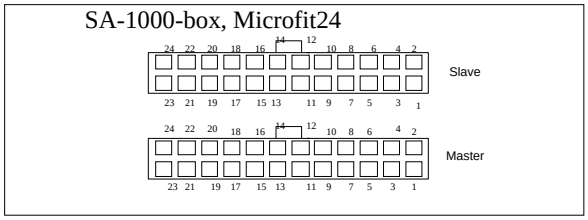
BMW M3 E36 -93 6 cyl, USA



PCB info
remove R71
R66 100 k parallell with 10 k
R79 10 k
R82 330 k

GND list

Pin	Ground pins in BMW connector
	Power
6	Ground, fuel injection oputput stages
15	Ground point
34	Ground for remaining output stages (except for ignition and fuel injection
55	Ground, ignition
-	Ground for Idle Air signal inverter
	Signal
28	Ground for electronics and shielding of sensors
40	Ground, oxygen sensor
43	Ground, crank sensor
44	Ground for sensors: IAT,Coolant and TP
45	Ground for shield
71	Ground, knock sensors and shields
	MAF sensor GND

SA1000 Master

Pin			Colour	Name	i/o	Type	Bosch pin	note
1			black / white	signal GND	in/out	GND	-----	See GND list
2			grey	5v out	out	Supply	59	TP
3			orange	Digital 1 out, Fan ctrl	out	Grounding	-	Fan control
4			Violett	Coolant temp in	in	Analog	78	internal 3,3k pull up
5			brown/green	PWM1, boost not used?	out	Grounding	-	
6				Not used, internal MAP sensor	in	Analog	-	
7				Digital 2 out, RPM tach	out	Grounding	47	RPM tach, 330 ohm 12v pull up
8			red/green	Throttle Position Sensor	in	Analog	73	
9			white	PWM2, Idle air	out	Grounding	29,2	direct to pin29 and via inverter to 2
10			red/yellow	Lambda sensor1 in	in	Analog	13	sensor ground pin 40
11			black / green	IGN B out, cyl 5 and 2	out	Grounding/driving	25, 51	via igniter to pin 25 & 51
12			green	Air temp	in	Analog	77	internal 3,3k pull up
13			blue / red	IGN A out, cyl 1 and 6	out	Grounding/driving	50, 24	via igniter to pin 50 & 24
14			blue / white	Crankshaft in	in	tooth sensor in	16	sensor ground pin 43
15				fuel output, not used	out	Grounding	-	
16				analog in, not used	in	Analog	-	Discards master system volt meass if used
17			brown / black	Fuel injector 3	out	Grounding	31	
18				Ign cut/ext act, not used	in		-	
19			brown / blue	Fuel injector 2	out	Grounding	32	
20				Launch ctrl, not used	in		-	
21			brown / yellow	Fuel injector 1	out	Grounding	33	
22			red / white	Cam Sensor in	in	tooth sensor in	17	Hall effect cam sensor
23			black	Power GND	in	GND	-----	See GND list
24			red	12 V Power	in	Power Supply	56	ignition switch

SA1000 Slave

Pin			Colour	Name	i/o	Type	Bosch pin	note
1			black / white	signal GND	in/out	GND	-----	See GND list
2				5v out, not used	out		-	
3			orange	Digital 3 out, DME, Fuel pump relay	out	Grounding	27, 1	Connect direct to pin27 (DME) and via diode to pin1 (Fuel relay)
4			Violett	Coolant temp in	in	Analog	Connect to corresponding master wire	
5				PWM3, not used	out		-	
6				Not used, internal MAP sensor	in		-	
7			yellow	Digital 4 out, VANOS	out	Grounding	7	Camshaft actuator control
8			red/green	Throttle Position Sensor	in	Analog	Connect to corresponding master wire	
9				PWM4, not used	out		-	
10			Yellow/green	Lambda2 sensor in	in	Analog	Connect to corresponding master wire	
11				Ign out, not used	out		-	
12			green	Air temp	in	Analog	Connect to corresponding master wire	
13			orange / white	IGN C out, cyl 3 and 4	out	Grounding/driving	52, 23	via igniter to pin 52 & 23
14			blue / white	Crankshaft in	in	tooth sensor in	Connect to corresponding master wire	
15				fuel output, not used	out		-	
16				analog in, not used	in		-	Discards slave system volt meass if used
17			brown/red	Fuel injector 6	out	Grounding	4	
18				Ign cut/ext act, not used	in		If used, connect to corresponding master wire	
19			brown/grey	Fuel injector 5	out	Grounding	3	
20				Launch ctrl, not used	in		If used, connect to corresponding master wire	
21			brown / green	Fuel injector 4	out	Grounding	5	
22			red / white	Cam Sensor in	in	tooth sensor in	Connect to corresponding master wire	
23			black	Power GND	in	GND	-----	See GND list
24			red	not used	in	Power Supply		

Stock ignition wires

Cyl			Colour	Stock ECU pin
1			black / white	50
2			black / red	51
3			black / yellow	52
4			black / blue	23
5			black / green	25
6			black / purple	24

6 channel Igniter

			Colour	Name
			black	Power GND, connect to chassi
			blue	Channel 1 in
			blue / red	Channel 1 out
			green	Channel 2 in
			black / green	Channel 2 out
			white	Channel 3 in
			brown / white	Channel 3 out
			yellow	Channel 4 in
			black / yellow	Channel 4 out
			brown	Channel 5 in
			brown / black	Channel 5 out
			grey	Channel 6 in
			brown / grey	Channel 6 out