SWIFT®

MERIDIA®

Speed. Precision. Control.

Service Manual

Draft 11

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COMPUTERIZED ELEVATOR CONTROL CORP.

Moving People. Moving Business.

SECTION 12 - CAR COMMANDS AND PARAMETERS

From the Human Interface terminal, type <**CAR**> to establish communication with the car functions. The prompt in Car Human Interface mode is:

C# 1=>

CAR DIAGNOSTIC COMMANDS

<COMMAND>	DESCRIPTION OF CAR COMMAND
ASU	**A**utomatic **S**et **U**p: (Hoistway Scan) Limit switch position and Floor Center of Target (COT) Position Reference Set-up. **NOTE:** *Refer to Auto Setup (Hatch Scan) on page 6-9 for HPV 900 or page 7-9 for DSD 412:*
BAS	**BAS**e of output: Output base setting can be either 10 or 16. If set to 10, all values returned by the controller will be in decimal notation (easiest to read). If set to 16, all values returned by the controller will be in hexadecimal notation. It is advisable to leave it at 10.
BBT	**B**rake to **B**rake last travel **T**ime: This command returns time period of last run performed by car.
BDC	**B**rake **D**uty **C**ycle. Typing "BDC=[number 1 to 255]<ENTER>" while the car is on inspection sends a turn on duty cycle to the brake device. Manually pushing in MC and BK contactors will lift the brake. Typing "BDC <ENTER>" or placing the car on AUTO will turn off the brake command.
CCS	**C**ar **C**all pilot **S**tatus: Displays the pilot status of the car. An UP pilot is a call above current car position. A DOWN pilot is a call below current car position. The hexadecimal numbers below indicate the pilot status: 0H - no pilot 1H - up pilot 2H - down pilot 3H - up and down pilot 4H - at call floor 5H - at call floor and up pilot 6H - at call floor and down pilot 7H - at call floor and up and down pilot

<COMMAND>	DESCRIPTION OF CAR COMMAND
CCT	**C**ar **C**all **T**est. The car call test automatically activates car calls at selected floors to allow the car to run continuously in a test mode unattended. The command CCT toggles the car call test operation on and off. To select the desired floor, type "CCTF" for front or "CCTR" for rear car calls and follow the prompt to select the individual floor. More than one car call must be selected to activate the test. Loss of power or activation of fire service will cancel the car call test operation. **Note:** *Must be done in Black Terminal screen with the doors on Door Disconnect.* **Note:** *If car is placed in Automatic Service, the call will continue to be answered. CCT must be disabled by re-entering the CCT command.*
CLS	**CL**ear terminal **S**creen. Clears the terminal screen on the wizard or human interface terminal device.
CMC	This command displays **C**ar smart controllers **C**o**M**munication status (Communication Status of the following Devices): OK > C# 1=> CMC **COMMUNICATIONS STATUS**

HI	ST	RCV	FAIL	%F				
DRV	ST	RCV	FAIL	%F				
2	--	0	0	0				

VIC	ST	RCV	FAIL	%F	INBD:	01234567	OUTBD:	01234567
11	OK	69	0	0		11111100		11000000
CAR	ST	RCV	FAIL	%F	INBD:	01234567	OUTBD:	01234567
8	OK	67	0	0				
19	OK	67	0	0		10000000		11000000
20	OK	25	0	0		10001100		10001100
31	OK	66	0	0				
MIC	ST	RCV	FAIL	%F	INBD:	01234567	OUTBD:	01234567
12	OK	69	0	0		00000000		00000000
AUX	ST	RCV	FAIL	%F	INBD:	01234567	OUTBD:	01234567

NOTE: *Comm Status*
0 = No Comm
1 = Poor Comm
2 = Comm O.K.
3 = Comm Perfect

<COMMAND>	DESCRIPTION OF CAR COMMAND

NOTE the following definitions:

HI = human interface port (CCU)
DRV = drive port (CCU)
VIC = local I2C port controlled by the VIC microcontroller (on CCU)
CAR = car RS-485 port controlled by the MIC microcontroller (on CCU)
MIC = local I2C port controlled by MIC microcontroller (on CCU)
AUX = local RS-485 port controlled by VIC microcontroller (on CCU)
ST (status) line indicates "OK" when the device is communicating
RCV = the # of packets received
FAIL = the # of failed packets
%Fail = percentage failure of 100 packets
INBD = input board comm status on device I2C port (0=no comm,1=comm)
OUTBD = output board comm status on device I2C port (0=no comm,1=comm)

If no data is displayed, then the port is not being used to access an intelligent device.

