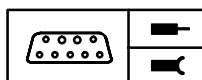


## Pin Assignments

### X6000

Pin	Type	Description/Function	Connection
1	A	Cyl. 2 ignition coil control	Cyl. 2 ignition coil
2	A	Cyl. 4 ignition coil control	Cyl. 4 ignition coil
3	A	Cyl. 6 ignition coil control	Cyl. 6 ignition coil
4	M	Ground	Ground point
5	A	Cyl. 2 fuel injection valve control	Cyl. 2 fuel injection valve
6	A	Cyl. 1 fuel injection valve control	Cyl. 1 fuel injection valve
7	M	Ground	Hot wire air mass meter
8	E	Hot wire air mass meter	Hot wire air mass meter
9	E	TI-measurement signal (fuel consumption)	Instrument cluster
10	E	Engine coolant temperature	Engine coolant temperature sensor
11	E	Fuel tank pressure	Fuel tank pressure sensor
12	E	Throttle position signal	Throttle position sensor
13		Not used	
14	E	Intake air temperature	Intake air temperature sensor
15	E	Speed signal right rear	ABS/ASC control module
16	E	Activate A/C	Pressure switch
17		Not used	
18	E	Drive-away protection signal (code)	Electronic immobilizer control module (EWS II)
19	E	A/C-ON-signal	Air conditioning operating unit
20	A	"Check engine" indicator control	Instrument cluster
21	A	Camshaft control	Variable camshaft control valve
22	A	Cyl. 3 fuel injection valve control	Cyl. 3 fuel injection valve
23	A	Cyl. 6 fuel injection valve control	Cyl. 6 fuel injection valve
24	A	Cyl. 4 fuel injection valve control	Cyl. 4 fuel injection valve
25	M	Oxygen sensor heating ground	Oxygen sensor (in front of catalytic converter)
26	E	Battery voltage	B+ jump start junction point
27	A	Activate valve	Idle speed control valve
28	M	Ground	Ground point
29	A	Cyl. 1 ignition coil control	Cyl. 1 ignition coil

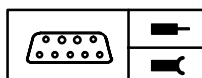
E = Input, A = Output, M = Ground



## Pin Assignments

Pin	Type	Description/Function	Connection
30	A	Cyl. 3 ignition coil control	Cyl. 3 ignition coil
31	A	Cyl. 5 ignition coil control	Cyl. 5 ignition coil
32	M	Ground	Ground point
33	A	Cyl. 5 fuel injection valve control	Cyl. 5 fuel injection valve
34	M	Ground	Ground point
35	A	Activate relay	Secondary air pump relay
36	A	Crankshaft RPM speed signal TD	Instrument cluster
37		Not used	
38	M	Ground	Shield knock sensor
39	M	Ground	Temperature sensors
40	M	Ground	Crankshaft position/RPM sensor Fuel tank pressure sensor
41	M	Ground	Shield camshaft position sensor
42	M	Ground	Throttle position sensor
43	E	Camshaft position	Camshaft position sensor
44	A	Voltage supply	Throttle position sensor Fuel tank pressure sensor
45	A	Throttle position signal	ABS/ASC control module
46	E	TI-measurement signal (fuel consumption)	Instrument cluster
47		Not used	
48	A	Voltage supply	Crankshaft position/RPM sensor
49	E	Terminal 15	Ignition switch
50	A	Running losses	Solenoid valve
51	A	Activate valve	Carbon canister valve
52	A	Signal exhaust flap	Exhaust gas flap valve
53	A	Activate valve	Idle speed control valve
54	E	Battery voltage, terminal 87	Engine control module relay
55	M	Oxygen sensor heating ground	Oxygen sensor (in front of catalytic converter)
56	M	Ground	Ground point
57	E	Cyl. 1-3 knock sensor	Knock sensor
58	E	Cyl. 1-3 knock sensor	Knock sensor
59	E	Cyl. 4-6 knock sensor	Knock sensor

