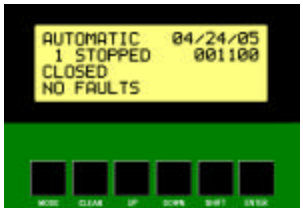
VHC-102 HYDRAULIC ELEVATOR CONTROLLER

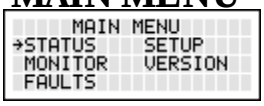
Quick-reference 2005-10-12

THE KEYPAD



MODE Return to **MAIN MENU**.
CLEAR Return to previous menu level.
UP Navigate menus, adjust values.
DOWN Navigate menus, adjust values.
SHIFT Navigate clock & date, toggle ºF & ºC.

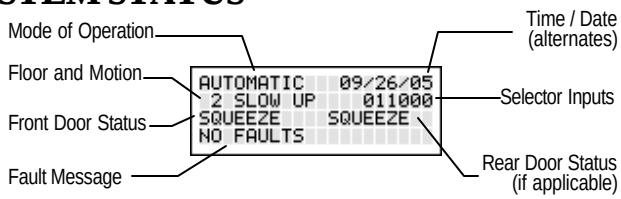
MAIN MENU



The **MAIN MENU** allows access to different categories of information and functionality.

STATUS Provides comprehensive system information at-a-glance.
MONITOR Displays the state of each input and output grouped into various lists, as well as board voltage and temperature, and timer values.
FAULTS Display and maintenance of the fault log and reset counter.
SETUP Contains sub-menus for field-programmable aspects.
VERSION Displays the version of the resident software and factory

SYSTEM STATUS



The **Selector Inputs** portion of the **STATUS** screen are interpreted as follows:

Input	HSU	LU	DZF	DZR	LD	HSD
Value	0	1	1	0	0	0
Status	Off	Active	Active	Off	Off	Off

STATUS LEDs

Status LEDs, found on the main relay board, differ slightly between Passenger elevators…... and…... Freight elevators.

Illuminated LEDs indicate the following:

PWR Power: Reliable at the main relay board.
EMG Emergency Safety Devices: Safety circuit is complete to the door locks.
HCK Hall Lock Check: Hall lock circuit is complete.
GCK Car Gate Check: Car gate circuit is complete.
DC1 Door Circuit: Door and gate circuits are complete.
DCC Door Closed Condition: Door, gate, & retiring cam (where applicable) circuits are complete.
UTL* Up Terminal Limit: Switch is not activated.
USL* Up Speed Limit: Switch is not activated. Car not at top landing.
DTL* Down Terminal Limit: Switch is not activated.
DSL* Down Speed Limit: Switch is not activated. Car not at bottom landing.
HTB Heartbeat: (Flashes) Green indicates reliable communication with the main CPU board; red means communication is not reliable.

**LEDs extinguished while doors are not closed.*

SYSTEM SETUP

Navigating the menus refers to using the keypad to move the arrow (→) to a particular menu item on a particular menu screen.

From the **MAIN MENU**, navigate to **SETUP** using the **UP**/ **DOWN** keys. Press **ENTER** to view the **SETUP** menu. Navigate to a category and press **ENTER**.

Some categories will require additional menu navigation before presenting adjustable values.

Navigate to the item requiring adjustment and press **ENTER**. The current value will flash until it is locked by pressing **ENTER** again. While it is flashing, the value may be adjusted by pressing (and sometimes holding) the **UP** and **DOWN** keys.

***CLOCK** and **DATE** menus do not use the **ENTER** key to select or lock values. Use the **SHIFT** key to move from hour to minute to second, and month to day to year. Displayed values take effect when **MODE** is pressed. Pressing **CLEAR** exits the menu without saving changes.*

OPERATING MODES

Some modes of operation are user-activated, some are fault-activated, and others are activated by evaluating combinations of inputs. Getting the system back to Automatic (normal) mode from any other mode will require different procedures, based on the current operating mode.

Normal mode *(No action required)*
AUTOMATIC Elevator is ready for use.

