac	1-3-3	-	2, 11	●
				●	●	140	HOTSCDSysReac	3-1-4	1638	2, 11	●
	Fan speed	Above target range with system reaction	●	●	86	FanCDSysReac	2-3-8	523602	2, 11	●	
	Fuel low pressure	Below target range with system reaction	●	●	91	FIPSCDSysReac	2-1-6	94	2, 11	●	
	Fuel temperature	Above target range with system reaction	●	●	134	FTSCDSysReac	2-3-7	174	0, 11	●	
	Misfire	Misfire detected with system reaction	●		47	CmbChbSysReac	2-4-1	1346	0, 11		
	Oil pressure	Above target range	●	●	198	OPSCDSysReacHi	2-3-1	100	0, 11	●	
	Oil pressure	Below target range	●	●	199	OPSCDSysReacLo	2-3-1	100	1, 11	●	
	Oil temperature	Below target range with system reaction	●	●	203	OTSCDSysReac	1-4-4	175	0, 11	●	
	Overspeed	Engine overspeed with system reaction	●	●	79	EngPrtSysReacFOC	2-1-4	190	0, 11		
Overrun conditions	Overrun conditions with system reaction	●	●	80	EngPrtSysReacORC	2-1-4	190	11, 14	●		
Shut-off request	Shut-off request ignored by operator	●	●	48	CoEngShOffDemlgr	3-4-1	1109	2, 11			
Water level in fuel filter	Above target range	●	●	89	FIFCD_WtLvl	2-2-8	97	11, 12			
High pressure system monitoring	Metering unit valve	Flow rate outside target range	●		176	MeUnCD_ADC	1-3-5	523615	3, 4, 11		
		Not connected or output disabled	●		177	MeUnCDNoLoad	1-3-5	523615	5, 11, 12		
		Short circuit to Ubatt	●		178	MeUnCDSCBat	1-3-5	523615	11, 12		
		Short circuit to ground	●		179	MeUnCDSCGnd	1-3-5	523615	11, 12		
	Rail pressure limiting valve	Opening failure	●		208	PRVMon	1-4-6	523470	2, 11, 12, 14		
		Opening failure with system reaction	●		236	PRVMonSysReac	1-4-6	523470	11, 12		
	Rail pressure sensor	Cable break or short circuit	●		209	RailCD	1-4-7	157	3, 4, 11		
		Deviation of signal during start or after-run above target range	●		210	RailCDOfsTst	1-4-7	157	0, 1, 11	●	
	Rail pressure	Positive deviation (speed dependent) outside target range	●		211	RailMeUn0	1-3-4	523613	0, 11	●	
		Positive deviation (flow dependent) outside target range (⇒ leakage!)	●		212	RailMeUn1	1-3-4	523613	0, 11	●	
		Negative deviation (flow dependent) outside target range	●		213	RailMeUn2	1-3-4	523613	0, 11	●	
		Negative deviation (speed dependent) outside target range	●		214	RailMeUn3	1-3-4	523613	1, 11	●	
		Pressure above target range	●		215	RailMeUn4	1-3-4	523613	0, 11	●	
		Implausible (leakage, injector needle blocked in open position)	●		216	RailMeUn7	1-3-4	523613	2, 11	●	
Compression test active: rail-pressure monitoring is going to be disabled	●	●	175	InjVlvErrDet	5-5-5	523370	11, 14				

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Functional group	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV						
Combustion monitoring	Multiple cylinders	Misfire detected	●	●	46	CmbChbMisfireMul	2-4-1	1322	11, 12	
	Single cylinder	Misfire detected (cylinder 1)	●	●	38	CmbChbMisfire1	2-4-1	1323	11, 12	
		Misfire detected (cylinder 2)	●	●	39	CmbChbMisfire2	2-4-1	1324	11, 12	
		Misfire detected (cylinder 3)	●	●	40	CmbChbMisfire3	2-4-1	1325	11, 12	
		Misfire detected (cylinder 4)	●	●	41	CmbChbMisfire4	2-4-1	1326	11, 12	
		Misfire detected (cylinder 5)	●	●	42	CmbChbMisfire5	2-4-1	1327	11, 12	
		Misfire detected (cylinder 6)	●	●	43	CmbChbMisfire6	2-4-1	1328	11, 12	
		Misfire detected (cylinder 7)		●	44	CmbChbMisfire7	2-4-1	1450	11, 12	
		Misfire detected (cylinder 8)		●	45	CmbChbMisfire8	2-4-1	1451	11, 12	

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Injection system monitoring	Begin of injection period	Outside target range or missing (cylinder 1)		●	24	BIPCyl1	5-3-1	523561	2	●	
		Outside target range or missing (cylinder 2)		●	25	BIPCyl2	5-3-2	523562	2	●	
		Outside target range or missing (cylinder 3)		●	26	BIPCyl3	5-3-3	523563	2	●	
		Outside target range or missing (cylinder 4)		●	27	BIPCyl4	5-3-4	523564	2	●	
		Outside target range or missing (cylinder 5)		●	28	BIPCyl5	5-3-5	523565	2	●	
		Outside target range or missing (cylinder 6)		●	29	BIPCyl6	5-3-6	523566	2	●	
		Outside target range or missing (cylinder 7)		●	30	BIPCyl7	5-3-7	523567	2	●	
		Outside target range or missing (cylinder 8)		●	31	BIPCyl8	5-3-8	523568	2	●	
	Multiple injectors	Short circuit (cylinder bank 1)	●	●	153	InjVlvBnk1A	1-5-1	523350	3, 4, 11, 13	●	
		Cable break (cylinder bank 1)	●	●	154	InjVlvBnk1B	1-5-1	523351	5, 13	●	
		Short circuit (cylinder bank 2)	●	●	155	InjVlvBnk2A	1-5-2	523352	3, 4, 11, 13	●	
		Cable break (cylinder bank 2)	●	●	156	InjVlvBnk2B	1-5-2	523353	5, 13	●	
	Single injector	Short circuit (injector 1)	●	●	159	InjVlvCyl1A	1-5-4	651	3, 4, 11, 13	●	
		Cable break (injector 1)	●	●	160	InjVlvCyl1B	1-5-4	651	5, 13	●	
		Short circuit (injector 2)	●	●	161	InjVlvCyl2A	1-5-5	652	3, 4, 11, 13	●	
		Cable break (injector 2)	●	●	162	InjVlvCyl2B	1-5-5	652	5, 13	●	
		Short circuit (injector 3)	●	●	163	InjVlvCyl3A	1-5-6	653	3, 4, 11, 13	●	
		Cable break (injector 3)	●	●	164	InjVlvCyl3B	1-5-6	653	5, 13	●	
		Short circuit (injector 4)	●	●	165	InjVlvCyl4A	1-6-1	654	3, 4, 11, 13	●	
		Cable break (injector 4)	●	●	166	InjVlvCyl4B	1-6-1	654	5, 13	●	
		Short circuit (injector 5)	●	●	167	InjVlvCyl5A	1-6-2	655	3, 4, 11, 13	●	
		Cable break (injector 5)	●	●	168	InjVlvCyl5B	1-6-2	655	5, 13	●	
		Short circuit (injector 6)	●	●	169	InjVlvCyl6A	1-6-3	656	3, 4, 11, 13	●	
		Cable break (injector 6)	●	●	170	InjVlvCyl6B	1-6-3	656	5, 13	●	
		Short circuit (injector 7)		●	171	InjVlvCyl7A	1-6-4	657	3, 4, 11, 13	●	
		Cable break (injector 7)		●	172	InjVlvCyl7B	1-6-4	657	5, 13	●	
		Short circuit (injector 8)		●	173	InjVlvCyl8A	1-6-5	658	3, 4, 11, 13	●	
		Cable break (injector 8)		●	174	InjVlvCyl8B	1-6-5	658	5, 13	●	
	EGR system monitoring	EGR actuator (external)	Short circuit to Ubatt	●	●	69	EGRCD_Max	4-1-4	2791	3, 11	
			Short circuit to ground	●	●	70	EGRCD_Min	4-1-4	2791	4, 11	
			Cable break or ECU internal error	●	●	71	EGRCD_SigNpl	4-1-5	2791	2, 5, 11	
Cable break or short circuit			●	●	72	EGRCDIntEGR	4-1-6	2791	2, 3, 4, 5		