The following indicates the corresponding address to each intelligent device:

DEVICE COMMUNICATION

DEVICE NAME	COMMUNICATION ADDRESS	DESCRIPTION
DRV	2	**DRiVe** System
CTC	8	**C**ar **T**op **C**ontroller
BK	9	**B**ra**K**e Board
MF	10	**M**otor **F**ield
VIC	11	**V**elocity **I**nterface **C**ontroller (on CCU board)
MIC	12	**M**otor room **I**nterface **C**ontroller (on CCU board)
MPC1	13	**M**otor room **P**ort **C**ontroller **1**
MPC2	14	**M**otor room **P**ort **C**ontroller **2**
MPC3	15	**M**otor room **P**ort **C**ontroller **3**
MPC4	16	**M**otor room **P**ort **C**ontroller **4**

<table>
<tr><th><COMMAND></th><th colspan="3">DESCRIPTION OF CAR COMMAND</th></tr>
<tr><td></td><td>DEVICE NAME</td><td>COMMUNICATION ADDRESS</td><td>DESCRIPTION</td></tr>
<tr><td></td><td>MPC5</td><td>17</td><td>Motor room Port Controller 5</td></tr>
<tr><td></td><td>MPC6</td><td>18</td><td>Motor room Port Controller 6</td></tr>
<tr><td></td><td>TOC</td><td>19</td><td>Top Of Car Device</td></tr>
<tr><td></td><td>COP</td><td>20</td><td>Car Operating Panel</td></tr>
<tr><td></td><td>RCOP</td><td>21</td><td>Rear Car Operating Panel</td></tr>
<tr><td></td><td>CPC1</td><td>22</td><td>Car Port Controller 1</td></tr>
<tr><td></td><td>CPC2</td><td>23</td><td>Car Port Controller 2</td></tr>
<tr><td></td><td>CPC3</td><td>24</td><td>Car Port Controller 3</td></tr>
<tr><td></td><td>CPC4</td><td>25</td><td>Car Port Controller 4</td></tr>
<tr><td></td><td>CPC5</td><td>26</td><td>Car Port Controller 5</td></tr>
<tr><td></td><td>CPC6</td><td>27</td><td>Car Port Controller 6</td></tr>
<tr><td></td><td>CPE</td><td>31</td><td>Car Position Encoder</td></tr>
<tr><td>CMG</td><td colspan="3">Displays Group CoMmunication status status (Communication Status of the following Devices):</td></tr>
<tr><td></td><td colspan="3"><u>COMMUNICATION STATUS (GROUP)</u></td></tr>
<tr><td></td><td colspan="3">
HI ST RCV FAIL %FAIL CTG
3 OK65 0 0 201

ST RCV FAIL %FAIL
OK 81 0 0 11
202 OK 81 0 0
203 OK 81 0 0
204 OK 81 0 0

HC ST RCV FAIL %FAIL
OK 43 0 0 0
12 OK 43 0 0
13 OK 43 0 0
14 OK 43 0 0
15 OK 43 0 0
16 OK 43 0 0
17 OK 43 0 0
18 OK 43 0 0
19 OK 43 0 0
20 OK 43 0 0
211 OK 43 0 0

The following description indicates the corresponding address to each board:

<table>
<tr><th>DEVICE NAME</th><th>COMMUNICATION ADDRESS</th><th>DESCRIPTION</th></tr>
<tr><td>HI</td><td>3</td><td>Human Interface</td></tr>
<tr><td>HPU_HC</td><td>11-42</td><td>HPU Hall Calls for floors 1 through 32</td></tr>
<tr><td>HPU_IGEMP</td><td>74</td><td>HPU Inter-group Emergency Power I/O</td></tr>
<tr><td>HPU_EMP-FIR</td><td>75</td><td>HPU Emergency Power Recall/Fire light I/O</td></tr>
<tr><td>HPU_GIO1</td><td>76</td><td>HPU General Purpose I/O 1</td></tr>
<tr><td>HPU_GIO2</td><td>77</td><td>HPU General Purpose I/O 2</td></tr>
<tr><td>HPU_GIO3</td><td>78</td><td>HPU General Purpose I/O 3</td></tr>
<tr><td>MPE_HC</td><td>79</td><td>HPU Hall Calls run from MPE Board for floors 1-32</td></tr>
<tr><td>MPE_HC_RAX</td><td>80</td><td>HPU Rear AUX Hall Calls from MPE Board for floors 1-32</td></tr>
<tr><td>MPE_HC_R</td><td>81</td><td>HPU Rear Hall Calls run from MPE Board for floors 1-32</td></tr>
<tr><td>MPE_HC_AX</td><td>82</td><td>HPU AUX Hall Calls run from MPE Board for floors 1-32</td></tr>
<tr><td>MPE_IR1</td><td>83</td><td>HPU IR1 Hall Calls run from MPE Board for floors 1-32</td></tr>
<tr><td>MPE_IR2</td><td>84</td><td>HPU IR2 Hall Calls run from MPE Board for floors 1-32</td></tr>
</table>
</td></tr>
</table>

