

FITTING INSTRUCTIONS

CAUTION

GAUGE TO BE FITTED TO **NEGATIVE EARTH** VEHICLES ONLY

DISCONNECT THE BATTERY CABLE PRIOR TO INSTALLATION

GENERAL INFORMATION:

OPERATING VOLTAGE: 11-17VDC: NOTE-Instrument is equipped with a 12v lamp.

INPUT SIGNAL: Magnetic sensor, Hall effect speed transducer, Digital ECU

COMPLIES WITH 95/54/EC, ISO7637 & ISOTR 10605 for Electro-Magnetic Compatibility.

CALIBRATION:

The Programmable speedometer is calibrated (programmed) by setting a combination of ten switches found on the rear of the instrument. To gain access to these switches remove the hole plug by pressing above the center to allow a small coin, screwdriver, etc. to be inserted in the slot behind the upper edge. The odometer and speedometer are electronically linked together and are both calibrated when the switches are set correctly. Set the switches prior to installing the instrument.

NOTE: The switch setting must be done with the power 'OFF'.

CALIBRATION PROCEDURE:

Calculate the "calibration number" from the appropriate formula below. (the number obtained must be within the range of 2500 to 135625 pulses/unit distance). Refer to the 'CALIBRATION SWITCH SETTING' table with this number. Locate the setting which is nearest to the calibration number, then set the switches marked with "0" to the "OFF" position (down).

EXAMPLE: Calibration number=18142: therefore, switches 1,2,3,5,6,7,8,9 are switched "OFF" (Switch settings 0001000001).

Calibration Number

(Unit distance = miles or kilometres)

1) Front wheel mounted slotted disc / tone wheel (visible through magnetic sensor threaded hole)

Calibration number =
Number of slots in slotted disc x (tyre revs/unit distance)

2) Propeller shaft / tail shaft mounted magnetic sensor (4 pole):

Calibration number =
(Tyre revs/Unit distance) x differential ratio x 4

3) sender driven from transmission cable drive:

Calibration number =
(Cable turns/unit distance) x (number of pulses/sender turn)

INSTALLATION:

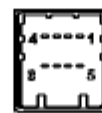
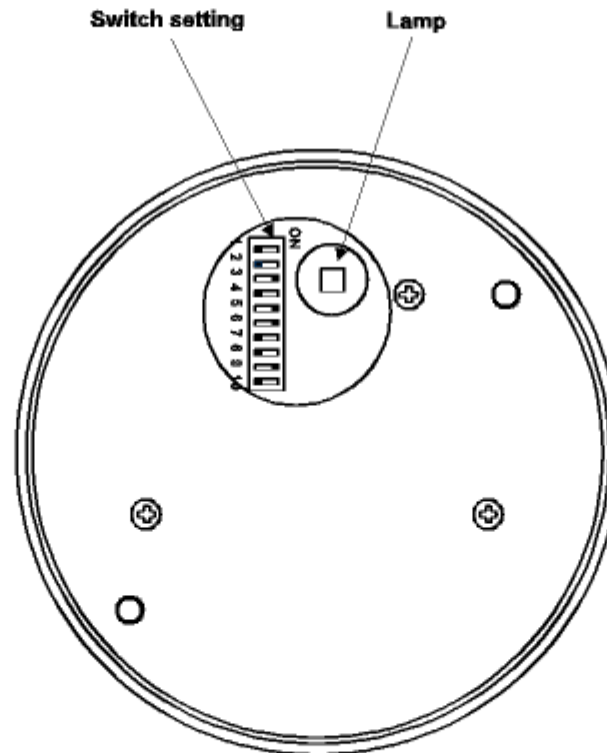
When mounting the gauge in an instrument panel, cut a hole in the instrument panel suitable to fit the rear of the gauge, with sufficient depth to accept the instrument and connector.

Connect the wires as described below with the power 'OFF', and the test before finally fixing into place.

