

Certificate & Quick Reference

Thank-you for purchasing a YouChoos sound decoder!

This certificate provides specific details of your decoder including your unique build number. Each sound decoder I load is individually catalogued and assigned a unique certificate, indicating the load date and an individual code...

Your decoder has unique number: CL73-TEMPLATE-1043

YouChoos Sounds Class 73 Hybrid DCC Address: 3



Included in this package:

PART NUMBER	YouChoos Sounds - Class 73 Hybrid YC-CL73
DECODER	MS series - template
SPEAKER	N/A - template

Functions:

FKey	Category	Action
F0fwd:	LIGHT	FA3 front dest / F0Fwd / FA8 rear dest
F0rev:	LIGHT	FA3 front dest / F0Fwd / FA8 rear dest
F1:	SOUND	Running Sounds
F2:	SOUND	Horn 3
F3:	LIGHT	FA6 front cab / FA4 rear cab
F4:	LIGHT	FA9 fan
F5:	QUICKSEL	Quick-Select (Hybrid Switch)
F6:	SOUND	Horn 4
F7:	NOTCH UP	Notch Up
F8:	SOUND	Flange
F9:	SOUND	Guard's Whistle
F10:	SOUND	Horn 5
F11:	SOUND	Bell
F12:	SHUNT + HALF SPEED	Shunting Mode / Half Speed
F13:	SOUND	Announcement
F14:	SOUND	Compressor
F15:	SOUND	Door
F16:	SOUND	Primer and Pump
F17:	SOUND	Horn 2
F18:	SOUND	Horn
F19:	SOUND	Mute
F20:	VOLUME	Volume Decrease
F21:	VOLUME	Volume Increase
F22:	SOUND	Clack
F23:	SOUND	Fan
F24:	SOUND	Horn 7
F25:	SOUND	Beeps
F26:	SOUND	Destroy Air
F27:	SOUND	Horn 6
F28:	SOUND	Coupling Up

All functions are ON/OFF.

Feature Notes:

Active Braking – To slow down, choose the desired speed on the throttle, then use the Brake key to control the slow-down to that speed. If you prefer more traditional throttle-based braking, simply decrease the value in CV#4, or even simpler: leave ACTIVE BRAKE switched on all the time!

Shunt Mode – Momentum/Inertia is reduced to ¼ the normal effect and the throttle range is halved to simulate driving light-engine.

Quick Select – For steam, switches from standard chuff sounds to light-engine where chuffs are quieter. For hybrid locomotives, switches engine type – usually effective only at standstill. Some steam projects contain a 'QuickSelect#2' which normally gives heavier chuffs compared to the default. For diesel, sometimes provided for alternative cold start.

Solo – usually defined on the same key as QuickSelect for light-engine on a steam loco – has various effects including reducing the effect of momentum.

SpeedLock – while the SpeedLock key is switched on, the throttle will control the engine sounds only, and leaves the physical speed of the motor unchanged.

NotchUp – for diesel/electric projects, the NotchUp key will raise the base engine level to notch 1 when standing idle. Switch off to return to idle. Has no effect while in motion. Allows you to manually rev the engine up.

Coast – for diesel/electric sounds, the Coast key brings the base engine level down to idle, regardless of the current speed. Switch off to return to speed-dependent engine level.

LowBeam – for some projects, a LowBeam key is provided which dims the forward-motion headlights.

Mute – Fades all sounds out to silent until unmuted, where sounds will be faded back to their previous level.

Volume Up/Down – Overall volume level will be decreased / increased gradually while VOLUP / VOLDOWN is switched on, eventually reaching silent or the maximum defined in the project (usually around 90%). Affects CV#266 master volume level. If you lose sound, check that you haven't simply reduced the volume to silent! Default is recommended around 65%.

Dynamic / Exponential Inertia – Linear throttle-to-speed response is not particularly realistic, so speed change is exponential as speed increases, simulating slow starts from standstill. Similarly, harder throttle requests will result in faster acceleration. This is all built-in to the project working automatically on your throttle requests.

Looping Sounds – Some sounds are looping and will continue repeating until that function is switched off.

Steam Chuff Rate – Use CV#267 to adjust the chuff rate to match wheel rotation.

Random Sounds – Some sounds may be configured to play at random intervals, usually at reduced volume.

IMPORTANT – WARRANTY INFORMATION!

