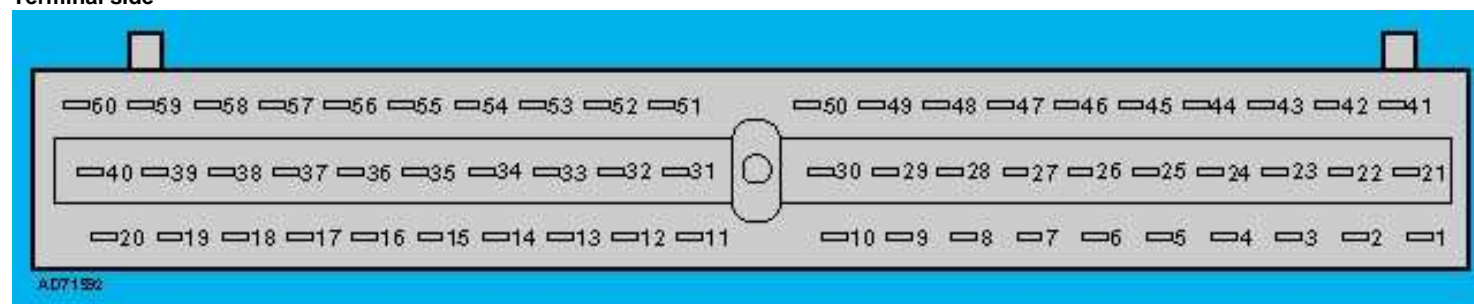


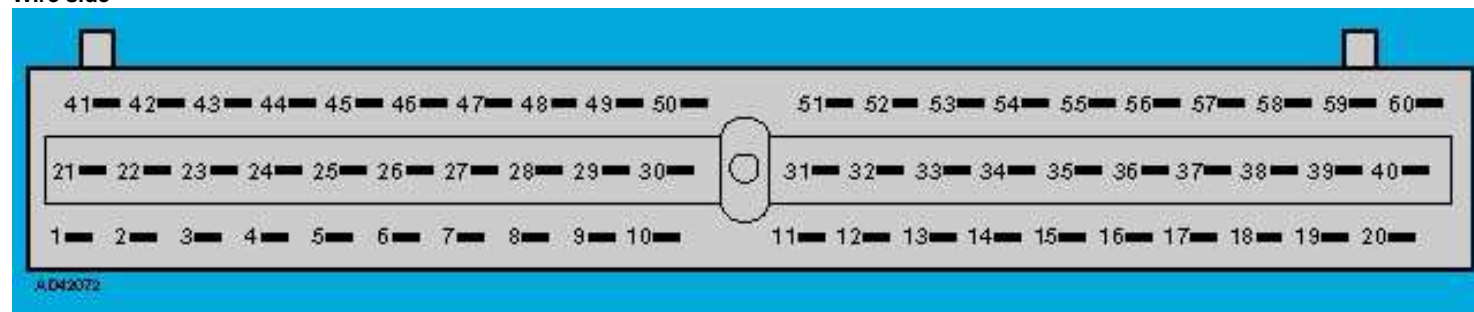
Telephone:
Fax:
VAT Registration No.:

Name:		Manufacturer:	Ford
Address:		Model:	Scorpio
		Year:	1991
		Registration:	
Tel - Private:		Mileage:	
Tel - Business:		Job number:	


