

Sennetech

SCT-1009

CAMERA CONTROL CODE TRANSLATOR
BOSCH BIPHASE TO SENSORMATIC RS-422 Ver 3.46

www.sennetech.net

Sennetech, Inc. 6455 W. Bath Rd. Perry, MI 48872 U.S.A. Ph (517) 675-1150 Fax(517) 675-1151

PRODUCT DESCRIPTION

The SCT-1009 is a Bosch to Sensormatic code translator designed to permit control of Sensormatic receivers from Bosch Allegiant controllers. It receives Bosch biphas code and transmits the appropriate commands in Sensormatic RS-422 format. There are four independent Sensormatic outputs.

The SCT-1009 can be programmed via internal switches to offset the Bosch camera addresses to one of 32 groups. This allows the use of Bosch addresses above the maximum Sensormatic addresses. The group size can be 256 or it can be limited to 99 addresses for Sensormatic receivers with only 2 digit address switches.

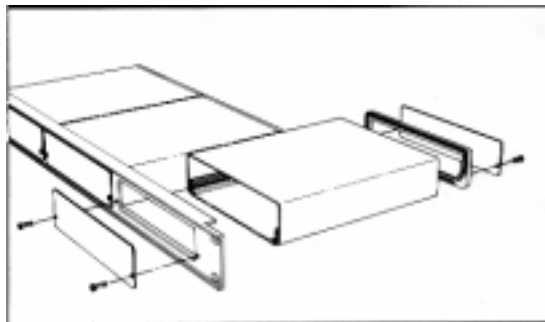
Front panel LEDs indicate status of power, receive, and transmit.

Input and output connections are made with removable screw terminals.

SPECIFICATIONS

SIZE:	5.57"W x 1.52H x 5.45D
WEIGHT:	1.5 lb
POWER:	9Volt to 15Volt AC or DC @ 125ma
INDICATORS:	Power, Rx, & Tx
BOSCH BIPHASE INPUT:	(1) 3-pin Screw terminal
SENSORMATIC OUTPUTS:	(4) 3-pin screw terminal

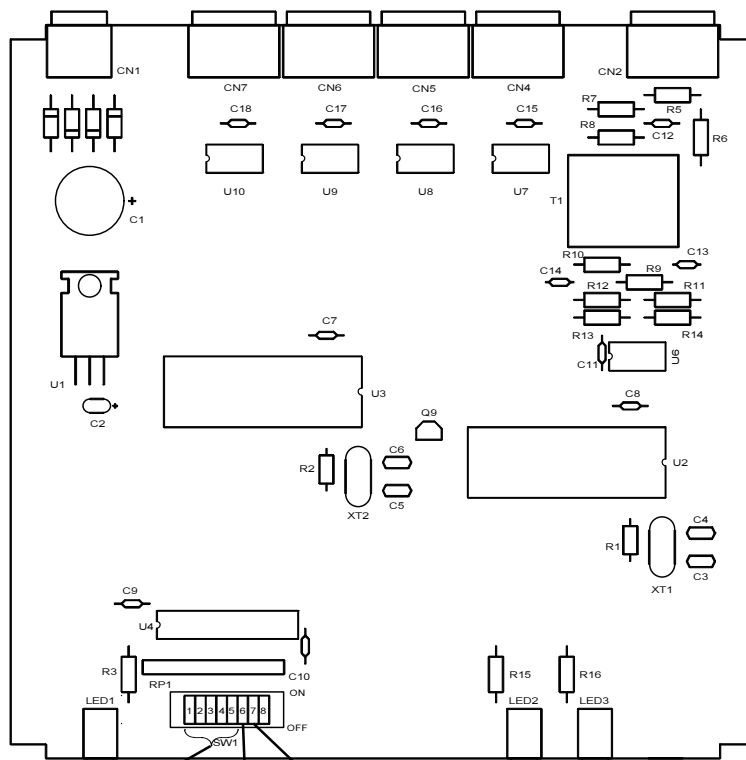
To install the case on the rack mount frame, remove the front panel and the plastic bezel. The rack mount frame takes the place of the bezel as shown below.



SETTING THE CONFIGURATION SWITCHES

To set the configuration switches, remove the back panel which is secured by two screws. Then slide the cover back to expose the switches. The switches can be changed with power applied and the changes take effect immediately.

SW1-1 to SW1-5						
ADDRESS GROUP SELECTION						
#	Group of 99	1	2	3	4	5
1	1~ 99	OFF	OFF	OFF	OFF	OFF
2	100~ 198	ON	OFF	OFF	OFF	OFF
3	199~ 297	OFF	ON	OFF	OFF	OFF
4	298~ 396	ON	ON	OFF	OFF	OFF
5	397~ 495	OFF	OFF	ON	OFF	OFF
6	496~ 594	ON	OFF	ON	OFF	OFF
7	595~ 693	OFF	ON	ON	OFF	OFF
8	694~ 792	ON	ON	ON	OFF	OFF
9	793~ 891	OFF	OFF	OFF	ON	OFF
10	892~ 990	ON	OFF	OFF	ON	OFF
11	991~1089	OFF	ON	OFF	ON	OFF
12	1090~1188	ON	ON	OFF	ON	OFF
13	1189~1287	OFF	OFF	ON	ON	OFF
14	1288~1386	ON	OFF	ON	ON	OFF
15	1387~1485	OFF	ON	ON	ON	OFF
16	1486~1584	ON	ON	ON	ON	OFF
17	1585~1683	OFF	OFF	OFF	OFF	ON
18	1684~1782	ON	OFF	OFF	OFF	ON
19	1783~1881	OFF	ON	OFF	OFF	ON
20	1882~1980	ON	ON	OFF	OFF	ON
21	1981~2079	OFF	OFF	ON	OFF	ON
22	2080~2178	ON	OFF	ON	OFF	ON
23	2179~2277	OFF	ON	ON	OFF	ON
24	2278~2376	ON	ON	ON	OFF	ON
25	2377~2475	OFF	OFF	OFF	ON	ON
26	2476~2574	ON	OFF	OFF	ON	ON
27	2575~2673	OFF	ON	OFF	ON	ON
28	2674~2772	ON	ON	OFF	ON	ON
29	2773~2871	OFF	OFF	ON	ON	ON
30	2872~2970	ON	OFF	ON	ON	ON
31	2971~3069	OFF	ON	ON	ON	ON
32	3070~3168	ON	ON	ON	ON	ON