Damage caused by mishandling, short-circuit, or undue force is NOT covered by warranty. Normally, a repair/replacement charge of approximately £30 + P&P will be levied in such cases. Decoders are delicate, so please handle with care. The most common cause of damage is caused by excessive force on wires, which may result in wires becoming detached, or worse, the entire solder pad coming off (particularly true for the smaller decoders). Also be careful that the coloured coating on the wires does not get pulled back exposing bare wire at the solder pads, thus increasing risk of short-circuit.

More Information on Your Sound Decoder



User Sound Assignments

The following table lists the sound effect files loaded onto your decoder, with their unique sample numbers which are used in CVs to assign a sound to a specific feature. Where a sound has no Function Key listed, this indicates that it is an additional sound included in your project which you can manually assign instead of another sound – for example, an alternative whistle/horn which you can swap in for one of the default ones. Please refer to the supplied CV Table document where you can see which CV is used to assign a sound to each Function Key (starts at CV#513).

Of course there are many more sound files that make up your project, such as engine sounds, braking, set-off etc., but these are not included here – only those that are available as user sounds, assignable to Function Keys.



Random Sounds

Zimo decoders include 8 random sound generators, Z1 to Z8, which are also indicated here along with the sample number assigned to them, and whether they are to be played randomly at standstill, in motion, or both.

Likewise, please refer to the CV Table document supplied with your YouChoos sound decoder to see which CVs are used in random sound definition (CVs#744 to 767 and CVs#315 to 338).

Effect Sound Sample Number	Name	Looping	Function Key(s)	Random Generator	Random at Standstill	Random in Motion
20	Horn	Loops	F18 (CV#564)			
21	Horn 2	Loops	F17 (CV#561)			
22	Horn 3		F2 (CV#516)			
23	Horn 4		F6 (CV#528)			
24	Horn 5		F10 (CV#540)			
25	Horn 6		F27 (CV#694)			
26	Horn 7		F24 (CV#685)			
27	Primer and Pump		F16 (CV#558)			
28	Guard's Whistle		F9 (CV#537)			
29	Halt 2					
30	Flange	Loops	F8 (CV#534)			
31	Fan	Loops	F23 (CV#682)			
32	Door		F15 (CV#555)			
33	Compressor	Loops	F14 (CV#552)	Z4 (CV#753)	Yes	Yes
34	Announcement		F13 (CV#549)			
35	Platform Noise					
36	Clack	Loops	F22 (CV#679)			
37	Beeps		F25 (CV#688)			
38	Beep - single					
39	Bell		F11 (CV#543)			
40	Destroy Air		F26 (CV#691)			
41	Apply Brakes					
42	Halt 3					
43	Pantograph	Loops				
44	Arc			Z1 (CV#744)	Yes	Yes
45	Arc 2			Z2 (CV#747)	Yes	Yes
46	Circuit Breaker			Z3 (CV#750)	Yes	Yes
47	Coupling Up		F28 (CV#697)			
48	Buffer Up					

Remember, you can always reset to the project's original configuration if you make a mess, by sending CV#8=8, though note that the DCC Address of the decoder will also be reset (normally back to 3)!



Physical AUX Outputs

The table below states how the physical outputs (for lighting etc.) are configured in your decoder. Outputs that are assigned for FKey0-12 are achieved with Zimo Extended Function Mapping (where CV#61=97). For any outputs assigned to FKeys above FKey12, Swiss Mapping (also known as Zimo Advanced Mapping) is used instead (not shown in this table).

Physical Output	Wire Colour (if wired)	FKey	Effect / Direction	Notes
F0Fwd	WHITE	FKey0	Constant (simple ON/OFF)	F0Fwd
FA2	BROWN		State Dependent Smoke	FA2 smoke
FA3	-additional-	FKey0	Constant (simple ON/OFF) - FWD only	FA3 front dest
FA4	-additional-	FKey3	Constant (simple ON/OFF) - REV only	FA4 rear cab
FA5	-additional-		Constant (simple ON/OFF) - FWD only	FA5 front headlight
FA6	-additional-	FKey3	Constant (simple ON/OFF) - FWD only	FA6 front cab
FA7	-additional-		Constant (simple ON/OFF) - REV only	FA7 rear headlight
FA8	-additional-	FKey0	Constant (simple ON/OFF) - REV only	FA8 rear dest
FA9	-additional-	FKey4	Constant (simple ON/OFF)	FA9 fan
FA10	-additional-		Single Strobe	FA10 arc
FA11	-additional-		Constant (simple ON/OFF)	FA11 uncoupler

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CV List MS series - template – Configuration Values at shipping time

