

RECORD Technologies

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Tachometer Installation for Programmable Electronic Tachometers

RECORD
R175 & R176

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Installation

Electrical connections

- When power is applied, the needle should go to zero position. If it does not, there may be a bad connection in the "hot" (green) and (red) wire, or in the ground wire circuit. Check power to the meter by measuring with a voltmeter at the plug (meter leads on the pins that attach to the green/red and black wire).
- Low voltage (below 10.5V) to the tachometer will cause an inaccurate reading. If a problem exists, measure the vehicle voltage with the engine running and tachometer connected. This can be done by connecting a voltmeter to a power source (i.e. fuse block, etc.) and/or by connecting the voltmeter leads to the green and red and black wires.
- Magnetic sensors only: If the tach reads zero, then "jumps" to a normal reading at higher RPM, adjust the sensor so that it is closer to the gear (AC generators cannot be adjusted). Be careful not to screw it in too far, or damage may occur. Screw the mag sensor in all the way until it bottoms out, then back off the sender 1/4 of a turn and tighten down the nut.
- Never connect the (blue) wire to the ignition coil or damage may result.

LEAD/COLOUR	DESCRIPTION
Red and Green Wire	Ignition via a 5 amp fuse
Black	Ground
Yellow	DO NOT USE
White	CONNECT ONLY if using input from ignition coil or alternator W terminal
Blue	CONNECT ONLY if using input from magnetic sensor or AC generator

You will need to know the number of pulses per crank shaft revolution for your vehicle and set that number into the tachometer via the programming switches or your tachometer will not read accurately.

Programming the switch setting:

The switch "ON" = 1; "OFF" = 0

NOTE: The switch setting must be done with the power off. Changing the switch settings while the power is on will have no effect.

Each of the eight switches has a different value as following:

Calculate which values add up to your number of pulses per rev and switch on the corresponding switches, see the binary example below:

Switch	Value
#8	1
#7	2
#6	4
#5	8
#4	16
#3	32
#2	64
#1	128

Example: Set a gear with 103 teeth (pulse/rev):

#2	ON	64
#3	ON	32
#6	ON	4
#7	ON	2
#8	ON	1
Total:		103

How to set/calibrate your pulses per revolution

4) MAGNETIC SENSOR

Pulses per revolution = number of teeth on fly wheel (starter gear).

5) AC GENERATOR SENSOR

Pulse/revs = (pulse/revs of sender) x (ratio of take off RPM to engine RPM): Example: $30 \times .5 = 15$

If the number of pulses per revolution (from equation) is not a whole number, the tachometer will not be accurate. In this case, select an AC generator so that this number is non-fractional.

6) ALTERNATOR TAP:

Pulse/revs = $\frac{\text{(poles on alternator)} \times \text{(diameter of crank pulley)}}{2 \times \text{(diameter of alternator pulley)}}$ Example $\frac{12 \times 9.5}{2 \times 4} = \frac{114}{8} = 14$

Specifications:

Operating Voltage:	10-16VDC
Input:	Magnetic sensor, AC generator, Alternator Tap
Programming Range:	1-255 pulses per revolution
Hour meter (optional):	Operates only when engine runs (inhibited)
Warranty:	2 Years

RPM

Programming Table

SWITCH	FRE- QUENCY	SWITCH	FRE- QUENCY	SWITCH	FRE- QUENCY	SWITCH	FRE- QUENCY	SWITCH	FRE- QUENCY
12345678	P/rpm	12345678	P/rpm	12345678	P/rpm	12345678	P/rpm	12345678	P/rpm
00000001	1	00110101	53	01101001	105	10011101	157	11010001	209
00000010	2	00110110	54	01101010	106	10011110	158	11010010	210
00000011	3	00110111	55	01101011	107	10011111	159	11010011	211
00000100	4	00111000	56	01101100	108	10100000	160	11010100	212
00000101	5	00111001	57	01101101	109	10100001	161	11010101	213
00000110	6	00111010	58	01101110	110	10100010	162	11010110	214
00000111	7	00111011	59	01101111	111	10100011	163	11010111	215
00001000	8	00111100	60	01110000	112	10100100	164	11011000	216
00001001	9	00111101	61	01110001	113	10100101	165	11011001	217
00001010	10	00111110	62	01110010	114	10100110	166	11011010	218
00001011	11	00111111	63	01110011	115	10100111	167	11011011	219
00001100	12	01000000	64	01110100	116	10101000	168	11011100	220
00001101	13	01000001	65	01110101	117	10101001	169	11011101	221
00001110	14	01000010	66	01110110	118	10101010	170	11011110	222
00001111	15	01000011	67	01110111	119	10101011	171	11011111	223
00010000	16	01000100	68	01111000	120	10101100	172	11100000	224
00010001	17	01000101	69	01111001	121	10101101	173	11100001	225
00010010	18	01000110	70	01111010	122	10101110	174	11100010	226
00010011	19	01000111	71	01111011	123	10101111	175	11100011	227
00010100	20	01001000	72	01111100	124	10110000	176	11100100	228
00010101	21	01001001	73	01111101	125	10110001	177	11100101	229
00010110	22	01001010	74	01111110	126	10110010	178	11100110	230
00010111	23	01001011	75	01111111	127	10110011	179	11100111	231
00011000	24	01001100	76	10000000	128	10110100	180	11101000	232
00011001	25	01001101	77	10000001	129	10110101	181	11101001	233
00011010	26	01001110	78	10000010	130	10110110	182	11101010	234
00011011	27	01001111	79	10000011	131	10110111	183	11101011	235
00011100	28	01010000	80	10000100	132	10111000	184	11101100	236
00011101	29	01010001	81	10000101	133	10111001	185	11101101	237
00011110	30	01010010	82	10000110	134	10111010	186	11101110	238
00011111	31	01010011	83	10000111	135	10111011	187	11101111	239
00100000	32	01010100	84	10001000	136	10111100	188	11110000	240
00100001	33	01010101	85	10001001	137	10111101	189	11110001	241
00100010	34	01010110	86	10001010	138	10111110	190	11110010	242
00100011	35	01010111	87	10001011	139	10111111	191	11110011	243
00100100	36	01011000	88	10001100	140	11000000	192	11110100	244
00100101	37	01011001	89	10001101	141	11000001	193	11110101	245
00100110	38	01011010	90	10001110	142	11000010	194	11110110	246
00100111	39	01011011	91	10001111	143	11000011	195	11110111	247
00101000	40	01011100	92	10010000	144	11000100	196	11111000	248
00101001	41	01011101	93	10010001	145	11000101	197	11111001	249
00101010	42	01011110	94	10010010	146	11000110	198	11111010	250
00101011	43	01011111	95	10010011	147	11000111	199	11111011	251
00101100	44	01100000	96	10010100	148	11001000	200	11111100	252
00101101	45	01100001	97	10010101	149	11001001	201	11111101	253
00101110	46	01100010	98	10010110	150	11001010	202	11111110	254
00101111	47	01100011	99	10010111	151	11001011	203	11111111	255
00110000	48	01100100	100	10011000	152	11001100	204		
00110001	49	01100101	101	10011001	153	11001101	205		
00110010	50	01100110	102	10011010	154	11001110	206		
00110011	51	01100111	103	10011011	155	11001111	207		
00110100	52	01101000	104	10011100	156	11010000	208		