SW1-6
ADDRESS GROUP SIZE

ON: 256
OFF: 99

SW1-7
SPEED CONVERSION

ON: Variable speeds
OFF: Two speeds

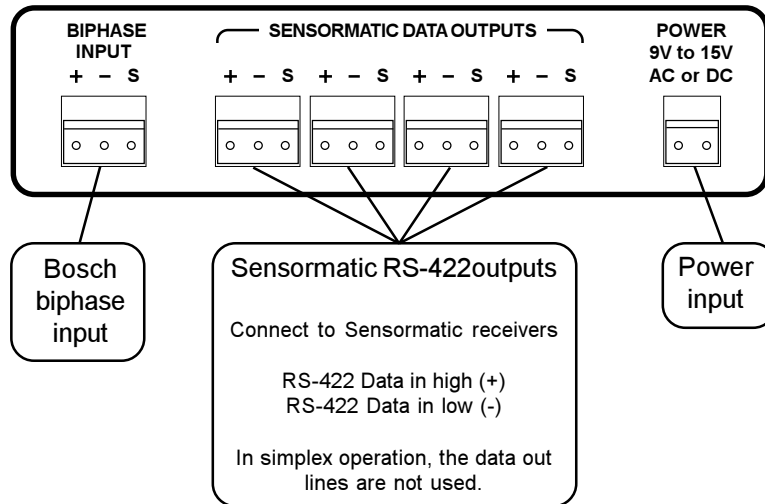
If switch 6 is Off, Bosch camera numbers will be converted to Sensormatic camera addresses in groups of 99. The translator will convert commands only for camera numbers in it's address group. Address conversion charts at the back of the manual show which address to set in each Sensormatic camera for each group of 99. The highest usable address is 3168.

If switch 6 if On, Bosch camera numbers will be converted in groups of 256 which extends the highest usable address to 8192. Camera number 256 and all multiples of 256 result in a Sensormatic address of 0, which is not valid. Thus 256, 512, 768, 1024, etc can not be used. To calculate the address to be set in the dome for camera numbers above 256, subtract the highest address in the next lowest group from the desired camera number.

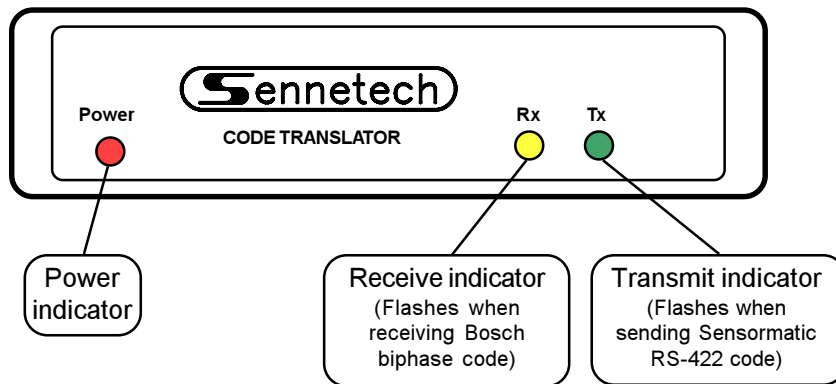
Group 1	001~ 256	Group 9	2049~2304	Group 17	4097~4352	Group 25	6145~6400
Group 2	256~ 512	Group 10	2305~2560	Group 18	4353~4608	Group 26	6401~6656
Group 3	513~ 768	Group 11	2561~2816	Group 19	4609~4864	Group 27	6657~6912
Group 4	769~1024	Group 12	2817~3072	Group 20	4865~5120	Group 28	6913~7168
Group 5	1025~1280	Group 13	3073~3328	Group 21	5121~5376	Group 29	7169~7424
Group 6	1281~1536	Group 14	3329~3584	Group 22	5377~5632	Group 30	7425~7680
Group 7	1537~1792	Group 15	3585~3840	Group 23	5633~5888	Group 31	7681~7936
Group 8	1793~2048	Group 16	3841~4096	Group 24	5881~6144	Group 32	7937~8192

INSTALLATION

REAR PANEL



FRONT PANEL



Because of the different nature of Bosch biphase and Sensormatic RS-422 code structure, the indicators will show different patterns. The Rx indicator will flicker while biphase code is being received. (If the polarity is reversed, it should not come on.) The Tx indicator will flash only when the Sensormatic output command changes. Thus, if you initiate a pan command, the Rx indicator should flicker as long as the joystick is deflected, but the Tx indicator will flash only at the start of the pan and again at the end, or whenever the speed is changed.

There is other data in addition to just camera control data on the biphase line. The Rx indicator will also indicate when this data is present, but the Tx indicator not flash.

Troubleshooting

Symptom:

The receive indication when trying to control a camera but no transmit indication.

Possible cause:

The camera address is not in the selected address group.

OPERATION

Bosch pan, tilt, zoom, focus, & iris are converted to the equivalent Sensormatic commands.

Other commands are converted according to the following table

BOSCH COMMAND

SENSORMATIC COMMAND

Presets (Targets)

To store a preset, put the camera in the desired position Use "Set (1 to 7) Enter" to store that position which will be recalled with the "Shot (1 to 7) Enter" command.

Set 1 to Set 7 Enter	Store preset 1 to 7
Shot 1 to Shot 7 Enter	Recall preset 1 to 7

Patterns

To store a pattern, put the camera in the starting position.

Use "Set (50, 60, 70 , or 80) Enter" to start the recording.

Then move the camera through the desired pattern.

Use "OFF (50, 60, 70, or 80) Enter" to end the pattern.

Use "ON (50, 60, 70, or 80) Enter" to accept the new pattern.

Set 50 Enter	Start Pattern 1 Record
Set 60 Enter	Start Pattern 2 Record
Set 70 Enter	Start Pattern 3 Record
Set 80 Enter	Start Pattern 4 Record

Once a pattern is stored, it can be run using the following commands.

