

DaimlerChrysler

Adaption Module as Vehicle Control ADM2



Control Unit

Operating Manual

3. Construction

12 pin connector (continued)				
pin	type	function	short cut	description
12/09	DE	configurable input	DSF1	configurable input, switch to ground, normally open 0 = disabled 1 = ABS 2 = Retarder 3 = Temposet (set rodspeed limit) 4 = grid heater detection 5 = minimal torque 6 = remote cab driving
12/10	DE	configurable input	DSF0	configurable input, switch to battery voltage, normally open 0 = disabled 1 = ABS 2 = Retarder 3 = Temposet (set rodspeed limit) 4 = grid heater detection 5 = minimal torque 6 = remote cab driving
12/11	DE	engine stop (external)	STOP_ EXT	switch to battery voltage, normally open stops engine, if closed
12/12	IE	engine speed alternator (terminal W)	KL. W	feature not yet available

A = output
E/A = input/output (bidirectional)
DE = digital input
AE = analog input
IE = pulse input

3. Construction

digital inputs (DE) (continued)							
pin	funktion	abbrev	U _{MAX}	U _{MIN}	U _{LOW}	U _{HIGH}	further data
15/01	transmission neutral	NE	U _B	0 V	< 3,0 V	> 7,0 V	pull up resistor 2,35 kOhm
15/02	dual speed axle	HA	U _B	0 V	< 3,0 V	> 7,0 V	pull up resistor 5 kOhm
12/07	feature not yet available.						
12/08	feature not yet available.						
12/09	configurable input	DSF1	U _B	0 V	< 3,0 V	> 7,0 V	pull up resistor 2,35 kOhm
12/10	configurable input	DSF0	U _B	0 V	< 3,5 V	> 8,2 V	pull down resistor 7,7kOhm
12/11	engine stop (external)	STOP- EXT	U _B	0 V	< 3,5 V	> 8,2 V	pull down resistor 7,7kOhm

analog inputs (AE)					
pin	function	abbrev.	U _{MIN}	U _{MAX}	further data
21/11	throttle pedal signal analog	AFPS	0 V	5 V	e.g. Williams pedal terminal A, pull down resistor 47 kOhm to ground
18/18	remote throttle signal	HFGS	0 V	5 V	pull up resistor 200 kOhm to 5 V.
15/07	coolant level sensor	KW_SE	0 V	5 V	pull up resistor 440 Ohm to 5 V.
15/08	air filter sensor	LF_SE	0 V	5 V	pull up resistor 200kOhm to 5 V.

14 Switching threshold relay 3 + relay 4	17 IWK4 temperature	200	-50	200	°C
	18 IWK4 hysteresis T	5	0	200	°C

Parameter group	Parameter	Basic value	Range Min	Range Max	Unit
15 Cruise control	01 minimum speed for cruise control	48	38	152	km/h
	02 maximum speed for cruise control	152	48	152	km/h
	03 step speed CC+	2	0	10	km/h
	04 step speed CC-	2	0	10	km/h
	05 ramp up	2	0	20	km/h/s
	06 ramp down	2	0	20	km/h/s
	07 automatic resumption after gear shift: 0=not active 1=active	0	0	1	-

Parameter group	Parameter	Basic value	Range Min	Range Max	Unit
16 Configuration relay1  — Adjustment of parameters 16/01 and 16/18 until 16/20 only in driving test and only through skilled workers with know-how in control engineering	01 relay 1: 0= not active 1= starter protection 2= FFG kickdown position 3= transmission output1	2	0	3	-
	18 maximum starting time	30	0	120	s
	19 minimum speed	80	0	500	1/min
	20 switch-off time	1	0	30	s

10 Configuration engine brake(continued)	
Parameter	Description
11 Type engine brake	refer to standard SAE 1939 chapter 5.2.2.2 and chapter 5.2.2.3 3 = MBR_KD (constantly open valve) 4 = MBR_BK (engine retarder flap) 255= not defined
22 Cruise Control stage 3 (both MBR_H and MBR_L) on ##	Cut in- and cut off speeds (threshold values) for the engine brake step 3 (MBR_L and MBR_H). ##valid from the diagnosis version 204
23 Cruise Control stage 3 (both MBR_H and MBR_L) off ##	
24 Engine brake configuration ##	Type of engine brake system: 0 = compression brake and exhaust flap 1 = compression brake and turbo brake
25 Engine brake stage 1 mask ##	Engine brake activation if MBR_L=1 and MBR_H=0 0 = no activation 64 = decompression valve (stage 1) 80 = decompression valve and exhaust flap (stage 2) 81 = decompression valve ,exhaust flap and turbo brake (stage 3)
26 Engine brake stage 1 factor ##	Turbo brake torque demand relative value If parameter 10/25 = 81 then parameter 10/26 can be set from 0 to 100% for turbo brake demand else parameter 10/26 has to be set on value 100%
27 Engine brake stage 2 mask ##	Engine brake activation if MBR_L=0 and MBR_H=1 0 = no activation 64 = decompression valve (stage 1) 80 = decompression valve and exhaust flap (stage 2) 81 = decompression valve ,exhaust flap and turbo brake (stage 3)
28 Engine brake stage 2 factor ##	Turbo brake torque demand relative value If parameter 10/27 = 81 then parameter 10/28 can be set from 0 to 100% for turbo brake demand else parameter 10/28 has to be set on value 100%
29 Engine brake stage 3mask ##	Engine brake activation if MBR_L=1 and MBR_H=1 0 = no activation 64 = decompression valve (stage 1) 80 = decompression valve and exhaust flap (stage 2) 81 = decompression valve ,exhaust flap and turbo brake (stage 3)