Terminal side


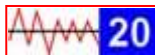












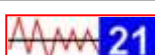

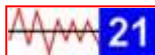











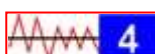








Wire side




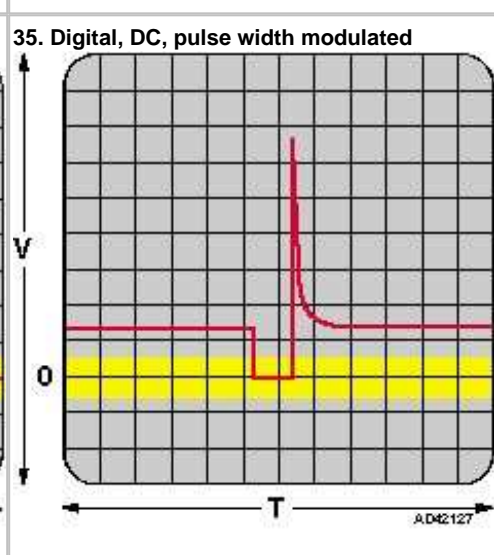
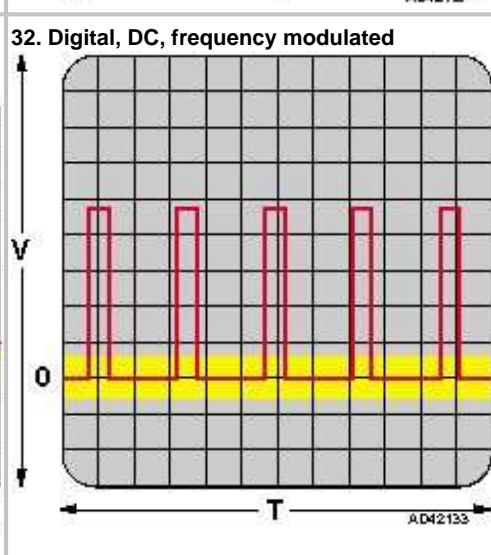
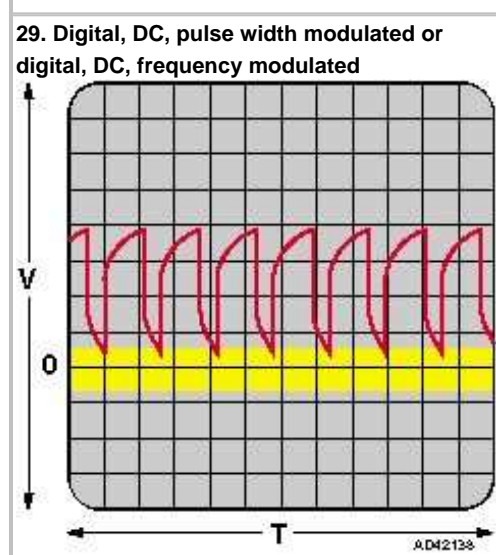
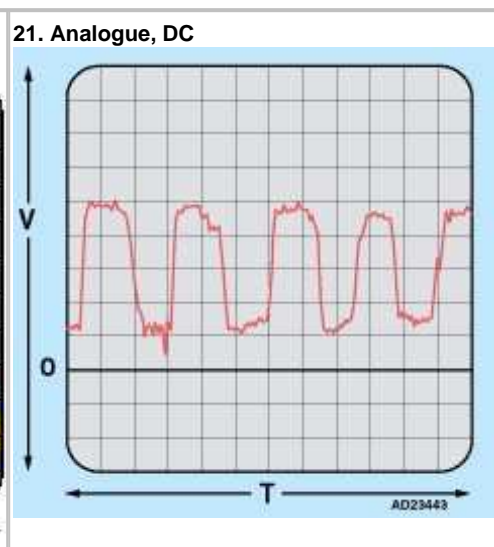
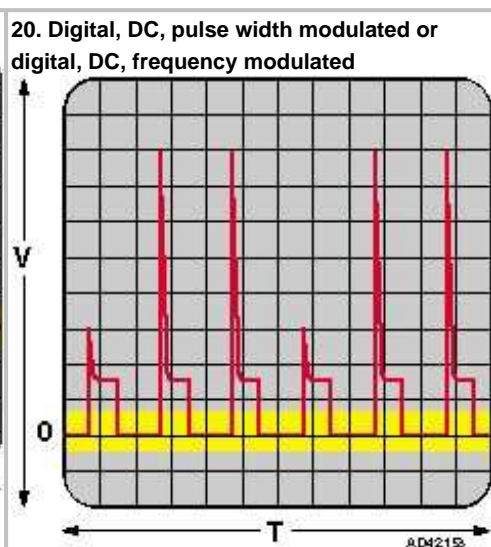
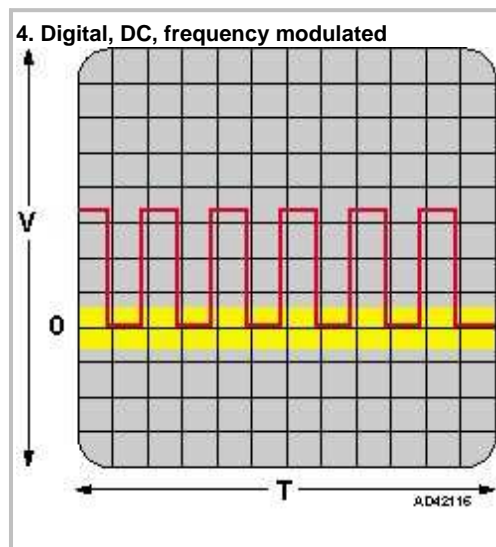
Component/circuit description	ECM pin	Signal	Condition	Typical value	Oscilloscope setting (Suggested settings - Voltage/time per division)	Wave form
AC compressor clutch relay	54		Engine idling - AC ON	11-14 V		
AC compressor clutch relay	54		Engine idling - AC ON - accelerator pedal briefly fully depressed	0-1 V briefly		
Air conditioning	10		Engine idling - AC OFF	0 V		
Air conditioning	10		Engine idling - AC ON - AC compressor ON	11-14 V		
Battery	1		Ignition OFF	11-14 V		
Brake pedal position (BPP) switch - 1990-96	18		Ignition ON - brake pedal released	0 V		