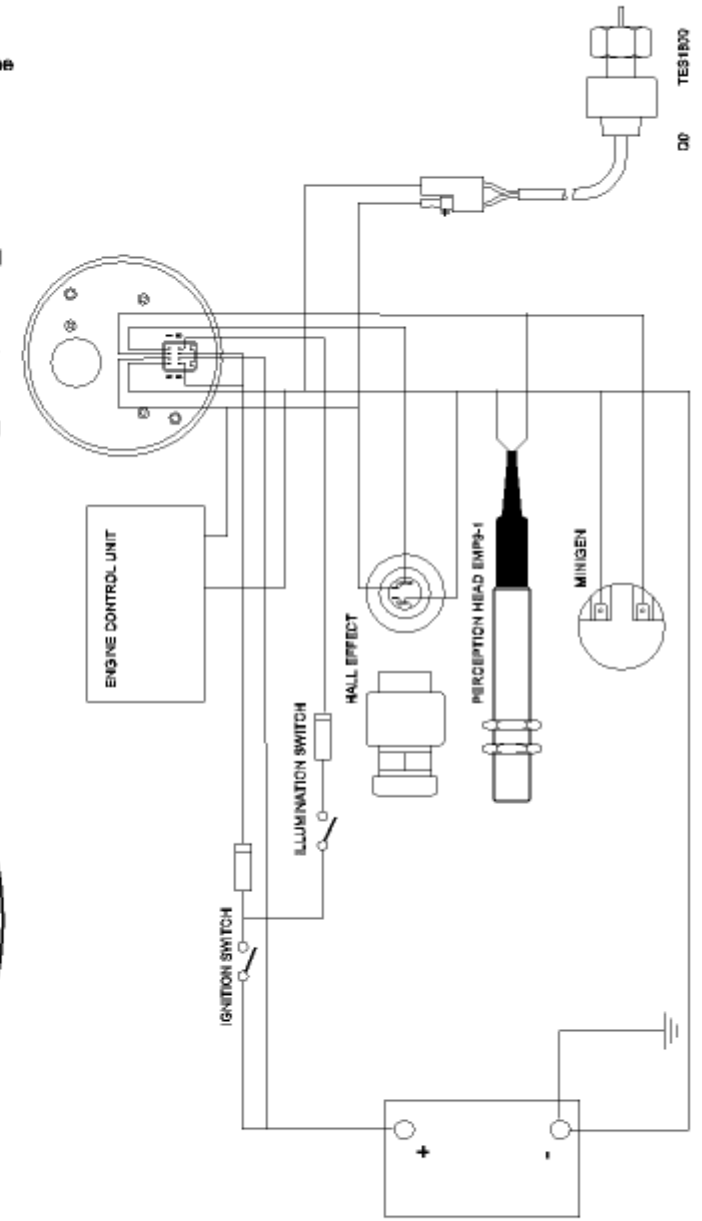
GREEN -Connect to ignition power source. (+ve)
BLACK - Connect to ground and sensor wire. (-ve)
BROWN/SLATE - Connect to battery. (+ve) if required, Lcd will be switched on when ignition is switched off.
RED/WHITE - Connect to dash lamp power
RED - Connect to ignition (+ve) if pull up input required

Sender unit connection options:-

WHITE/BLACK - Connect to ECU or Hall effect speed transducer (NOT both)
RED/BLUE - Connect to magnetic sensor input
LIGHT GREEN/PURPLE - Connect to 8v input on hall effect speed transducer.