Use "SHOT (50, 60, 70, or 80) Enter" to run a stored pattern one time.

Use "SHOT (51, 61, 71, or 81) Enter" to run a stored pattern repeatedly.

Additional commands

On 3 Enter	Set Auto-Iris / Auto-focus
On 4 Enter	Set Auto-Iris / Auto-focus
On 41 Enter	Enter V-Phase adjust mode (Use IRIS to make adjustment)
Off 41 Enter	Exit V-Phase adjust mode
Shot 90 Enter	Move camera to home position
Shot 91 Enter	Flip camera 180°
Set 99 Enter	Reset Dome

Dome configuration Utility

To bring up the on screen configuration menu, use "Set 95"

Set 95 Enter	Start configuration utility.
--------------	------------------------------

While the menu is displayed, the following control functions are in effect:

Pan & Tilt	Move the highlight bar
Focus Far	Select the highlighted item
Zoom In/Out	Inc/Dec value of selected field, display next item, or move cursor.
Iris Close	Return to previous menu or exit

Address conversion table for groups of 99

GROUP 1		GROUP 2		GROUP 3		GROUP 4		GROUP 5		GROUP 6		GROUP 7		GROUP 8	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	1	100	1	199	1	298	1	397	1	496	1	595	1	694	1
2	2	101	2	200	2	299	2	398	2	497	2	596	2	695	2
3	3	102	3	201	3	300	3	399	3	498	3	597	3	696	3
4	4	103	4	202	4	301	4	400	4	499	4	598	4	697	4
5	5	104	5	203	5	302	5	401	5	500	5	599	5	698	5
6	6	105	6	204	6	303	6	402	6	501	6	600	6	699	6
7	7	106	7	205	7	304	7	403	7	502	7	601	7	700	7
8	8	107	8	206	8	305	8	404	8	503	8	602	8	701	8
9	9	108	9	207	9	306	9	405	9	504	9	603	9	702	9
10	10	109	10	208	10	307	10	406	10	505	10	604	10	703	10
11	11	110	11	209	11	308	11	407	11	506	11	605	11	704	11
12	12	111	12	210	12	309	12	408	12	507	12	606	12	705	12
13	13	112	13	211	13	310	13	409	13	508	13	607	13	706	13
14	14	113	14	212	14	311	14	410	14	509	14	608	14	707	14
15	15	114	15	213	15	312	15	411	15	510	15	609	15	708	15
16	16	115	16	214	16	313	16	412	16	511	16	610	16	709	16
17	17	116	17	215	17	314	17	413	17	512	17	611	17	710	17
18	18	117	18	216	18	315	18	414	18	513	18	612	18	711	18
19	19	118	19	217	19	316	19	415	19	514	19	613	19	712	19
20	20	119	20	218	20	317	20	416	20	515	20	614	20	713	20
21	21	120	21	219	21	318	21	417	21	516	21	615	21	714	21
22	22	121	22	220	22	319	22	418	22	517	22	616	22	715	22
23	23	122	23	221	23	320	23	419	23	518	23	617	23	716	23
24	24	123	24	222	24	321	24	420	24	519	24	618	24	717	24
25	25	124	25	223	25	322	25	421	25	520	25	619	25	718	25
26	26	125	26	224	26	323	26	422	26	521	26	620	26	719	26
27	27	126	27	225	27	324	27	423	27	522	27	621	27	720	27
28	28	127	28	226	28	325	28	424	28	523	28	622	28	721	28
29	29	128	29	227	29	326	29	425	29	524	29	623	29	722	29
30	30	129	30	228	30	327	30	426	30	525	30	624	30	723	30
31	31	130	31	229	31	328	31	427	31	526	31	625	31	724	31
32	32	131	32	230	32	329	32	428	32	527	32	626	32	725	32
33	33	132	33	231	33	330	33	429	33	528	33	627	33	726	33
34	34	133	34	232	34	331	34	430	34	529	34	628	34	727	34
35	35	134	35	233	35	332	35	431	35	530	35	629	35	728	35
36	36	135	36	234	36	333	36	432	36	531	36	630	36	729	36
37	37	136	37	235	37	334	37	433	37	532	37	631	37	730	37
38	38	137	38	236	38	335	38	434	38	533	38	632	38	731	38
39	39	138	39	237	39	336	39	435	39	534	39	633	39	732	39
40	40	139	40	238	40	337	40	436	40	535	40	634	40	733	40
41	41	140	41	239	41	338	41	437	41	536	41	635	41	734	41
42	42	141	42	240	42	339	42	438	42	537	42	636	42	735	42
43	43	142	43	241	43	340	43	439	43	538	43	637	43	736	43
44	44	143	44	242	44	341	44	440	44	539	44	638	44	737	44
45	45	144	45	243	45	342	45	441	45	540	45	639	45	738	45
46	46	145	46	244	46	343	46	442	46	541	46	640	46	739	46
47	47	146	47	245	47	344	47	443	47	542	47	641	47	740	47
48	48	147	48	246	48	345	48	444	48	543	48	642	48	741	48
49	49	148	49	247	49	346	49	445	49	544	49	643	49	742	49
50	50	149	50	248	50	347	50	446	50	545	50	644	50	743	50
51	51	150	51	249	51	348	51	447	51	546	51	645	51	744	51
52	52	151	52	250	52	349	52	448	52	547	52	646	52	745	52
53	53	152	53	251	53	350	53	449	53	548	53	647	53	746	53
54	54	153	54	252	54	351	54	450	54	549	54	648	54	747	54
55	55	154	55	253	55	352	55	451	55	550	55	649	55	748	55
56	56	155	56	254	56	353	56	452	56	551	56	650	56	749	56
57	57	156	57	255	57	354	57	453	57	552	57	651	57	750	57
58	58	157	58	256	58	355	58	454	58	553	58	652	58	751	58
59	59	158	59	257	59	356	59	455	59	554	59	653	59	752	59
60	60	159	60	258	60	357	60	456	60	555	60	654	60	753	60
61	61	160	61	259	61	358	61	457	61	556	61	655	61	754	61
62	62	161	62	260	62	359	62	458	62	557	62	656	62	755	62
63	63	162	63	261	63	360	63	459	63	558	63	657	63	756	63
64	64	163	64	262	64	361	64	460	64	559	64	658	64	757	64
65	65	164	65	263	65	362	65	461	65	560	65	659	65	758	65
66	66	165	66	264	66	363	66	462	66	561	66	660	66	759	66
67	67	166	67	265	67	364	67	463	67	562	67	661	67	760	67
68	68	167	68	266	68	365	68	464	68	563	68	662	68	761	68
69	69	168	69	267	69	366	69	465	69	564	69	663	69	762	69
70	70	169	70	268	70	367	70	466	70	565	70	664	70	763	70
71	71	170	71	269	71	368	71	467	71	566	71	665	71	764	71
72	72	171	72	270	72	369	72	468	72	567	72	666	72	765	72
73	73	172	73	271	73	370	73	469	73	568	73	667	73	766	73
74	74	173	74	272	74	371	74	470	74	569	74	668	74	767	74
75	75	174	75	273	75	372	75	471	75	570	75	669	75	768	75
76	76	175	76	274	76	373	76	472	76	571	76	670	76	769	76
77	77	176	77	275	77	374	77	473	77	572	77	671	77	770	77
78	78	177	78	276	78	375	78	474	78	573	78	672	78	771	78
79	79	178	79	277	79	376	79	475	79	574	79	673	79	772	79
80	80	179	80	278	80	377	80	476	80	575	80	674	80	773	80
81	81	180	81	279	81	378	81	477	81	576	81	675	81	774	81
82	82	181	82	280	82	379	82	478	82	577	82	676	82	775	82
83	83	182	83	281	83	380	83	479	83	578	83	677	83	776	83
84	84	183	84	282	84	381	84	480	84	579	84	678	84	777	84
85	85	184	85	283	85	382	85	481	85	580	85	679	85	778	85
86	86	185	86	284	86	383	86	482	86	581	86	680	86	779	86
87	87	186	87	285	87	384	87	483	87	582	87	681	87	780	87
88	88	187	88	286	88	385	88	484	88	583	88	682	88	781	88
89	89	188	89	287	89	386	89	485	89	584	89	683	89	782	89
90	90	189	90	288	90	387	90	486	90	585	90	684	90	783	90
91	91	190	91	289	91	388	91	487	91	586	91	685	91	784	91
92	92	191	92	290	92	389	92	488	92	587	92	686	92	785	92
93	93	192	93	291	93	390	93	489	93	588	93	687	93	786	93
94	94	193	94	292	94	391	94	490	94	589	94	688	94	787	94
95	95	194	95	293	95	392	95	491	95	590	95	689	95	788	95
96	96	195	96	294	96	393	96	492	96	591	96	690	96	789	96
97	97	196	97	295	97	394	97	493	97	592	97	691	97	790	97
98	98	197	98	296	98	395	98	494	98	593	98	692	98	791	