E = Input, A = Output, M = Ground



## Pin Assignments

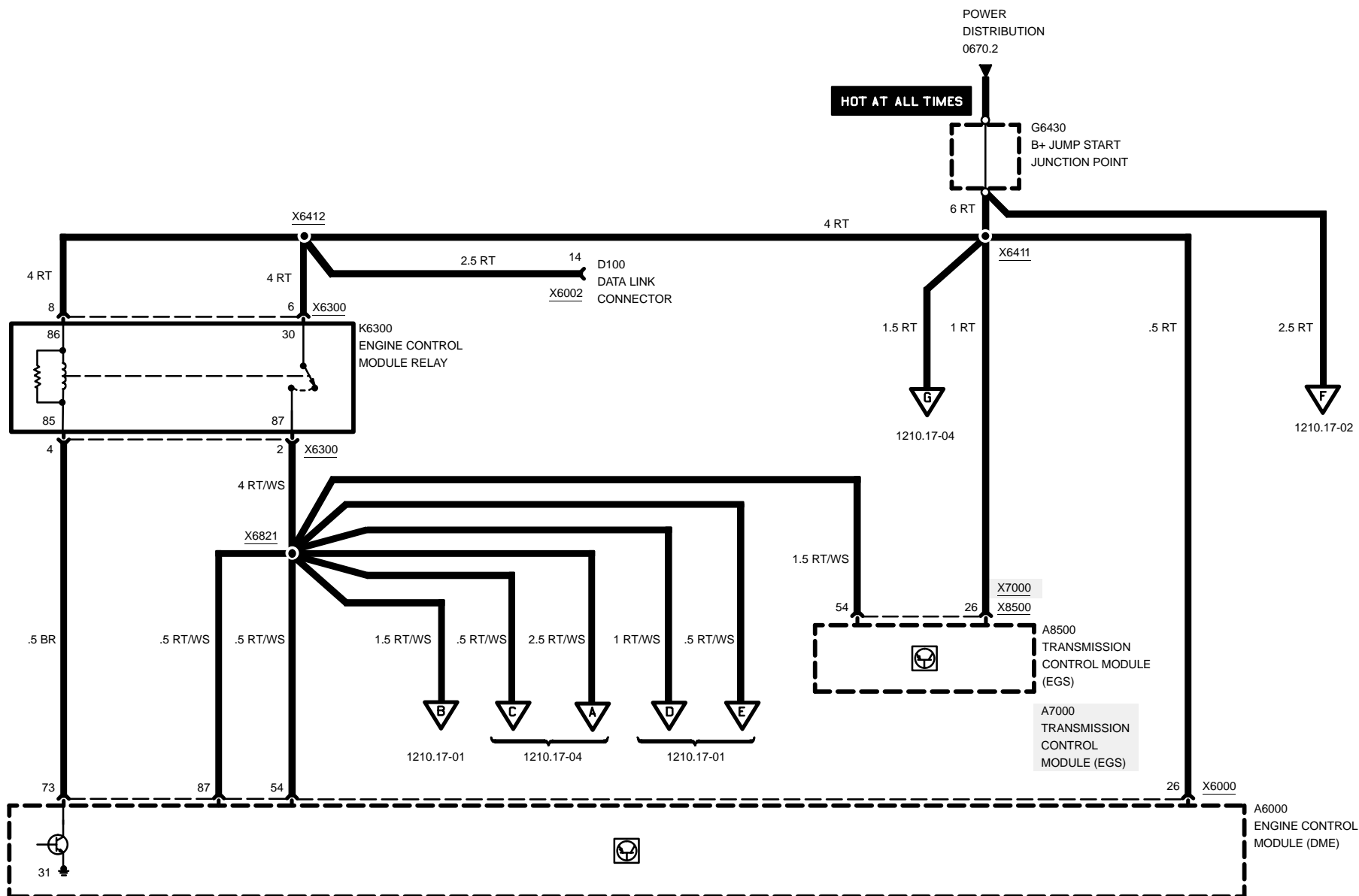
Pin	Type	Description/Function	Connection
60	E	Programming voltage	Data link connector
61	M	Oxygen sensor heating ground	Oxygen sensor (behind catalytic converter)
62	A	Activate valve	Secondary air pump valve
63	E	Cyl. 4-6 knock sensor	Knock sensor
64	M	Ground	Camshaft position sensor
65	E	Camshaft position	Camshaft position sensor
66		Not used	
67	M	Oxygen sensor signal ground	Oxygen sensor (in front of catalytic converter)
68	A	Activate valve	Evaporative emission valve
69	A	Activate relay	Fuel pump relay
70	M	Oxygen sensor signal ground	Oxygen sensor (in front of catalytic converter)
71	M	Oxygen sensor signal ground	Oxygen sensor (behind catalytic converter)
72	M	Oxygen sensor signal ground	Oxygen sensor (behind catalytic converter)
73	E	Activate relay	Engine control module relay
74	A	Activate A/C compressor	Compressor control relay
75	E	Sensor signal	Oxygen sensor (in front of catalytic converter)
76	E	Sensor signal	Oxygen sensor (in front of catalytic converter)
77	E	Sensor signal	Oxygen sensor (behind catalytic converter)
78	E	Sensor signal	Oxygen sensor (behind catalytic converter)
79	M	Oxygen sensor heating ground	Oxygen sensor (behind catalytic converter)
80	A	ASC signal ZA	Slip control module (ABS/ASC)
81	A	ASC signal ZWV	Slip control module (ABS/ASC)
82	A	ASC signal MSR	Slip control module (ABS/ASC)
83	E	Sensor signal	Crankshaft position/RPM sensor
84		Not used	
85	E/A	CAN-LOW	Transmission control module (EGS)
86	E/A	CAN-HIGH	Transmission control module (EGS)
87	E	Battery voltage, terminal 87	Engine control module relay
88	E/A	TxD diagnosis data link	Data link connector