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			DCR	DMV							
Signal lamps monitoring	Coolant temperature warning lamp	Cable break or short circuit	●	●	54	CTLpCD	1-2-3	704	11		
	Diagnostic lamp	Cable break or short circuit, disabled by ECU	●	●	225	SysLamp	5-1-3	624	2, 3, 4, 5		
	Engine operating signal lamp	Cable break or ECU internal error	●	●	81	ESLpCD	1-4-2	703	2, 3, 4, 5		
	Oil pressure warning lamp	Cable break or short circuit	●	●	195	OPLpCD	1-3-5	705	2, 3, 4, 5		
	Preheating signal lamp	Cable break or short circuit	●	●	53	CSLpCD	3-2-8	1081	2, 3, 4, 5		
CAN bus monitoring	CAN message	Missing or value above target range (message "DecV1" = pseudo pedal)	●	●	94	FrmMngDecV1	5-2-6	523239	2, 12	●	
		Missing (message "FunModCtl" = function mode control)	●	●	95	FrmMngFunModCtl	5-2-7	523240	11, 12	●	
		Missing (message "EngPrt" = engine protection)	●	●	106	FrmMngTOEngPrt	3-3-3	523212	11, 12	●	
		Missing (message "PrHtEnCmd" = preheat and engine command)	●	●	110	FrmMngTOPrHtEnCmd	3-3-7	523216	11, 12	●	
		Missing (message "RxCCVS" = cruise control)	●	●	112	FrmMngTORxCCVS	1-1-1	523218	11, 12	●	
		Missing (message "RxEngTemp" = engine temperature)	●	●	113	FrmMngTORxEngTemp	1-1-2	523604	11, 12	●	
		Missing (message "SwtOut" = switch outputs)	●	●	117	FrmMngTOSwtOut	1-1-5	523238	11, 12	●	
		Missing (message "TCO1" = speedo signal)	●	●	118	FrmMngTOTCO1	1-1-6	523222	11, 12	●	
		Missing (message "TSC1-AE")	●	●	120	FrmMngTOTSC1AE	1-1-8	523605	11, 12		
		Missing (message "TSC1-AR")	●	●	121	FrmMngTOTSC1AR	1-1-9	523606	11, 12		
		Missing (message "TSC1-DE")	●	●	122	FrmMngTOTSC1DE	1-1-8	523607	11, 12		
		Missing (message "TSC1-DR")	●	●	123	FrmMngTOTSC1DR	1-1-9	523608	11, 12		
		Missing (message "TSC1-PE")	●	●	124	FrmMngTOTSC1PE	1-1-8	523609	11, 12		
		Missing (message "TSC1-TE")	●	●	125	FrmMngTOTSC1TE	1-1-8	898	11, 12		
		Missing (message "TSC1-TR")	●	●	126	FrmMngTOTSC1TR	1-1-9	520	11, 12		
		Missing (message "TSC1-VE")	●	●	127	FrmMngTOTSC1VE	1-1-8	523610	11, 12		
		Missing (message "TSC1-VR")	●	●	128	FrmMngTOTSC1VR	1-1-9	523611	11, 12		
		Time-out of at least one sended message		●	●	131	FrmMngTxTO	2-7-1	523500	11, 12	●
	CAN bus off-state	Cable break or short circuit, off-state (CAN bus A)		●	●	192	NetMngCANAOFF	2-7-1	639	11, 14	●
		Cable break or short circuit, off-state (CAN bus B)		●	●	193	NetMngCANBOFF	2-7-1	1231	11, 14	●
Cable break or short circuit, off-state (CAN bus C)			●	●	194	NetMngCANCOFF	2-7-1	1235	11, 14	●	

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ECU self-test	ECU internal error	Ambient pressure sensor defective	●	●	16	APSCD	2-9-2	108	2, 3, 4, 11	●
		Communication with chip CJ 940 disturbed	●	●	141	HWEMonCom	5-5-5	523617	11, 12	
		EEPROM memory access	●	●	142	HWEMonEEPROM	2-8-1	630	11, 12	
		Injector power stage A	●	●	157	InjVlvChipA	1-5-3	523354	2, 3, 12, 14	
		Injector power stage B	●	●	158	InjVlvChipB	1-5-3	523355	12	
		Watchdog counter exceeds maximum	●	●	184	Montr	1-3-9	523420	11, 14	
		Redundant shut-off conditions detected	●	●	218	SOPTst	1-4-9	523490	3, 4, 11, 12	
		Wrong voltage of internal 5V reference source 1	●	●	219	SSpMon1	2-8-2	1079	3, 4, 11	●
		Wrong voltage of internal 5V reference source 2	●	●	221	SSpMon2	2-8-2	1080	3, 4, 11	●
		Wrong voltage of internal 5V reference source 3	●	●	222	SSpMon3	2-8-2	523601	3, 4, 11	●
		Time processing unit (TPU) defective	●	●	228	TPUMon	5-5-5	523550	2, 11	
		Serial communication interface defective	●	●	235	WdCom	5-5-5	523600	11, 12	
	ECU internal hardware monitoring	A recovery occurred which is stored as protected	●	●	143	HWEMonRcyLocked	5-5-5	523612	11, 14	
		A recovery occurred which is not stored	●	●	144	HWEMonRcySuppressed	5-5-5	523612	11, 14	
		A recovery occurred which is visible in the error memory	●	●	145	HWEMonRcyVisible	5-5-5	523612	11, 14	
		Overvoltage	●	●	146	HWEMonUMaxSupply	5-5-5	523612	3, 11	
		Undervoltage	●	●	147	HWEMonUMinSupply	5-5-5	523612	4, 11	

¹ Non-self-curing errors remain active at least up to the next ECU reset.

Abbreviations: DCR = DEUTZ Common Rail system, DMV = DEUTZ Magnetic Valve system (Pump-Line-Injector), SPN = Suspect Parameter Number, FMI = Failure Mode Identifier

The following basic steps should be performed to fix an error:

- a. Check the cabling for a short circuit/cable break; repair/replace cables if necessary.
- b. Check the particular component for a damage or the need of maintenance; repair/replace it if necessary.
- c. Reset the ECU by switching ignition off, waiting until the ECU has shut off and switching ignition on again. Check if the error is still active.
- d. In the case of a detected misfire additionally check the condition of the fuel system and the engine mechanics (valves, pistons).