1	GREEN
2	BROWN/SLATE
3	RED
4	RED/WHITE
5	BLACK
6	WHITE/BLACK
7	RED/BLUE
8	LIGHT GREEN/PURPLE



DO TES1830

Switches marked "0" are "OFF". Switches marked "1" are "ON". Switch settings are sequenced 1,2,3,4,etc

PULSES/ UNIT DISTANCE	SWITCH SETTINGS	PULSES/ UNIT DISTANCE	SWITCH SETTINGS	PULSES/ UNIT DISTANCE	SWITCH SETTINGS	PULSES/ UNIT DISTANCE	SWITCH SETTINGS	PULSES/ UNIT DISTANCE	SWITCH SETTINGS	PULSES/ UNIT DISTANCE	SWITCH SETTINGS
2500	= 0000000000	3445	= 0110101000	4765	= 0011010100	6613	= 0100000010	9196	= 0001101010	12809	= 0111010110
2509	= 1000000000	3458	= 1110101000	4783	= 1011010100	6638	= 1100000010	9231	= 1001101010	12859	= 1111010110
2518	= 0100000000	3471	= 0001101000	4801	= 0111010100	6663	= 0010000010	9267	= 0101101010	12909	= 0000110110
2527	= 1100000000	3484	= 1001101000	4819	= 1111010100	6689	= 1010000010	9303	= 1101101010	12959	= 1000110110
2536	= 0010000000	3497	= 0101101000	4837	= 0000110100	6715	= 0110000010	9339	= 0011101010	13009	= 0100110110
2545	= 1010000000	3510	= 1101101000	4855	= 1000110100	6741	= 1010000010	9375	= 1011000010	13059	= 1100110110
2554	= 0110000000	3523	= 0011101000	4873	= 0100110100	6767	= 0001000010	9411	= 0111101010	13110	= 0010110110
2563	= 1110000000	3536	= 1011101000	4892	= 1100110100	6793	= 1001000010	9447	= 1111101010	13161	= 1010110110
2573	= 0001000000	3549	= 0111101000	4911	= 0010110100	6819	= 0101000010	9483	= 0000110110	13212	= 0110110110
2583	= 1001000000	3562	= 1111101000	4930	= 1010110100	6845	= 1101000010	9520	= 1000011010	13263	= 1110110110
2593	= 0101000000	3575	= 0000011000	4949	= 0110110100	6871	= 0011000010	9557	= 0100011010	13314	= 0001110110
2603	= 1101000000	3588	= 1000011000	4968	= 1110110100	6897	= 1011000010	9594	= 1100011010	13366	= 1001110110
2613	= 0011000000	3602	= 0100011000	4987	= 0001110100	6923	= 0111000010	9631	= 0010011010	13418	= 0101110110
2623	= 1011000000	3616	= 1100011000	5006	= 1001110100	6950	= 1111000010	9668	= 1010011010	13470	= 1101110110
2633	= 0111000000	3630	= 0010011000	5025	= 0101110100	6977	= 0000100010	9705	= 0110011010	13522	= 0011110110
2643	= 1111000000	3644	= 1010011000	5044	= 10110110100	7004	= 1000100010	9742	= 1110011010	13574	= 1011110110
2653	= 0000100000	3658	= 0110011000	5063	= 0011110100	7031	= 0100100010	9780	= 0001011010	13627	= 0111110110
2663	= 1000100000	3672	= 1110011000	5082	= 1011110100	7058	= 1100100010	9818	= 1001011010	13680	= 1111110110
2673	= 0100100000	3686	= 0001011000	5101	= 0111110100	7085	= 0010100010	9856	= 0101011010	13733	= 0000001110
2683	= 1100100000	3700	= 1001011000	5120	= 1111110100	7112	= 1010100010	9894	= 1101011010	13786	= 1000001110
2693	= 0010100000	3714	= 0101011000	5140	= 0000001100	7139	= 0110100010	9932	= 0011011010	13839	= 0100001110
2703	= 1010100000	3728	= 1101011000	5160	= 1000001100	7166	= 1110100010	9970	= 1011011010	13893	= 1100001110
2713	= 0110100000	3742	= 0011011000	5180	= 0100001100	7193	= 0001100010	10008	= 0111011010	13947	= 0010001110