CV	Description	Value	77	Free speed curve	42	150	Experimental motor reg - deviation control	0	270	Longer chuff length at very low speeds	0	337	Maximum interval for random generator Z8	135
1	Short Address	3	78	Free speed curve	48	151	Motor brake and reduce motor BackEMF in Consist	0	271	Overlapping effect at high speed	16	338	Playback length for random generator Z8	0
2	Starting voltage	1	79	Free speed curve	54	152	Dim Mask 2 - FO7-FO12, RiBi	0	272	Blow-off duration	50	339	NotchUp 1st FKey	7
3	Rate of acceleration	20	80	Free speed curve	60	153	Stop time after DCC signal loss	0	273	Delayed start after blow-off	20	340	Notch level and extra Notch FKeys	1
4	Rate of deceleration	10	81	Free speed curve	68	154	Zimo configuration part 2	0	274	Blow-off schedule	30	341	Switch input 1 Playback time	0
5	Maximum speed	1	82	Free speed curve	76	155	FKey for half-speed	12	275	Engine (chuff) sound volume at low speed	175	342	Switch input 2 Playback time	0
6	Middle speed	1	83	Free speed curve	84	156	FKey for deactivating momentum	12	276	Engine (chuff) sound volume at high speed and no-load	150	343	Switch input 3 Playback time	0
7	Version Number (Part1)	5	84	Free speed curve	92	157	FKey for MAN function	0	277	Degree of volume change under load for driving (chuff) sound.	25	344	Follow-up time for fan noise	0
8	Manufacturer Id / HARD RESET	145	85	Free speed curve	102	158	Sound/RailCom config	40	278	Load change threshold	1	345	QUICK-select FKey	5
9	Motor frequency	55	86	Free speed curve	112	159	Special effects FuncOutput7	2	279	Reaction time to load change	1	346	Switch collection conditions	6
10	EMF Feedback cut-off	0	87	Free speed curve	124	160	Special Effects FuncOutput8	2	280	Load influence (DIESEL)	10	347	Switch-over key for solo driving	0
12	Operation Types - disable specific protocols	5	88	Free speed curve	136	161	Servo outputs: Protocol	0	281	Acceleration threshold for full load sound	1	348	Switch-over parameters	0
13	Analog mode active functions F1-F8	3	89	Free speed curve	152	162	Servo 1 - Left stop	49	282	Duration of acceleration sound	50	349	Brake Time	10
14	Analog functions and Inertia	195	90	Free speed curve	168	163	Servo 1 - Right stop	205	283	Engine sound volume at full acceleration	255	350	Delay of switchgear sound after start up - ELECTRIC	0
17	Extended address (byte 1)	0	91	Free speed curve	188	164	Servo 1 - Rotating position	127	284	Threshold for deceleration sound	1	351	Smoke fan speed at steady speed	15
18	Extended address (byte 2)	0	92	Free speed curve	208	165	Servo 1 - Rotating speed	10	285	Duration of reduced volume on deceleration	50	352	Smoke fan speed at acceleration and motor start-up - DIESEL	75
19	Consist Address - high	0	93	Free speed curve	230	166	Servo 2 - Left stop	49	286	Volume level during deceleration	125	353	Automatic shut-down of smoke generator	0
20	Consist Address - low	0	94	Free speed curve	252	167	Servo 2 - Right stop	205	287	Brake squeal threshold	55	354	Steam chuff frequency at step 1	0
21	Consist functions for F1 - F8	0	95	Directional speed trimming - REV	0	168	Servo 2 - Center position	127	288	Minimum driving time before brake squeal	50	355	Exhaust fan speed at stand-still (steam and diesel)	12
22	Consist functions FO & F9-F12 + DC Inertia	0	97	Consist FKey	0	169	Servo 2 - Rotating speed	10	289	Thyristor - stepping effect	1	356	Speedlock Key	0
23	Acceleration trimming	0	100	Current asymmetry	0	170	Servo 3 - Left stop	49	290	Thyristor - pitch at medium speed	20	357	Thyristor - lowering volume at high speed	0
24	Deceleration trimming	0	101	Comparison asym. offset	0	171	Servo 3 - Right stop	205	291	Thyristor - pitch at max speed	100	358	Thyristor - volume reduction curve at high speed	0
27	Direction dependent stops (Lenz ABC)	0	105	User CV / Manuld	145	172	Servo 3 - Centre position	127	292	Thyristor - speed step for pitch increase	10	359	Duration of Electric switch gear sound on speed changes	5
28	RailCom Configuration	3	106	User CV / Provider Id	13	173	Servo 3 - Rotating speed	10	293	Thyristor - volume at cruising	2	360	Electric switchgear duration on coming to stop	5
29	Configuration bits - decoder properties	10	107	Light suppression on cab side 1 - front	0	174	Servo 4 - Left stop	49	294	Thyristor - volume during acceleration	255	361	Switch gear sound - Playback delay - ELECTRIC	1
31	Index page - high	0	108	Light suppression on cab side 2 - rear	0	175	Servo 4 - Right stop	205	295	Thyristor - volume during deceleration	1	362	Thyristor - Switchover threshold for second thyristor sound	0
32	Index page - low	0	109	Automatic unilateral light suppression	0	176	Servo 4 - Centre position	127	296	eMotor - highest volume	255	363	Switch gear sound - Dividing the speed into shift steps - ELECTRIC	0
33	Function mapping F0 forward	0	110	Automatic unilateral light suppression	0	177	Servo 4 - Rotating speed	10	297	eMotor - speed when audible begins	15	364	Speed drop during upshifts (diesel with mechanical transmission)	10
34	Function mapping F0 reverse	0	111	Emergency stop deceleration rate	0	178	Motor reg EMK-difference max	0	298	eMotor - speed for full volume	50	365	Upshift rpm (diesel mechanical)	10
35	Function mapping F1	0	112	Special ZIMO configuration bits	0	181	Servo 1 - FKey assignment	0	299	eMotor - pitch dependent on speed	100	366	Turbo - max volume	125
36	Function mapping F2	0	113	EMF reduction - compensation	0	182	Servo 2 - FKey assignment	0	300	Enter OpsMode	0	367	Turbo - dependency on speed	25
37	Function mapping F3	0	114	Dimming mask	255	183	Servo 3 - FKey assignment	0	301	Inc/Dec programming of CVs	0	368	Turbo - dependency on acceleration	5
38	Function mapping F4	0	115	Uncoupler control (KROIS and ROCCO couplers)	55	184	Servo 4 - FKey assignment	0	302	Start Calibration Mode/Sequence	0	369	Minimum load for turbo	5
39	Function mapping F5	0	116	Automated uncoupling procedure	155	185	Special assignment for live steam engines	0	303	Switching input 1 - key/options	0	370	Turbo - frequency increase	50
40	Function mapping F6	0	117	Flasher functions	0	186	Pantograph 1 - FKey assignment	0	304	Switching input 2 - key/options	0	371	Turbo - frequency decrease	100
41	Function mapping F7	0	118	Flashing mask	0	187	Pantograph 2 - FKey assignment	0	305	Switching input 3 - key/options	0	372	eMotor - volume dependent on speed	255
42	Function mapping F8	0	119	Low beam mask for F6	0	188	Pantograph 3 - FKey assignment	0	306	Switching input 4 - key/options	0	373	eMotor - volume dependent on braking	50
43	Function mapping F9	0	120	Low beam mask for F7	0	189	Pantograph 4 - FKey assignment	0	307	Cornering squeals or reed configuration	0	374	Coasting-Key (or Notching)	0
44	Function mapping F10	0	121	Exponential acceleration	11	190	Brightening up times	0	308	Cornering squeal FKey	0	375	Coasting-Step (or Notching)	0
45	Function mapping F11	0	122	Exponential deceleration	11	191	Dimming down time	0	309	Brake Key	0	376	Driving sound	0
46	Function mapping F12	0	123	Adaptive acceleration and deceleration	22	192	Special effects FuncOutput9	0	310	On/off key for engine and random sound	1	377	Volume - large scale decoders	0
49	HLU acceleration	0	124	Shunting key functions and SUSI	2	193	Special effects FuncOutput10	16	311	On/off key for function sound	0	378	Likelihood of switchgear sparks during accel	0
50	HLU deceleration	0	125	Special effects F0FWD	0	194	Special effects FuncOutput11	0	312	Blow-off key	0	379	Likelihood of switchgear sparks during decel	0
51	HLU limit HU	20	126	Special effects FOREV	0	195	Special effects FuncOutput12	0	313	Mute key	119	380	Manual electric brake key	0
52	HLU limit U	40	127	Special effects FuncOutput1	0	196	Special effects FuncOutput13	0	314	Mute fade in/out time	0	381	Electric brake - minimum speed	30
53	HLU limit UL	70	128	Special effects FuncOutput2	80	197	SUSI#1 Configuration	0	315	Minimum interval for random generator Z1	40	382	Electric brake - maximum speed	255
54	HLU limit L	110	129	Special effects FuncOutput3	1	198	SUSI#2 Configuration	0	316	Maximum interval for random generator Z1	100	383	Electric brake - Pitch according to speed	0
55	HLU limit LF	180	130	Special effects FuncOutput4	2	199	IN1/IN2 Configuration	0	317	Playback length for random generator Z1	0	384	Electric brake - Deceleration threshold	40
56	Back-EMF control (P and I values)	55	131	Special effects FuncOutput5	1	200	IN3/IN4 Configuration	0	318	Minimum interval for random generator Z2	45	385	Electric brake - Hill descent	0
57	Voltage reference	0	132	Special effects FuncOutput6	1	201	Bootloader version	0	319	Maximum interval for random generator Z2	105	386	Electric brake - loops	8
58	Back-EMF intensity	255	133	FO4 as Cam sensor Or FO4 as fan of smoke generators of steam engines.	0	202	Bootloader subversion	0	320	Playback length for random generator Z2	0	387	Influence of accel to diesel sound steps	64
59	HLU delay	5	134	Asymmetrical stopping ABC	106	203	Decoder ID	0	321	Minimum interval for random generator Z3	50	388	Influence of decel to diesel sound steps	64
60	Reduced function output voltage (Dimming)	50	135	Km/h - Speed regulation	0	204	Decoder ID	0	322	Maximum interval for random generator Z3	110	389	Limit accel influence over diesel sound steps	30
61	Special ZIMO function mapping	97	136	Railcom mph factor	24	205	Decoder ID	0	323	Playback length for random generator Z3	0	390	Momentum reduction when driving solo	0
62	Effects dimming	0	137	Smoke generator voltage - standstill	50	206	Decoder ID	0	324	Minimum interval for random generator Z4	55	391	Driving with idle sound, when driving solo	0
63	Effects cycle	62	138	Smoke generator voltage - cruising	180	207	Decoder ID	0	325	Maximum interval for random generator Z4	115	392	Switch input 4 Playback time	0
64	Effects ditch	0	139	Smoke generator voltage - acceleration	255	208	Project Number	73	326	Playback length for random generator Z4	0	393	Zimo Config 5 - switch inputs	0
65	Version Number (part2) sub-version	15	140	Constant braking distance - config	0	209	SubProject Number High Byte	-4	327	Minimum interval for random generator Z5	60	394	Switchgear flash with sound plus Blending	16
66	Directional speed trimming - FWD	0	141	Constant braking distance - distance	20	210	SubProject Number Low Byte	-19	328	Maximum interval for random generator Z5	120	395	Max Volume via FKey volume adjust	125
67	Free speed curve	4	142	High speed correction - ABC	5	211	Load Code P1	0	329	Playback length for random generator Z5	0	396	FKey to reduce volume	20
68	Free speed curve	7	143	High speed correction - HLU	0	212	Load Code P2	0	330	Minimum interval for random generator Z6	65	397	FKey to increase volume	21
69	Free speed curve	10	144	Programming and update lock - not in MS	0	213	Load Code P3	0	331	Maximum interval for random generator Z6	125			
70	Free speed curve	13	145	Experimental - Alternative motor control method	0	214	Load Code P4	0	332	Playback length for random generator Z6	0			
71	Free speed curve	16	146	Compensation for gear back-lash	0	215	Variable low voltage (large scale)	0	333	Minimum interval for random generator Z7	70			
72	Free speed curve	20	147	BackEMF I-value (Integral)	0	216	Loco type selection	101	334	Maximum interval for random generator Z7	130			
73	Free speed curve	24	148	BackEMF D-Value (Differential)	0	217	Total volume	100	335	Playback length for random generator Z7	0			
74	Free speed curve	28	149	BackEMF P-Value (Proportional)	0	218	Chuff rate (using virtual cam)	90	336	Minimum interval for random generator Z8	75			
75	Free speed curve	32				219	Switching to real cam sensor	0						
76	Free speed curve	36				269	Lead-chuff accentuated	0						