Address conversion table for groups of 99

GROUP 9		GROUP 10		GROUP 11		GROUP 12		GROUP 13		GROUP 14		GROUP 15		GROUP 16	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
793	1	892	1	991	1	1090	1	1189	1	1288	1	1387	1	1486	1
794	2	893	2	992	2	1091	2	1190	2	1289	2	1388	2	1487	2
795	3	894	3	993	3	1092	3	1191	3	1290	3	1389	3	1488	3
796	4	895	4	994	4	1093	4	1192	4	1291	4	1390	4	1489	4
797	5	896	5	995	5	1094	5	1193	5	1292	5	1391	5	1490	5
798	6	897	6	996	6	1095	6	1194	6	1293	6	1392	6	1491	6
799	7	898	7	997	7	1096	7	1195	7	1294	7	1393	7	1492	7
800	8	899	8	998	8	1097	8	1196	8	1295	8	1394	8	1493	8
801	9	900	9	999	9	1098	9	1197	9	1296	9	1395	9	1494	9
802	10	901	10	1000	10	1099	10	1198	10	1297	10	1396	10	1495	10
803	11	902	11	1001	11	1100	11	1199	11	1298	11	1397	11	1496	11
804	12	903	12	1002	12	1101	12	1200	12	1299	12	1398	12	1497	12
805	13	904	13	1003	13	1102	13	1201	13	1300	13	1399	13	1498	13
806	14	905	14	1004	14	1103	14	1202	14	1301	14	1400	14	1499	14
807	15	906	15	1005	15	1104	15	1203	15	1302	15	1401	15	1500	15
808	16	907	16	1006	16	1105	16	1204	16	1303	16	1402	16	1501	16
809	17	908	17	1007	17	1106	17	1205	17	1304	17	1403	17	1502	17
810	18	909	18	1008	18	1107	18	1206	18	1305	18	1404	18	1503	18
811	19	910	19	1009	19	1108	19	1207	19	1306	19	1405	19	1504	19
812	20	911	20	1010	20	1109	20	1208	20	1307	20	1406	20	1505	20
813	21	912	21	1011	21	1110	21	1209	21	1308	21	1407	21	1506	21
814	22	913	22	1012	22	1111	22	1210	22	1309	22	1408	22	1507	22
815	23	914	23	1013	23	1112	23	1211	23	1310	23	1409	23	1508	23
816	24	915	24	1014	24	1113	24	1212	24	1311	24	1410	24	1509	24
817	25	916	25	1015	25	1114	25	1213	25	1312	25	1411	25	1510	25
818	26	917	26	1016	26	1115	26	1214	26	1313	26	1412	26	1511	26
819	27	918	27	1017	27	1116	27	1215	27	1314	27	1413	27	1512	27
820	28	919	28	1018	28	1117	28	1216	28	1315	28	1414	28	1513	28
821	29	920	29	1019	29	1118	29	1217	29	1316	29	1415	29	1514	29
822	30	921	30	1020	30	1119	30	1218	30	1317	30	1416	30	1515	30
823	31	922	31	1021	31	1120	31	1219	31	1318	31	1417	31	1516	31
824	32	923	32	1022	32	1121	32	1220	32	1319	32	1418	32	1517	32
825	33	924	33	1023	33	1122	33	1221	33	1320	33	1419	33	1518	33
826	34	925	34	1024	34	1123	34	1222	34	1321	34	1420	34	1519	34
827	35	926	35	1025	35	1124	35	1223	35	1322	35	1421	35	1520	35
828	36	927	36	1026	36	1125	36	1224	36	1323	36	1422	36	1521	36
829	37	928	37	1027	37	1126	37	1225	37	1324	37	1423	37	1522	37
830	38	929	38	1028	38	1127	38	1226	38	1325	38	1424	38	1523	38
831	39	930	39	1029	39	1128	39	1227	39	1326	39	1425	39	1524	39
832	40	931	40	1030	40	1129	40	1228	40	1327	40	1426	40	1525	40
833	41	932	41	1031	41	1130	41	1229	41	1328	41	1427	41	1526	41
834	42	933	42	1032	42	1131	42	1230	42	1329	42	1428	42	1527	42
835	43	934	43	1033	43	1132	43	1231	43	1330	43	1429	43	1528	43
836	44	935	44	1034	44	1133	44	1232	44	1331	44	1430	44	1529	44
837	45	936	45	1035	45	1134	45	1233	45	1332	45	1431	45	1530	45
838	46	937	46	1036	46	1135	46	1234	46	1333	46	1432	46	1531	46
839	47	938	47	1037	47	1136	47	1235	47	1334	47	1433	47	1532	47
840	48	939	48	1038	48	1137	48	1236	48	1335	48	1434	48	1533	48
841	49	940	49	1039	49	1138	49	1237	49	1336	49	1435	49	1534	49
842	50	941	50	1040	50	1139	50	1238	50	1337	50	1436	50	1535	50
843	51	942	51	1041	51	1140	51	1239	51	1338	51	1437	51	1536	51
844	52	943	52	1042	52	1141	52	1240	52	1339	52	1438	52	1537	52
845	53	944	53	1043	53	1142	53	1241	53	1340	53	1439	53	1538	53
846	54	945	54	1044	54	1143	54	1242	54	1341	54	1440	54	1539	54
847	55	946	55	1045	55	1144	55	1243	55	1342	55	1441	55	1540	55
848	56	947	56	1046	56	1145	56	1244	56	1343	56	1442	56	1541	56
849	57	948	57	1047	57	1146	57	1245	57	1344	57	1443	57	1542	57
850	58	949	58	1048	58	1147	58	1246	58	1345	58	1444	58	1543	58
851	59	950	59	1049	59	1148	59	1247	59	1346	59	1445	59	1544	59
852	60	951	60	1050	60	1149	60	1248	60	1347	60	1446	60	1545	60
853	61	952	61	1051	61	1150	61	1249	61	1348	61	1447	61	1546	61
854	62	953	62	1052	62	1151	62	1250	62	1349	62	1448	62	1547	62
855	63	954	63	1053	63	1152	63	1251	63	1350	63	1449	63	1548	63
856	64	955	64	1054	64	1153	64	1252	64	1351	64	1450	64	1549	64
857	65	956	65	1055	65	1154	65	1253	65	1352	65	1451	65	1550	65
858	66	957	66	1056	66	1155	66	1254	66	1353	66	1452	66	1551	66
859	67	958	67	1057	67	1156	67	1255	67	1354	67	1453	67	1552	67
860	68	959	68	1058	68	1157	68	1256	68	1355	68	1454	68	1553	68
861	69	960	69	1059	69	1158	69	1257	69	1356	69	1455	69	1554	69
862	70	961	70	1060	70	1159	70	1258	70	1357	70	1456	70	1555	70
863	71	962	71	1061	71	1160	71	1259	71	1358	71	1457	71	1556	71
864	72	963	72	1062	72	1161	72	1260	72	1359	72	1458	72	1557	72
865	73	964	73	1063	73	1162	73	1261	73	1360	73	1459	73	1558	73
866	74	965	74	1064	74	1163	74	1262	74	1361	74	1460	74	1559	74
867	75	966	75	1065	75	1164	75	1263	75	1362	75	1461	75	1560	75
868	76	967	76	1066	76	1165	76	1264	76	1363	76	1462	76	1561	76
869	77	968	77	1067	77	1166	77	1265	77	1364	77	1463	77	1562	77
870	78	969	78	1068	78	1167	78	1266	78	1365	78	1464	78	1563	78
871	79	970	79	1069	79	1168	79	1267	79	1366	79	1465	79	1564	79
872	80	971	80	1070	80	1169	80	1268	80	1367	80	1466	80	1565	80
873	81	972	81	1071	81	1170	81	1269	81	1368	81	1467	81	1566	81
874	82	973	82	1072	82	1171	82	1270	82	1369	82	1468	82	1567	82
875	83	974	83	1073	83	1172	83	1271	83	1370	83	1469	83	1568	83
876	84	975	84	1074	84	1173	84	1272	84	1371	84	1470	84	1569	84
877	85	976	85	1075	85	1174	85	1273	85	1372	85	1471	85	1570	85
878	86	977	86	1076	86	1175	86	1274	86	1373	86	1472	86	1571	86
879	87	978	87	1077	87	1176	87	1275	87	1374	87	1473	87	1572	87
880	88	979	88	1078	88	1177	88	1276	88	1375	88	1474	88	1573	88
881	89	980	89	1079	89	1178	89	1277	89	1376	89	1475	89	1574	89
882	90	981	90	1080	90	1179	90	1278	90	1377	90	1476	90	1575	90
883	91	982	91	1081	91	1180	91	1279	91	1378	91	1477	91	1576	91
884	92	983	92	1082	92	1181	92	1280	92	1379	92	1478	92	1577	92
885	93	984	93	1083	93	1182	93	1281	93						

