Telephone:
Fax:
BR. Registracione tablice:

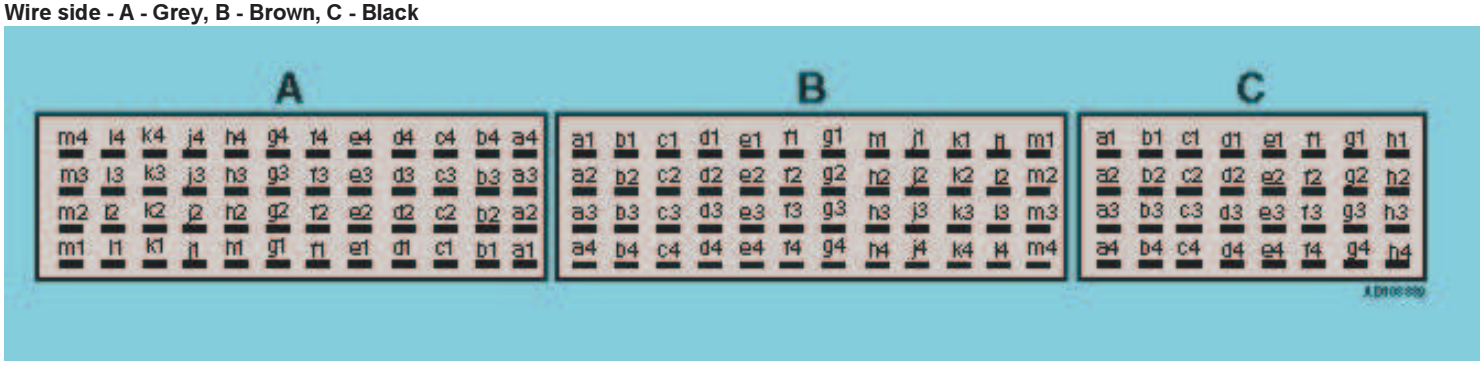
Name: pisac - sam svoj majstor
Address:

Tel - Private:
Tel - Business:
Tel - Mobile

Manufacturer: Ford
Model:
Year:
Registration:
Mileage:
Job number:
Date

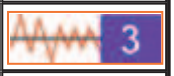
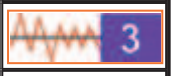
Terminal side - A - Grey, B - Brown, C - Black

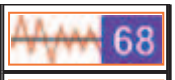
Wire side - A - Grey, B - Brown, C - Black



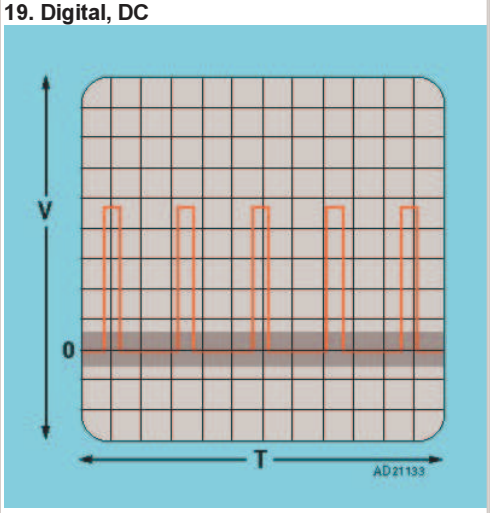
Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting (Suggested settings - Voltage/time per division)	Wave form
AC refrigerant high pressure switch	Cd2	←	Ignition ON	11-14 V		
AC refrigerant high pressure switch	Cd2	←	Engine running - refrigerant pressure normal	11-14 V		
AC refrigerant high pressure switch	Cd2	←	Engine running - refrigerant pressure high	0 V		
AC refrigerant low pressure switch - through AC refrigerant dual pressure switch	Ch2	←	Ignition ON	11-14 V		