<COMMAND>	DESCRIPTION OF CAR COMMAND		
	MPE_RIR1	85	**HPU** RIR1 Hall Calls run from **MPE** Board for floors 1-32
	MPE_RIR2	86	**HPU** RIR2 Hall Calls run from **MPE** Board for floors 1-32
	MPE_CB	87	**HPU** CB Hall Calls run from **MPE** Board for floors 1-32
	MPE_RCB	88	**HPU** RCB Hall Calls run from **MPE** Board for floors 1-32
	MPE_VIP	89	**HPU** VIP Hall Calls run from **MPE** Board for floors 1-32
	MPE_RVIP	90	**HPU** RVIP Hall Calls run from **MPE** Board for floors 1-32
	GIO1	91	**I2C** I/O 1 run from MPE Board
	GIO2	92	**I2C** I/O 2 run from MPE Board
	GSEC	93	**I2C** I/O Group Security
	HC	94	**I2C** Hall Call
	RHC	95	**I2C** Rear Hall Call
	IR	96	**I2C** Inconspicuous Riser Hall Call
	RIR	97	**I2C** Rear Inconspicuous Riser Hall Call
	CB	98	**I2C** Code Blue and Rear Code Blue Riser
	VIP	99	**I2C** VIP and Rear VIP Riser
	GRP	200	**GR**ou**P** Communication Address
	CAR 1	201	**Car #1** Communication Address
	CAR 2	202	**Car #2** Communication Address
	CAR 3	203	**Car #3** Communication Address
	CAR 4	204	**Car #4** Communication Address
	CAR 5	205	**Car #5** Communication Address
	CAR 6	206	**Car #6** Communication Address
	CAR 7	207	**Car #7** Communication Address
	CAR 8	208	**Car #8** Communication Address
	CAR 9	209	**Car #9** Communication Address
	CAR 10	210	**Car #10** Communication Address
	RVU	211	**RVU** on Hall Call Bus
	RVU	212	**RVU** on Car To Group Bus

NOTE the following definitions:

HI = human interface port (CCU)
CTG = Car to Group(CCU)
HC = Hall Call (CCU)
ST indicates "OK" when the devise is communicating
RCV = # packets received
FAIL = # of failed packets
FAIL = the # of failed packets
%Fail = percentage failure of 100 packets

<table>
<tr><th><COMMAND></th><th>DESCRIPTION OF CAR COMMAND</th></tr>
<tr><td>COT</td><td>Center of Target: Center Of Target: This value is the DPP position for where the center of the floor target is located. COT parameters are set during auto-setup. See FOF for adjusting to place the car level to the door sill.

C# 1=> COT

<table>
<tr><th>FLOOR #</th><th>COT</th><th>FOF</th><th>FCP</th></tr>
<tr><td>1</td><td>1000</td><td>-6</td><td>994</td></tr>
<tr><td>2</td><td>1400</td><td>0</td><td>1400</td></tr>
<tr><td>3</td><td>1800</td><td>0</td><td>1800</td></tr>
<tr><td>4</td><td>2200</td><td>0</td><td>2200</td></tr>
<tr><td>5</td><td>2600</td><td>-2</td><td>2598</td></tr>
<tr><td>6</td><td>3000</td><td>0</td><td>3000</td></tr>
<tr><td>7</td><td>3400</td><td>0</td><td>3400</td></tr>
<tr><td>8</td><td>3800</td><td>+4</td><td>3804</td></tr>
<tr><td>9</td><td>4200</td><td>0</td><td>4200</td></tr>
<tr><td>10</td><td>4600</td><td>0</td><td>4600</td></tr>
<tr><td>11</td><td>5000</td><td>0</td><td>5000</td></tr>
<tr><td>12</td><td>5400</td><td>0</td><td>5400</td></tr>
<tr><td>13</td><td>5800</td><td>0</td><td>5800</td></tr>
<tr><td>14</td><td>6200</td><td>0</td><td>6200</td></tr>
<tr><td>15</td><td>6600</td><td>0</td><td>6600</td></tr>
</table>
Note: The COT values shown here are default values. Your values may differ.</td></tr>
<tr><td>CPY</td><td>CoPY flash parameters to RAM or RAM parameters to flash.
CPYR - Copies RAM parameters to flash.
CPYF - Copies flash parameters to RAM.</td></tr>
<tr><td>DATE</td><td>Set the real time calendar clock DATE. The date is entered as month/day/year. To exit this command without changing the date, hit <ENTER ↵> before typing in new date values.
Current date: 6/21/94
Enter new date: 7/26/94</td></tr>
<tr><td>DCS</td><td>Down Call pilot Status:
a) Up Pilot -- down hall call above current car position
Down Pilot -- down hall call below current car position</td></tr>
<tr><td>DLB</td><td>Down Limit Break: Car velocity and position when the Down Limit switches first break open during a run. This command is entered after the elevator has tripped all the slowdown limit switches on a run to the first landing.</td></tr>
<tr><td>DPC</td><td>Digital Position Count: This command returns the DPP count of the current elevator position. This value is also displayed on the car diagnostic screen under "Pos Cn".</td></tr>
</table>