Address conversion table for groups of 99

GROUP 17		GROUP 18		GROUP 19		GROUP 20		GROUP 21		GROUP 22		GROUP 23		GROUP 24	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1585	1	1684	1	1783	1	1882	1	1981	1	2080	1	2179	1	2278	1
1586	2	1685	2	1784	2	1883	2	1982	2	2081	2	2180	2	2279	2
1587	3	1686	3	1785	3	1884	3	1983	3	2082	3	2181	3	2280	3
1588	4	1687	4	1786	4	1885	4	1984	4	2083	4	2182	4	2281	4
1589	5	1688	5	1787	5	1886	5	1985	5	2084	5	2183	5	2282	5
1590	6	1689	6	1788	6	1887	6	1986	6	2085	6	2184	6	2283	6
1591	7	1690	7	1789	7	1888	7	1987	7	2086	7	2185	7	2284	7
1592	8	1691	8	1790	8	1889	8	1988	8	2087	8	2186	8	2285	8
1593	9	1692	9	1791	9	1890	9	1989	9	2088	9	2187	9	2286	9
1594	10	1693	10	1792	10	1891	10	1990	10	2089	10	2188	10	2287	10
1595	11	1694	11	1793	11	1892	11	1991	11	2090	11	2189	11	2288	11
1596	12	1695	12	1794	12	1893	12	1992	12	2091	12	2190	12	2289	12
1597	13	1696	13	1795	13	1894	13	1993	13	2092	13	2191	13	2290	13
1598	14	1697	14	1796	14	1895	14	1994	14	2093	14	2192	14	2291	14
1599	15	1698	15	1797	15	1896	15	1995	15	2094	15	2193	15	2292	15
1600	16	1699	16	1798	16	1897	16	1996	16	2095	16	2194	16	2293	16
1601	17	1700	17	1799	17	1898	17	1997	17	2096	17	2195	17	2294	17
1602	18	1701	18	1800	18	1899	18	1998	18	2097	18	2196	18	2295	18
1603	19	1702	19	1801	19	1900	19	1999	19	2098	19	2197	19	2296	19
1604	20	1703	20	1802	20	1901	20	2000	20	2099	20	2198	20	2297	20
1605	21	1704	21	1803	21	1902	21	2001	21	2100	21	2199	21	2298	21
1606	22	1705	22	1804	22	1903	22	2002	22	2101	22	2200	22	2299	22
1607	23	1706	23	1805	23	1904	23	2003	23	2102	23	2201	23	2300	23
1608	24	1707	24	1806	24	1905	24	2004	24	2103	24	2202	24	2301	24
1609	25	1708	25	1807	25	1906	25	2005	25	2104	25	2203	25	2302	25
1610	26	1709	26	1808	26	1907	26	2006	26	2105	26	2204	26	2303	26
1611	27	1710	27	1809	27	1908	27	2007	27	2106	27	2205	27	2304	27
1612	28	1711	28	1810	28	1909	28	2008	28	2107	28	2206	28	2305	28
1613	29	1712	29	1811	29	1910	29	2009	29	2108	29	2207	29	2306	29
1614	30	1713	30	1812	30	1911	30	2010	30	2109	30	2208	30	2307	30
1615	31	1714	31	1813	31	1912	31	2011	31	2110	31	2209	31	2308	31
1616	32	1715	32	1814	32	1913	32	2012	32	2111	32	2210	32	2309	32
1617	33	1716	33	1815	33	1914	33	2013	33	2112	33	2211	33	2310	33
1618	34	1717	34	1816	34	1915	34	2014	34	2113	34	2212	34	2311	34
1619	35	1718	35	1817	35	1916	35	2015	35	2114	35	2213	35	2312	35
1620	36	1719	36	1818	36	1917	36	2016	36	2115	36	2214	36	2313	36
1621	37	1720	37	1819	37	1918	37	2017	37	2116	37	2215	37	2314	37
1622	38	1721	38	1820	38	1919	38	2018	38	2117	38	2216	38	2315	38
1623	39	1722	39	1821	39	1920	39	2019	39	2118	39	2217	39	2316	39
1624	40	1723	40	1822	40	1921	40	2020	40	2119	40	2218	40	2317	40
1625	41	1724	41	1823	41	1922	41	2021	41	2120	41	2219	41	2318	41
1626	42	1725	42	1824	42	1923	42	2022	42	2121	42	2220	42	2319	42
1627	43	1726	43	1825	43	1924	43	2023	43	2122	43	2221	43	2320	43
1628	44	1727	44	1826	44	1925	44	2024	44	2123	44	2222	44	2321	44
1629	45	1728	45	1827	45	1926	45	2025	45	2124	45	2223	45	2322	45