398	Steps to trigger Automatic Coasting	25
399	Rule 17 speed dependent headlights	0
400	Input mapping for internal F0	0
401	Input mapping for internal F1	0
402	Input mapping for internal F2	0
403	Input mapping for internal F3	0
404	Input mapping for internal F4	0
405	Input mapping for internal F5	0
406	Input mapping for internal F6	0
407	Input mapping for internal F7	0
408	Input mapping for internal F8	0
409	Input mapping for internal F9	0
410	Input mapping for internal F10	0
411	Input mapping for internal F11	0
412	Input mapping for internal F12	0
413	Input mapping for internal F13	0
414	Input mapping for internal F14	0
415	Input mapping for internal F15	0
416	Input mapping for internal F16	0
417	Input mapping for internal F17	0
418	Input mapping for internal F18	0
419	Input mapping for internal F19	0
420	Input mapping for internal F20	0
421	Input mapping for internal F21	0
422	Input mapping for internal F22	0
423	Input mapping for internal F23	0
424	Input mapping for internal F24	0
425	Input mapping for internal F25	0
426	Input mapping for internal F26	0
427	Input mapping for internal F27	0
428	Input mapping for internal F28	0
430	Swiss Mapping Group 1 FKey	29
431	Swiss Mapping Group 1 MKey	0
432	Swiss Mapping Group 1 Forward 1st AUX	14
433	Swiss Mapping Group 1 Forward 2nd AUX	3
434	Swiss Mapping Group 1 Reverse 1st AUX	15
435	Swiss Mapping Group 1 Reverse 2nd AUX	0
436	SMG Group 2 FKey	29
437	SMG Group 2 MKey	0
438	SMG Group 2 Forward 1st AUX	8
439	SMG Group 2 Forward 2nd AUX	0
440	SMG Group 2 Reverse 1st AUX	0
441	SMG Group 2 Reverse 2nd AUX	0
442	SMG Group 3 FKey	3
443	SMG Group 3 MKey	0
444	SMG Group 3 Forward 1st AUX	6
445	SMG Group 3 Forward 2nd AUX	0
446	SMG Group 3 Reverse 1st AUX	4
447	SMG Group 3 Reverse 2nd AUX	0
448	SMG Group 4 FKey	4
449	SMG Group 4 MKey	0
450	SMG Group 4 Forward 1st AUX	9
451	SMG Group 4 Forward 2nd AUX	0
452	SMG Group 4 Reverse 1st AUX	9
453	SMG Group 4 Reverse 2nd AUX	0
454	SMG Group 5 FKey	0
455	SMG Group 5 MKey	0
456	SMG Group 5 Forward 1st AUX	0
457	SMG Group 5 Forward 2nd AUX	0
458	SMG Group 5 Reverse 1st AUX	0
459	SMG Group 5 Reverse 2nd AUX	0
460	SMG Group 6 FKey	0
461	SMG Group 6 MKey	0
462	SMG Group 6 Forward 1st AUX	0
463	SMG Group 6 Forward 2nd AUX	0
464	SMG Group 6 Reverse 1st AUX	0
465	SMG Group 6 Reverse 2nd AUX	0
466	SMG Group 7 FKey	0
467	SMG Group 7 MKey	0
468	SMG Group 7 Forward 1st AUX	0
469	SMG Group 7 Forward 2nd AUX	0
470	SMG Group 7 Reverse 1st AUX	0
471	SMG Group 7 Reverse 2nd AUX	0