<COMMAND>	DESCRIPTION OF CAR COMMAND
DPY	**D**iagnostic **D**ispla**y** Control: The <DPY> commands allow the user to capture up to 128 frames of the car diagnostic display for playback at a later time. The capturing of the diagnostic display can be triggered on the activation of any error code. DPYD or DPYTD — Enter diagnostic display mode. This mode will display the captured frames of the diagnostic display Enter: <**B**> to play **B**ackward one frame <**F**> to play **F**orward one frame <**C**> to get **C**urrent frame <**CTRL>** + <**C**> to quit diagnostic display mode DPYT — Displays all the DPY commands DPYTS — Setup diagnostic triggering DPYTR — Reset triggering display (returns display to normal mode)
ELB	**E**TS (Emergency Terminal Slowdown) **L**imit **B**reak: Car velocity and position when the ETS Limits first break open during a run. This command is entered after the elevator has tripped all the slowdown limits on a run to the first landing. *VIC and CTC Emergency Limit Velocity* **Down Limit Fault at limit #* **Up Limit Fault at limit #* *Emergency Slowdown Velocity (ESV):* ***1**= 350; **2**= 450;* **Down Emergency Terminal Slowdown Fault* **Up Emergency Terminal Slowdown Fault;* ***ETS Up Direction* ***ETS Up Direction* *ETS Velocity: 351* *ETS Up Limit Position: 12184* *ETS Down Limit Position: 0* * Displayed only if the corresponding fault condition occurs. ** Displayed according to direction entering or leaving the ETS limit.
EXE	**EX**clude **E**rror code. This command creates a list of error codes that are not stored in the error buffer. EXES - Set bit to exclude error code from buffer. Eg. Type EXES54<ENTER> to exclude error code 54 from buffer. EXER - Reset bit that excludes error code from buffer. Eg. Type

<table>
<tr><th><COMMAND></th><th>DESCRIPTION OF CAR COMMAND</th></tr>
<tr><td></td><td>EXER54<ENTER> to allow error code 54 to be placed in the buffer.
EXEC - Clear error code exclusion list. Allow all error codes to be placed in buffer.
EXEL - List error codes excluded from being placed in error buffer.</td></tr>
<tr><td>FCP</td><td>Floor position Count Preset: This is the reference DPP position for where dead level is for each floor. The FCP position is the sum of COT (Center Of Target from Hoistway Scan) and/or FOF (Floor Offset) parameters.

C# 1=> FCP

<table>
<tr><th>FLOOR #</th><th>COT</th><th>FOF</th><th>FCP</th></tr>
<tr><td>1</td><td>1000</td><td>-6</td><td>994</td></tr>
<tr><td>2</td><td>1400</td><td>0</td><td>1400</td></tr>
<tr><td>3</td><td>1800</td><td>0</td><td>1800</td></tr>
<tr><td>4</td><td>2200</td><td>0</td><td>2200</td></tr>
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<tr><td>10</td><td>4600</td><td>0</td><td>4600</td></tr>
<tr><td>11</td><td>5000</td><td>0</td><td>5000</td></tr>
<tr><td>12</td><td>5400</td><td>0</td><td>5400</td></tr>
<tr><td>13</td><td>5800</td><td>0</td><td>5800</td></tr>
<tr><td>14</td><td>6200</td><td>0</td><td>6200</td></tr>
<tr><td>15</td><td>6600</td><td>0</td><td>6600</td></tr>
</table>
</td></tr>
</table>

<COMMAND>	DESCRIPTION OF CAR COMMAND
FLTn (See Error Code Definitions)	**F**au**LT**s (Errors): The ***MERIDIA***™ Operating System keeps a record of the previous 24 faults that have occurred along with the number of occurrences, time of day, the floor number, the velocity, digital position count and various status bytes. The faults are labeled 0-23. This command displays four of the 24 faults starting at fault n (n = 0-23). The n is optional. If not used, the <**FLT>** command displays all 24 faults. Zero indicates no fault occurrence. Note that CS and DS are in hexadecimal form, which must be converted into binary form. The fault is displayed on screen as follows: *C# 1>FLT0* *FLT COUNT FLR TIME DATE DPP DMD VEL DM DZ SV CS DS* *FLT0= 80 1 11 4:39:22p 6/02/94 5279 350 350 3 00H 26 AFH 0FH* *FLT1= 0 0 0 0:00:00a 0/00/94 0 0 0 0 00H 0 00H 00H* *FLT2= 0 0 0 0:00:00a 0/00/94 0 0 0 0 00H 0 00H 00H* *FLT3= 0 0 0 0:00:00a 0/00/94 0 0 0 0 00H 0 00H 00H* The headings in the above table are detailed below: FLT = Fault number COUNT = Number of occurrences FLR = Floor where the error occurred TIME = The time the fault occurred (from the system real time calendar clock) DATE = Date of occurrence DPP = Digital Position Pulse count DMD = Demand velocity VEL = Car's Velocity calculated from the Digital Position Pulse DM = Digitizer Mode Value. The value that appears is the last value that successfully registered in fault registry. If the value "3" appears then the car was in the Flat Top mode when the fault was registered. **Definitions** **0** Stop **1** Acceleration **2** Roll **3** Top Speed **4** Flat Top **5** Deceleration **6** Leveling **7** Emergency **8** Inspection