7. Application

7.5. Engine brake (Retarder)



Risk of injury!

The engine retarder is a safety-relevant function for commercial vehicles.

Incorrect wiring or unsuitable parameter programming can make it impossible to actuate the engine retarder. The lack of, or reduction in, engine braking power could lead to the vehicle brake being overloaded.

Changes to the parameters in this group must only be performed by specially trained personnel or after consultation with the engine manufacturer. It is not normally necessary to change these parameters

ADM2 supports 2 engine brake systems

- exhaust flap
- decompression valve

The responding outputs for the engine brake can be configured. For engine brake configuration refer to chapter 7.5.3.

The control of the engine brake takes place in a single stage or in a multi stage.

Refer for parameter settings to parameter 10/12, stage engine brake.

The Engine brake can be activated if the following conditions are complied

- Driving mode, no PTO speed control
- No ABS intervention
- Engine speed higher than parameter 10/01, minimum engine speed MBR
- Accelerator pedal not further pushed down than maximum throttle position for engine brake, parameter 10/02
- Vehicle speed higher than minimum road speed for engine brake operation, parameter 10/04

For engine brake activation refer to chapter 7.5.4 and for engine brake deactivation refer to chapter 7.5.5

Parameter

- 02/13 Configuration engine brake MBR
- 10/01 Minimum engine speed MBR
- 10/04 Minimum road speed for engine brake operation
- 10/11 Type engine brake
- 10/12 Stage engine brake

Inputs

- Pin 18/08 MBR_L
- Pin 18/09 MBR_H

Outputs

- Pin 15/06 MBR_BK
- Pin 15/10 MBR_KD

7. Application

7.5.3.5.3. Exhaust flap und decompression valve at PLD

Configuration ADM2:

Configuration Vehicle Parameters / Configuration Engine Brake , **02/13**
parameter value = 0 no engine brake at ADM2