1630	46	1729	46	1828	46	1927	46	2026	46	2125	46	2224	46	2323	46
1631	47	1730	47	1829	47	1928	47	2027	47	2126	47	2225	47	2324	47
1632	48	1731	48	1830	48	1929	48	2028	48	2127	48	2226	48	2325	48
1633	49	1732	49	1831	49	1930	49	2029	49	2128	49	2227	49	2326	49
1634	50	1733	50	1832	50	1931	50	2030	50	2129	50	2228	50	2327	50
1635	51	1734	51	1833	51	1932	51	2031	51	2130	51	2229	51	2328	51
1636	52	1735	52	1834	52	1933	52	2032	52	2131	52	2230	52	2329	52
1637	53	1736	53	1835	53	1934	53	2033	53	2132	53	2231	53	2330	53
1638	54	1737	54	1836	54	1935	54	2034	54	2133	54	2232	54	2331	54
1639	55	1738	55	1837	55	1936	55	2035	55	2134	55	2233	55	2332	55
1640	56	1739	56	1838	56	1937	56	2036	56	2135	56	2234	56	2333	56
1641	57	1740	57	1839	57	1938	57	2037	57	2136	57	2235	57	2334	57
1642	58	1741	58	1840	58	1939	58	2038	58	2137	58	2236	58	2335	58
1643	59	1742	59	1841	59	1940	59	2039	59	2138	59	2237	59	2336	59
1644	60	1743	60	1842	60	1941	60	2040	60	2139	60	2238	60	2337	60
1645	61	1744	61	1843	61	1942	61	2041	61	2140	61	2239	61	2338	61
1646	62	1745	62	1844	62	1943	62	2042	62	2141	62	2240	62	2339	62
1647	63	1746	63	1845	63	1944	63	2043	63	2142	63	2241	63	2340	63
1648	64	1747	64	1846	64	1945	64	2044	64	2143	64	2242	64	2341	64
1649	65	1748	65	1847	65	1946	65	2045	65	2144	65	2243	65	2342	65
1650	66	1749	66	1848	66	1947	66	2046	66	2145	66	2244	66	2343	66
1651	67	1750	67	1849	67	1948	67	2047	67	2146	67	2245	67	2344	67
1652	68	1751	68	1850	68	1949	68	2048	68	2147	68	2246	68	2345	68
1653	69	1752	69	1851	69	1950	69	2049	69	2148	69	2247	69	2346	69
1654	70	1753	70	1852	70	1951	70	2050	70	2149	70	2248	70	2347	70
1655	71	1754	71	1853	71	1952	71	2051	71	2150	71	2249	71	2348	71
1656	72	1755	72	1854	72	1953	72	2052	72	2151	72	2250	72	2349	72
1657	73	1756	73	1855	73	1954	73	2053	73	2152	73	2251	73	2350	73
1658	74	1757	74	1856	74	1955	74	2054	74	2153	74	2252	74	2351	74
1659	75	1758	75	1857	75	1956	75	2055	75	2154	75	2253	75	2352	75
1660	76	1759	76	1858	76	1957	76	2056	76	2155	76	2254	76	2353	76
1661	77	1760	77	1859	77	1958	77	2057	77	2156	77	2255	77	2354	77
1662	78	1761	78	1860	78	1959	78	2058	78	2157	78	2256	78	2355	78
1663	79	1762	79	1861	79	1960	79	2059	79	2158	79	2257	79	2356	79
1664	80	1763	80	1862	80	1961	80	2060	80	2159	80	2258	80	2357	80
1665	81	1764	81	1863	81	1962	81	2061	81	2160	81	2259	81	2358	81
1666	82	1765	82	1864	82	1963	82	2062	82	2161	82	2260	82	2359	82
1667	83	1766	83	1865	83	1964	83	2063	83	2162	83	2261	83	2360	83
1668	84	1767	84	1866	84	1965	84	2064	84	2163	84	2262	84	2361	84
1669	85	1768	85	1867	85	1966	85	2065	85	2164	85	2263	85	2362	85
1670	86	1769	86	1868	86	1967	86	2066	86	2165	86	2264	86	2363	86
1671	87	1770	87	1869	87	1968	87	2067	87	2166	87	2265	87	2364	87
1672	88	1771	88	1870	88	1969	88	2068	88	2167	88	2266	88	2365	88
1673	89	1772	89	1871	89	1970	89	2069	89	2168	89	2267	89	2366	89
1674	90	1773	90	1872	90	1971	90	2070	90	2169	90	2268	90	2367	90
1675	91	1774	91	1873	91	1972	91	2071	91	2170	91	2269	91	2368	91
1676	92	1													