2723	= 1110100000	3756	= 1011011000	5200	= 1100001100	7221	= 1001100010	10047	= 1111011010	14001	= 1010001110
2733	= 0001100000	3770	= 0111011000	5220	= 0010001100	7249	= 0101100010	10086	= 0000111010	14055	= 0110001110
2743	= 1001100000	3784	= 1111011000	5240	= 1010001100	7277	= 1101100010	10125	= 1000111010	14109	= 1110001110
2753	= 0101100000	3798	= 0000111000	5260	= 0110001100	7305	= 0011100010	10164	= 0100111010	14164	= 0001001110
2763	= 1101100000	3812	= 1000111000	5280	= 1110001100	7333	= 1011100010	10203	= 1100111010	14219	= 1001001110
2773	= 0011100000	3826	= 0100111000	5300	= 0001001100	7361	= 0111100010	10242	= 0010111010	14274	= 0101001110
2783	= 1011100000	3840	= 1100111000	5320	= 1001001100	7389	= 1011100010	10282	= 1010111010	14329	= 1101001110
2793	= 0111100000	3855	= 0010111000	5340	= 0101001100	7417	= 0000010010	10322	= 0110111010	14384	= 0011001110
2803	= 1111100000	3870	= 1010111000	5360	= 1101001100	7445	= 1000010010	10362	= 1110111010	14440	= 1011001110
2813	= 0000010000	3885	= 0110111000	5380	= 0011001100	7474	= 0100010010	10402	= 0001111010	14496	= 0111001110
2823	= 1000010000	3900	= 1110111000	5401	= 1011001100	7503	= 1100010010	10442	= 1010111010	14552	= 1111001110
2834	= 0100010000	3915	= 0001111000	5422	= 0111001100	7532	= 0010010010	10482	= 0101111010	14608	= 0000101110
2845	= 1100010000	3930	= 1001111000	5443	= 1111001100	7561	= 1010010010	10522	= 1101111010	14665	= 1000101110
2856	= 0010010000	3945	= 0101111000	5464	= 0000010010	7590	= 0110010010	10563	= 0011111010	14722	= 0100010110
2867	= 1010010000	3960	= 1101111000	5485	= 1000101100	7619	= 1110010010	10604	= 1011111010	14779	= 1100101110
2878	= 0110010000	3975	= 0011111000	5506	= 0100101100	7648	= 0001010010	10645	= 0111111010	14836	= 0010101110
2889	= 1110010000	3990	= 1011111000	5527	= 1100101100	7677	= 1001010010	10686	= 1111111010	14893	= 1010101110
2900	= 0001010000	4005	= 0111111000	5548	= 0010101100	7706	= 0101010010	10727	= 0000000110	14951	= 0101010110
2911	= 1001010000	4020	= 1111111000	5569	= 1010101100	7736	= 1101010010	10768	= 1000000110	15009	= 1110101110
2922	= 0101010000	4035	= 0000000100	5590	= 0110101100	7766	= 0011010010	10810	= 0100000110	15067	= 0001101110
2933	= 1101010000	4050	= 1000000100	5611	= 1110101100	7796	= 1011010010	10852	= 1100000110	15125	= 1001101110
2944	= 0011010000	4065	= 0100000100	5632	= 0001101100	7826	= 0111010010	10894	= 0010000110	15184	= 0101101110
2955	= 1011010000	4080	= 1100000100	5654	= 1001101100	7856	= 1111010010	10936	= 1010000110	15243	= 1101101110
2966	= 0111010000	4095	= 0010000100	5676	= 0101101100	7886	= 0000110010	10978	= 0110000110	15302	= 0011011010
2977	= 1111010000	4110	= 1010000100	5698	= 1101101100	7916	= 1000110010	11020	= 1110000110	15361	= 1011101110
2988	= 0000110000	4126	= 0110000100	5720	= 0011101100	7946	= 0100110010	11063	= 0001000110	15421	= 0111101110
2999	= 1000110000	4142	= 1110000100	5742	= 1011101100	7977	= 1100110010	11106	= 1001000110	15481	= 1111101110