Brake pedal position (BPP) switch	18	←	Ignition ON - brake pedal depressed	11-14 V		
Crankshaft position (CKP) sensor - without integral amplifier/distributor	56	←	Engine idling	45 Hz		
Crankshaft position (CKP) sensor	56	←	Engine idling		5 V/20 ms	
Data link connector (DLC)	17	⇒		Connected pin - no test data available or random digital signal		
Data link connector (DLC)	48	←		Connected pin - no test data available or random digital signal		
Digital multifunction display - 1992-96	34	←		Connected pin - no test data available or random digital signal		
Earth	20		Ignition ON	0 V		
Earth	40		Ignition ON	0 V		
Earth	49		Ignition ON	0 V		
Earth	60		Ignition ON	0 V		
Earth - brown wire	28		Ignition ON	0 V		
Earth - some models	5		Ignition ON	0 V		
Earth - without integral amplifier/distributor	16		Ignition ON	0 V		
Engine control relay	37	←	Ignition OFF	0 V		
Engine control relay	37	←	Ignition ON	11-14 V		
Engine control relay	57	←	Ignition OFF	0 V		
Engine control relay	57	←	Ignition ON	11-14 V		
Engine control relay - 1992-96	22	⇒	Ignition ON	0-1 V briefly then 11-14 V		
Engine control relay	22	⇒	Engine cranking	0-1 V		
Engine coolant temperature (ECT) sensor	7	←	Ignition ON - coolant temp. 0°C	3,8-3,9 V		
Engine coolant temperature (ECT) sensor	7	←	Ignition ON - coolant temp. 20°C	3-3,2 V		
Engine coolant temperature (ECT) sensor	7	←	Ignition ON - coolant temp. 80°C	0,6-0,9 V		
Engine coolant temperature (ECT) sensor	46	⇒	Ignition ON	0 V		
Engine coolant temperature (ECT) sensor - 1993-96	49	⇒	Ignition ON	0 V		
Evaporative emission (EVAP) canister purge valve	31 (37)	⇒	Engine idling - engine hot - valve not operating	0 V		
Evaporative emission (EVAP) canister purge valve	31 (37)	⇒	Engine under load - engine hot - valve operating	3-14 V		
Evaporative emission (EVAP) canister purge valve	31	⇒	Ignition ON	11-14 V		

Evaporative emission (EVAP) canister purge valve	31		Engine running - valve operating		10 V/50 ms	
Exhaust gas recirculation (EGR) backpressure transducer - if fitted	26		Ignition ON	5 V		
Exhaust gas recirculation (EGR) backpressure transducer	27		Ignition ON	0,4-3,9 V - varies with pressure		
Exhaust gas recirculation (EGR) backpressure transducer	46		Ignition ON	0 V		
Exhaust gas recirculation (EGR) solenoid - if fitted 1986-89	33 (37)		Engine idling - engine hot	0 V		
Exhaust gas recirculation (EGR) solenoid	33 (37)		Accelerate briefly - engine hot	9-14 V		
Exhaust gas recirculation (EGR) solenoid	33		Ignition ON	11-14 V		
Exhaust gas recirculation (EGR) solenoid	33		Engine running - valve operating		5 V/20 ms	
Fuel flow sensor - 1986-91	34			Connected pin - no test data available or random digital signal		
Fuel pump relay - 1986-91	22		Ignition ON	0-1 V briefly then 11-14 V		
Fuel pump relay	22		Engine cranking	0-1 V		
Heated oxygen sensor (HO2S) - 1986-88	29		Engine idling - engine hot	0,1-0,9 V fluctuating	0,2 V/1 sec.	
Heated oxygen sensor (HO2S) - LH 1989-96	43		Engine idling - engine hot	0,1-0,9 V	0,2 V/1 sec.	
Heated oxygen sensor (HO2S) - RH 1989-96	29		Engine idling - engine hot	0,1-0,9 V	0,2 V/1 sec.	
Heated oxygen sensors (HO2S) - 4-wire	46		Engine idling - engine hot	0 V		
Heated oxygen sensors (HO2S)	49		Engine idling - engine hot	0 V		
Idle adjustment connection - blue/yellow wire	28		Ignition ON	0 V or 5 V		
Idle air control (IAC) valve	21		Engine idling - engine hot	9,5-11 V	2 V/5 ms	
Ignition amplifier	36		Engine idling	45 Hz	2 V/10 ms	
Ignition amplifier - with integral amplifier/distributor	16		Ignition ON	0 V		
Ignition amplifier	56		Engine idling	45 Hz	5 V/20 ms	
Injectors - group A	58		Ignition ON	11-14 V		
Injectors	58		Engine idling	2,3 ms	10 V/2 ms	
Injectors - group B	59		Ignition ON	11-14 V		
Injectors	59		Engine idling	2,3 ms	10 V/2 ms	