Table 2: Errors sorted by SPN number

SPN	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	FMI	Self-curing ¹
			DCR	DMV					
29	Hand throttle	Cable break or short circuit, signal implausible compared to signal of idle sensor	●	●	138	HdThrt	1-2-6	2, 3, 4, 11	
84	Vehicle speed signal	Speed above target range, signal missing or implausible	●	●	232	VSSCD1	5-2-1	0, 8, 12, 14	●
91	Accelerator pedal	Cable break or short circuit, signal implausible compared to signal of idle sensor (analog pedal)	●	●	12	APP1	2-2-6	2, 3, 4, 11	
91	Accelerator pedal	Cable break or short circuit, bad PWM signal range or frequency (digital pedal)	●	●	14	APPPwm	2-2-2	2, 8	●
91	Accelerator pedal	Bad PWM pulse-width repetition rate (digital pedal)	●	●	15	APPPwmPer	2-2-2	8, 11	●
94	Fuel low pressure sensor	Cable break or short circuit	●	●	90	FIPSCD	2-1-6	3, 4, 11	●
94	Fuel low pressure	Below target range with system reaction	●	●	91	FIPSCDSysReac	2-1-6	2, 11	●
97	Fuel filter water level sensor	Cable break or short circuit	●	●	87	FIFCD	2-2-8	3, 4, 11	●
97	Water level in fuel filter	Above target range	●	●	89	FIFCD_WtLvl	2-2-8	11, 12	
100	Oil pressure sensor	Cable break or short circuit	●	●	196	OPSCD	2-2-4	0, 2, 3, 4	●
100	Oil pressure sensor	Pressure value implausible low	●	●	197	OPSCD1	2-3-1	1, 11	●
100	Oil pressure	Above target range	●	●	198	OPSCDSysReacHi	2-3-1	0, 11	●
100	Oil pressure	Below target range	●	●	199	OPSCDSysReacLo	2-3-1	1, 11	●
102	Charge air pressure sensor	Cable break or short circuit	●	●	32	BPSCD	2-2-3	2, 3, 4	●
102	Charge air pressure	Outside target range with system reaction	●	●	33	BPSCDSysReac	2-2-3	2, 11	●
105	Charge air temperature sensor	Cable break or short circuit	●	●	149	IATSCD	1-2-8	2, 3, 4, 11	●
105	Charge air temperature	Above target range with system reaction	●	●	150	IATSCDSysReac	2-3-3	0, 11	●
107	Air filter condition	Pressure loss above target range with system reaction	●	●	11	AirFitSysReac	1-3-6	1, 11	●
108	ECU internal error	Ambient pressure sensor defective	●	●	16	APSCD	2-9-2	2, 3, 4, 11	●
110	Coolant temperature sensor	Cable break or short circuit	●	●	55	CTSCD	2-2-5	2, 3, 4	●
110	Coolant temperature	Outside target range with system reaction	●	●	56	CTSCDSysReac	2-3-2	0, 11	●
111	Coolant level	Outside target range with system reaction	●	●	37	CLSCDSysReac	2-3-5	1, 11	
157	Rail pressure sensor	Cable break or short circuit	●		209	RailCD	1-4-7	3, 4, 11	
157	Rail pressure sensor	Deviation of signal during start or after-run above target range	●		210	RailCDOfsTst	1-4-7	0, 1, 11	●
158	Terminal 15	Ignition ON not detected	●	●	226	T15CD	5-1-4	11, 12	
168	Battery	Voltage below target range	●	●	22	BattCD	3-1-8	0, 1, 11	●
168	Battery voltage	Above target range with system reaction	●	●	23	BattCDSysReac	3-1-8	2, 11	●
174	Fuel temperature sensor	Fuel temp. sensor: cable break or short circuit	●	●	133	FTSCD	2-2-7	3, 4, 11	●
174	Fuel temperature	Above target range with system reaction	●	●	134	FTSCDSysReac	2-3-7	0, 11	●
175	Oil temperature sensor	Cable break or short circuit	●	●	201	OTSCD	1-4-4	2, 3, 4	●
175	Oil temperature	Below target range with system reaction	●	●	203	OTSCDSysReac	1-4-4	0, 11	●
190	Engine speed sensor	Engine running with cam-shaft speed signal only	●	●	75	EngMBackUp	2-1-2	11, 12	●

DEUTZ EMR3 - Diagnostic trouble codes



SPN	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	FMI	Self-curing ¹
			DCR	DMV					
190	Engine speed sensor	Speed signal from cam-shaft bad or missing	●	●	76	EngMCAoS1	2-1-2	8, 11, 12	●
190	Engine speed sensor	Speed signal from crank-shaft bad or missing	●	●	77	EngMCRoS1	2-1-2	8, 11, 12	●
190	Engine speed sensor	Speed signals of crank-shaft and cam-shaft are phase-shifted	●	●	78	EngMOFsCaSCrS	2-1-3	2, 11	
190	Overspeed	Engine overspeed with system reaction	●	●	79	EngPrtSysReacFOC	2-1-4	0, 11	
190	Overrun conditions	Overrun conditions with system reaction	●	●	80	EngPrtSysReacORC	2-1-4	11, 14	●
520	CAN message	Missing (message "TSC1-TR")	●	●	126	FrmMngTOTSC1TR	1-1-9	11, 12	
563	Main relay	Short circuit to ground or emergency shut-off (relay 3)	●	●	187	MRlyCDMnRly2	2-6-1	7, 11, 12	
624	Diagnostic lamp	Cable break or short circuit, disabled by ECU	●	●	225	SysLamp	5-1-3	2, 3, 4, 5	
630	ECU internal error	EEPROM memory access	●	●	142	HWEMonEEPROM	2-8-1	11, 12	
639	CAN bus off-state	Cable break or short circuit, off-state (CAN bus A)	●	●	192	NetMngCANAOFF	2-7-1	11, 14	●
651	Single injector	Short circuit (injector 1)	●	●	159	InjVlvCyl1A	1-5-4	3, 4, 11, 13	●
651	Single injector	Cable break (injector 1)	●	●	160	InjVlvCyl1B	1-5-4	5, 13	●
652	Single injector	Short circuit (injector 2)	●	●	161	InjVlvCyl2A	1-5-5	3, 4, 11, 13	●
652	Single injector	Cable break (injector 2)	●	●	162	InjVlvCyl2B	1-5-5	5, 13	●
653	Single injector	Short circuit (injector 3)	●	●	163	InjVlvCyl3A	1-5-6	3, 4, 11, 13	●
653	Single injector	Cable break (injector 3)	●	●	164	InjVlvCyl3B	1-5-6	5, 13	●
654	Single injector	Short circuit (injector 4)	●	●	165	InjVlvCyl4A	1-6-1	3, 4, 11, 13	●
654	Single injector	Cable break (injector 4)	●	●	166	InjVlvCyl4B	1-6-1	5, 13	●
655	Single injector	Short circuit (injector 5)	●	●	167	InjVlvCyl5A	1-6-2	3, 4, 11, 13	●
655	Single injector	Cable break (injector 5)	●	●	168	InjVlvCyl5B	1-6-2	5, 13	●
656	Single injector	Short circuit (injector 6)	●	●	169	InjVlvCyl6A	1-6-3	3, 4, 11, 13	●
656	Single injector	Cable break (injector 6)	●	●	170	InjVlvCyl6B	1-6-3	5, 13	●
657	Single injector	Short circuit (injector 7)		●	171	InjVlvCyl7A	1-6-4	3, 4, 11, 13	●
657	Single injector	Cable break (injector 7)		●	172	InjVlvCyl7B	1-6-4	5, 13	●
658	Single injector	Short circuit (injector 8)		●	173	InjVlvCyl8A	1-6-5	3, 4, 11, 13	●
658	Single injector	Cable break (injector 8)		●	174	InjVlvCyl8B	1-6-5	5, 13	●
676	Air heater relay	Cable break or wrong connection	●	●	19	ArHtCD_NoLd	2-6-3	4, 11	
676	Air heater relay	Inoperable during shut-off	●	●	20	ArHtCD_RlyErr	2-6-3	2, 5, 11	
677	Start relay	Start relay (high side): short circuit	●	●	223	StrtCDHS	5-1-2	3, 4, 11	
677	Start relay	Start relay (low side): cable break or short circuit, disabled by ECU	●	●	224	StrtCDLS	5-1-2	3, 4, 5, 11	
701	Reserve output	Short circuit to Ubatt (output 1)	●	●	57	Dummy1CD_Max	-	11	
701	Reserve output	Short circuit to ground (output 1)	●	●	58	Dummy1CD_Min	-	11	
701	Reserve output	Cable break or ECU internal error (output 1)	●	●	59	Dummy1CD_SigNpl	-	11	
702	Reserve output	Short circuit to Ubatt (output 2)	●	●	60	Dummy2CD_Max	-	11	