3010	= 0100110000	4158	= 0001000100	5764	= 0111101100	8008	= 0010100010	11149	= 0101000110	15541	= 0000011110
3021	= 1100110000	4174	= 1001000100	5786	= 1111101100	8039	= 1010110010	11192	= 1101000110	15601	= 1000011110
3032	= 0010110000	4190	= 0101000100	5808	= 0000011100	8070	= 0110110010	11235	= 0011000110	15661	= 0100011110
3043	= 1010110000	4206	= 1101000100	5830	= 1000011100	8101	= 1101100010	11278	= 1011010010	15722	= 1100011110
3054	= 0110110000	4222	= 0011000100	5852	= 0100011100	8132	= 0001110010	11322	= 0111000110	15783	= 0010011110
3065	= 1110110000	4238	= 1011000100	5874	= 1100011100	8163	= 1001110010	11366	= 1111000110	15844	= 1010001110
3076	= 0001110000	4254	= 0111000100	5896	= 0010011100	8194	= 0101110010	11410	= 0000100110	15905	= 0110011110
3088	= 1001110000	4270	= 1111000100	5919	= 1010011100	8226	= 1101110010	11454	= 1000100110	15967	= 1110011110
3100	= 0101110000	4286	= 0000100100	5942	= 0110011100	8258	= 0011110010	11498	= 0100100110	16029	= 0001011110
3112	= 1101110000	4302	= 1000100100	5965	= 1110011100	8290	= 1011110010	11542	= 1100100110	16091	= 1010101110
3124	= 0011110000	4318	= 0100100100	5988	= 0001011100	8322	= 0111110010	11587	= 0010100110	16153	= 0101011110
3136	= 1011110000	4334	= 1100100100	6011	= 1001011100	8354	= 1111110010	11632	= 1010100110	16216	= 1101011110
3148	= 0111110000	4350	= 0010100100	6034	= 0101011100	8386	= 0000001010	11677	= 0110100110	16279	= 0011011110
3160	= 1111110000	4366	= 1010100100	6057	= 1101011100	8418	= 1000001010	11722	= 1110100110	16342	= 1011011110
3172	= 0000001000	4383	= 0110100100	6080	= 0011011100	8450	= 0100001010	11767	= 0001100110	16405	= 0111011110
3184	= 1000001000	4400	= 1110100100	6103	= 1011011100	8483	= 1100001010	11812	= 1001100110	16469	= 1111011110
3196	= 0100001000	4417	= 0001100100	6126	= 0111011100	8516	= 0010001010	11858	= 0101100110	16533	= 0000111110
3208	= 1100001000	4434	= 1001100100	6149	= 1111011100	8549	= 1010001010	11904	= 1101100110	16597	= 1000111110
3220	= 0010001000	4451	= 0101100100	6173	= 0000111100	8582	= 0110001010	11950	= 0011100110	16661	= 0100111110
3232	= 1010001000	4468	= 1101100100	6197	= 1000111100	8615	= 1110001010	11996	= 1011100110	16726	= 1100111110
3244	= 0110001000	4485	= 0011100100	6221	= 0100111100	8648	= 0001001010	12042	= 0111100110	16791	= 0010111110
3256	= 1110001000	4502	= 1011100100	6245	= 1100111100	8681	= 1001001010	12089	= 1111100110	16856	= 1010111110
3268	= 0001001000	4519	= 0111100100	6269	= 0010111100	8714	= 0101001010	12136	= 0000010110	16921	= 0110111110
3280	= 1001001000	4536	= 1111100100	6293	= 1010111100	8748	= 1101001010	12183	= 1000010110	16987	= 1110111110
3292	= 0101001000	4553	= 0000010100	6317	= 0110111100	8782	= 0011001010	12230	= 0100001010	17053	= 0001111110
3304	= 1101001000	4570	= 1000010100	6341	= 1110111100	8816	= 1011001010	12277	= 1100010110	17119	= 1001111110
3316	= 0011001000	4587	= 0100010100	6365	= 0001111100	8850	= 0111001010	12324	= 0010010110	17185	= 0101111110
3328	= 1011001000	4604									