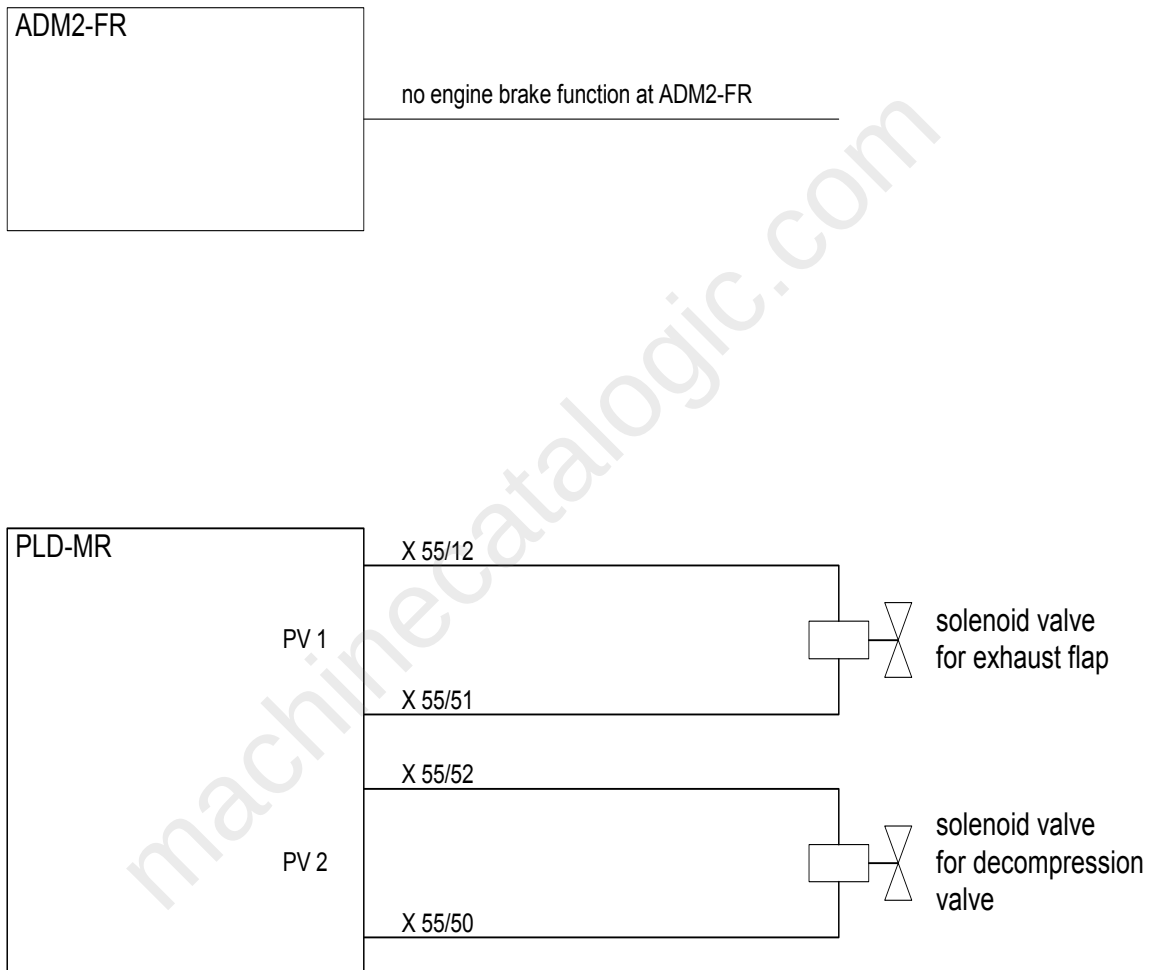
Configuration PLD (DiagV. 3..5):

vehicle parameter set1/ analog valve 1, **06/01**

parameter value = 3: exhaust flap at PLD

vehicle parameter set1/ analog valve 2, **06/02**

parameter value = 3: decompression valve at PLD



Message			Message Definition				Length or Resolution	Operating Data Range
Name	Identifier [Hex]	Repetition-rate	State	Byte	Bit	Comment / Parameter	SAE J1939/71 Rev. 10/1998	
EEC1	0C F0 04 00 PGN=61444	10ms	☒			Electronic Engine Controller #1	5.3.7	
				1	8..5	Not defined	---	4 bits 1111b
			✓		4..1	Engine / Retarder torque mode	5.2.2.1	4 bits 0000b...1110b
			✓	2		Drivers demand engine - percent torque	5.2.1.4	1% 0 to 125%, (0= -125%, 125=0%, 250= +125%)
			✓	3		Actual engine - percent torque	5.2.1.5	1% 0 to 125%
			✓	4, 5		Engine Speed	5.2.1.9	0.125 rpm 0 to 8031.875 rpm
				6		Source address of controlling device for engine control	5.2.5.298	1 Byte 0 to 253d
				7, 8		Not defined	---	2 Bytes FF.FFh
EEC2	0C F0 03 00 PGN=61443	50ms	☒			Electronic Engine Controller #2	5.3.6	
				1	8, 7	Not defined	---	2 bits 00b, 01b
					6, 5	Road speed limit status	5.2.6.76	2 bits 00b, 01b
			✓		4, 3	Accelerator pedal (AP) kickdown switch	5.2.2.5	2 bits 00b, 01b
			✓		2, 1	Accelerator pedal (AP) low idle switch	5.2.2.4	2 bits 00b, 01b
			✓	2		Accelerator pedal (AP) position	5.2.1.8	0.4% 0 to 100%
			✓	3		Percent load at current speed	5.2.1.7	1% 0 to 125%
			(✓)	4		Remote accelerator	5.2.1.59	0.4% 0 to 100%
EEC3	18 FE DF 00 PGN=65247	250ms		5..8		Not defined	---	4 Bytes FF.FF.FF.FFh
			☒			Electronic Engine Controller	5.3.13	
			✓	1		Nominal friction - percent torque	5.2.1.6	1% 0 to 125%
			✓	2, 3		Engine's desired operating speed	5.2.1.10	0.125 rpm 0 to 8031.875 rpm
			✓	4		Engine's operating speed asymmetry adjustment	5.2.1.16	1Byte, ratio 0 to 250d
				5..8		Not defined	---	4 Bytes FF.FF.FF.FFh

Full Version Available

Mercedes-Benz ADM2 Control Unit Operator Manual

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File Pages: 478 · File Count: 3 · File Language: English