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SPN	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	FMI	Self-curing ¹
			DCR	DMV					
702	Reserve output	Short circuit to ground (output 2)	●	●	61	Dummy2CD_Min	-	11	
702	Reserve output	Cable break or ECU internal error (output 2)	●	●	62	Dummy2CD_SigNpl	-	11	
703	Engine operating signal lamp	Cable break or ECU internal error	●	●	81	ESLpCD	1-4-2	2, 3, 4, 5	
704	Coolant temperature warning lamp	Cable break or short circuit	●	●	54	CTLpCD	1-2-3	11	
705	Oil pressure warning lamp	Cable break or short circuit	●	●	195	OPLpCD	1-3-5	2, 3, 4, 5	
729	Air heater relay	Cable break or short circuit	●	●	17	ArHt1	2-6-3	3, 4, 5, 11	●
730	Air heater magnetic valve	Cable break or short circuit	●	●	18	ArHt2	2-6-3	3, 4, 5, 11	●
898	CAN message	Missing (message "TSC1-TE")	●	●	125	FrmMngTOTSC1TE	1-1-8	11, 12	
923	Engine power output	Engine Power output: cable break or short circuit	●	●	74	EngCDTrqCalcOut	5-5-5	2, 3, 4, 5	
975	Fan actuator	Fan actuator: cable break or short circuit	●	●	83	FanCD	2-3-8	2, 3, 4, 5	
1072	Engine brake (internal)	Internal engine brake: cable break or short circuit	●	●	52	CRERCD	5-2-8	3, 4, 5, 11	
1074	Engine brake flap actuator	Engine brake flap actuator: cable break or short circuit	●	●	82	ExFICD	2-1-9	3, 4, 5, 11	
1079	ECU internal error	Wrong voltage of internal 5V reference source 1	●	●	219	SSpMon1	2-8-2	3, 4, 11	●
1080	ECU internal error	Wrong voltage of internal 5V reference source 2	●	●	221	SSpMon2	2-8-2	3, 4, 11	●
1081	Preheating signal lamp	Cable break or short circuit	●	●	53	CSLpCD	3-2-8	2, 3, 4, 5	
1109	Shut-off request	Shut-off request ignored by operator	●	●	48	CoEngShOffDemlgr	3-4-1	2, 11	
1231	CAN bus off-state	Cable break or short circuit, off-state (CAN bus B)	●	●	193	NetMngCANBOff	2-7-1	11, 14	●
1235	CAN bus off-state	Cable break or short circuit, off-state (CAN bus C)	●	●	194	NetMngCANCOff	2-7-1	11, 14	●
1237	Override switch	Switch hangs	●	●	200	OSwCD	1-4-5	2, 11	●
1322	Multiple cylinders	Misfire detected	●	●	46	CmbChbMisfireMul	2-4-1	11, 12	
1323	Single cylinder	Misfire detected (cylinder 1)	●	●	38	CmbChbMisfire1	2-4-1	11, 12	
1324	Single cylinder	Misfire detected (cylinder 2)	●	●	39	CmbChbMisfire2	2-4-1	11, 12	
1325	Single cylinder	Misfire detected (cylinder 3)	●	●	40	CmbChbMisfire3	2-4-1	11, 12	
1326	Single cylinder	Misfire detected (cylinder 4)	●	●	41	CmbChbMisfire4	2-4-1	11, 12	
1327	Single cylinder	Misfire detected (cylinder 5)	●	●	42	CmbChbMisfire5	2-4-1	11, 12	
1328	Single cylinder	Misfire detected (cylinder 6)	●	●	43	CmbChbMisfire6	2-4-1	11, 12	
1346	Misfire	Misfire detected with system reaction	●		47	CmbChbSysReac	2-4-1	0, 11	
1450	Single cylinder	Misfire detected (cylinder 7)		●	44	CmbChbMisfire7	2-4-1	11, 12	
1451	Single cylinder	Misfire detected (cylinder 8)		●	45	CmbChbMisfire8	2-4-1	11, 12	
1638	Customer-specific sensor	Cable break or short circuit (sensor 2)	●	●	139	HOTSCD	3-1-4	3, 4, 11, 12	●
1638	Customer-specific temperature	Outside target range with system reaction (temperature 2)	●	●	140	HOTSCDSysReac	3-1-4	2, 11	●
2634	Main relay	Short circuit to Ubatt (relay 1)	●	●	182	MnRly1_SCB	1-3-7	3, 11	
2634	Main relay	Short circuit to ground (relay 1)	●	●	183	MnRly1_SCG	1-3-8	4, 11	
2634	Main relay	Short circuit to ground or emergency shut-off (relay 2)	●	●	186	MRlyCD	2-6-1	7, 11, 12	

DEUTZ EMR3 - Diagnostic trouble codes



SPN	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	FMI	Self-curing ¹
			DCR	DMV					
2634	Main relay	Short circuit to ground or emergency shut-off (relay 3)	●	●	188	MRlyCDMnRly3	2-6-1	7, 11, 12	
2791	EGR actuator (external)	Short circuit to Ubatt	●	●	69	EGRCd_Max	4-1-4	3, 11	
2791	EGR actuator (external)	Short circuit to ground	●	●	70	EGRCd_Min	4-1-4	4, 11	
2791	EGR actuator (external)	Cable break or ECU internal error	●	●	71	EGRCd_SigNpl	4-1-5	2, 5, 11	
2791	EGR actuator (external)	Cable break or short circuit	●	●	72	EGRCdIntEGR	4-1-6	2, 3, 4, 5	
523212	CAN message	Missing (message "EngPrt" = engine protection)	●	●	106	FrmMngTOEngPrt	3-3-3	11, 12	●
523216	CAN message	Missing (message "PrHtEnCmd" = preheat and engine command)	●	●	110	FrmMngTOPrHtEnCmd	3-3-7	11, 12	●
523218	CAN message	Missing (message "RxCCVS" = cruise control)	●	●	112	FrmMngTORxCCVS	1-1-1	11, 12	●
523222	CAN message	Missing (message "TCO1" = speedo signal)	●	●	118	FrmMngTOTCO1	1-1-6	11, 12	●
523238	CAN message	Missing (message "SwtOut" = switch outputs)	●	●	117	FrmMngTOSwtOut	1-1-5	11, 12	●
523239	CAN message	Missing or value above target range (message "DecV1" = pseudo pedal)	●	●	94	FrmMngDecV1	5-2-6	2, 12	●
523240	CAN message	Missing (message "FunModCtl" = function mode control)	●	●	95	FrmMngFunModCtl	5-2-7	11, 12	●
523350	Multiple injectors	Short circuit (cylinder bank 1)	●	●	153	InjVlvBnk1A	1-5-1	3, 4, 11, 13	●
523351	Multiple injectors	Cable break (cylinder bank 1)	●	●	154	InjVlvBnk1B	1-5-1	5, 13	●
523352	Multiple injectors	Short circuit (cylinder bank 2)	●	●	155	InjVlvBnk2A	1-5-2	3, 4, 11, 13	●
523353	Multiple injectors	Cable break (cylinder bank 2)	●	●	156	InjVlvBnk2B	1-5-2	5, 13	●
523354	ECU internal error	Injector power stage A	●	●	157	InjVlvChipA	1-5-3	2, 3, 12, 14	
523355	ECU internal error	Injector power stage B	●	●	158	InjVlvChipB	1-5-3	12	
523370	Rail pressure	Compression test active: rail-pressure monitoring is going to be disabled	●	●	175	InjVlvErrDet	5-5-5	11, 14	
523420	ECU internal error	Watchdog counter exceeds maximum	●	●	184	Montr	1-3-9	11, 14	
523450	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 1)	●	●	189	MSSCD1	1-4-3	2, 3, 4, 11	●
523451	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 2)	●	●	190	MSSCD2	1-4-3	2, 3, 4, 11	●
523452	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 3)	●	●	191	MSSCD3	1-4-3	2, 3, 4, 11	●
523470	Rail pressure limiting valve	Opening failure	●		208	PRVMon	1-4-6	2, 11, 12, 14	
523470	Rail pressure limiting valve	Opening failure with system reaction	●		236	PRVMonSysReac	1-4-6	11, 12	
523490	ECU internal error	Redundant shut-off conditions detected	●	●	218	SOPTst	1-4-9	3, 4, 11, 12	
523500	CAN message	Time-out of at least one sended message	●	●	131	FrmMngTxTO	2-7-1	11, 12	●
523550	Terminal 50	Engine start switch hangs	●	●	227	T50CD	5-1-5	11, 12	
523550	ECU internal error	Time processing unit (TPU) defective	●	●	228	TPUMon	5-5-5	2, 11	
523561	Begin of injection period	Outside target range or missing (cylinder 1)		●	24	BIPCyl1	5-3-1	2	●
523562	Begin of injection period	Outside target range or missing (cylinder 2)		●	25	BIPCyl2	5-3-2	2	●
523563	Begin of injection period	Outside target range or missing (cylinder 3)		●	26	BIPCyl3	5-3-3	2	●
523564	Begin of injection period	Outside target range or missing (cylinder 4)		●	27	BIPCyl4	5-3-4	2	●
523565	Begin of injection period	Outside target range or missing (cylinder 5)		●	28	BIPCyl5	5-3-5	2	●