472	SMG Group 8 FKey	0
473	SMG Group 8 MKey	0
474	SMG Group 8 Forward 1st AUX	0
475	SMG Group 8 Forward 2nd AUX	0
476	SMG Group 8 Reverse 1st AUX	0
477	SMG Group 8 Reverse 2nd AUX	0
478	SMG Group 9 FKey	0
479	SMG Group 9 MKey	0
480	SMG Group 9 Forward 1st AUX	0
481	SMG Group 9 Forward 2nd AUX	0
482	SMG Group 9 Reverse 1st AUX	0
483	SMG Group 9 Reverse 2nd AUX	0
484	SMG Group 10 FKey	0
485	SMG Group 10 MKey	0
486	SMG Group 10 Forward 1st AUX	0
487	SMG Group 10 Forward 2nd AUX	0
488	SMG Group 10 Reverse 1st AUX	0
489	SMG Group 10 Reverse 2nd AUX	0
490	SMG Group 11 FKey	0
491	SMG Group 11 MKey	0
492	SMG Group 11 Forward 1st AUX	0
493	SMG Group 11 Forward 2nd AUX	0
494	SMG Group 11 Reverse 1st AUX	0
495	SMG Group 11 Reverse 2nd AUX	0
496	SMG Group 12 FKey	0
497	SMG Group 12 MKey	0
498	SMG Group 12 Forward 1st AUX	0
499	SMG Group 12 Forward 2nd AUX	0
500	SMG Group 12 Reverse ast AUX	0
501	SMG Group 12 Reverse 2nd AUX	0
502	SMG Group 13 FKey	0
503	SMG Group 13 MKey	0
504	SMG Group 13 Forward 1st AUX	0
505	SMG Group 13 Forward 2nd AUX	0
506	SMG Group 13 Reverse 1st AUX	0
507	SMG Group 13 Reverse 2nd AUX	0
508	Dimming Group 1 Settings	0
509	Dimming Group 2 Settings	0
510	Dimming Group 3 Settings	0
511	Dimming Group 4 Settings	0
512	Dimming Group 5 Settings	0
513	F1 sound assignment	0
514	F1 volume adjust	0
515	F1 looping/short	0
516	F2 sound assignment	22
517	F2 volume adjust	0
518	F2 looping/short	0
519	F3 sound assignment	0
520	F3 volume adjust	0
521	F3 looping/short	0
522	F4 sound assignment	0
523	F4 volume adjust	0
524	F4 looping/short	0
525	F5 sound assignment	0
526	F5 volume adjust	0
527	F5 looping/short	0
528	F6 sound assignment	23
529	F6 volume adjust	0
530	F6 looping/short	0
531	F7 sound assignment	0
532	F7 volume adjust	0
533	F7 looping/short	0
534	F8 sound assignment	30
535	F8 volume adjust	0
536	F8 looping/short	8
537	F9 sound assignment	28
538	F9 volume adjust	0
539	F9 looping/short	0
540	F10 sound assignment	24
541	F10 volume adjust	0
542	F10 looping/short	0
543	F11 sound assignment	39
544	F11 volume adjust	0

