

20	2500
40	1100
60	600
80	300

## 21) Throttle Position Sensor Voltage And Resistance Specification (1.8l A/T&amp;2.2l)

Throttle Opening	Volt	Ohm ( $\Omega$ )
1/8	0.998	0.989
2/8	1.60	1.104
3/8	2.37	1.278
4/8	2.74	1.462
5/8	3.15	1.480
6/8	3.43	1.459
7/8	3.60	1.144
8/8	4.02	1.072

## 22) Knock Sensor Voltage Value(2.2l Turbo) : &gt; 0.03v

**4. 1993**

Applicable Vehicle Types:

Ford: Crown Victoria, Escort, Mustang, Probe, Taurus, Tempo, Thunderbird

Lincoln: Continental, Mark VIII, Town Car

Mercury: Cougar, Grand Marquis, Sable, Topaz, Tracer

## 1) Water Temperature Sensor Resistance Value Specification

Temperature ( $^{\circ}\text{C}$ )	Ohm ( $\Omega$ )
20	2200-2700
40	1000-1300
60	500-650
80	250-350

## 2) Engine Cooling Fan Coolant Temperature Sensor Resistance Specification

Temperature ( $^{\circ}\text{C}$ )	Ohm ( $\Omega$ )
91	1700-1840
97	1420-1530
108	1030-1110

## 3) Heated Oxygen Sensor Voltage Value Specification

Status	Voltage
Acceleration	0.5-1.0
Rev Decrease	0-0.5
Idle(cold engine)	0
Idle(heat engine)	0-1
Ignition Switch On, Engine Turn Off	0

## 4) Vane Type Air Flow Sensor Voltage Value

Vane Throttle Opening	Volt(Change Range 15%)
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All Close	3.90
1/8	3.24
2/8	5.60
3/8	5.62
4/8	5.83
5/8	6.02
6/8	6.57
7/8	7.46
8/8	7.87

## 5) Barometric Pressure Sensor Voltage Value

Vacuum (Inch-Hg)	Volt
0	3.9
4	3.6
8	3.1
12	2.5
16	2.0
20	1.5
24	0.9
28	0.4

## 6 ) Water Temperature Sensor, Intake Air Temperature Sensor Resistance And Voltage Specification(Change Range 15%)

Temperature (°C)	Voltage (V)	Ohm(K $\omega$ )
100	0.46	2.07
90	0.60	2.80
80	0.78	3.84
70	1.02	5.37
60	1.33	7.70
50	1.70	10.97
40	2.13	16.15
30	2.60	24.27
20	3.07	37.30
10	3.51	58.75

## 7) Intake Air Temperature Sensor Resistance Value Specification

Temperature (°C)	Ohm ( $\Omega$ )
1.8I&2.5I	
0	10000-20000
20	2000-3000
40	900-1300
2.0I A/T	
0	72100-79400
13	54300-58600
25	29700-36300
43	17900-19300

## 8) Quality Air Flow Sensor Voltage

Status	Volt
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Engine Running	1.5-5.0
Ignition Switch On	1.0-1.5
Idle	0.6
20 Mile/Hr.	1.1
40 Mile/Hr.	1.7
60 Mile/Hr.	2.1

## 9) Manifold Absolute Pressure Sensor Frequency Specification (Change Range 15%)

Atmospheric Pressure (Inch-Hg)	Frequency (Hz)
17.1	122.4
18.3	125.5
19.5	128.7
20.7	131.9
21.8	135.1
23.0	138.3
24.2	141.8
25.4	145.4
26.6	148.9
27.7	152.5
28.9	156.1
30.1	159.6
31.0	162.4

## 10) Manifold Absolute Pressure Sensor Frequency Specification (Change Range 15%)

Manifold Vacuum Limiter (Inch-Hg)	Frequency (Hz)
0	159
3	150
6	141
9	133
12	125
15	117
18	109
21	102
24	95
27	88
30	80

11) Throttle Position Sensor Voltage Value Specification  
(Except 1.8l&2.2l)

Throttle Opening	Volt
0	0.50
10	0.97
20	1.44
30	1.90
40	2.37
50	2.84
60	3.31
70	3.78

80	4.24
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## 12) Manifold Absolute Pressure Sensor Voltage Output Specification