Switches marked "0" are "OFF". Switches marked "1" are "ON". Switch settings are sequenced 1,2,3,4,etc
 See page 1 overleaf for lower pulse values

PULSES/ UNIT	SWITCH SETTINGS	PULSES/ UNIT	SWITCH SETTINGS	PULSES/ UNIT	SWITCH SETTINGS	PULSES/ UNIT	SWITCH SETTINGS	PULSES/ UNIT	SWITCH SETTINGS	PULSES/ UNIT	SWITCH SETTINGS
17863	= 0010000001	24930	= 0101101001	34931	= 0000110101	49461	= 0110000011	70065	= 0011101011	99267	= 0100110111
17932	= 1010000001	25027	= 1101101001	35072	= 1000110101	49662	= 1110000011	70349	= 1011101011	99670	= 1100110111
18002	= 0110000001	25124	= 0011101001	35214	= 0100110101	49863	= 0001000011	70634	= 0111101011	100075	= 0010110111
18072	= 1110000001	25222	= 1011101001	35357	= 1100110101	50065	= 1001000011	70921	= 1111101011	100481	= 1010110111
18142	= 0001000001	25320	= 0111101001	35500	= 0010110101	50268	= 0101000011	71209	= 0000100011	100889	= 0110110111
18212	= 1001000001	25418	= 1111101001	35644	= 1010110101	50472	= 1101000011	71498	= 1000010011	101299	= 1110110111
18283	= 0101000001	25517	= 0000011001	35788	= 0110110101	50677	= 0011000011	71788	= 0100010011	101710	= 0001110011
18354	= 1101000001	25616	= 1000011001	35933	= 1101101011	50883	= 1011000011	72079	= 1100010011	102123	= 1001110011
18425	= 0011000001	25716	= 0100011001	36079	= 0001110101	51089	= 0111000011	72372	= 0010010011	102538	= 0101110011
18496	= 1011000001	25816	= 1100011001	36225	= 1001110101	51296	= 1111000011	72666	= 1010010011	102954	= 1101110011
18568	= 0111000001	25916	= 0010011001	36372	= 0101110101	51504	= 0000100011	72961	= 0110010011	103372	= 0011110011
18640	= 1111000001	26017	= 1010011001	36519	= 1011110101	51713	= 1000100011	73257	= 1110010011	103792	= 0111110011
18712	= 0000100001	26118	= 0110011001	36667	= 0011110101	51923	= 0100100011	73554	= 0001010011	104213	= 0111110011
18785	= 1000100001	26220	= 1110011001	36816	= 0111110101	52134	= 1100100011	73853	= 1010010011	104636	= 1111110011
18858	= 0100100001	26322	= 0001011001	36965	= 0111101011	52345	= 0010100011	74153	= 0101010011	105061	= 0000001111
18931	= 1100100001	26424	= 1001011001	37115	= 1111110101	52557	= 1010100011	74454	= 1101010011	105488	= 1000001111
19004	= 0010100001	26527	= 0101011001	37265	= 0000001101	52770	= 0110100011	74756	= 0011010011	105916	= 0100001111
19078	= 1010100001	26630	= 1101011001	37416	= 1000001101	52984	= 1110100011	75059	= 1011010011	106346	= 1100001111
19152	= 0110100001	26734	= 0010110011	37568	= 0100001101	53199	= 0001100011	75364	= 0111010011	106778	= 0010001111
19226	= 1110100001	26838	= 1011011001	37720	= 1100001101	53415	= 1001100011	75670	= 1111010011	107212	= 1010001111
19301	= 0001100001	26942	= 0111011001	37873	= 0010001101	53632	= 0101100011	75977	= 0000110011	107647	= 0110001111
19376	= 1001100001	27047	= 1111011001	38026	= 1010001101	53850	= 1101100011	76285	= 1000110011	108084	= 1110001111
19451	= 0101100001	27152	= 0000111001	38180	= 0110001101	54068	= 0011100011	76595	= 0100110011	108523	= 0001001111
