

Pinlayout VCU MS 50.4 / MS 50.4P

Analogue Inputs

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Std IO_Map channel
SENS-B 54	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB54_C	24	ana_in_01
SENS-B 55	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB55_C	24	ana_in_02
SENS-B 65	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB65_C	24	ana_in_03
SENS-B 62	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB62_C	24	ana_in_04
SENS-B 47	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB47_C	24	ana_in_05
SENS-A 61	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA61_C	24	ana_in_06
SENS-A 42	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA42_C	24	ana_in_07
SENS-A 39	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA39_C	24	ana_in_08
SENS-A 40	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA40_C	24	ana_in_09
SENS-A 41	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA41_C	24	ana_in_10
SENS-B 48	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB48_C	24	ana_in_11
SENS-B 57	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB57_C	24	ana_in_12
SENS-B 40	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB40_C	24	ana_in_13
SENS-B 49	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB49_C	24	ana_in_14
SENS-B 50	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpB50_C	24	ana_in_15
SENS-A 47	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA47_C	24	ana_in_16
SENS-A 49	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA49_C	24	ana_in_17
SENS-A 55	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA55_C	24	ana_in_18
SENS-A 56	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA56_C	24	ana_in_19
SENS-A 48	analogue input 0..5V	switch.-pullup 3k01, 12bit		cfgPullUpA48_C	24	ana_in_20
SENS-B 41	analogue input 0..5V	switch.-pullup 3k01, 12bit	I/O Package	cfgPullUpB41_C	24	ana_in_21
SENS-B 42	analogue input 0..5V	switch.-pullup 3k01, 12bit	I/O Package	cfgPullUpB42_C	24	ana_in_22
SENS-A 57	analogue input 0..5V	switch.-pullup 3k01, 12bit	I/O Package	cfgPullUpA57_C	24	ana_in_23
SENS-A 50	analogue input 0..5V	switch.-pullup 3k01, 12bit	I/O Package	cfgPullUpA50_C	24	ana_in_24
SENS-A 24 SENS-A 23	diff. analogue input	1(+) thermocouple 1(-)			24 shielded	
SENS-A 29 SENS-A 38	diff. analogue input	2(+) thermocouple 2(-)			24 shielded	
SENS-A 63 SENS-A 62	diff. analogue input	3(+) thermocouple 3(-)			24 shielded	
SENS-A 66 SENS-A 65	diff. analogue input	4(+) thermocouple 4(-)			24 shielded	

SENS-B 63	analogue input 0..5V	HSL1 high speed ADC	High Speed Logging		24	
SENS-B 56	analogue input 0..5V	HSL2 high speed ADC	High Speed Logging		24	
SENS-B 66	analogue input 0..5V	HSL3 high speed ADC	High Speed Logging		24	
SENS-B 61	analogue input 0..5V	HSL4 high speed ADC	High Speed Logging		24	
SENS-B 60	analogue input 0..5V	HSL5 high speed ADC	High Speed Logging		24	
SENS-B 64	analogue input 0..5V	HSL6 high speed ADC	High Speed Logging		24	

Digital Revolution Inputs

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Std IO_Map channel
LIFE 43	Hall/DF11 0-5V	switchable 0=Hall,1=DF11		cfgRevInpL43_C	24 shielded	DIGIN_01
LIFE 10	Hall/DF11 0-5V	switchable 0=Hall,1=DF11		cfgRevInpL10_C	24 shielded	DIGIN_02
LIFE 37	Hall/DF11 0-5V	switchable 0=Hall,1=DF11		cfgRevInpL37_C	24 shielded	DIGIN_03
LIFE 03	Hall/DF11 0-5V	switchable 0=Hall,1=DF11		cfgRevInpL43_C	24 shielded	DIGIN_04
LIFE 64	Hall 0-5V		I/O Package		24 shielded	DIGIN_05
LIFE 60	Hall 0-5V		I/O Package		24 shielded	DIGIN_06
LIFE 59	Hall 0-5V		I/O Package		24 shielded	DIGIN_07
LIFE 53	Hall 0-5V		I/O Package		24 shielded	DIGIN_08

Digital Inputs

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Std IO_Map channel
LIFE 04	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL04_C	24	DIGIN_09
LIFE 06	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL06_C	24	DIGIN_10
LIFE 46	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL46_C	24	DIGIN_11
LIFE 47	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL47_C	24	DIGIN_12
LIFE 14	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL14_C	24	DIGIN_13
LIFE 19	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL19_C	24	DIGIN_14
LIFE 29	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL29_C	24	DIGIN_15
LIFE 57	digital input 0..5V	switch.-pullup 2k15		cfgPullUpL57_C	24	DIGIN_16
LIFE 21	I_S_LAPTRIG negative edge 0..5V	20ms main-trigger, 40ms sub-trigger			24	LAPTRIGGER