E = Input, A = Output, M = Ground



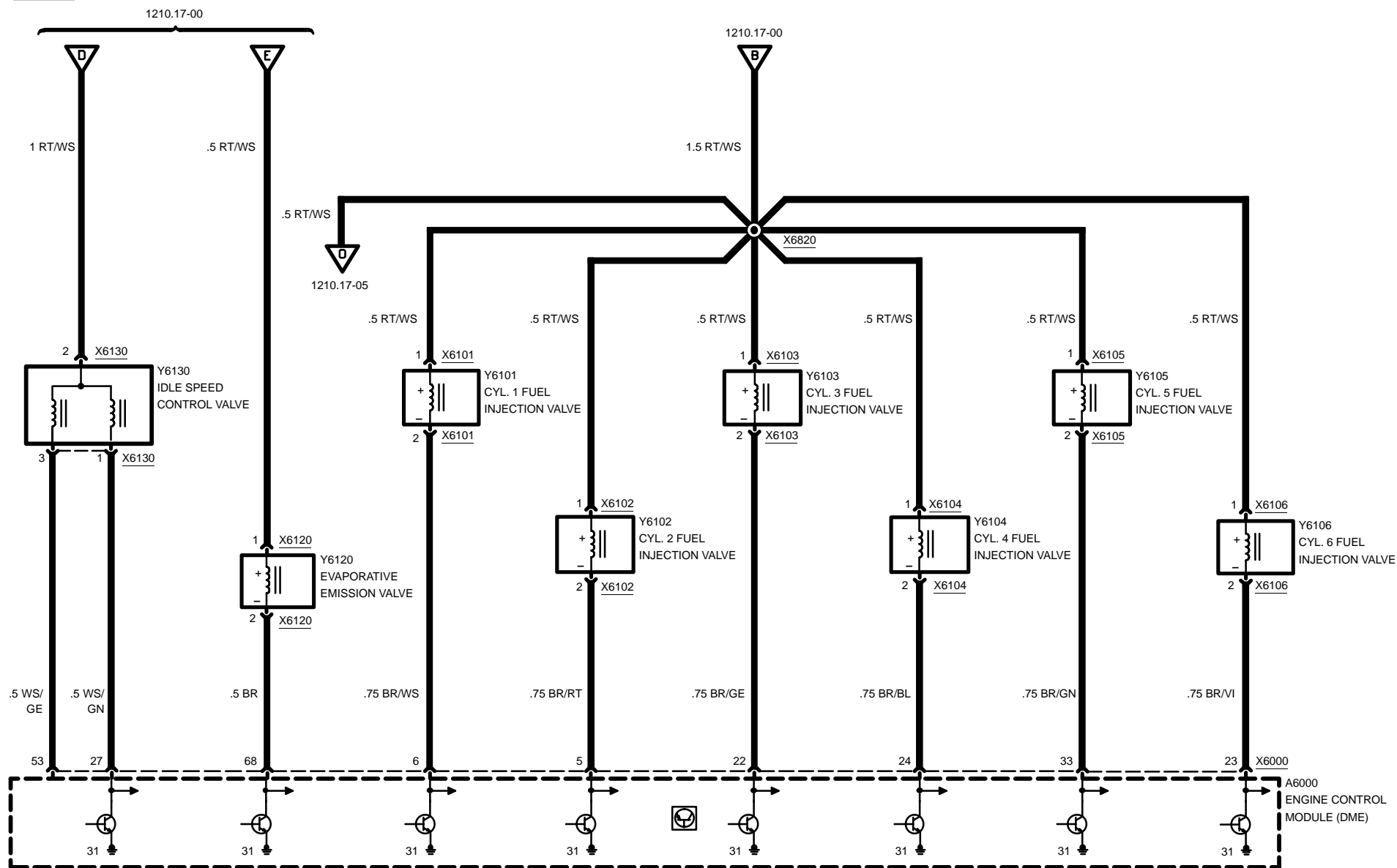
# ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)