AC refrigerant low pressure switch	Ch2	←	Engine running - AC ON, AC compressor ON	0 V		
AC refrigerant low pressure switch	Ch2	←	Engine running - AC ON, AC compressor OFF	11-14 V		
Accelerator pedal position (APP) sensor	Cf3	←	Ignition ON - accelerator pedal released	89%	2 V/2 ms	
Accelerator pedal position (APP) sensor	Cf3	←	Ignition ON - accelerator pedal depressed	25%	2 V/2 ms	
Alternator	Bh4			Connected pin - no test data available or random digital signal		
Alternator	Ca1			Connected pin - no test data available or random digital signal		
Battery	Bg4	←	Ignition OFF	11-14 V		
Brake pedal position (BPP) switch 2	Ce4	←	Ignition ON - brake pedal released	0 V		
Brake pedal position (BPP) switch 2	Ce4	←	Ignition ON - brake pedal depressed	11-14 V		
Camshaft position (CMP) sensor	Ac1	←	Engine idling		5 V/50 ms	
Camshaft position (CMP) sensor	Ad4	⊣	Ignition ON	0 V		
Camshaft position (CMP) sensor	Ae3	⇨	Ignition ON	5 V		
CAN data bus - high	Ca4	⇦		Connected pin - no test data available or random digital signal		
CAN data bus - low	Ca3	⇦		Connected pin - no test data available or random digital signal		
Crankshaft position (CKP) sensor	Ab4	←	Engine idling	2,7 V ac	1 V/2 ms	
Crankshaft position (CKP) sensor	Ac4	←	Engine idling	2,7 V ac	1 V/2 ms	Reversed 
Cylinder head temperature (CHT) sensor - dual range	Aa2	←	Ignition ON - coolant temp. 12°C	3,4 V		
Cylinder head temperature (CHT) sensor	Aa2	←	Ignition ON - coolant temp. 80°C	3,6 V		
Cylinder head temperature (CHT) sensor	Ag1	⊣	Ignition ON	0 V		
Earth	Ah4		Ignition ON	0 V		
Earth	Aj4		Ignition ON	0 V		
Earth	Ak4		Ignition ON	0 V		
Earth	Bk2		Ignition ON	0 V		
Earth	Cg4		Ignition ON	0 V		
Earth	Ch4		Ignition ON	0 V		
Engine control (EC) relay	Aj3	←	Ignition OFF	0 V		
Engine control (EC) relay	Aj3	←	Ignition ON	11-14 V		
Engine control (EC) relay	Ak2	←	Ignition OFF	0 V		
Engine control (EC) relay	Ak2	←	Ignition ON	11-14 V		
Engine control (EC) relay	Ak3	←	Ignition OFF	0 V		
Engine control (EC) relay	Ak3	←	Ignition ON	11-14 V		

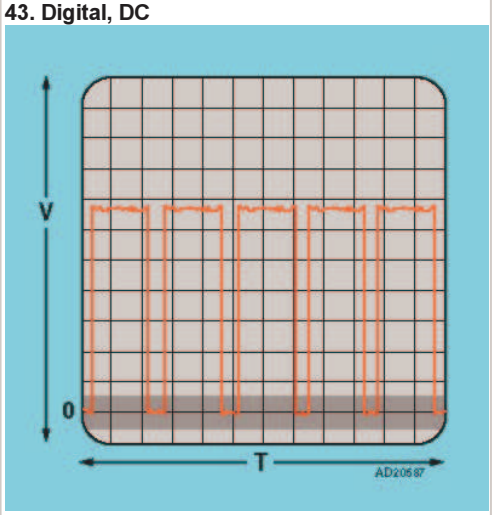
Engine control (EC) relay	Bh3		Ignition OFF	11-14 V		
Engine control (EC) relay	Bh3		Ignition ON	0-1 V		
Engine coolant blower motor control module	Cb2		Ignition ON	11-14 V		
Exhaust gas recirculation (EGR) valve position sensor	Bc3		Ignition ON	5 V		
Exhaust gas recirculation (EGR) valve position sensor	Bd2		Ignition ON	0,6 V		
Exhaust gas recirculation (EGR) valve position sensor	Bd2		Engine idling	2,6 V		
Exhaust gas recirculation (EGR) valve position sensor	Bd2		Engine idling - accelerate briefly	0,8 V briefly		
Exhaust gas recirculation (EGR) valve position sensor	Be2		Ignition ON	0 V		
Exhaust gas recirculation (EGR) valve actuator	Bl2		Engine idling	0-1 V		
Exhaust gas recirculation (EGR) valve actuator	Bm2		Ignition ON	1200 Hz	5 V/0,5 ms	
Exhaust gas recirculation (EGR) valve actuator	Bm2		Engine idling	14%	5 V/2 ms	
Exhaust gas recirculation (EGR) valve actuator	Bm2		Engine decelerating	30%	5 V/2 ms	
Fuel flow control valve	Bm4		Ignition OFF	0-1 V		
Fuel flow control valve	Bm4		Ignition ON	203 Hz	2 V/2 ms	
Fuel flow control valve	Bm4		Engine idling	6%	2 V/2 ms	
Fuel flow control valve	Bm4		3000 rpm	8,5%	2 V/2 ms	
Fuel pressure regulator control solenoid	Bl4		Ignition ON	11-14 V		
Fuel pressure regulator control solenoid	Bl4		Engine idling	0-1 V		
Fuel pressure regulator control solenoid	Bl4		Engine idling - accelerate briefly		2 V/0,5 ms	
Fuel rail pressure (FRP) sensor	Aa4		Ignition ON	5 V		
Fuel rail pressure (FRP) sensor	Ab2		Ignition ON	0,5 V		
Fuel rail pressure (FRP) sensor	Ab2		Engine idling	1,2 V		
Fuel rail pressure (FRP) sensor	Ab2		3000 rpm	2,3 V		
Fuel rail pressure (FRP) sensor	Ab3		Ignition ON	0 V		
Fuel temperature sensor	Aa3		Ignition ON - fuel temp. 10°C	3,9 V		
Fuel temperature sensor	Aj1		Ignition ON	0 V		
Glow plug relay	Bd4		Ignition ON - glow plugs OFF	0 V		
Glow plug relay	Bd4		Ignition ON - glow plugs ON	11-14 V		
Glow plug relay	Be1		Ignition ON - glow plugs OFF	11-14 V		
Glow plug relay	Be1		Ignition ON - glow plugs ON	0 V		
Ignition switch	Cc3		Ignition ON	11-14 V		
Injector 1	Al4 (Am1)		Engine idling	0,4 ms pilot + 0,7 ms main	20 V/0,5 ms	