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SPN	Component / Location	Description (Error location)	Defined for		Error code SERDIA	ID	Blink code	FMI	Self-curing ¹
			DCR	DMV					
523566	Begin of injection period	Outside target range or missing (cylinder 6)		●	29	BIPCyl6	5-3-6	2	●
523567	Begin of injection period	Outside target range or missing (cylinder 7)		●	30	BIPCyl7	5-3-7	2	●
523568	Begin of injection period	Outside target range or missing (cylinder 8)		●	31	BIPCyl8	5-3-8	2	●
523600	ECU internal error	Serial communication interface defective	●	●	235	WdCom	5-5-5	11, 12	
523601	ECU internal error	Wrong voltage of internal 5V reference source 3	●	●	222	SSpMon3	2-8-2	3, 4, 11	●
523602	Fan speed	Above target range with system reaction	●	●	86	FanCDSysReac	2-3-8	2, 11	●
523604	CAN message	Missing (message "RxEngTemp" = engine temperature)	●	●	113	FrmMngTORxEngTemp	1-1-2	11, 12	●
523605	CAN message	Missing (message "TSC1-AE")	●	●	120	FrmMngTOTSC1AE	1-1-8	11, 12	
523606	CAN message	Missing (message "TSC1-AR")	●	●	121	FrmMngTOTSC1AR	1-1-9	11, 12	
523607	CAN message	Missing (message "TSC1-DE")	●	●	122	FrmMngTOTSC1DE	1-1-8	11, 12	
523608	CAN message	Missing (message "TSC1-DR")	●	●	123	FrmMngTOTSC1DR	1-1-9	11, 12	
523609	CAN message	Missing (message "TSC1-PE")	●	●	124	FrmMngTOTSC1PE	1-1-8	11, 12	
523610	CAN message	Missing (message "TSC1-VE")	●	●	127	FrmMngTOTSC1VE	1-1-8	11, 12	
523611	CAN message	Missing (message "TSC1-VR")	●	●	128	FrmMngTOTSC1VR	1-1-9	11, 12	
523612	ECU internal hardware monitoring	A recovery occurred which is stored as protected	●	●	143	HWEMonRcyLocked	5-5-5	11, 14	
523612	ECU internal hardware monitoring	A recovery occurred which is not stored	●	●	144	HWEMonRcySuppressed	5-5-5	11, 14	
523612	ECU internal hardware monitoring	A recovery occurred which is visible in the error memory	●	●	145	HWEMonRcyVisible	5-5-5	11, 14	
523612	ECU internal hardware monitoring	Overvoltage	●	●	146	HWEMonUMaxSupply	5-5-5	3, 11	
523612	ECU internal hardware monitoring	Undervoltage	●	●	147	HWEMonUMinSupply	5-5-5	4, 11	
523613	Rail pressure	Positive deviation (speed dependent) outside target range	●		211	RailMeUn0	1-3-4	0, 11	●
523613	Rail pressure	Positive deviation (flow dependent) outside target range (⇒ leakage!)	●		212	RailMeUn1	1-3-4	0, 11	●
523613	Rail pressure	Negative deviation (flow dependent) outside target range	●		213	RailMeUn2	1-3-4	0, 11	●
523613	Rail pressure	Negative deviation (speed dependent) outside target range	●		214	RailMeUn3	1-3-4	1, 11	●
523613	Rail pressure	Pressure above target range	●		215	RailMeUn4	1-3-4	0, 11	●
523613	Rail pressure	Implausible (leakage, injector needle blocked in open position)	●		216	RailMeUn7	1-3-4	2, 11	●
523615	Metering unit valve	Flow rate outside target range	●		176	MeUnCD_ADC	1-3-5	3, 4, 11	
523615	Metering unit valve	Not connected or output disabled	●		177	MeUnCDNoLoad	1-3-5	5, 11, 12	
523615	Metering unit valve	Short circuit to Ubatt	●		178	MeUnCDSCBat	1-3-5	11, 12	
523615	Metering unit valve	Short circuit to ground	●		179	MeUnCDSCGnd	1-3-5	11, 12	
523617	ECU internal error	Communication with chip CJ 940 disturbed	●	●	141	HWEMonCom	5-5-5	11, 12	
-	Customer-specific sensor	Cable break or short circuit (sensor 1)	●	●	136	GOTSCD	1-3-3	2, 3, 4, 11	●
-	Customer-specific temperature	Outside target range with system reaction (temperature 1)	●	●	137	GOTSCDSysReac	1-3-3	2, 11	●

¹ Non-self-curing errors remain active at least up to the next ECU reset.

Abbreviations: DCR = DEUTZ Common Rail system, DMV = DEUTZ Magnetic Valve system (Pump-Line-Injector), SPN = Suspect Parameter Number, FMI = Failure Mode Identifier

The following basic steps should be performed to fix an error:

- a. Check the cabling for a short circuit/cable break; repair/replace cables if necessary.
- b. Check the particular component for a damage or the need of maintenance; repair/replace it if necessary.
- c. Reset the ECU by switching ignition off, waiting until the ECU has shut off and switching ignition on again. Check if the error is still active.
- d. In the case of a detected misfire additionally check the condition of the fuel system and the engine mechanics (valves, pistons).