19526	= 1101100001	27258	= 1000111001	38335	= 1110001101	54287	= 1011100011	76906	= 1100110011	108964	= 1001001111
19602	= 0011100001	27364	= 0100111001	38490	= 0001001101	54507	= 0111100011	77218	= 0010110011	109406	= 0101001111
19678	= 1011100001	27470	= 1100111001	38646	= 1001001101	54728	= 1111100011	77531	= 1011100011	109850	= 1110010011
19754	= 0111100001	27577	= 0010111001	38803	= 0101001101	54950	= 0000010011	77846	= 0110110011	110296	= 0011001111
19831	= 1111100001	27684	= 1010111001	38960	= 1101001101	55173	= 1000010011	78162	= 1110110011	110744	= 1011001111
19908	= 0000010001	27792	= 0110111001	39118	= 0010100101	55397	= 0100010011	78479	= 0001110011	111194	= 0111001111
19985	= 1000010001	27900	= 1110111001	39277	= 1011001101	55622	= 1100010011	78798	= 1001110011	111646	= 1111001111
20063	= 0100010001	28008	= 0001111001	39436	= 0111001101	55848	= 0010010011	79118	= 0101110011	112099	= 0000101111
20141	= 1100010001	28117	= 1001111001	39596	= 1111001101	56075	= 1010010011	79439	= 1101110011	112554	= 1000101111
20219	= 0010010001	28226	= 0101111001	39756	= 0000010101	56302	= 0110010011	79761	= 0011110011	113011	= 0100101111
20297	= 1010010001	28336	= 1101111001	39917	= 1000101101	56530	= 1110010011	80085	= 1011110011	113470	= 1100101111
20376	= 0110010001	28446	= 0011111001	40079	= 0100101101	56759	= 0001010011	80410	= 0111110011	113931	= 0010101111
20455	= 1110010001	28557	= 1011111001	40241	= 1100101101	56989	= 1001010011	80736	= 1111110011	114394	= 1010101111
20534	= 0001010001	28668	= 0111111001	40404	= 0010101101	57220	= 0101010011	81064	= 0000000111	114859	= 0110101111
20614	= 1001010001	28779	= 1111111001	40568	= 1010101101	57452	= 1101010011	81393	= 1000000111	115325	= 1110101111
20694	= 0101010001	28891	= 0000000101	40732	= 0110101101	57685	= 0011010011	81723	= 0100000111	115793	= 0001101011
20774	= 1101010001	29003	= 1000000101	40897	= 1110101101	57919	= 1011010011	82055	= 1100000111	116263	= 1001101111
20855	= 0010100001	29116	= 0100000101	41063	= 0001101101	58154	= 0111010011	82388	= 0010000111	116735	= 0101101111
20936	= 1011010001	29229	= 1100000101	41229	= 1010110101	58390	= 1111010011	82722	= 1010000111	117209	= 1101101111
21017	= 0111010001	29343	= 0010000101	41396	= 0101101101	58627	= 0000110011	83058	= 0110000111	117685	= 0001101111
21099	= 1111010001	29457	= 1010000101	41564	= 1101101101	58865	= 1000110011	83395	= 1110000111	118163	= 1011101111
21181	= 0000110001	29572	= 0110000101	41732	= 0011101101	59104	= 0100110011	83734	= 0001000111	118643	= 0111101111
21263	= 1000110001	29687	= 1110000101	41901	= 1011101101	59344	= 1100110011	84074	= 1001000111	119125	= 1111010011
21346	= 0100110001	29802	= 0001000101	42071	= 0111101101	59585	= 0010110011	84415	= 0101000111	119609	= 0000011111
21429	= 1100110001	29918	= 1001000101	42242	= 1111101101	59827	= 1010110011	84758	= 1101000111	120095	= 1000011111
21512	= 0010110001	30034	= 0101000101	42413	= 0000011101	60070	= 0110110011	85102	= 0011000111	120583	= 0100011111