Linear Variable Differential Transformer

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Measurement channel
SENS-B 22 SENS-B 23 SENS-B 33 SENS-B 32 SENS-B 24 SENS-B 16	O_LVDT1_PRI1 -10V..+10V O_LVDT1_PRI2 -10V..+10V I_LVDT1_SEC1P -10V..+10V I_LVDT1_SEC_M -10V..+10V I_LVDT1_SEC2N -10V..+10V G_SCR_LVDT1	output1 primary coil output2 primary coil input1 secondary coil virtual ground secondary coil input2 secondary coil GND,2A fused	I/O Package		24 shielded	
SENS-B 09 SENS-B 15 SENS-B 03 SENS-B 08 SENS-B 14 SENS-B 31	O_LVDT2_PRI1 -10V..+10V O_LVDT2_PRI2 -10V..+10V I_LVDT2_SEC1P -10V..+10V I_LVDT2_SEC_M -10V..+10V I_LVDT2_SEC2N -10V..+10V G_SCR_LVDT2	output1 primary coil output2 primary coil input1 secondary coil virtual ground secondary coil input2 secondary coil GND,2A fused	I/O Package		24 shielded	
SENS-A 64 SENS-A 60 SENS-A 58 SENS-A 53 SENS-A 59 SENS-A 54	O_LVDT3_PRI1 -10V..+10V O_LVDT3_PRI2 -10V..+10V I_LVDT3_SEC1P -10V..+10V I_LVDT3_SEC_M -10V..+10V I_LVDT3_SEC2N -10V..+10V G_SCR_LVDT3	output1 primary coil output2 primary coil input1 secondary coil virtual ground secondary coil input2 secondary coil GND,2A fused	I/O Package		24 shielded	
SENS-A 52 SENS-A 45 SENS-A 51 SENS-A 44 SENS-A 43 SENS-A 46	O_LVDT4_PRI1 -10V..+10V O_LVDT4_PRI2 -10V..+10V I_LVDT4_SEC1P -10V..+10V I_LVDT4_SEC_M -10V..+10V I_LVDT4_SEC2N -10V..+10V G_SCR_LVDT4	output1 primary coil output2 primary coil input1 secondary coil virtual ground secondary coil input2 secondary coil GND,2A fused	I/O Package		24 shielded	

Outputs

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Std IO_Map channel
SENS-B 34	low side switch	VBAT 2A PWM		cfgFwB34_C	22	LS_OUT_01
SENS-B 17	low side switch	VBAT 2A PWM		cfgFwB17_C	22	LS_OUT_02
SENS-B 43	low side switch	VBAT 2A PWM		cfgFwB43_C	22	LS_OUT_03
SENS-B 59	low side switch	VBAT 2A PWM		cfgFwB59_C	22	LS_OUT_04
SENS-A 10	low side switch	VBAT 2A PWM	I/O Package	cfgFwA10_C	22	LS_OUT_05
SENS-A 01	low side switch	VBAT 2A PWM	I/O Package	cfgFwA01_C	22	LS_OUT_06
SENS-A 03	low side switch	VBAT 2A PWM	I/O Package	cfgFwA03_C	22	LS_OUT_07
SENS-A 16	low side switch	VBAT 2A PWM	I/O Package	cfgFwA16_C	22	LS_OUT_08

SENS-B 25 SENS-B 26	high side switch	VBAT 8A PWM (+) (+) use both pins		cfgHssB25B26_C bulb/DC-Motor	18	HS_OUT_01
SENS-B 51 SENS-B 58	high side switch	VBAT 8amps PWM (+) (+) use both pins		cfgHssB51B58_C bulb/DC-Motor	18	HS_OUT_02
SENS-A 08 SENS-A 09	high side switch	VBAT 8amps PWM (+) (+) use both pins	I/O Package	cfgHssA08A09_C bulb/DC-Motor	18	HS_OUT_03
SENS-A 04 SENS-A 05	high side switch	VBAT 8amps PWM (+) (+) use both pins	I/O Package	cfgHssA04A05_C bulb/DC-Motor	18	HS_OUT_04
SENS-A 33	digital output	5V 50mA PWM	I/O Package	cfgDigOutA33_C	24	DIG_OUT_01
SENS-A 32	digital output	5V 50mA PWM	I/O Package	cfgDigOutA32_C	24	DIG_OUT_02
SENS-A 31	digital output	5V 50mA PWM	I/O Package	cfgDigOutA31_C	24	DIG_OUT_03
SENS-A 30	digital output	5V 50mA PWM	I/O Package	cfgDigOutA30_C	24	DIG_OUT_04