Table 3: Errors sorted by SERDIA error code

Error code SERDIA	Component / Location	Description (Error location)	Defined for		ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV					
11	Air filter condition	Pressure loss above target range with system reaction	●	●	AirFltSysReac	1-3-6	107	1, 11	●
12	Accelerator pedal	Cable break or short circuit, signal implausible compared to signal of idle sensor (analog pedal)	●	●	APP1	2-2-6	91	2, 3, 4, 11	
14	Accelerator pedal	Cable break or short circuit, bad PWM signal range or frequency (digital pedal)	●	●	APPPwm	2-2-2	91	2, 8	●
15	Accelerator pedal	Bad PWM pulse-width repetition rate (digital pedal)	●	●	APPPwmPer	2-2-2	91	8, 11	●
16	ECU internal error	Ambient pressure sensor defective	●	●	APSCD	2-9-2	108	2, 3, 4, 11	●
17	Air heater relay	Cable break or short circuit	●	●	ArHt1	2-6-3	729	3, 4, 5, 11	●
18	Air heater magnetic valve	Cable break or short circuit	●	●	ArHt2	2-6-3	730	3, 4, 5, 11	●
19	Air heater relay	Cable break or wrong connection	●	●	ArHtCD_NoLd	2-6-3	676	4, 11	
20	Air heater relay	Inoperable during shut-off	●	●	ArHtCD_RlyErr	2-6-3	676	2, 5, 11	
22	Battery	Voltage below target range	●	●	BattCD	3-1-8	168	0, 1, 11	●
23	Battery voltage	Above target range with system reaction	●	●	BattCDSysReac	3-1-8	168	2, 11	●
24	Begin of injection period	Outside target range or missing (cylinder 1)		●	BIPCyl1	5-3-1	523561	2	●
25	Begin of injection period	Outside target range or missing (cylinder 2)		●	BIPCyl2	5-3-2	523562	2	●
26	Begin of injection period	Outside target range or missing (cylinder 3)		●	BIPCyl3	5-3-3	523563	2	●
27	Begin of injection period	Outside target range or missing (cylinder 4)		●	BIPCyl4	5-3-4	523564	2	●
28	Begin of injection period	Outside target range or missing (cylinder 5)		●	BIPCyl5	5-3-5	523565	2	●
29	Begin of injection period	Outside target range or missing (cylinder 6)		●	BIPCyl6	5-3-6	523566	2	●
30	Begin of injection period	Outside target range or missing (cylinder 7)		●	BIPCyl7	5-3-7	523567	2	●
31	Begin of injection period	Outside target range or missing (cylinder 8)		●	BIPCyl8	5-3-8	523568	2	●
32	Charge air pressure sensor	Cable break or short circuit	●	●	BPSCD	2-2-3	102	2, 3, 4	●
33	Charge air pressure	Outside target range with system reaction	●	●	BPSCDSysReac	2-2-3	102	2, 11	●
37	Coolant level	Outside target range with system reaction	●	●	CLSCDSysReac	2-3-5	111	1, 11	
38	Single cylinder	Misfire detected (cylinder 1)	●	●	CmbChbMisfire1	2-4-1	1323	11, 12	
39	Single cylinder	Misfire detected (cylinder 2)	●	●	CmbChbMisfire2	2-4-1	1324	11, 12	
40	Single cylinder	Misfire detected (cylinder 3)	●	●	CmbChbMisfire3	2-4-1	1325	11, 12	
41	Single cylinder	Misfire detected (cylinder 4)	●	●	CmbChbMisfire4	2-4-1	1326	11, 12	
42	Single cylinder	Misfire detected (cylinder 5)	●	●	CmbChbMisfire5	2-4-1	1327	11, 12	
43	Single cylinder	Misfire detected (cylinder 6)	●	●	CmbChbMisfire6	2-4-1	1328	11, 12	
44	Single cylinder	Misfire detected (cylinder 7)		●	CmbChbMisfire7	2-4-1	1450	11, 12	
45	Single cylinder	Misfire detected (cylinder 8)		●	CmbChbMisfire8	2-4-1	1451	11, 12	
46	Multiple cylinders	Misfire detected	●	●	CmbChbMisfireMul	2-4-1	1322	11, 12	
47	Misfire	Misfire detected with system reaction	●		CmbChbSysReac	2-4-1	1346	0, 11	

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Error code SERDIA	Component / Location	Description (Error location)	Defined for		ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV					
48	Shut-off request	Shut-off request ignored by operator	●	●	CoEngShOffDemlgr	3-4-1	1109	2, 11	
52	Engine brake (internal)	Internal engine brake: cable break or short circuit	●	●	CRERCD	5-2-8	1072	3, 4, 5, 11	
53	Preheating signal lamp	Cable break or short circuit	●	●	CSLpCD	3-2-8	1081	2, 3, 4, 5	
54	Coolant temperature warning lamp	Cable break or short circuit	●	●	CTLpCD	1-2-3	704	11	
55	Coolant temperature sensor	Cable break or short circuit	●	●	CTSCD	2-2-5	110	2, 3, 4	●
56	Coolant temperature	Outside target range with system reaction	●	●	CTSCDSysReac	2-3-2	110	0, 11	●
57	Reserve output	Short circuit to Ubatt (output 1)	●	●	Dummy1CD_Max	-	701	11	
58	Reserve output	Short circuit to ground (output 1)	●	●	Dummy1CD_Min	-	701	11	
59	Reserve output	Cable break or ECU internal error (output 1)	●	●	Dummy1CD_SigNpl	-	701	11	
60	Reserve output	Short circuit to Ubatt (output 2)	●	●	Dummy2CD_Max	-	702	11	
61	Reserve output	Short circuit to ground (output 2)	●	●	Dummy2CD_Min	-	702	11	
62	Reserve output	Cable break or ECU internal error (output 2)	●	●	Dummy2CD_SigNpl	-	702	11	
69	EGR actuator (external)	Short circuit to Ubatt	●	●	EGRCD_Max	4-1-4	2791	3, 11	
70	EGR actuator (external)	Short circuit to ground	●	●	EGRCD_Min	4-1-4	2791	4, 11	
71	EGR actuator (external)	Cable break or ECU internal error	●	●	EGRCD_SigNpl	4-1-5	2791	2, 5, 11	
72	EGR actuator (external)	Cable break or short circuit	●	●	EGRCDIntEGR	4-1-6	2791	2, 3, 4, 5	
74	Engine power output	Engine Power output: cable break or short circuit	●	●	EngCDTrqCalcOut	5-5-5	923	2, 3, 4, 5	
75	Engine speed sensor	Engine running with cam-shaft speed signal only	●	●	EngMBackUp	2-1-2	190	11, 12	●
76	Engine speed sensor	Speed signal from cam-shaft bad or missing	●	●	EngMCA1	2-1-2	190	8, 11, 12	●
77	Engine speed sensor	Speed signal from crank-shaft bad or missing	●	●	EngMCR1	2-1-2	190	8, 11, 12	●
78	Engine speed sensor	Speed signals of crank-shaft and cam-shaft are phase-shifted	●	●	EngMOfsCaScrS	2-1-3	190	2, 11	
79	Overspeed	Engine overspeed with system reaction	●	●	EngPrtSysReacFOC	2-1-4	190	0, 11	
80	Overrun conditions	Overrun conditions with system reaction	●	●	EngPrtSysReacORC	2-1-4	190	11, 14	●
81	Engine operating signal lamp	Cable break or ECU internal error	●	●	ESLpCD	1-4-2	703	2, 3, 4, 5	
82	Engine brake flap actuator	Engine brake flap actuator: cable break or short circuit	●	●	ExFICD	2-1-9	1074	3, 4, 5, 11	
83	Fan actuator	Fan actuator: cable break or short circuit	●	●	FanCD	2-3-8	975	2, 3, 4, 5	
86	Fan speed	Above target range with system reaction	●	●	FanCDSysReac	2-3-8	523602	2, 11	●
87	Fuel filter water level sensor	Cable break or short circuit	●	●	FIFCD	2-2-8	97	3, 4, 11	●
89	Water level in fuel filter	Above target range	●	●	FIFCD_WtLvl	2-2-8	97	11, 12	
90	Fuel low pressure sensor	Cable break or short circuit	●	●	FIPSCD	2-1-6	94	3, 4, 11	●
91	Fuel low pressure	Below target range with system reaction	●	●	FIPSCDSysReac	2-1-6	94	2, 11	●
94	CAN message	Missing or value above target range (message "DecV1" = pseudo pedal)	●	●	FrmMngDecV1	5-2-6	523239	2, 12	●
95	CAN message	Missing (message "FunModCtl" = function mode control)	●	●	FrmMngFunModCtl	5-2-7	523240	11, 12	●
106	CAN message	Missing (message "EngPrt" = engine protection)	●	●	FrmMngTOEngPrt	3-3-3	523212	11, 12	●