Injector 2	Al2 (Am4)	⇨	Engine idling	0,4 ms pilot + 0,7 ms main	20 V/0,5 ms	
Injector 3	Al1 (Am2)	⇨	Engine idling	0,4 ms pilot + 0,7 ms main	20 V/0,5 ms	
Injector 4	Al3 (Am3)	⇨	Engine idling	0,4 ms pilot + 0,7 ms main	20 V/0,5 ms	
Knock sensor (KS)	Ac2 (Ad2)	⇦	Engine idling - accelerate briefly		50 mV/1 ms	
Knock sensor (KS)	Ad2 (Ac2)	⇦	Engine idling - accelerate briefly		50 mV/1 ms	
Knock sensor (KS) - screened lead	Ac3	⊣	Ignition ON	0 V		
Manifold absolute pressure (MAP) sensor	Ab1	⇦	Ignition ON	1,6 V		
Manifold absolute pressure (MAP) sensor	Ab1	⇦	Engine idling	1,6 V		
Manifold absolute pressure (MAP) sensor	Ab1	⇦	Engine idling - full throttle briefly	4,2 V briefly		
Manifold absolute pressure (MAP) sensor	Ad1	⊣	Ignition ON	0 V		
Manifold absolute pressure (MAP) sensor	Ae2	⇨	Ignition ON	5 V		
Mass air flow (MAF) sensor	Ah3	⇦	Ignition ON	477 Hz	2 V/1 ms	
Mass air flow (MAF) sensor	Ah3	⇦	Engine idling	2,6 kHz	2 V/0,2 ms	
Mass air flow (MAF) sensor	Ah3	⇦	3000 rpm	8,3 kHz	2 V/0,1 ms	
Mass air flow (MAF) sensor	Bg2	⊣	Ignition ON	0 V		
Intake air temperature (IAT) sensor	Bc1	⇦	Ignition ON - air temp. 12°C	3 V		
Starter motor relay	Cd1	⊣▷	Ignition ON	0-1 V		
Starter motor relay	Cd1	⊣▷	Engine cranking	0-1 V		
Turbocharger (TC) vane position actuator	Bm1	⇦	Ignition ON	11-14 V		
Turbocharger (TC) vane position actuator	Bm1	⇦	Engine idling	11-14 V		
Turbocharger (TC) boost air temperature sensor	Ba2	⇦	Ignition ON - air temp. 12°C	3,8 V		
Turbocharger (TC) boost air temperature sensor	Bg3	⊣	Ignition ON	0 V		
Wide open throttle (WOT) relay	Cd4	⇦	Ignition ON	11-14 V		
Wide open throttle (WOT) relay	Cd4	⇦	Engine idling - AC compressor OFF	11-14 V		
Wide open throttle (WOT) relay	Cd4	⇦	Engine idling - AC compressor ON	0-1 V		