User-activated modes *(User-deactivated also, except RESYNCH)*
INSPECTION Switch-activated Inspection mode.
ACCESS Switch-activated Access mode.
INDEP SERV Switch-activated Independent-Service.
DISABLED Switch-activated Car-Disabled mode.
EMG PWR TST Switch-activated Emergency Power Test.
FIREMAN I* Switch-activated Phase I Fire Service.
FIREMAN II Switch-activated Phase II Fire Service.
RESYNCH* Menu-activated Telescopic Resynchronization. (*Auto-reset*).

Optional auto-detect modes *(Auto-reset upon completion of mode's objective)*
VISCOSITY Setpoint- or detector-activated oil-warming mode.
HOT OIL Setpoint-activated oil-cooling mode.

Temporary modes *(No action required)*
INITIAL Brief startup condition.
RESET Assessing status. May attempt motion for establishing position.

Auto-detect modes *(Initiating condition must be removed)*
FIREMAN I* Detector-activated Phase I Fire Service.
SHUNT TRIP Shut-down imminent due to machine room temperature.
EMG PWR ON Emergency Power detected.
AUX LOWRING Detector-activated Emergency Auxiliary-Powered Lowering.
BAT LOWRING Detector-activated Battery-Powered Lowering.
LOW OIL Detector-activated Low-Oil mode.

Fault-activated modes *(User must power system off, then on)*
DEAD MODE One or more possible incapacitating conditions.
PUMP FAIL Failed to confirm timely upward motion.
DN DIR TIME Failed to confirm timely downward motion.
CONT FAIL Starter contact failure.

**More than one way to initiate mode.*

VERTITRON MIDWEST, INC.
Manufacturing, Engineering & Sales
19336 607 Ave., Mankato, MN 56001
Phone: (507) 245-3399, Fax: (507) 245-3799
www.vertitron.com

TOLL-FREE: (888) 864-3683

FAULT LOG

The most recent fault condition since the last system reset is displayed in the **Fault Message** of the **STATUS** screen. *Some faults cause a system reset and therefore won't be displayed on the* **STATUS** *screen.* Navigating from the **MAIN MENU** to **FAULTS**, then **FAULT LOG**, will display each fault with the time and date that it occurred. The fault log allows scrolling through the last 25 faults.

This table shows faults as they would appear in the fault log (left side), followed by a brief description of the fault, and if applicable, the equation of the logic condition that generates the fault. These equations include the following logic symbols: + OR, *x* AND, / NOT, = EQUAL, <> NOT EQUAL. Any terms and symbols within parentheses should be evaluated before evaluating any terms and symbols outside of the parentheses.