## POWER



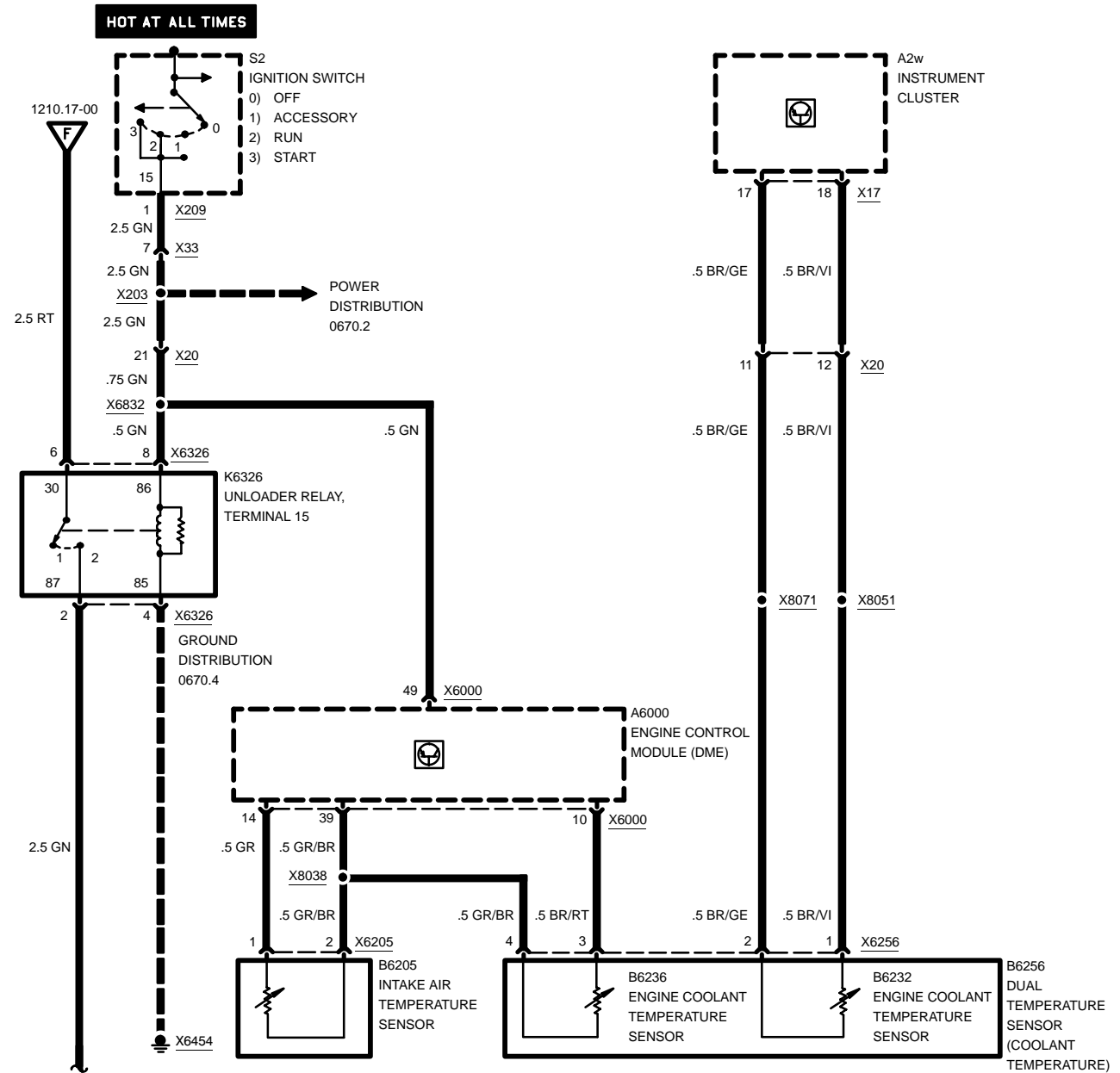


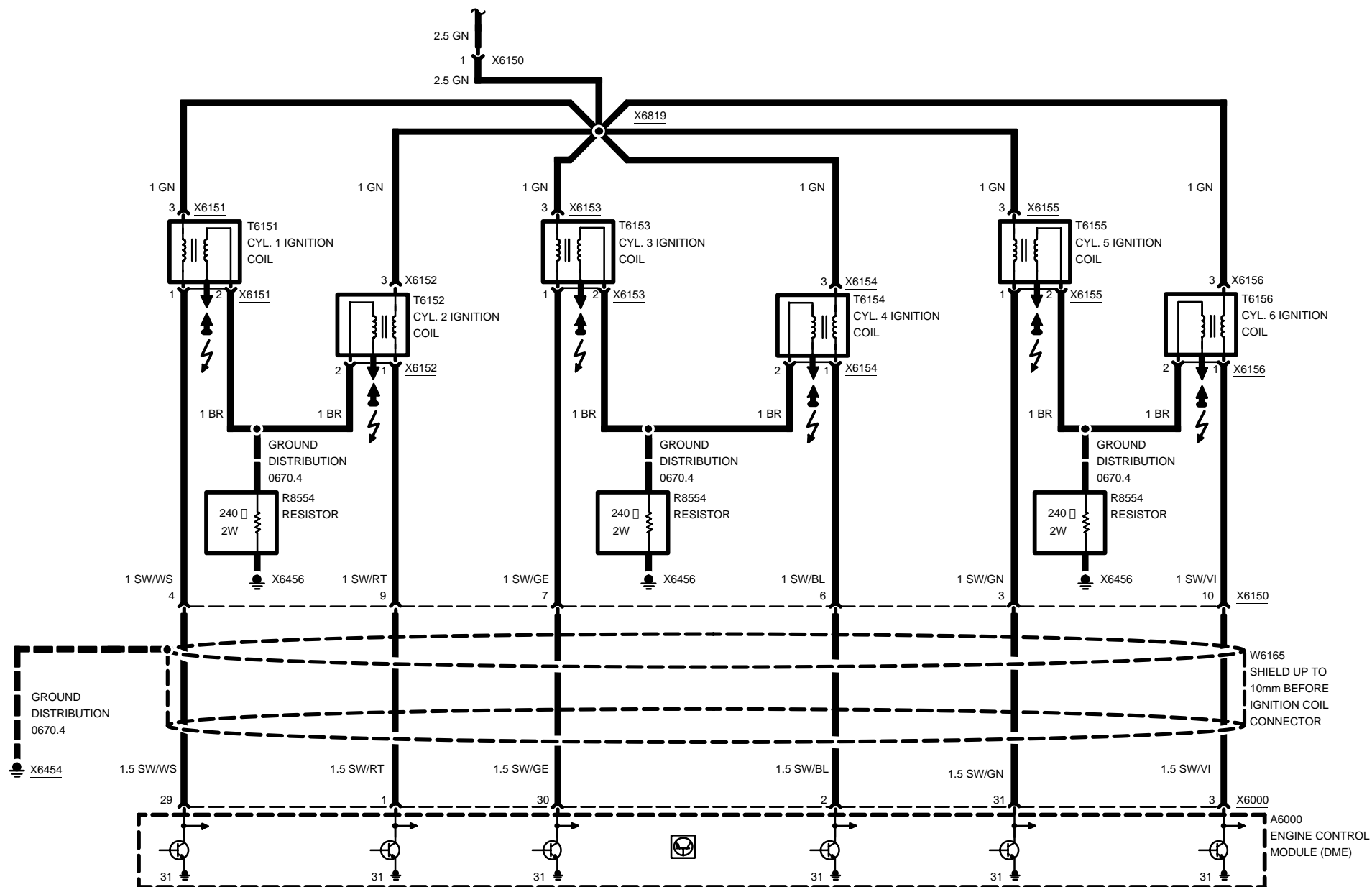
# ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)





# ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)





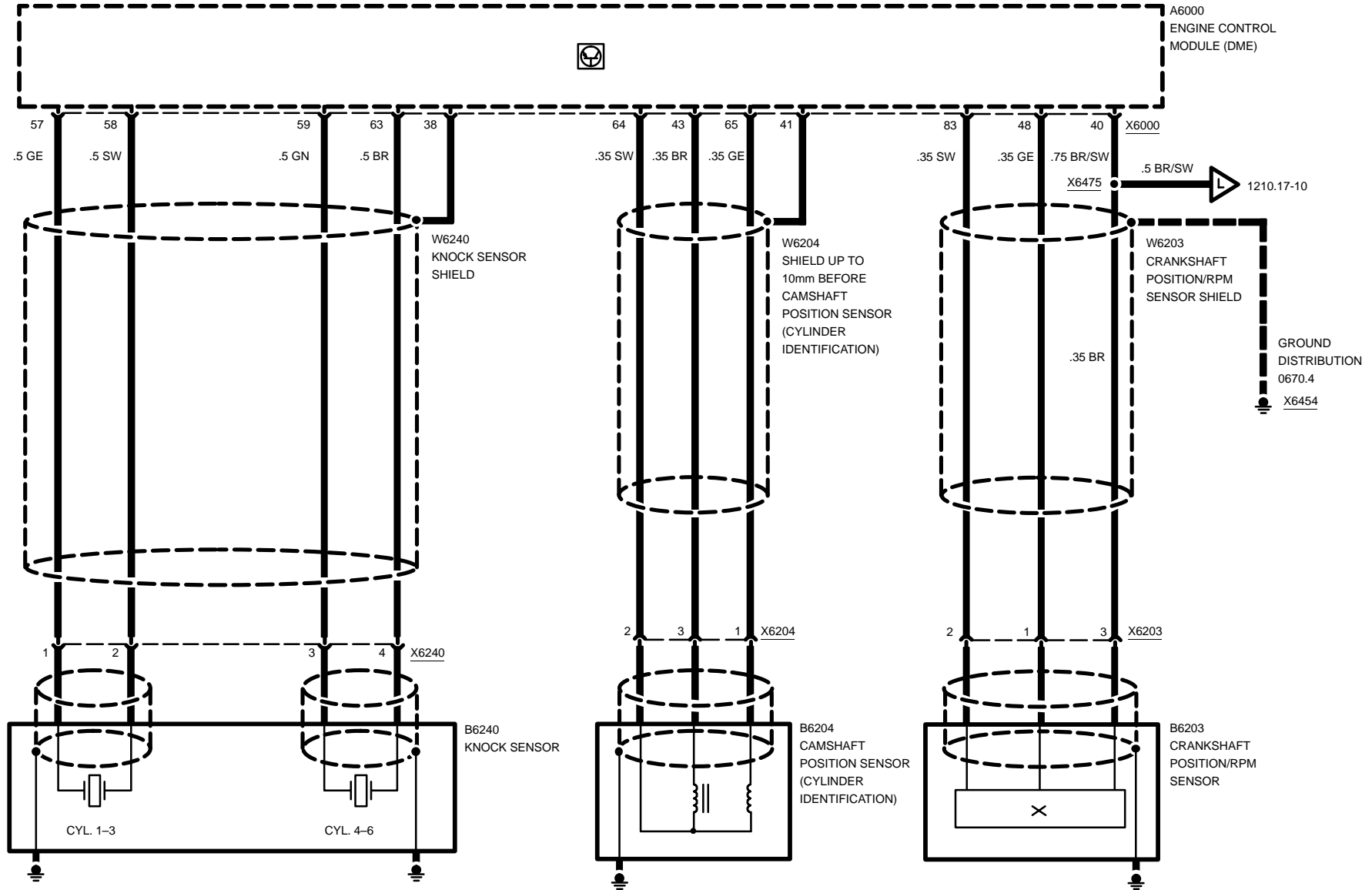




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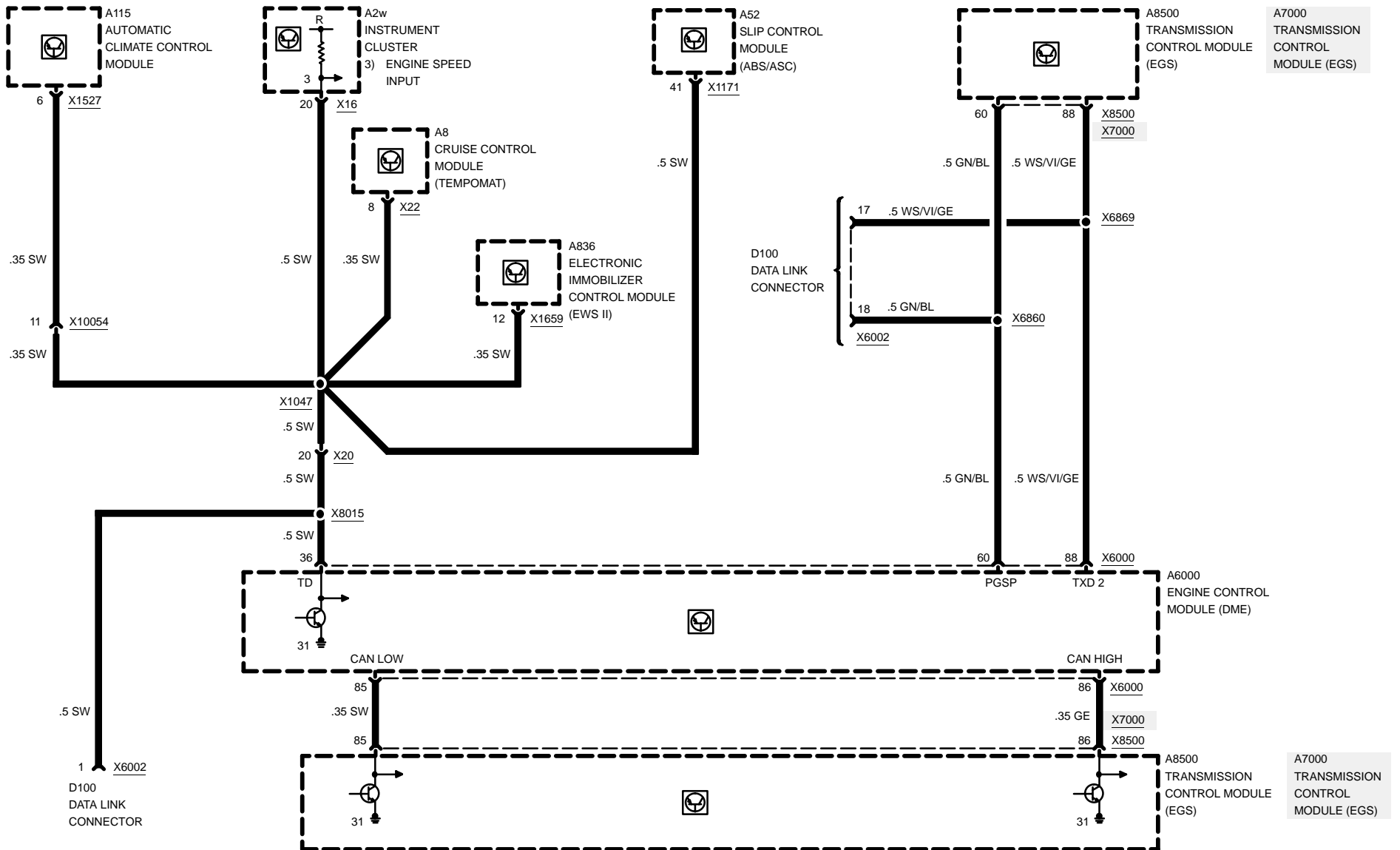