<COMMAND>	DESCRIPTION OF CAR COMMAND

DZ = Door Zone status

To interpolate the information below, convert the hexadecimal number under the DZ heading into a binary number. The 8-bit binary number will correspond to the bits shown below. Bit 0 will be the least significant, or the "right-most" bit. Wherever there is one (1) on the specified bit, this signifies that the item described next to the bit was active when the fault occurred.

BITS

- **0** up level zone
- **1** up final level zone
- **2** down final level zone
- **3** down level zone
- **4** dz
- **5** Not Used
- **6** Not Used
- **7** Not Used

SV = Car service type

Numbers shown correspond directly to status (no conversion needed)

0=INVALID	**1**=SAFETIES	**2**=DRIVE OFF
3=PWR LOSS	**4**=INSPECT	**5**=### INIT
6=DRIVE FLT	**7**=CWT DRL	**8**=CTLSHUTDN
9=EARTH Q.	**10**=FIRE PH 2	**11**=FIRE PH 1
12=CODE BLUE	**13**=EM RECALL	**14**=HOMING
15=INDEPEND	**16**=ATT	**17**=DOOR DISC
18=REAR DISC	**19**=VIP	**20**=LBY IND
21=DISP LOSS	**22**=STOP SW	**23**=SERV PROT
24=LOAD BP	**25**=SECURITY	**26**=AUTOMATIC
27=IR SERV	**28**=EMT	**29**=SPECIAL
30=BLDG SVC	**31**=NIGHT SVC	**32**=SHUTTLE
33=PRE ALARM	**34**=PRIORITY	**35**=EM RECALL
36=SEC RCALL	**37**=LOAD CAL	

CS = Car Status

Convert hexadecimal numbers to binary as in DZ above.

BITS

- **0** start sequence
- **1** run sequence
- **2** EMST (Emergency Stop Output)
- **3** EMSD (Emergency Stop Input)
- **4** SRU (Speed Reference Up)
- **5** SRD (Speed Reference Down)
- **6** up motion
- **7** down motion

<COMMAND>	DESCRIPTION OF CAR COMMAND
	DS = Door Status Convert hexadecimal numbers to binary as in DZ and CS above. BITS **0** door open limit (DOL) **1** door close limit (DCL) **2** rear door close limit (RDCL) **3** rear door open limit (RDOL) **4** door open pilot **5** door close pilot **6** rear door open pilot **7** rear door close pilot
FLTXn (See Error Code Definitions)	**F**au**LT**s (errors - see FLTn): This command shows the e**X**tended fault buffer corresponding to the faults shown with the above **<FLT>** command. The "n" value is set to the fault index number label from 0 to 23. From the **<FLT>** command example shown below, the "n" number is selected to retrieve additional fault information for fault code 80 stored at index number 0. Convert the hexadecimal numbers to binary for bit settings. (An explanation of the conversion process can be found on page 12-15.) *C# 1=> FLTX3* *FLT,COUNT,FLR, TIME , DATE , DPP, DMD, VEL, DM, DZ, SV, CS, DS* *FLT 3=143, 1, 3, 7:34:45p, 1/01/00, 1762, 405, 441, 5, 00H, 26, 5EH, 03H* *CS1,CS2,CS3,CS4,VS1,VS2,VICV,VICDPP,CTS,CTCV,CPS,CPEDPP,MFS, BKS, GR* *00H, 32H,90H,7DH,20H,00H, 424, 1217, 03H, 0, 0DH, 1651, 00H, 90H, 201* *DS1,DS2,DS3,DRVCM,EX1,EX2,EX3,EX4,EX5* *00H,00H,00H, 0000H,00H,00H,00H,00H,00H* The following details the headings in the above table, ***which are <u>NOT</u> to be confused with Control Status Word Bits (see page 11-1).*** CS1 = Car Status 1 BITS **0** Rope Gripper Trip **1** Rope Gripper Fault **2** Fault Trip **3** Relay Fault **4** Controller Fault **5** Motion Fault **6** Gate & Lock (GLR) Fault **7** Run Time-Out Fault CS2 = Car Status 2 BITS **0** mg fault **1** Motion Master (elevator motion allowed) **2** Gate or Lock On Fault **3** Drive Fault **4** Communication Initialized Ok **5** Tach Direction (CCU DPP quadrature: 1=up, 0=dn)