Network

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Measurement channel
LIFE 48 LIFE 56	CAN Bus 1 high CAN Bus 1 low	up to 1Mbit/s no termination		cfgErrMonCan1_C stErrLvlCan1_C	CAN	stErrCan1
LIFE 62 LIFE 55	CAN Bus 2 high CAN Bus 2 low	up to 1Mbit/s no termination		cfgErrMonCan2_C stErrLvlCan2_C	CAN	stErrCan2
LIFE 12 LIFE 13	CAN Bus 3 high CAN Bus 3 low	up to 1Mbit/s no termination		cfgErrMonCan3_C stErrLvlCan3_C	CAN	stErrCan3
LIFE 07 LIFE 08	CAN Bus 4 high CAN Bus 4 low	up to 1Mbit/s no termination		cfgErrMonCan4_C stErrLvlCan4_C	CAN	stErrCan4
LIFE 30 LIFE 31	CAN Bus 5 high CAN Bus 5 low	up to 1Mbit/s no termination	I/O Package	cfgErrMonCan5_C stErrLvlCan5_C	CAN	stErrCan5
LIFE 38 LIFE 39	CAN Bus 6 high CAN Bus 6 low	up to 1Mbit/s no termination	I/O Package	cfgErrMonCan6_C stErrLvlCan6_C	CAN	stErrCan6
LIFE 01 LIFE 02	CAN Bus 7 high CAN Bus 7 low	up to 1Mbit/s no termination	I/O Package	cfgErrMonCan7_C stErrLvlCan7_C	CAN	stErrCan7
LIFE 05 LIFE 11	CAN Bus 8 high CAN Bus 8 low	up to 1Mbit/s no termination	I/O Package	cfgErrMonCan8_C stErrLvlCan8_C	CAN	stErrCan8
LIFE 09	LIN Bus				24	
LIFE 15 LIFE 16	Serial interface	RS232_RX RS232_TX			24 24	
LIFE 65 LIFE 54 LIFE 66 LIFE 61	Ethernet 1	ETH1RX+ 100Mbit/s ETH1RX- ETH1TX+ ETH1TX-			CAT5, shield to G_COMSCR	

LIFE 26 LIFE 25 LIFE 18 LIFE 17	Ethernet 2	ETH2RX+ 100Mbit/s ETH2RX- ETH2TX+ ETH2TX-			CAT5, shield to G_COMSCR	
LIFE 35 LIFE 34 LIFE 36 LIFE 27	Ethernet 3	ETH3RX+ 100Mbit/s ETH3RX- ETH3TX+ ETH3TX-			CAT5, shield to G_COMSCR	
LIFE 40	Ground for ETHERNET	G_COMSCR, 2A, fused				
LIFE 51 LIFE 45 LIFE 58 LIFE 52	USB	USB_DP USB_DN USB_GND USB_VDD 500mA maximum			USB shield to G_USB_SCR	
LIFE 28	Ground for USB	G_USB_SCR, 2A, fused				
LIFE 22	Timesync timeline	data synchronising for Ethernet extension modules			24	
LIFE 42 LIFE 41 LIFE 50 LIFE 49		Not connected				
LIFE 24 LIFE 23 LIFE 33 LIFE 32		Not connected				

Power Supplies

ECU Pin Connector	I/O Type	Description	Required Upgrade	Pin related function	LEAD AWG	Measurement channel
LIFE 63	Battery plus	Power supply			20	uBattLv
SENS-B 29	Battery plus	Power supply			20	
SENS-B 36	Battery plus	Power supply			20	
SENS-B 37	Battery plus	Power supply			20	
SENS-B 45	Battery plus	Power supply			20	
LIFE 20	GND	Ground			20	
SENS-A 20	GND	Ground			20	
SENS-B 30	GND	Ground			20	
SENS-B 38	GND	Ground			20	
SENS-B 39	GND	Ground			20	
SENS-B 46	GND	Ground			20	