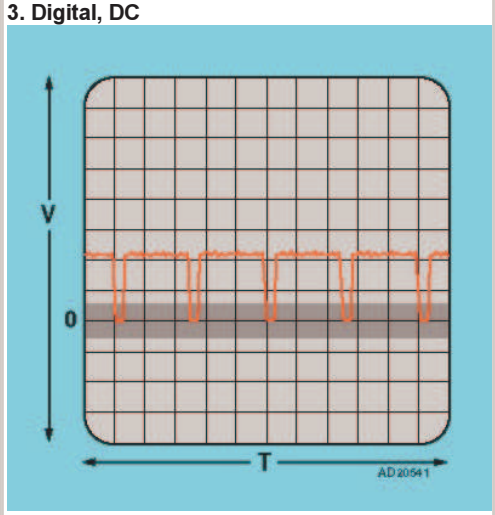
19. Digital, DC



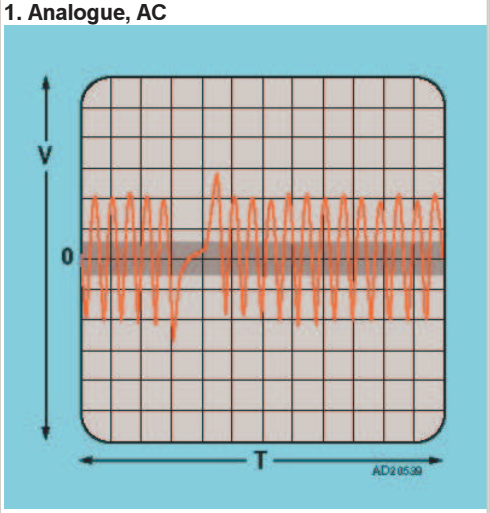
43. Digital, DC



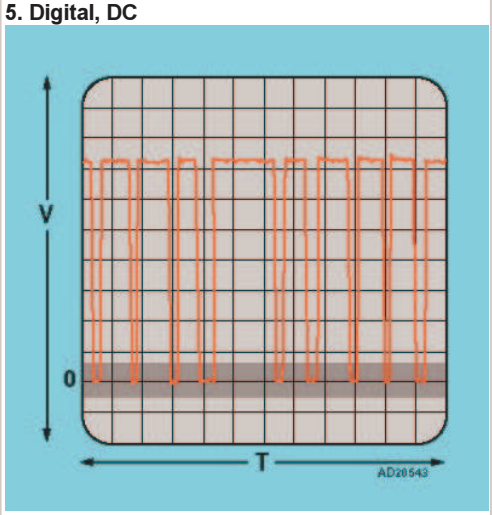
3. Digital, DC



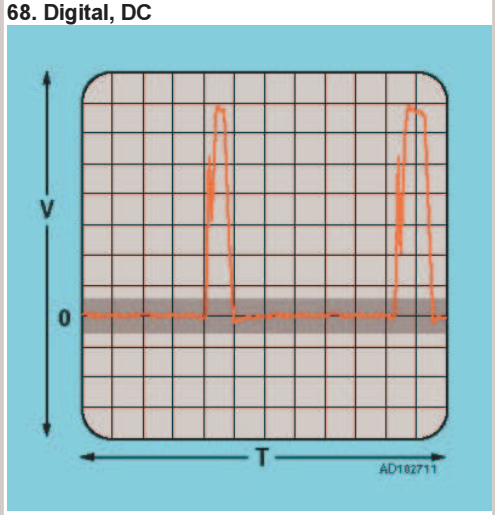
1. Analogue, AC



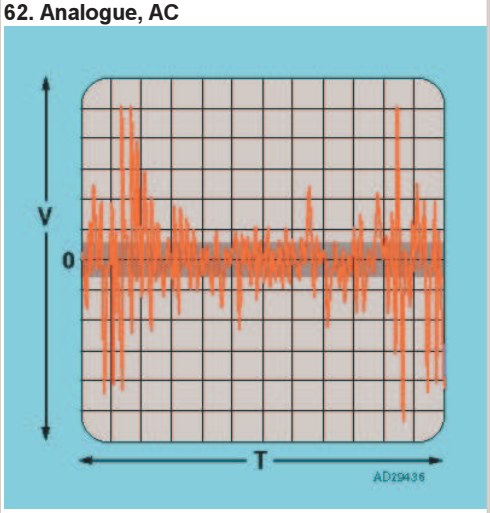
5. Digital, DC



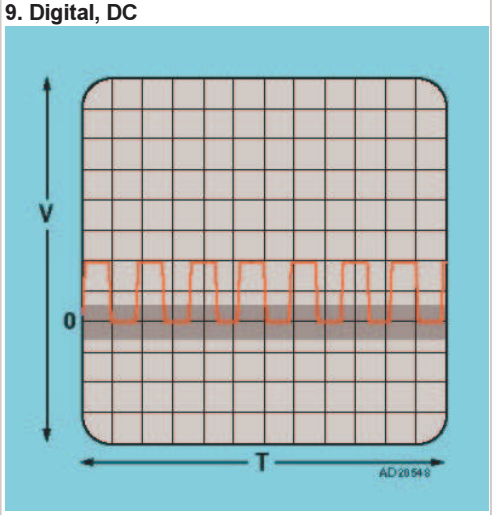
68. Digital, DC



62. Analogue, AC



9. Digital, DC



⇦⇨	input/output signal
⇦	input signal
⇨	output signal
	ECM switched earth
	ECM earth circuit