Model CL17 Chlorine Analyzer Quick Reference Guide

Keyboard Diagnostic Codes

CODE	FUNCTION
0	Checks recorder output, recorder operation and connection. Outputs a zero indication to recorder.
1	Checks recorder output, recorder operation and connection. Outputs a full scale indication to recorder.
2	Checks recorder output, recorder operation and connection. Outputs a half-scale indication to recorder.
3	Automatically calibrates current recorder output. Must select 4-20 mA CAL recorder output switch on interconnect circuit board.
4	Automatically calibrates voltage recorder output for the selected output range
5	Moves recorder full-scale output in a positive direction to calibrate recorder. Press any key when reading is correct.
6	Moves recorder full-scale output in a negative direction to calibrate recorder. Press any key when reading is correct.
7	Moves recorder minimum output in a positive direction to calibrate recorder. Press any key when reading is correct.
8	Moves recorder minimum output in a negative direction to calibrate recorder. Press any key when reading is correct.
9	Initiates a 30-minute alarm circuit lockout
10	Recalls appropriate system warning code.
11	Recalls appropriate system alarm code.
12	Enters number 1 concentration average setting. Display gives chlorine concentration of the measurement. Default selection.
13	Selects number 2 concentration average setting. Display will be the average of the last two chlorine measurements.
14	Selects number 3 concentration average setting. Display will be the average of the last three chlorine measurements.
15	Recalls concentration average status (1, 2 or 3).
16	Places analyzer in the cold start condition, setting all programmed parameters to their default values.
17	Recalls status of frequency setting, 50 or 60 Hz
18	Toggles frequency between 50 and 60 Hz. Used to match analyzer to frequency of available facility power.
19	Removes any correction values entered for gain or zero. Default calibration values are restored.
20	Removes any correction values entered for offset. Default value of 0 is restored.
21	Recalls value of offset automatically entered during reset
22	Sets baud rate for serial interface setup to 300
23	Sets baud rate for serial interface setup to 600
24	Sets baud rate for serial interface setup to 1200. This is the default setting.
25	Sets baud rate for serial interface setup to 2400
26	Sets baud rate for serial interface setup to 4800
27	Sets baud rate for serial interface setup to 9600
28	Recalls baud rate selected. (Zero not shown).
29	Selects odd parity for serial interface setup
30	Selects even parity for serial interface setup
31	Disables parity. This is the default condition.
32	Recalls parity status; even = 2, odd = 1, disabled = 0
33	Selects stop bits of one for serial interface setup

Keyboard Diagnostic Codes (continued)

CODE	FUNCTION
34	Selects stop bits of two for serial interface setup. This is the default selection.
35	Recalls stop-bit status (1 or 2)
36	Sets word length to 7 bits for serial interface setup
37	Sets word length to 8 bits for serial interface setup. This is the default selection.
38	Recalls word length selected
39	Prints instrument setup
40	Selects 2.5-minute print interval for printer setup
41	Selects 10-minute print interval for printer setup
42	Selects 30-minute print interval for printer setup
43	Selects 60-minute print interval for printer setup
44	Recalls print interval (2, 5, 10, 30, or 60)
45	Recalls status of Print All Alarms (disabled = 0, enabled = 1)
46	Toggles Print All Alarms status between disabled and enabled. Disabled is the default condition.
47	Sets analyzer to clean sample cell position
48	Recalls ALARM 1 high/low status (low = 0, high = 1). High is the default setting.
49	Toggles ALARM 1 high/low status
50	Recalls ALARM 2 high/low status (low = 0, high = 1). High is the default setting.
51	Toggles ALARM 2 high/low status
52*	Resets system warning errors, system warning relay, and system warning LED without performing a system reset.
53*	During a System Alarm, the recorder output goes to Zero.
54*	During a System Alarm, the recorder output stays at Last Value (default setting).
55*	During a System Alarm, the recorder output goes to Full Scale.
56*	Recalls System Alarm Status for recorder output as follows: (0) = output goes to Last Value (1) = output goes to Zero (2) = output goes to Full Scale
57*	Recalls enable/disable power failure alarm status.
58*	Toggles between enable/disable power failure alarm. Default is disabled.
59*	Allows continuous flow of sample through the colorimeter to allow for flow rate setting. A “P” will be displayed when the pump is in the sample position. To stop, press any key or wait for diagnostic time out to occur (30 min.).
612	Unlocks keyboard for 5 minutes. Automatically returns to locked status if programmed.
623	Locks keyboard, preventing keyboard use except for monitoring
634	Unlocks keyboard
900	Test D/A - Checks D/A converter and analog recorder circuit. Sets individual bits of D/A on and measures output with A/D. Results of test are displayed and printed. Ideal results are 512, 256, 128, 64, 32, 16, 8, 4, 2, 1.
901	A/D = 0 - sets D/A for mid -scale recorder output then measures output with A/D. Measured voltage displayed.
902	A/D = full scale - sets D/A for full-scale recorder output then measures output with A/D. Measured voltage displayed.
903	A/D = ½ full scale - sets D/A for mid-scale recorder output then measures output with A/D. Measured voltage displayed.
904	Print stack on—enables printing of internal measurements
905	Print stack off—disables printing of internal measurements

* Features not available with software version 1.7 or earlier.