545	F11 looping/short	0
546	F12 sound assignment	0
547	F12 volume adjust	0
548	F12 looping/short	0
549	F13 sound assignment	34
550	F13 volume adjust	0
551	F13 looping/short	0
552	F14 sound assignment	33
553	F14 volume adjust	0
554	F14 looping/short	8
555	F15 sound assignment	32
556	F15 volume adjust	0
557	F15 looping/short	0
558	F16 sound assignment	27
559	F16 volume adjust	0
560	F16 looping/short	0
561	F17 sound assignment	21
562	F17 volume adjust	0
563	F17 looping/short	8
564	F18 sound assignment	20
565	F18 volume adjust	0
566	F18 looping/short	8
567	F19 sound assignment	0
568	F19 volume adjust	0
569	F19 looping/short	0
570	F0 sound assignment	0
571	F0 volume adjust	0
572	F0 looping/short	0
573	IDLE sound assignment	0
574	IDLE volume adjust	0
575	CHANGEDIR sound assignment	0
576	CHANGEDIR volume adjust	0
577	COMETOHALT sound assignment	4
578	COMETOHALT volume adjust	0
579	THYRISTOR sound assignment	6
580	THYRISTOR volume adjust - not used	0
581	SETOFF sound assignment	0
582	SETOFF volume adjust	0
583	WATEROUTLET sound assignment	0
584	WATEROUTLET volume adjust	0
585	EMOTOR sound assignment	5
586	EMOTOR volume adjust	0
587	ROLLING sound assignment n/a	0
588	DRIVING SOUNDS volume adjustment	0
589	SWITCHVALVE sound assignment	0
590	SWITCHVALVE volume adjust	0
591	THYRISTOR2 sound assignment	0
592	THYRISTOR2 volume adjust	0
593	PANTOSTOP sound assignment	0
594	PANTOSTOP volume adjust	0
595	PANTODOWN sound assignment	0
596	PANTODOWN volume adjust	0
597	PANTODOWNSTOP sound assignment	0
598	PANTODOWNSTOP volume adjust	0
599	TURBO sound assignment	7
600	TURBO volume adjust - not used	0
601	DYNAMIC BRAKES - sound assignment	0
602	DYNAMIC BRAKES volume adjustment	0
603	CORNERING squeal sound assignment	0
604	CORNERING squeal volume adjust	0
671	Reed input 4 sound assignment	0
672	Reed input 4 volume adjust	0
673	F20 sound assignment	0
674	F20 volume adjust	0
675	F20 looping/short	0
676	F21 sound assignment	0
677	F21 volume adjust	0
678	F21 looping/short	0
679	F22 sound assignment	36
680	F22 volume adjust	0
681	F22 looping/short	8
682	F23 sound assignment	31
683	F23 volume adjust	0