<COMMAND>	DESCRIPTION OF CAR COMMAND

6 Tach Direction Error (Drive, CCU, VIC, or CPE)
7 CCU Tach Direction Error

CS3 = Car Status 3
BITS
0 Up Call Pilot
1 Down Call Pilot
2 At Floor Call Pilot
3 Drop Leveling Velocity Output (LVE)
4 Moving
5 Leveling
6 Lev DZ
7 CCU Thermal Sensor

CS4 = Car Status 4
BITS
0 SYSTEM MASTER (SRD/SRU ok)
1 Proximity
2 CGS & DLS
3 Gate & Lock (GL)
4 SM Input From Contactor
5 MA Input From Contactor
6 BKR (Brake Relay)
7 Door Operation

VS1 = VIC Board Status 1
BITS
0 Slowdown Limit Fault (SLF)
1 Inspection Speed Fault (ISF)
2 GL Speed Fault (GLF)
3 Not Used
4 Not Used
5 Moving Up
6 Moving Down
7 Emergency Stop Fault (ESF)

VS2 = VIC Board Status 2
BITS
0 Slowdown Fault At Limit 1
1 Slowdown Fault At Limit 2
2 Not Used
3 Not Used
4 Not Used
5 Not Used
6 0=Up Limit Fault, 1=Dn Limit Fault
7 Not Used

VICV = Car's velocity from VIC (motor encoder) Digital Position Pulse

VICDPP = VIC Position Count (Unit: pulses/foot)

CTCS = CTC ETS Status
BITS
0 Up ETS limit hit
1 Down ETS limit hit
2 Up ETS limit error
3 Down ETS limit error
4 Up direction at ETS limit
5 Down direction at ETS limit

<COMMAND>	DESCRIPTION OF CAR COMMAND

6 Not Used
7 Not Used

CTCV = CTC Velocity (Unit: ft/min)

CPES = CPE Car Position Encoder Status
BITS
0 Position Count Memory Lost
1 Low Battery
2 No Battery Connected
3 Up direction from car encoder
4 Down direction from car encoder
5 Not Used
6 Not Used
7 Position count initialized

CPEDPP = CPE Position Count (Unit: dpp/foot)

MFS = Motor Field Board Status
BITS
0 +24v fail
1 +15v fail
2 -15v fail
3 No AC Input to Board
4 Motor Field Fault
5 Not Used
6 Not Used
7 Not Used

BKS = Brake Board Status
BITS
0 +24v fail (N/A if IGBT Brake Board)
1 +15v fail (N/A if IGBT Brake Board)
2 -15v fail (N/A if IGBT Brake Board)
3 No AC Input to Board (N/A if IGBT Brake Board)
4 Brake Board Fault
5 Not Used
6 Not Used
7 On if IGBT Brake board used

GR = Car number of car that is the master:

201 = car 1
202 = car 2
203 = car 3
204 = car 4
205 = car 5
206 = car 6
207 = car 7
208 = car 8

IF DSD-412 DRIVE:
(If applicable, reference DSD Drive Manual - Book 3, especially fault codes f97 through f905)

DS1 = Drive Status 1
BITS
0 Set to 1 for Synchronization (Comm. Status between drive and controller).
1 Set to 1 for Synchronization

<COMMAND>	DESCRIPTION OF CAR COMMAND

2 Tach Direction Is Up
3 Tach Direction Is Down
4 Tach Overspeed Fault (f97)
5 Tach Loss Fault (f98)
6 Reverse Tach Fault (f99)
7 Serial Comm Fault

DS2 = Drive Status 2
BITS
0 Motor Fault (f400)
1 Excessive Field Current (f401)
2 Contactor Failure (f402)
3 Drive is at CEMF Limit
4 DH Input Fault (f405)
5 E-Stop Fault (f406)
6 A Drive Fault exists
7 Drive is Ready

DS3 = Drive Status 3
BITS
0 A “No Loop Fault” Exists (f900)
1 PCU 1st Fault (f901)
2 Line Synchronization Failure (f903)
3 Low Line Fault (f904)
4 Field Loss Fault (f905)
5 Not Used
6 Not Used
7 Not Used

DRVCM = Drive Command
BITS
0 Set To 1 For Synchronization
1 Set To 1 For Synchronization
2 Run Command (SMC)
3 Fault Reset (AFR)
4 Run Down (SRD)
5 Run UP (SRU)
6 Full Field Command (FEI)
7 Not Used
8 Not Used
9 Not Used
10 Not Used
11 Not Used
12 Not Used
13 Not Used
14 Not Used
15 Not Used

END DSD-412
EX1 = Extended Error Data 1 (programmer defined, call CEC)
EX2 = Extended Error Data 2 (programmer defined, call CEC)
EX3 = Extended Error Data 3 (programmer defined, call CEC)
EX4 = Extended Error Data 4 (programmer defined, call CEC)
EX5 = Extended Error Data 5 (programmer defined, call CEC)

<COMMAND>	DESCRIPTION OF CAR COMMAND

In the event of a support call to CEC, you may be asked to provide the appropriate bit description as listed below.