Address conversion table for groups of 99

GROUP 25		GROUP 26		GROUP 27		GROUP 28		GROUP 29		GROUP 30		GROUP 31		GROUP 32	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
2377	1	2476	1	2575	1	2674	1	2773	1	2872	1	2971	1	3070	1
2378	2	2477	2	2576	2	2675	2	2774	2	2873	2	2972	2	3071	2
2379	3	2478	3	2577	3	2676	3	2775	3	2874	3	2973	3	3072	3
2380	4	2479	4	2578	4	2677	4	2776	4	2875	4	2974	4	3073	4
2381	5	2480	5	2579	5	2678	5	2777	5	2876	5	2975	5	3074	5
2382	6	2481	6	2580	6	2679	6	2778	6	2877	6	2976	6	3075	6
2383	7	2482	7	2581	7	2680	7	2779	7	2878	7	2977	7	3076	7
2384	8	2483	8	2582	8	2681	8	2780	8	2879	8	2978	8	3077	8
2385	9	2484	9	2583	9	2682	9	2781	9	2880	9	2979	9	3078	9
2386	10	2485	10	2584	10	2683	10	2782	10	2881	10	2980	10	3079	10
2387	11	2486	11	2585	11	2684	11	2783	11	2882	11	2981	11	3080	11
2388	12	2487	12	2586	12	2685	12	2784	12	2883	12	2982	12	3081	12
2389	13	2488	13	2587	13	2686	13	2785	13	2884	13	2983	13	3082	13
2390	14	2489	14	2588	14	2687	14	2786	14	2885	14	2984	14	3083	14
2391	15	2490	15	2589	15	2688	15	2787	15	2886	15	2985	15	3084	15
2392	16	2491	16	2590	16	2689	16	2788	16	2887	16	2986	16	3085	16
2393	17	2492	17	2591	17	2690	17	2789	17	2888	17	2987	17	3086	17
2394	18	2493	18	2592	18	2691	18	2790	18	2889	18	2988	18	3087	18
2395	19	2494	19	2593	19	2692	19	2791	19	2890	19	2989	19	3088	19
2396	20	2495	20	2594	20	2693	20	2792	20	2891	20	2990	20	3089	20
2397	21	2496	21	2595	21	2694	21	2793	21	2892	21	2991	21	3090	21
2398	22	2497	22	2596	22	2695	22	2794	22	2893	22	2992	22	3091	22
2399	23	2498	23	2597	23	2696	23	2795	23	2894	23	2993	23	3092	23
2400	24	2499	24	2598	24	2697	24	2796	24	2895	24	2994	24	3093	24
2401	25	2500	25	2599	25	2698	25	2797	25	2896	25	2995	25	3094	25
2402	26	2501	26	2600	26	2699	26	2798	26	2897	26	2996	26	3095	26
2403	27	2502	27	2601	27	2700	27	2799	27	2898	27	2997	27	3096	27
2404	28	2503	28	2602	28	2701	28	2800	28	2899	28	2998	28	3097	28
2405	29	2504	29	2603	29	2702	29	2801	29	2900	29	2999	29	3098	29
2406	30	2505	30	2604	30	2703	30	2802	30	2901	30	3000	30	3099	30
2407	31	2506	31	2605	31	2704	31	2803	31	2902	31	3001	31	3100	31
2408	32	2507	32	2606	32	2705	32	2804	32	2903	32	3002	32	3101	32
2409	33	2508	33	2607	33	2706	33	2805	33	2904	33	3003	33	3102	33
2410	34	2509	34	2608	34	2707	34	2806	34	2905	34	3004	34	3103	34
2411	35	2510	35	2609	35	2708	35	2807	35	2906	35	3005	35	3104	35
2412	36	2511	36	2610	36	2709	36	2808	36	2907	36	3006	36	3105	36
2413	37	2512	37	2611	37	2710	37	2809	37	2908	37	3007	37	3106	37
2414	38	2513	38	2612	38	2711	38	2810	38	2909	38	3008	38	3107	38
2415	39	2514	39	2613	39	2712	39	2811	39	2910	39	3009	39	3108	39
2416	40	2515	40	2614	40	2713	40	2812	40	2911	40	3010	40	3109	40
2417	41	2516	41	2615	41	2714	41	2813	41	2912	41	3011	41	3110	41
2418	42	2517	42	2616	42	2715	42	2814	42	2913	42	3012	42	3111	42
2419	43	2518	43	2617	43	2716	43	2815	43	2914	43	3013	43	3112	43
2420	44	2519	44	2618	44	2717	44	2816	44	2915	44	3014	44	3113	44
2421	45	2520	45	2619	45	2718	45	2817	45	2916	45	3015	45	3114	45