AUX POWER LOWERING .. Elevators were switched to an emergency power source and this car was not selected to be active. EPO x /EPS.
BATTERY LOWERING..... Access mode or Inspection mode was attempted while battery lowering was active. HLP x /AUT x (INA + HSB + CSB).
BOTH DOOR ZONES..... Front and rear door zones were detected at the same time on an elevator with no selective openings. DZF x DZR x /Selective Openings.
BOTH LEVELERS..... Level-up and level-down were detected at the same time. LU x LD.
BOTH LOCKS OPEN..... Car and hoistway lock-closure could not be confirmed after previous confirmation. /(HCK + GCK) x /(CL x DCC).
BOTH TERMINALS ..... Up-terminal-limit and down-terminal-limit were detected at the same time. UTL x DTL.
BROKEN LD ..... Level-down not detected during reset. /LD x (DZF + DZR) for too long.
CALL I/O COMM LOSS..... Unreliable or no communication from call board.
CAM DIDN'T PICK..... Door lock not confirmed in time. (Did not see DCC input after RC output was activated). RC x /DCC for too long.
CAM ON TOO LONG..... Retiring cam output was active too long. RC for too long.
CAR BP SWITCH FAIL..... Main relay board's car-door-bypass switch malfunctioned. CSO x CSB.
CAR OVERLOADED ..... Load-weighing limit triggered. LW4.
CB RELAY FAIL..... CB (car-door-bypass) relay status conflicted with main relay board's car-door-bypass switch status. CSO = CBK.
CLOSE FAIL..... Door-close process took too long. /CL for too long.
CLOSE LIMIT FAILURE..... Hall & gate contacts indicated closed status while door-close-limit went undetected. HCK x GCK x /CL.
CLOSE TIME OUT..... Gate- and door-close process took too long. /GCL + /DCL for too long.
COMM FAIL PEELLE ..... Unreliable or no communication from Peelle board.
COMM FAIL TINY I/O..... Unreliable or no communication from expansion (tiny) I/O board.
COMMUNICATION 1 FAIL.. Unreliable or no communication from main relay board.
COMMUNICATION 2 FAIL.. Main relay board reports unreliable or no communication from main CPU board.
D AND P DIDN'T PICK..... Starter's run and potential statuses both indicated failure to meet demanded start. POT* x R* x /(RON* + PON*). **May be appended with 1 or 2.*
D AND POT STUCK ON ..... Starter's run and potential statuses both indicated failure to meet demanded stop. RON* x PON* x /(R* + POT*). **May be appended with 1 or 2.*
DCC JUMPERED..... Door-closed-circuit indicated closed status while door-open-limit indicated open status. OL x DCC x /(LCK x /(HSK + HSAK) x (LU <> LD)).
DELTA DIDN'T PICK..... Starter's run status indicated failure to meet demanded start. R* x /RON*. **May be appended with 1 or 2.*
DELTA STUCK ON ..... Starter's run status indicated failure to meet demanded stop. RON* x /R*. **May be appended with 1 or 2.*
DISPATCHED FIRE SRVC.. A fire condition was detected by the dispatcher, independent of slave detection. FLO + FDA + FDL + FDH + FDM.
DOOR OPEN ..... Gate- and door-closed-limits are not detected during inspection or access modes. /DC1 x /AUT x (INA + HSB + CSB).
DOORS OPEN ..... Gate- and door-closed-limits are not detected during reset. /DC1.
DSL AND USL ON ..... Up-speed-limit and down-speed-limit were both detected at the same time. USL x DSL x DCC x (DZF + DZR).
DZF RELAY FAIL..... Door-zone-front relay status conflicted with expected status. DZF <> DZFK.
DZR RELAY FAIL..... Door-zone-rear relay status conflicted with expected status. DZR <> DZRK.
FAIL IN CG CIRCUIT..... Car gate status conflicted with expected status. CGK <> GCK.
FB RELAYS FAIL..... FB (fire-bypass) relay statuses conflicted with demanded/expected statuses. (FB <> FBA) + (/(Phase I fire service) x (FB <> FBK) + (FBA <> FBK)).
FLOOR OUT OF ORDER.... Floor encoding conflicted with either the up- or down-speed-limit-detected status, or the door-zone-detected floor sequence.
FLOOR TOO HIGH ..... Floor encoding or the door-zone-detected floor sequence produced a value lower than the minimum floor value.
FLOOR TOO LOW ..... Floor encoding or the door-zone-detected floor sequence produced a value higher than the maximum floor value.
GATE LOCK JUMPERED.... Gate contacts indicated closed status while door-open-limit indicated open status. OL x GCK x DCC x /(LCK x /(HSK + HSAK) x (LU <> LD)).
GATE LOCK OPEN ..... Car lock-closure could not be confirmed in time, or after previous confirmation. /GCK x /(CL x DCC).
HALL & GATE JUMPERED . Hall & gate contacts indicated closed status while door-open-limit indicated open status. OL x HCK x GCK x DCC x /(LCK x /(HSK + HSAK) x (LU <> LD)).
HALL BP SWITCH FAIL..... Main relay board's hoistway-door-bypass switch malfunctioned. HSO x HSB.