684	F23 looping/short	8
685	F24 sound assignment	26
686	F24 volume adjust	0
687	F24 looping/short	0
688	F25 sound assignment	37
689	F25 volume adjust	0
690	F25 looping/short	0
691	F26 sound assignment	40
692	F26 volume adjust	0
693	F26 looping/short	0
694	F27 sound assignment	25
695	F27 volume adjust	0
696	F27 looping/short	0
697	F28 sound assignment	47
698	F28 volume adjust	0
699	F28 looping/short	0
700	unused	0
724	HS switching gear set	0
726	Sound id for trigger 1	44
727	AUX output to activate with trigger 1	12
728	Sound id for trigger 2	45
729	AUX output to activate with trigger 2	12
730	Sound id for trigger 3	0
731	AUX output to activate with trigger 3	0
732	Sound id for trigger 4	0
733	AUX output to activate with trigger 4	0
734	Sound id for trigger 5	0
735	AUX output to activate with trigger 5	0
736	Sound id for trigger 6	0
737	AUX output to activate with trigger 6	0
738	Reed input 1 sound assignment	0
739	Reed input 1 volume adjust	0
740	Reed input 2 sound assignment	0
741	Reed input 2 volume adjust	0
742	Reed input 3 sound assignment	0
743	Reed input 3 volume adjust	0
744	Z1 Random sound assignment	44
745	Z1 Random volume adjust	91
746	Z1 Random standstill / motion	72
747	Z2 Random sound assignment	45
748	Z2 Random volume adjust	91
749	Z2 Random standstill / motion	72
750	Z3 Random sound assignment	46
751	Z3 Random volume adjust	91
752	Z3 Random standstill / motion	72
753	Z4 Random sounds assignment	33
754	Z4 Random volume adjust	46
755	Z4 Random standstill / motion	72
756	Z5 Random sound assignment	0
757	Z5 Random volume adjust	91
758	Z5 Random standstill / motion	72
759	Z6 Random sound assignment	0
760	Z6 Random volume adjust	91
761	Z6 Random standstill / motion	72
762	Z7 Random sound assignment	0
763	Z7 Random volume adjust	91
764	Z7 Random standstill / motion	72
765	Z8 Random sound assignment	0
766	Z8 Random volume adjust	91
767	Z8 Random standstill / motion	72
768	Current sound set selected	0
769	Last known drive direction	1
770	Servo1 last known position	127
771	Servo2 last known position	127
772	Servo3 last known position	127
773	Servo4 last known position	127
774	Last used rail data format	1
775	Measured kmh/mph values	42
776	Measured kmh/mph values	26
777	Measured motor load parameter	0
778	Measured motor load parameter	0
779	Measured motor load parameter	0
780	Measured motor load parameter	0