2422	46	2521	46	2620	46	2719	46	2818	46	2917	46	3016	46	3115	46
2423	47	2522	47	2621	47	2720	47	2819	47	2918	47	3017	47	3116	47
2424	48	2523	48	2622	48	2721	48	2820	48	2919	48	3018	48	3117	48
2425	49	2524	49	2623	49	2722	49	2821	49	2920	49	3019	49	3118	49
2426	50	2525	50	2624	50	2723	50	2822	50	2921	50	3020	50	3119	50
2427	51	2526	51	2625	51	2724	51	2823	51	2922	51	3021	51	3120	51
2428	52	2527	52	2626	52	2725	52	2824	52	2923	52	3022	52	3121	52
2429	53	2528	53	2627	53	2726	53	2825	53	2924	53	3023	53	3122	53
2430	54	2529	54	2628	54	2727	54	2826	54	2925	54	3024	54	3123	54
2431	55	2530	55	2629	55	2728	55	2827	55	2926	55	3025	55	3124	55
2432	56	2531	56	2630	56	2729	56	2828	56	2927	56	3026	56	3125	56
2433	57	2532	57	2631	57	2730	57	2829	57	2928	57	3027	57	3126	57
2434	58	2533	58	2632	58	2731	58	2830	58	2929	58	3028	58	3127	58
2435	59	2534	59	2633	59	2732	59	2831	59	2930	59	3029	59	3128	59
2436	60	2535	60	2634	60	2733	60	2832	60	2931	60	3030	60	3129	60
2437	61	2536	61	2635	61	2734	61	2833	61	2932	61	3031	61	3130	61
2438	62	2537	62	2636	62	2735	62	2834	62	2933	62	3032	62	3131	62
2439	63	2538	63	2637	63	2736	63	2835	63	2934	63	3033	63	3132	63
2440	64	2539	64	2638	64	2737	64	2836	64	2935	64	3034	64	3133	64
2441	65	2540	65	2639	65	2738	65	2837	65	2936	65	3035	65	3134	65
2442	66	2541	66	2640	66	2739	66	2838	66	2937	66	3036	66	3135	66
2443	67	2542	67	2641	67	2740	67	2839	67	2938	67	3037	67	3136	67
2444	68	2543	68	2642	68	2741	68	2840	68	2939	68	3038	68	3137	68
2445	69	2544	69	2643	69	2742	69	2841	69	2940	69	3039	69	3138	69
2446	70	2545	70	2644	70	2743	70	2842	70	2941	70	3040	70	3139	70
2447	71	2546	71	2645	71	2744	71	2843	71	2942	71	3041	71	3140	71
2448	72	2547	72	2646	72	2745	72	2844	72	2943	72	3042	72	3141	72
2449	73	2548	73	2647	73	2746	73	2845	73	2944	73	3043	73	3142	73
2450	74	2549	74	2648	74	2747	74	2846	74	2945	74	3044	74	3143	74
2451	75	2550	75	2649	75	2748	75	2847	75	2946	75	3045	75	3144	75
2452	76	2551	76	2650	76	2749	76	2848	76	2947	76	3046	76	3145	76
2453	77	2552	77	2651	77	2750	77	2849	77	2948	77	3047	77	3146	77
2454	78	2553	78	2652	78	2751	78	2850	78	2949	78	3048	78	3147	78
2455	79	2554	79	2653	79	2752	79	2851	79	2950	79	3049	79	3148	79
2456	80	2555	80	2654	80	2753	80	2852	80	2951	80	3050	80	3149	80
2457	81	2556	81	2655	81	2754	81	2853	81	2952	81	3051	81	3150	81
2458	82	2557	82	2656	82	2755	82	2854	82	2953	82	3052	82	3151	82
2459	83	2558	83	2657	83	2756	83	2855	83	2954	83	3053	83	3152	83
2460	84	2559	84	2658	84	2757	84	2856	84	2955	84	3054	84	3153	84
2461	85	2560	85	2659	85	2758	85	2857	85	2956	85	3055	85	3154	85
2462	86	2561	86	2660	86	2759	86	2858	86	2957	86	3056	86	3155	86
2463	87	2562	87	2661	87	2760	87	2859	87	2958	87	3057	87	3156	87
2464	88	2563	88	2662	88	2761	88	2860	88	2959	88	3058	88	3157	88
2465	89	2564	89	2663	89	2762	89	2861	89	2960	89	3059	89	3158	89
2466	90	2565	90	2664	90	2763	90	2862	90	2961	90	3060	90	3159	90
2467	91	2566	91	2665	91	2764	91	2863	91	2962	91	3061	91	3160	91
2468	92	2													