HALL LOCK JUMPERED .... Hall contacts indicated closed status while door-open-limit indicated open status. OL x HCK x DCC x /(LCK x /(HSK + HSAK) x (LU <> LD)).
HALL LOCK OPEN..... Hoistway lock-closure could not be confirmed in time, or after previous confirmation. /HCK x /(CL x DCC).
HB RELAY FAIL..... HB (hoistway-door-bypass) relay status conflicted with main relay board's hoistway-door-bypass switch status. (HSO = HBK) + (HSB <> HBK).
HIT TERMINAL..... Up- or down-terminal-limit detected. DCC x (UTL + DTL).
HS RELAY FAIL..... High-speed relay status conflicted with demanded status. (HS <> HSK) + (HS <> HSA).
HSA RELAY FAIL..... High-speed auxiliary relay status conflicted with demanded status. HSA<> HSAK.
INA RELAY FAIL..... Inspection access relay status conflicted with expected status. INA <> INAK.
INU AND IND BOTH ON ..... Up and down inspection travel was requested at the same time. INU x IND x INA.
INVALID FLR ENCODING... Floor encoding produced a value greater than the maximum floor value.
JUMPERED INTERLOCK.... Door closed circuit was, but should not have been, completed without energizing the retiring cam. DC1 x DCC x (DZF + DZR) x /(LU + LD) x /RC.
LOCKS AND LEVELING..... Summary of door-closed-circuit conflicted with sub circuits. DCC, locks & leveling are not reliable. /DCC x HCK x (GCK + CBK).
LOST DOOR ZONE ..... Could no longer detect the door zone in which the car had stopped. /(DZF + DZR).
LOW PRESSURE..... Low-pressure was detected while detection was enabled. NPS.
LU AND LD REVERSED ..... Level-up detected in door zone before level-down while lowering car during reset. DCC x /DTL x LU x /LD x (DZF + DZR).
MR INSP DISABLED ..... Hoistway - or car-bypass switch was detected while machine room inspection was underway. IMR x (HSB + CSB).
NO FAULTS..... No faults since last reset.
NO LEVEL DOWN SIGNAL. Level-down was not detected when lowering into a door-zone. LU x (DZF + DZR).
NO LEVEL UP SIGNAL..... Level-up was not detected when rising into a door-zone. LD x (DZF + DZR).
NO SELECTOR SIGNALS... No selector signals were detected while lowering to the down-terminal-limit during reset. DCC x DTL.
OL AND CL ON ..... Open-limit and close-limit conditions were detected at the same time. OL x CL.
OPEN FAIL..... Door-open process took too long. /OL for too long.
OPEN TERMINAL..... DTL (down terminal limit) was detected without DSL (down speed limit) , or UTL without USL. DCC x (DZF + DZR) x ((DTL x /DSL) + (UTL x /USL)).
OPEN TIME OUT..... Peelle door/gate-open process took too long.
PEELLE 24V PWR LOSS.... Peelle board reported insufficient voltage on its 24VDC input. /24V.
PICK CAM RETRY..... DCC was not detected in time after activating the retiring cam. RC x DC1 x /DCC x /EMG for too long.
POT DIDN'T PICK..... Starter's potential status indicated failure to meet demanded start. POT* x /PON*. **May be appended with 1 or 2.*
POT STUCK ON ..... Starter's potential status indicated failure to meet demanded stop. PON* x /POT*. **May be appended with 1 or 2.*
POWER LOSS ..... Main relay board reported that 120VAC line voltage is insufficient. /PWR.
RESYNCH FAILED ..... Down-terminal-limit detected while disabled for telescopic resynchronization operation. TR x DTL x DCC.
SQUEEZE TIME..... Door-close output was energized for too long. C for too long.
STALLED DOOR ..... CLOSE FAIL with additional diagnosis of HALL LOCK OPEN or GATE LOCK OPEN or both. /CL x /(HCK + GCK) for too long.
START AND RUN ON..... Starter's start and run were demanded/detected at the same time. (S* + SON*) x (R* + RON*). **May be appended with 1 or 2.*
STOP SWITCH PULLED ..... In-car emergency stop switch is activated. /EMG.
STUCK LU ..... Level-up still detected after rising above the door-zone during reset. LU x /(DZF + DZR).
TA AND BA RELAYS OFF... Access travel was requested, but neither top nor bottom access was detected. (INU + IND) x /(TAK + BAK).
TA AND BA RELAYS ON .... Top and bottom access were requested at the same time. INA x TAK x BAK.
TR RELAY FAIL..... Telescopic resynchronization relay status conflicted with demanded status. TR <> TRK.
W AND P DIDN'T PICK..... Starter's start and potential statuses both indicated failure to meet demanded start. POT* x S* x /(SON* + PON*). **May be appended with 1 or 2.*
WYE DIDN'T PICK..... Starter's start status indicated failure to meet demanded start. S* x /SON*. **May be appended with 1 or 2.*
WYE STUCK ON ..... Starter's start status indicated failure to meet demanded stop. SON* x /S*. **May be appended with 1 or 2.*