Intake air temperature (IAT) sensor	25	←	Ignition ON - air temp. 0°C	3,8-3,9 V		
Intake air temperature (IAT) sensor	25	←	Ignition ON - air temp. 20°C	3-3,2 V		
Intake air temperature (IAT) sensor	25	←	Ignition ON - air temp. 40°C	2-2,2 V		
Intake air temperature (IAT) sensor	46	↔	Ignition ON	0 V		
Intake air temperature (IAT) sensor - 1993-96	49	↔	Ignition ON	0 V		
Manifold absolute pressure (MAP) sensor	26	⇒	Ignition ON	5 V		
Manifold absolute pressure (MAP) sensor	45	←	Ignition ON	170 Hz		
Manifold absolute pressure (MAP) sensor	45	←	Engine idling - engine cold	120 Hz		
Manifold absolute pressure (MAP) sensor	45	←	Engine idling - engine hot	110 Hz		
Manifold absolute pressure (MAP) sensor	45	←	3000 rpm	105 Hz		
Manifold absolute pressure (MAP) sensor	46	↔	Ignition ON	0 V		
Manifold absolute pressure (MAP) sensor - 1993-96	49	↔	Ignition ON	0 V		
Octane coding plug - if fitted	23	←	Ignition ON	0 V or 5 V		
Octane coding plug	24	←	Ignition ON	0 V or 5 V		
Park/neutral position (PNP) switch - 1986-91	30	←	Ignition start position - AT not in P or N	11-14 V		
Park/neutral position (PNP) switch	30	←	Ignition start position - AT in P or N - engine cranking	0-1 V		
Park/neutral position (PNP) switch - 1992-96	30	←	Ignition ON - AT not in P or N	11-14 V		
Park/neutral position (PNP) switch	30	←	Ignition ON - AT in P or N	0-1 V		
Pulsed secondary air injection (PAIR) solenoid - some models 1986-89	51 (37)	↔	Engine idling - engine cold	9-14 V		
Pulsed secondary air injection (PAIR) solenoid	51 (37)	↔	Engine idling - engine hot	0 V		
Pulsed secondary air injection (PAIR) solenoid	51	↔	Ignition ON	11-14 V		
Throttle position (TP) sensor	26	⇒	Ignition ON	5 V		
Throttle position (TP) sensor	46	↔	Ignition ON	0 V		
Throttle position (TP) sensor	47	←	Ignition ON - throttle closed	0,5-0,9 V		
Throttle position (TP) sensor	47	←	Ignition ON - throttle fully open	4,3-5 V		
Throttle position (TP) sensor - 1993-96	49	↔	Ignition ON	0 V		

Transmission kick-down relay/switch - 1990-96	19	←	Ignition ON - accelerator pedal released	0 V		
Transmission kick-down relay/switch	19	←	Ignition ON - accelerator pedal fully depressed	11-14 V		
Transmission modulator	53	⇒	Ignition ON	9-12 V		
Transmission modulator - 1990-96	15	⇒	Ignition ON	9-12 V		
Vehicle speed sensor (VSS)	3	←	Ignition ON - vehicle pushed	0 V or 11-14 V		
Vehicle speed sensor (VSS)	3	←	Vehicle moving		5 V/50 ms	 43



43. Digital, DC, frequency modulated