SENS-A 22	G_ANASCR, screen	Ground analogue, 2A fused			20	
LIFE 44	G_DIGIN, digital input	Ground, 2A fused			20	
SENS-B 10	O_VSENS01 supply	5V/12V, 400mA		cfgSnsrSplyB10_C	20	u- / iSnsrSplyB10
SENS-B 21	G_SENSGND01	Ground, 2A fused			20	stErrSnsrSplyB10
SENS-B 04	O_VSENS02 supply	5V/12V, 400mA		cfgSnsrSplyB04_C	20	u- / iSnsrSplyB04
SENS-B 13	G_SENSGND02	Ground, 2A fused			20	stErrSnsrSplyB04
SENS-B 05	O_VSENS03 supply	5V/12V, 400mA		cfgSnsrSplyB05_C	20	u- / iSnsrSplyB05
SENS-B 20	G_SENSGND03	Ground, 2A fused			20	stErrSnsrSplyB05
SENS-B 01	O_VSENS04 supply	5V/12V, 400mA		cfgSnsrSplyB01_C	20	u- / iSnsrSplyB01
SENS-B 19	G_SENSGND04	Ground, 2A fused			20	stErrSnsrSplyB01
SENS-B 02	O_VSENS05 supply	5V/12V, 400mA		cfgSnsrSplyB02_C	20	u- / iSnsrSplyB02
SENS-B 28	G_SENSGND05	Ground, 2A fused			20	stErrSnsrSplyB02
SENS-A 36	O_VSENS06 supply	5V/12V, 400mA	I/O Package	cfgSnsrSplyA36_C	20	uSnsrSplyA36
SENS-A 28	G_SENSGND06	Ground, 2A fused			20	iSnsrSplyA36 stErrSnsrSplyA36
SENS-A 35	O_VSENS07 supply	5V/12V, 400mA	I/O Package	cfgSnsrSplyA35_C	20	uSnsrSplyA35
SENS-A 12	G_SENSGND07	Ground, 2A fused			20	iSnsrSplyA35 stErrSnsrSplyA35
SENS-A 25	O_VSENS08 supply	5V/12V, 400mA	I/O Package	cfgSnsrSplyA25_C	20	uSnsrSplyA25
SENS-A 11	G_SENSGND08	Ground, 2A fused			20	iSnsrSplyA25 stErrSnsrSplyA25
SENS-A 27	O_VSENS09 supply	5V/12V, 400mA	I/O Package	cfgSnsrSplyA27_C	20	uSnsrSplyA27
SENS-A 06	G_SENSGND09	Ground, 2A fused			20	iSnsrSplyA27 stErrSnsrSplyA27
SENS-A 19	O_VSENS10 supply	5V/12V, 400mA	I/O Package	cfgSnsrSplyA19_C	20	uSnsrSplyA19
SENS-A 02	G_SENSGND10	Ground, 2A fused			20	iSnsrSplyA19 stErrSnsrSplyA19
SENS-B 18	O_VSENS11 supply	12V, 400mA		cfgSnsrSplyB18_C	20	u- / iSnsrSplyB18
SENS-B 27	G_SENSGND11	Ground, 2A fused			20	stErrSnsrSplyB18
SENS-B 11	O_VSENS12 supply	12V, 400mA		cfgSnsrSplyB11_C	20	u- / iSnsrSplyB11
SENS-B 35	G_SENSGND12	Ground, 2A fused			20	stErrSnsrSplyB11
SENS-B 12	O_VSENS13 supply	12V, 400mA		cfgSnsrSplyB12_C	20	u- / iSnsrSplyB12
SENS-B 44	G_SENSGND13	Ground, 2A fused			20	stErrSnsrSplyB12
SENS-B 07	O_VSENS14 supply	12V, 400mA		cfgSnsrSplyB07_C	20	u- / iSnsrSplyB07
SENS-B 52	G_SENSGND14	Ground, 2A fused			20	stErrSnsrSplyB07
SENS-B 06	O_VSENS15 supply	12V, 400mA		cfgSnsrSplyB06_C	20	u- / iSnsrSplyB06
SENS-B 53	G_SENSGND15	Ground, 2A fused			20	stErrSnsrSplyB06

SENS-A 26 SENS-A 13	O_VSENS16 supply G_SENSGND16	12V,400mA Ground, 2A fused	I/O Package	cfgSnsrSplyA26_C	20 20	uSnsrSplyA26 iSnsrSplyA26 stErrSnsrSplyA26
SENS-A 37 SENS-A 07	O_VSENS17 supply G_SENSGND17	12V,400mA Ground, 2A fused	I/O Package	cfgSnsrSplyA37_C	20 20	uSnsrSplyA37 iSnsrSplyA37 stErrSnsrSplyA37
SENS-A 34 SENS-A 14	O_VSENS18 supply G_SENSGND18	12V,400mA Ground, 2A fused	I/O Package	cfgSnsrSplyA34_C	20 20	uSnsrSplyA34 iSnsrSplyA34 stErrSnsrSplyA34
SENS-A 17 SENS-A 15	O_VSENS19 supply G_SENSGND19	12V,400mA Ground, 2A fused	I/O Package	cfgSnsrSplyA17_C	20 20	uSnsrSplyA17 iSnsrSplyA17 stErrSnsrSplyA17
SENS-A 18 SENS-A 21	O_VSENS20 supply G_SENSGND20	12V,400mA Ground, 2A fused	I/O Package	cfgSnsrSplyA18_C	20 20	uSnsrSplyA18 iSnsrSplyA18 stErrSnsrSplyA18

Information as of September 2025