21596	= 1010110001	30151	= 1101000101	42585	= 1000011101	60314	= 1110110011	85447	= 1011000111	121073	= 1100011111
21680	= 0110110001	30268	= 0011000101	42758	= 0100011101	60559	= 0001110011	85794	= 0111000111	121565	= 0010011111
21764	= 1110110001	30386	= 1011000101	42931	= 1100011101	60805	= 1001110011	86142	= 1111000111	122059	= 1010011111
21849	= 0001110001	30504	= 0111000101	43105	= 0010011101	61052	= 0101110011	86492	= 0000100111	122555	= 0110011111
21934	= 1001110001	30623	= 1111000101	43280	= 1010011101	61300	= 1101110011	86843	= 1000100111	123053	= 1110011111
22019	= 0101110001	30742	= 0000100101	43455	= 0110011101	61549	= 0011110011	87196	= 0100100111	123553	= 0001011111
22105	= 1101110001	30862	= 1000100101	43631	= 1100110101	61799	= 1011110011	87550	= 1100100111	124055	= 1001011111
22191	= 0011110001	30982	= 0100100101	43808	= 0001011101	62050	= 0111110011	87905	= 0010100111	124559	= 0101011111
22277	= 1011110001	31103	= 1100100101	43986	= 1001011101	62302	= 1111110011	88262	= 1010100111	125065	= 1101011111
22364	= 0111110001	31224	= 0010100101	44164	= 0101011101	62555	= 0000001011	88620	= 0110100111	125573	= 0011011111
22451	= 1111110001	31345	= 1101010011	44343	= 1101011101	62809	= 1000001011	88980	= 1101001011	126083	= 1011011111
22538	= 0000001001	31467	= 0110100101	44523	= 0011011101	63064	= 0100001011	89341	= 0001100111	126595	= 0111011111
22626	= 1000001001	31589	= 1110100101	44703	= 1011011101	63320	= 1100001011	89704	= 1001100111	127109	= 1111011111
22714	= 0100001001	31712	= 0001100101	44884	= 0111011101	63577	= 0010001011	90068	= 0101100111	127625	= 0000111111
22802	= 1100001001	31835	= 1001100101	45066	= 1111011101	63835	= 1010001011	90434	= 1101100111	128143	= 1000111111
22891	= 0010001001	31959	= 0101100101	45249	= 0000111101	64094	= 0110001011	90801	= 0011100111	128663	= 0100111111
22980	= 1010001001	32088	= 1101100101	45432	= 1000111101	64354	= 1110001011	91170	= 1011100111	129186	= 1100111111
23069	= 0110001001	32218	= 0011100101	45616	= 0100111101	64615	= 0001001011	91540	= 0111100111	129711	= 0001011111
23159	= 1110001001	32348	= 1011100101	45801	= 1100111101	64877	= 1001001011	91912	= 1111100111	130238	= 1010111111
23249	= 0001001001	32479	= 0111100101	45987	= 0010111101	65140	= 0101001011	92285	= 0000010111	130767	= 0110111111
23339	= 1001001001	32611	= 1111100101	46173	= 1010111101	65404	= 1101001011	92660	= 1000010111	131298	= 1110111111
23430	= 0101001001	32743	= 0000010101	46360	= 0110111101	65669	= 0011001011	93036	= 0100010111	131831	= 0001111111
23521	= 1101001001	32876	= 1000010101	46548	= 1110111101	65935	= 1011001011	93414	= 1100010111	132366	= 1001111111
23612	= 0011001001	33009	= 0100010101	46737	= 0001111101	66203	= 0111001011	93793	= 0010010111	132904	= 0101111111
23704	= 1011001001	33143	= 1100010101	46926	= 1001111101	66472	= 1111001011	94174	= 1010010111	133444	= 1101111111
23796	= 0111001001	33277	= 0010010101	47116	= 0101111101	66742	= 0000101011	94556	= 011001		