783	PWM slow from auto-run	0
784	PWM fast from auto-run	0
800	SMG Group 14 FKey	0
801	SMG Group 14 MKey	0
802	SMG Group 14 Forward 1st AUX	0
803	SMG Group 14 Forward 2nd AUX	0
804	SMG Group 14 Reverse 1st AUX	0
805	SMG Group 14 Reverse 2nd AUX	0
806	SMG Group 15 FKey	0
807	SMG Group 15 MKey	0
808	SMG Group 15 Forward 1st AUX	0
809	SMG Group 15 Forward 2nd AUX	0
810	SMG Group 15 Reverse 1st AUX	0
811	SMG Group 15 Reverse 2nd AUX	0
812	SMG Group 16 FKey	0
813	SMG Group 16 MKey	0
814	SMG Group 16 Forward 1st AUX	0
815	SMG Group 16 Forward 2nd AUX	0
816	SMG Group 16 Reverse 1st AUX	0
817	SMG Group 16 Reverse 2nd AUX	0
818	SMG Group 17 FKey	0
819	SMG Group 17 MKey	0
820	SMG Group 17 Forward 1st AUX	0
821	SMG Group 17 Forward 2nd AUX	0
822	SMG Group 17 Reverse 1st AUX	0
823	SMG Group 17 Reverse 1nd AUX	0
824	Key inverted by IN1	0
825	Key inverted by IN2	0
826	Key inverted by IN3	0
827	Key inverted by IN4	0
830	Braking distance FWD high	0
831	Braking distance FWD low	0
832	Braking distance REV high	0
833	Braking distance REV low	0
834	Turbo - reduce dependency on accel	0
835	Number of Additional Quick Select FKeys	0
836	Probability of switchgear sparks	0
837	Script processes	0
840	Analog functions F13-F20	0
841	Analog functions F21-F28	0
843	Deactivate scripts 9 to 16	0