Keyboard Diagnostic Codes (continued)

CODE	FUNCTION
906	Displays and prints sample position measurements
907	Displays and prints reference position measurements
908	Displays and prints ground measurement
909	Displays and prints + VA measurement
910	Displays and prints - VA measurement
911	Displays and prints + 5VD measurement
912	Displays and prints reference voltage measurement
913	Displays and prints recorder voltage measurement
914	Displays and prints recorder current measurement
915	Displays and prints run time measurement
916	LED's on/off—momentarily turns on all LEDs and then turns them off
917	Display count—steps 7-segment displays through all 16 possible values
918	Alarm relay test—momentarily activates all alarm relays
923	Initiates priming sequence of 39 consecutive pump cycles
924	Recalls D/A counts for a full-scale recorder output
925	Recalls D/A counts for a zero recorder output

Keyboard Functions

LED INDICATOR	DESCRIPTION
Display	3-digit display shows chlorine conc. (mg/L). Decimal point positioned automatically. Also used as a programming display.
CHLORINE MG/L	Lamp is on when display is reading chlorine and flashes when alarm functions are disabled
ALARM 1	Indicates ALARM 1 concentration set point has been exceeded
ALARM 2	Indicates ALARM 2 concentration set point has been exceeded
SYSTEM ALARM	Indicates a malfunction has halted operation. Requires operator intervention for correction and restart.
SYSTEM WARNING	Indicates analyzer has detected a minor malfunction requiring investigation. Analyzer continues to operate.
KEY	**DESCRIPTION**
ALARM 1	Enters and recalls ALARM 1 concentration set point
DIAG	Performs programming and self-test operations
ALARM 2	Enters and recalls ALARM 2 concentration set point
STD	Enters the value of a known standard or sample being supplied to the analyzer for calibration
REC MAX	Enters and recalls full-scale value of the recorder output in mg/L Cl_2
ZERO	Checks and sets an analyzer zero reference point
SYS RESET	Clears system alarms and system warnings and restarts analyzer
REC MIN	Enters and recalls minimum value of recorder output in mg/L Cl_2
CLEAR	Clears numerical entry error and/or returns display to sample concentration reading
Numeric Keys	Enters numeric portion of commands

Error Codes

CODE	CAUSE OF MALFUNCTION
SYSTEM ALARMS	
E00	RAM error - memory failure (contact qualified service representative)
E01	ROM error - memory failure (contact qualified service representative)
E02	Motor failure - instrument does not detect motor running. Possible causes: motor defective or disconnected; optical switch defective or disconnected; defective interconnect or microprocessor board.
E03	Lamp out - no photocell current is measured. Possible causes: Photocell defective or disconnected; dirty sample cell; lamp burned out or disconnected; defective interconnect or microprocessor board; blown fuse.
E04	A/D malfunction (contact qualified service representative)
SYSTEM WARNINGS	
E10	Software restart (no action required) (for recurring E10 contact qualified service representative)
E11	Display error - indicates error in calculating display value (divide by 0, overflow, log of negative number, etc.) This is self-correcting.
E12	Cold start - indicates cold start has occurred since last system reset.
E13	Power Failure - indicates power was lost.
E14	Marginal gain - indicates gain correction made during calibration was excessive. Recheck calibration.
E15	Marginal zero - indicates zero correction made during calibration was excessive. Recheck calibration.
E16	Marginal offset - indicates high offset measurement was made during system reset. Light leak is primary cause (for recurring E16 contact qualified service representative).
E17	Low signal - indicates low photocell current. Possible causes: sample cell needs cleaning; lamp has dimmed.
E18	Color unstable - indicates abnormal color development. Probable cause is chlorine concentration too high for range of analyzer. Sample should undergo laboratory analysis.
E19	Voltage out of limit--indicates power supply problems (for recurring E19 contact a qualified service representative).
E20*	Invalid key or invalid key entry while the keyboard is locked.

* Feature not available with software version 1.7 or earlier.

Refer to the Instrument Manual for the location of the Hach office nearest you

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