Convert hexadecimal numbers to binary for bit settings:

In the example shown on page 12-11, the value under CS4 is "**7D**H". The "H" at the end of the value represents that it is a number in Hexidecimal.

Break down the number **7D** into its components of **7** and **D**.

From the conversion chart below, we see that **7** is equivalent to binary **0111** and **D** is equivalent to **1101**. We can then put it together to show that **7D**$H_{exidecimal}$ = **01111101** (binary).

Some tips:
In the binary system;

- the right most digit is called the Least Significant Bit (LSB) or Bit 0.
- the left most digit is called the Most Significant Bit (MSB) or Bit 7.

Conversion Chart

Hex	Binary
0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001
A	1010
B	1011
C	1100
D	1101
E	1110
F	1111

<COMMAND>	DESCRIPTION OF CAR COMMAND
FPR	**F**loor **P**osition **R**eference at present floor.
FPU	**F**loor **P**osition **U**pdate: Shows the position count of the car when reaches each door zone target, indicates the direction of hitting the target, if the position count was updated and shows the position count error at each target. C# 1=> FPU Floor Position Update Count for 2 in: 10 FLOOR Position Count Update Status Error 1 0 00H 0 2 1828 01H + 2 3 2664 01H + 3 4 3499 01H + 3 5 4335 01H + 4 6 5170 01H + 3 7 6006 01H + 4 8 6842 01H + 5 9 7677 01H + 5 10 8513 01H + 6 11 9348 01H + 6 12 10184 01H + 7 13 11019 01H + 7 14 11854 01H + 6 15 12687 81H + 4 Update Status: 00H = no data 01H = Moving Up no update 02H = Moving Down no update 81H = Moving Up position count updated 82H = Moving Down position count updated
FWL	**F**lash **W**rite access **L**og. When data or program is written to flash memory or EEPROM the SPU the bios software will log the event in battery backed ram. This command prints the data log to the terminal screen. **FWLC** clears the write access log.
GET	**GET/**load the parameters from EEPROM: This command restores modified parameters. (Also verifies the checksum and displays any errors.) **Note:** COT, ULR, DLR, EUR, EDR, ESV & TSV parameters must all be valid for <GET> to return an 'OK'.
GRP	Enter the **GR**ou**P** Human Interface (Prompt: Group =>)

<COMMAND>	DESCRIPTION OF CAR COMMAND
IOCn	**I/O C**ontroller that controls I2C input/output boards. An IOC logical device that operates an I2C serial port to read input or output data from an I/O board. This device can be a microcontroller on the CCU board such as the MIC or VIC, a board in the TOC box such as the CTC that controls three I2C ports addressed as the TOC, COP and RCOP or an MPE used to expand car or group I/Os such as the MPC1 or CPC3. Displays the I/O status for each I/O board controlled by an intelligent device. “n” represents the device comm port number as listed table at the bottom of this entry. C# 1=> IOC1 MIC IOC 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 Input: = = = = = = = = Output: = = = = = = = = 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 **Note: MIC is the I2C device controller (IOC).** Port # IIC device controller 0 VIC Velocity Interface Controller 1 MIC Motor room Interface Controller 2 MPC1 Motor Room Port Controller 1 3 MPC2 Motor Room Port Controller 2 4 MPC3 Motor Room Port Controller 3 5 MPC4 Motor Room Port Controller 4 6 MPC5 Motor Room Port Controller 5 7 MPC6 Motor Room Port Controller 6 8 TOC Top of Car 9 COP Car Operating Panel 10 RCOP Rear Car Operating Panel 11 CPC1 Car Port Controller 1 12 CPC2 Car Port Controller 2 13 CPC3 Car Port Controller 3 14 CPC4 Car Port Controller 4 15 CPC5 Car Port Controller 5 16 CPC6 Car Port Controller 6

<COMMAND>	DESCRIPTION OF CAR COMMAND
LWR	**L**oad **W**eigher **R**eading. Displays the load weigher voltage and percent load.
LWU[n]	**L**oad **W**eigher **U**ser interface setup. This command guides the user through the load weigher setup. If the LWU command is entered without a number immediately following, a list of four options are given for the user to select from show below: 1. Proximity sensor setup. 2. Strain gauge sensor setup. 3. Observe sensor setup parameters. 4. Activate offset calibration procedure. If proximity or strain gauge sensor setup is selected, the user is prompted for additional information to start the setup procedure. Once setup is activated, the following "LWU" commands are entered to validate the load condition of the car. LWU1 - Command is entered when the sensor voltage is setup between 1.0 and 1.4 volts and the car is empty at the bottom landing. LWU2 - Command is entered when the car has full load at the bottom floor. LWU3 - Command is entered when the car has full load at the top floor. LWU4 - Command is entered when the car is empty at the top floor. **Note:** *Can only be accessed via the Black terminal.*
MEN	CCU BIOS **MEN**u: Use to upload the software into FLASH memory without Wizard Program.
PAR	**PAR**ameters: This command offers a speedy way to Enter or Review all of the above adjustment parameters. Typing <**PAR>** <ENTER ↵> displays all parameters with a slight delay.
PARA	The '**A**' (Alter) suffix permits changing or reviewing all the **PAR**ameters. Each command will be displayed with the current value followed by a question mark. You can now change its value or hit <ENTER ↵> to skip to the next one.
POS	True Car **POS**ition, e.g. 1 through 15 (including 13)
RCC	**R**eset all **C**ar **C**alls
RCM	**R**eset **C**o**M**munication status log. Resets failure counts for all COMM devices (See <**CMC**> command)