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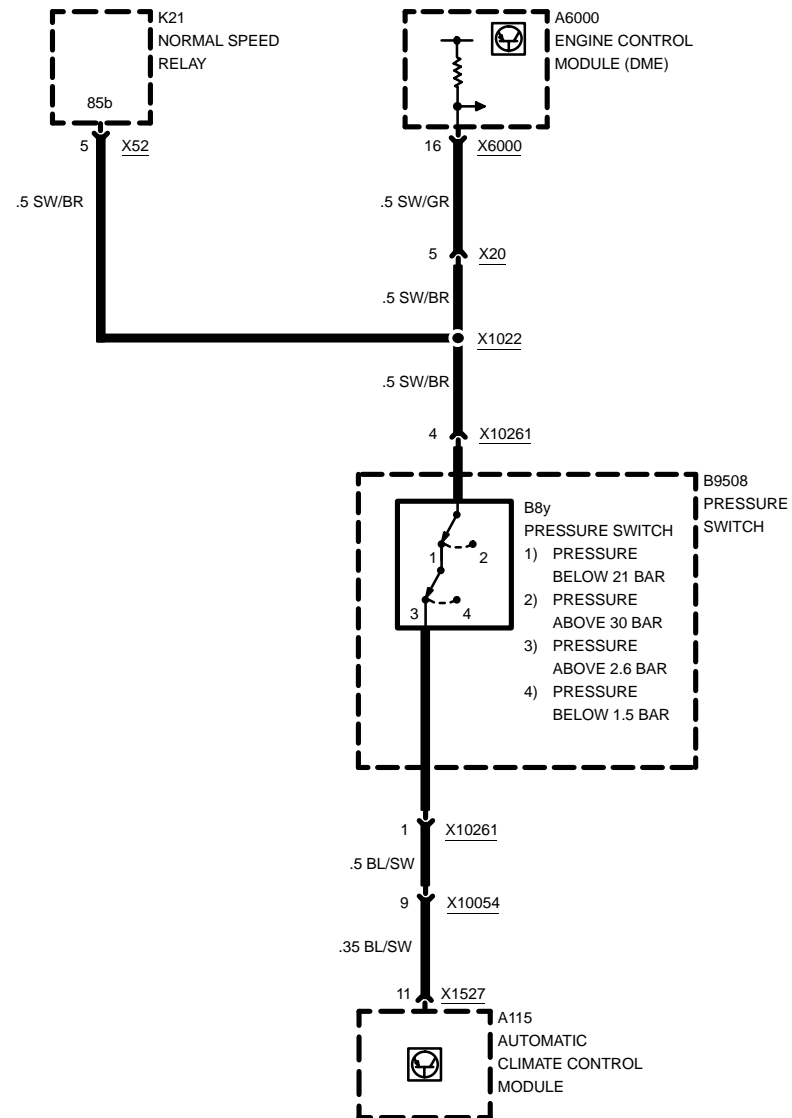
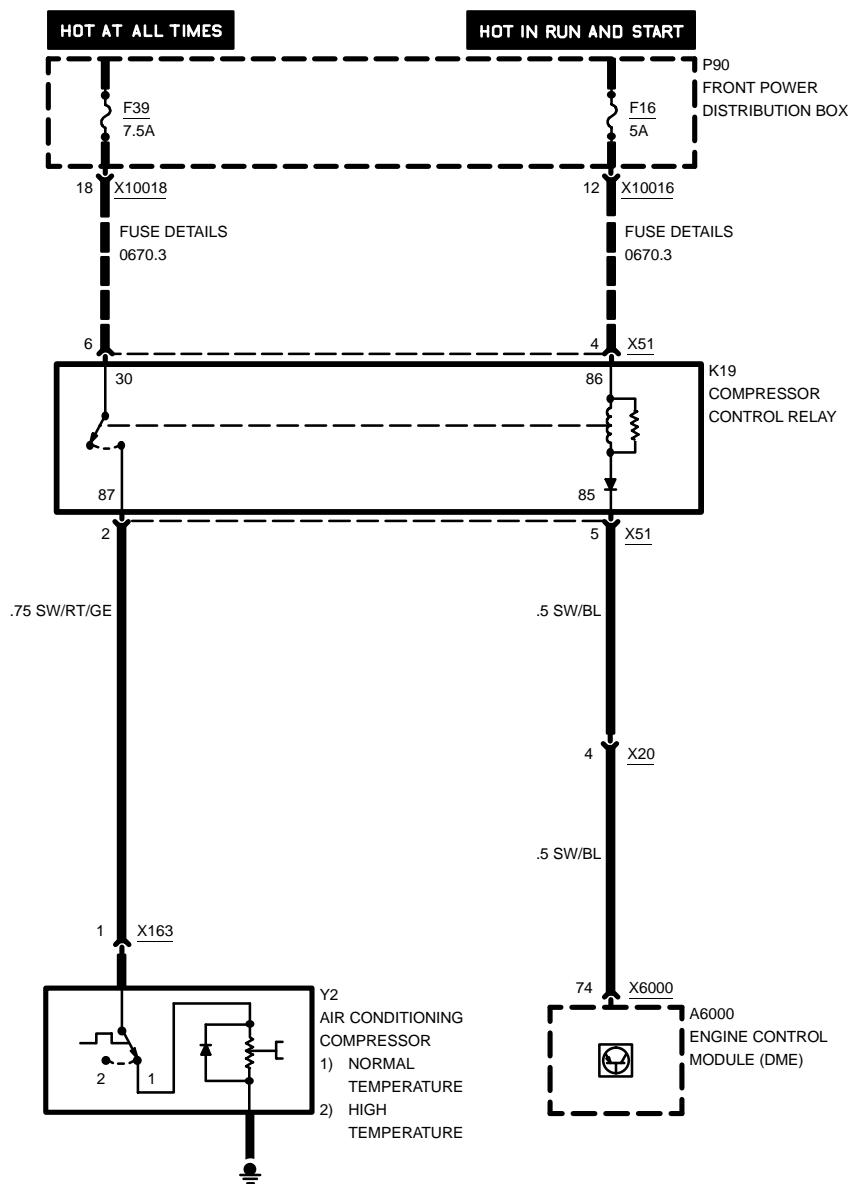