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Error code SERDIA	Component / Location	Description (Error location)	Defined for		ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV					
110	CAN message	Missing (message "PrHtEnCmd" = preheat and engine command)	●	●	FrmMngTOPrHtEnCmd	3-3-7	523216	11, 12	●
112	CAN message	Missing (message "RxCCVS" = cruise control)	●	●	FrmMngTORxCCVS	1-1-1	523218	11, 12	●
113	CAN message	Missing (message "RxEngTemp" = engine temperature)	●	●	FrmMngTORxEngTemp	1-1-2	523604	11, 12	●
117	CAN message	Missing (message "SwtOut" = switch outputs)	●	●	FrmMngTOSwtOut	1-1-5	523238	11, 12	●
118	CAN message	Missing (message "TCO1" = speedo signal)	●	●	FrmMngTOTCO1	1-1-6	523222	11, 12	●
120	CAN message	Missing (message "TSC1-AE")	●	●	FrmMngTOTSC1AE	1-1-8	523605	11, 12	
121	CAN message	Missing (message "TSC1-AR")	●	●	FrmMngTOTSC1AR	1-1-9	523606	11, 12	
122	CAN message	Missing (message "TSC1-DE")	●	●	FrmMngTOTSC1DE	1-1-8	523607	11, 12	
123	CAN message	Missing (message "TSC1-DR")	●	●	FrmMngTOTSC1DR	1-1-9	523608	11, 12	
124	CAN message	Missing (message "TSC1-PE")	●	●	FrmMngTOTSC1PE	1-1-8	523609	11, 12	
125	CAN message	Missing (message "TSC1-TE")	●	●	FrmMngTOTSC1TE	1-1-8	898	11, 12	
126	CAN message	Missing (message "TSC1-TR")	●	●	FrmMngTOTSC1TR	1-1-9	520	11, 12	
127	CAN message	Missing (message "TSC1-VE")	●	●	FrmMngTOTSC1VE	1-1-8	523610	11, 12	
128	CAN message	Missing (message "TSC1-VR")	●	●	FrmMngTOTSC1VR	1-1-9	523611	11, 12	
131	CAN message	Time-out of at least one sended message	●	●	FrmMngTxTO	2-7-1	523500	11, 12	●
133	Fuel temperature sensor	Fuel temp. sensor: cable break or short circuit	●	●	FTSCD	2-2-7	174	3, 4, 11	●
134	Fuel temperature	Above target range with system reaction	●	●	FTSCDSysReac	2-3-7	174	0, 11	●
136	Customer-specific sensor	Cable break or short circuit (sensor 1)	●	●	GOTSCD	1-3-3	-	2, 3, 4, 11	●
137	Customer-specific temperature	Outside target range with system reaction (temperature 1)	●	●	GOTSCDSysReac	1-3-3	-	2, 11	●
138	Hand throttle	Cable break or short circuit, signal implausible compared to signal of idle sensor	●	●	HdThrt	1-2-6	29	2, 3, 4, 11	
139	Customer-specific sensor	Cable break or short circuit (sensor 2)	●	●	HOTSCD	3-1-4	1638	3, 4, 11, 12	●
140	Customer-specific temperature	Outside target range with system reaction (temperature 2)	●	●	HOTSCDSysReac	3-1-4	1638	2, 11	●
141	ECU internal error	Communication with chip CJ 940 disturbed	●	●	HWEMonCom	5-5-5	523617	11, 12	
142	ECU internal error	EEPROM memory access	●	●	HWEMonEEPROM	2-8-1	630	11, 12	
143	ECU internal hardware monitoring	A recovery occurred which is stored as protected	●	●	HWEMonRcyLocked	5-5-5	523612	11, 14	
144	ECU internal hardware monitoring	A recovery occurred which is not stored	●	●	HWEMonRcySuppressed	5-5-5	523612	11, 14	
145	ECU internal hardware monitoring	A recovery occurred which is visible in the error memory	●	●	HWEMonRcyVisible	5-5-5	523612	11, 14	
146	ECU internal hardware monitoring	Overvoltage	●	●	HWEMonUMaxSupply	5-5-5	523612	3, 11	
147	ECU internal hardware monitoring	Undervoltage	●	●	HWEMonUMinSupply	5-5-5	523612	4, 11	
149	Charge air temperature sensor	Cable break or short circuit	●	●	IATSCD	1-2-8	105	2, 3, 4, 11	●
150	Charge air temperature	Above target range with system reaction	●	●	IATSCDSysReac	2-3-3	105	0, 11	●
153	Multiple injectors	Short circuit (cylinder bank 1)	●	●	InjVlvBnk1A	1-5-1	523350	3, 4, 11, 13	●
154	Multiple injectors	Cable break (cylinder bank 1)	●	●	InjVlvBnk1B	1-5-1	523351	5, 13	●

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Error code SERDIA	Component / Location	Description (Error location)	Defined for		ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV					
155	Multiple injectors	Short circuit (cylinder bank 2)	●	●	InjVlvBnk2A	1-5-2	523352	3, 4, 11, 13	●
156	Multiple injectors	Cable break (cylinder bank 2)	●	●	InjVlvBnk2B	1-5-2	523353	5, 13	●
157	ECU internal error	Injector power stage A	●	●	InjVlvChipA	1-5-3	523354	2, 3, 12, 14	
158	ECU internal error	Injector power stage B	●	●	InjVlvChipB	1-5-3	523355	12	
159	Single injector	Short circuit (injector 1)	●	●	InjVlvCyl1A	1-5-4	651	3, 4, 11, 13	●
160	Single injector	Cable break (injector 1)	●	●	InjVlvCyl1B	1-5-4	651	5, 13	●
161	Single injector	Short circuit (injector 2)	●	●	InjVlvCyl2A	1-5-5	652	3, 4, 11, 13	●
162	Single injector	Cable break (injector 2)	●	●	InjVlvCyl2B	1-5-5	652	5, 13	●
163	Single injector	Short circuit (injector 3)	●	●	InjVlvCyl3A	1-5-6	653	3, 4, 11, 13	●
164	Single injector	Cable break (injector 3)	●	●	InjVlvCyl3B	1-5-6	653	5, 13	●
165	Single injector	Short circuit (injector 4)	●	●	InjVlvCyl4A	1-6-1	654	3, 4, 11, 13	●
166	Single injector	Cable break (injector 4)	●	●	InjVlvCyl4B	1-6-1	654	5, 13	●
167	Single injector	Short circuit (injector 5)	●	●	InjVlvCyl5A	1-6-2	655	3, 4, 11, 13	●
168	Single injector	Cable break (injector 5)	●	●	InjVlvCyl5B	1-6-2	655	5, 13	●
169	Single injector	Short circuit (injector 6)	●	●	InjVlvCyl6A	1-6-3	656	3, 4, 11, 13	●
170	Single injector	Cable break (injector 6)	●	●	InjVlvCyl6B	1-6-3	656	5, 13	●
171	Single injector	Short circuit (injector 7)		●	InjVlvCyl7A	1-6-4	657	3, 4, 11, 13	●
172	Single injector	Cable break (injector 7)		●	InjVlvCyl7B	1-6-4	657	5, 13	●
173	Single injector	Short circuit (injector 8)		●	InjVlvCyl8A	1-6-5	658	3, 4, 11, 13	●
174	Single injector	Cable break (injector 8)		●	InjVlvCyl8B	1-6-5	658	5, 13	●
175	Rail pressure	Compression test active: rail-pressure monitoring is going to be disabled	●	●	InjVlvErrDet	5-5-5	523370	11, 14	
176	Metering unit valve	Flow rate outside target range	●		MeUnCD_ADC	1-3-5	523615	3, 4, 11	
177	Metering unit valve	Not connected or output disabled	●		MeUnCDNoLoad	1-3-5	523615	5, 11, 12	
178	Metering unit valve	Short circuit to Ubatt	●		MeUnCDSCBat	1-3-5	523615	11, 12	
179	Metering unit valve	Short circuit to ground	●		MeUnCDSCGnd	1-3-5	523615	11, 12	
182	Main relay	Short circuit to Ubatt (relay 1)	●	●	MnRly1_SCB	1-3-7	2634	3, 11	
183	Main relay	Short circuit to ground (relay 1)	●	●	MnRly1_SCG	1-3-8	2634	4, 11	
184	ECU internal error	Watchdog counter exceeds maximum	●	●	Montr	1-3-9	523420	11, 14	
186	Main relay	Short circuit to ground or emergency shut-off (relay 2)	●	●	MRlyCD	2-6-1	2634	7, 11, 12	
187	Main relay	Short circuit to ground or emergency shut-off (relay 3)	●	●	MRlyCDMnRly2	2-6-1	563	7, 11, 12	
188	Main relay	Short circuit to ground or emergency shut-off (relay 3)	●	●	MRlyCDMnRly3	2-6-1	2634	7, 11, 12	
189	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 1)	●	●	MSSCD1	1-4-3	523450	2, 3, 4, 11	●
190	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 2)	●	●	MSSCD2	1-4-3	523451	2, 3, 4, 11	●
191	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 3)	●	●	MSSCD3	1-4-3	523452	2, 3, 4, 11	●