<COMMAND>	DESCRIPTION OF CAR COMMAND
RDE	**R**eset **D**evice **E**rrors: Resets communication errors for the following boards: RDED Drive RDEV VIC device RDEB Brake Board or MIC device RDEM Motor Field Board RDEC CPE Board RDEE CTC (ETS) Board
RFL	**R**eset the **F**au**L**t Hold memory
RMA	**R**equest **MA**ster. When entered at the terminal of a car that is not the group, this car will request to become the master car, i.e. the group. The existing master car will relinquish group control to this car.
RSL	**R**equest **SL**ave. When entered at the terminal of the car that is currently the group controller, the car will relinquish group control to the next available car with the lowest car number. If no car is available, this car will time out and become the group again.
SCCn	**S**et **C**ar **C**all at floor (**n**)
SDCn	**S**et **D**own **C**all at floor (**n**)
STD	**ST**art **D**own: The <**STU>** and <**STD>** commands can be used while in automatic operation to provide a one (1) floor run up or down respectively.
STM	**S**e**T** Up **M**ode: This command allows car to run on inspection mode without the Digital Position Pulse while setting up the car,. This operating mode bypasses the normal safety check and prevents car from shutting down. This operating mode can also be initiated from front panel push buttons in the circuit breaker panel. If car loses power or if inspection switch is moved to automatic mode, elevator will automatically be removed from **Setup** mode.
STU	**ST**art **U**p (similar to the Attendant Buttons): The <**STU>** and <**STD>** commands can be used while in automatic operation to provide a one (1) floor run up or down respectively.
SUCn	**S**et **U**p **C**all at floor (**n**)
TIM	Computer up **TIM**e since the last power-up (day-hour:min:sec)
TIME	Set real **TIME** calendar clock. Time is entered as hour:min:sec followed by 'a' for am or 'p' for pm. To exit this command without changing the time, hit <ENTER ↵> before typing new time value. **Eg**: Current time: 11:12:32p Enter new time: 10:22:30 a
UCS	**U**p **C**all pilot **S**tatus (See CCS for explanations.)
ULBn	Car Velocity when the **U**p **L**imit(n) first **B**reak open: This command is useful when adjusting TSV. It permits "freezing" the car velocity at the instant each terminal limit switches open.

<COMMAND>	DESCRIPTION OF CAR COMMAND
VEL	Actual Car **VEL**ocity in FPM
VER	Displays software **VER**sions for all communications boards. See <**CMC**> command for description of devices: **DEVICE VERSION** (SYS= system; LOC= local; DRV= drive; HC= hall call) **SYS** Ver **LOC** Ver **CAR** Ver **DRV** Ver **HC** Ver 201 010 9 008 8 006 2 44 006 202 010 11 008 18 005 211 006 212 003 12 007 19 006
VIC	**V**elocity **I**nterface **C**ontroller Status: ***Velocity Interface Controller Status*** **Slowdown Limit Fault* **Inspection Speed Fault* **INS Velocity: 110 fpm* **Gate and Lock Speed Fault* **GL Velocity: 150 fpm (0.76 m/s)* *Moving Dn* *Moving Up* **Emergency Stop Fault* *VIC Velocity: 500 fpm (2.54 m/s)* *VIC position count: 1453* **Note:** Car must be traveling at velocity greater than 52 fpm (0.26 m/s) for VFC board to display velocity greater than 0. * Displayed only if corresponding fault condition occurs.
VLT	**V**elocity **L**imit **T**est. Sets a test variable to disable the SPU from limiting the velocity when a slowdown limit is hit. This flag is set for a single run.
WRT	**Wr**i**T**e parameters to EEPROM: This command stores changes in non-volatile memory. **Note:** It is not necessary to write <WRT> altered parameters immediately to EEPROM. You can test operation, continue to operate elevator, and store to EEPROM when satisfied. In case of removal of power to CPU, or if terminal is disconnected, parameters are restored to former value (no change occurs).
ZON	**ZON**e floor: Displays floor to which car is zoning.
ZPS	**Z**one **P**ilot **S**tatus (Refer to <**CCS>** command for explanation)