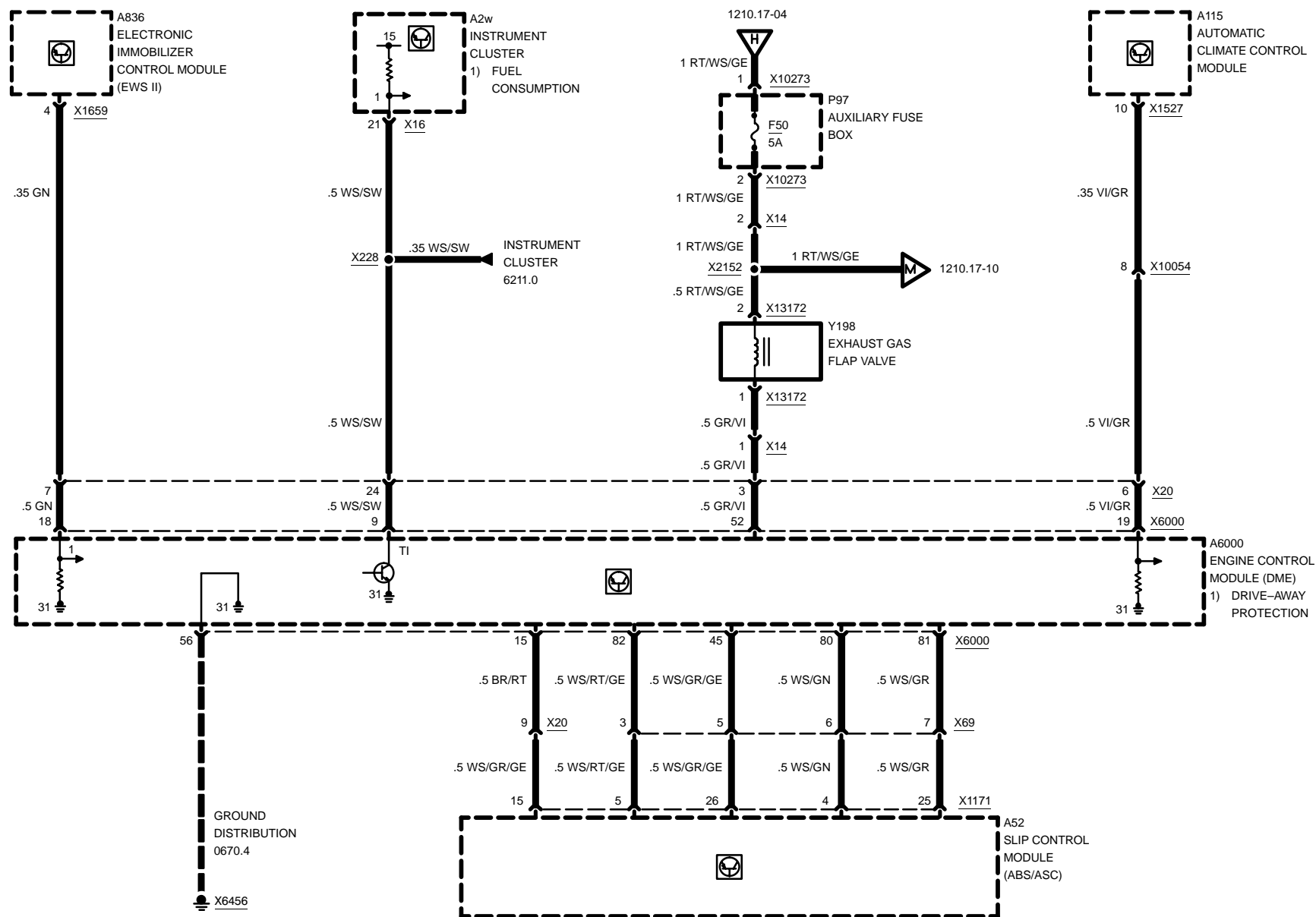
## ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)





## ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)







# ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)

## OBD II DIAGNOSIS

HOT IN ACCY RUN AND START