Altitude (Feet)	Volt
0	1.55-1.63
1000	1.52-1.60
2000	1.49-1.57
3000	1.46-1.54
4000	1.43-1.51
5000	1.40-1.48
6000	1.37-1.45
7000	1.35-1.43

## 13) Pressure Feedback EGR Sensor Voltage Specification (Change Range 15%)

Pressure (PSI)	Vacuum (Inch-Hg)	Volt
1.82	3.70	4.75
1.36	2.79	4.38
0.91	1.85	4.00
0.46	0.94	3.63
0.0	0	3.25
-2.47	-5.03	1.22
-3.63	-7.40	0.25

## 14) Triangle Pressure Feedback EGR Sensor Voltage Specification(Change Range 15%)

Pressure (PSI)	Vacuum (Inch-Hg)	Volt
4.34	8.83	4.56
3.25	6.62	3.54
2.17	4.41	2.51
1.08	2.21	1.48
0.0	0	0.45

## 15) Activity Fuel Sensor Voltage Output Frequency Specification

Methanol Percentage	Frequency
0	30-70
10	40-80
20	50-80
30	60-100
40	70-110
50	80-120
60	90-130
70	100-140
80	110-150
90	120-160
100	130-170

## 16) Manual Joy Stick Position Sensor Resistance Specification

Position	Ohm ( $\Omega$ )
R	3770-4607
P	1304-1593
N	660-807
D(Overspeed Gear)	361-442
D	190-232

1	78-95
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## 17) EGR Temperature Sensor Resistance Specification

Temperature (°C)	Ohm (Ω)
20	182000-336000
30	112000-165000
41	41300-47600
52	7500-10500

## 18) EGR Valve Position Sensor Voltage Specification

Vacuum (Inch-Hg)	Volt
0	0.8
6	5.0

## 19) Transmission Oil Temperature Sensor Voltage And Resistance Specification (Change Range 15%)

Temperature (°C)	Voltage(V)	Resistance(Ohm)
Escort&Tracer		
0	4.82	52000
20	4.61	23000
40	4.26	11000
60	3.74	5600
100	2.40	1710
All Other Vehicle Types		
0	3.88	96255
15	3.32	46883
40	2.15	16043
70	1.03	5260
90	0.60	2750

## 20) Vane Type Intake Air Temperature Sensor Resistance Value (Change Range 15%)

Temperature (°C)	Ohm (Ω)
-20	15000
0	5210
20	2500
40	1100
60	600
80	300

## 21) Throttle Position Sensor Voltage And Resistance Specification(Change Range 15%)

Throttle Opening	Volt	Ohm (Ω)
1.8I A/T		
1/8	0.998	0.989
2/8	1.60	1.104
3/8	2.37	1.278
4/8	2.74	1.462
5/8	3.15	1.480
6/8	3.43	1.459
7/8	3.60	1.144
8/8	4.02	1.072

2.0l A/T&2.5l		
All Close	0.5	0.4
1/4	1.3	0.6
1/2	2.2	1.6
3/4	2.9	2.2
Full Open	3.7	3.0

## 5. 1994

Applicable Vehicle Types:

Ford: Crown Victoria, Escort, Mustang, Probe, Taurus, Tempo, Thunderbird

Lincoln: Continental, Mark VIII, Town Car

Mercury: Cougar, Grand Marquis, Sable, Topaz, Tracer

### 1) Water Temperature Sensor Resistance Value Specification

Temperature (°C)	Ohm (Ω)
20	2200-2700
40	1000-1300
60	500-650
80	250-350

### 2) Oxygen Sensor Voltage Value Specification

Status	Voltage
Acceleration	0.5-1.0
Rev Decrease	0-0.5
Idle(cold engine)	0
Idle(heat engine)	0-1
Ignition Switch On, Engine Turn Off	0

### 3) Vane Type Air Flow Sensor Voltage Value

Vane Throttle Opening	Volt(Change Range 15%)
All Close	3.90
1/8	3.24
2/8	5.60
3/8	5.62
4/8	5.83
5/8	6.02
6/8	6.57
7/8	7.46
8/8	7.87

### 4) Barometric Pressure Sensor Output Frequency

Atmospheric Pressure (Inch-Hg)	Frequency (Hz)
17.1	122.4
18.3	125.5
19.5	128.7
20.7	131.9
21.8	135.1