DEUTZ EMR3 - Diagnostic trouble codes



Error code SERDIA	Component / Location	Description (Error location)	Defined for		ID	Blink code	SPN	FMI	Self-curing ¹
			DCR	DMV					
192	CAN bus off-state	Cable break or short circuit, off-state (CAN bus A)	●	●	NetMngCANAOff	2-7-1	639	11, 14	●
193	CAN bus off-state	Cable break or short circuit, off-state (CAN bus B)	●	●	NetMngCANBOff	2-7-1	1231	11, 14	●
194	CAN bus off-state	Cable break or short circuit, off-state (CAN bus C)	●	●	NetMngCANCOff	2-7-1	1235	11, 14	●
195	Oil pressure warning lamp	Cable break or short circuit	●	●	OPLpCD	1-3-5	705	2, 3, 4, 5	
196	Oil pressure sensor	Cable break or short circuit	●	●	OPSCD	2-2-4	100	0, 2, 3, 4	●
197	Oil pressure sensor	Pressure value implausible low	●	●	OPSCD1	2-3-1	100	1, 11	●
198	Oil pressure	Above target range	●	●	OPSCDSysReacHi	2-3-1	100	0, 11	●
199	Oil pressure	Below target range	●	●	OPSCDSysReacLo	2-3-1	100	1, 11	●
200	Override switch	Switch hangs	●	●	OSwCD	1-4-5	1237	2, 11	●
201	Oil temperature sensor	Cable break or short circuit	●	●	OTSCD	1-4-4	175	2, 3, 4	●
203	Oil temperature	Below target range with system reaction	●	●	OTSCDSysReac	1-4-4	175	0, 11	●
208	Rail pressure limiting valve	Opening failure	●		PRVMon	1-4-6	523470	2, 11, 12, 14	
209	Rail pressure sensor	Cable break or short circuit	●		RailCD	1-4-7	157	3, 4, 11	
210	Rail pressure sensor	Deviation of signal during start or after-run above target range	●		RailCDOfsTst	1-4-7	157	0, 1, 11	●
211	Rail pressure	Positive deviation (speed dependent) outside target range	●		RailMeUn0	1-3-4	523613	0, 11	●
212	Rail pressure	Positive deviation (flow dependent) outside target range (⇒ leakage!)	●		RailMeUn1	1-3-4	523613	0, 11	●
213	Rail pressure	Negative deviation (flow dependent) outside target range	●		RailMeUn2	1-3-4	523613	0, 11	●
214	Rail pressure	Negative deviation (speed dependent) outside target range	●		RailMeUn3	1-3-4	523613	1, 11	●
215	Rail pressure	Pressure above target range	●		RailMeUn4	1-3-4	523613	0, 11	●
216	Rail pressure	Implausible (leakage, injector needle blocked in open position)	●		RailMeUn7	1-3-4	523613	2, 11	●
218	ECU internal error	Redundant shut-off conditions detected	●	●	SOPTst	1-4-9	523490	3, 4, 11, 12	
219	ECU internal error	Wrong voltage of internal 5V reference source 1	●	●	SSpMon1	2-8-2	1079	3, 4, 11	●
221	ECU internal error	Wrong voltage of internal 5V reference source 2	●	●	SSpMon2	2-8-2	1080	3, 4, 11	●
222	ECU internal error	Wrong voltage of internal 5V reference source 3	●	●	SSpMon3	2-8-2	523601	3, 4, 11	●
223	Start relay	Start relay (high side): short circuit	●	●	StrtCDHS	5-1-2	677	3, 4, 11	
224	Start relay	Start relay (low side): cable break or short circuit, disabled by ECU	●	●	StrtCDLS	5-1-2	677	3, 4, 5, 11	
225	Diagnostic lamp	Cable break or short circuit, disabled by ECU	●	●	SysLamp	5-1-3	624	2, 3, 4, 5	
226	Terminal 15	Ignition ON not detected	●	●	T15CD	5-1-4	158	11, 12	
227	Terminal 50	Engine start switch hangs	●	●	T50CD	5-1-5	523550	11, 12	
228	ECU internal error	Time processing unit (TPU) defective	●	●	TPUMon	5-5-5	523550	2, 11	
232	Vehicle speed signal	Speed above target range, signal missing or implausible	●	●	VSSCD1	5-2-1	84	0, 8, 12, 14	●
235	ECU internal error	Serial communication interface defective	●	●	WdCom	5-5-5	523600	11, 12	
236	Rail pressure limiting valve	Opening failure with system reaction	●		PRVMonSysReac	1-4-6	523470	11, 12	

¹ Non-self-curing errors remain active at least up to the next ECU reset.

Abbreviations: DCR = DEUTZ Common Rail system, DMV = DEUTZ Magnetic Valve system (Pump-Line-Injector), SPN = Suspect Parameter Number, FMI = Failure Mode Identifier

The following basic steps should be performed to fix an error:

- a. Check the cabling for a short circuit/cable break; repair/replace cables if necessary.
- b. Check the particular component for a damage or the need of maintenance; repair/replace it if necessary.
- c. Reset the ECU by switching ignition off, waiting until the ECU has shut off and switching ignition on again. Check if the error is still active.
- d. In the case of a detected misfire additionally check the condition of the fuel system and the engine mechanics (valves, pistons).

Table 4: FMI codes

FMI	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

FMI	Description
8	Abnormal frequency, pulse width, or period
9	Abnormal update rate
10	Abnormal rate of change
11	Failure mode not identifiable
12	Bad intelligent device or component
13	Out of Calibration
14	Special Instructions
15	Reserved