

## **ISCO MODEL 4210 SOFTWARE HISTORY**

### **REVISION 2.26**

**Software Release Date: 11/06/03**

**Corrections:** None

**Enhancements:**

The software change will now accept a 1 foot dead band. The new style Airmar transducer must be used with the 1 foot dead band. A resistor on the ultrasonic board must be changed to allow the newer Airmar transducer to work below a 2 foot dead band.

Note: The Old style Airmar sensor will continue to operate with the 2 foot deadband.

### **REVISION 2.25**

**Software Release Date: 12/03/03**

**Corrections:**

- 1- Fixed problem when entering a data point description that would effect the modem dial out number.
- 2- Fixed garbled data string output.
- 3- Relaxed the printer timing for paper advance to work with newer printer mechanisms.

**Enhancements:**

- 1- The temperature limits were changed from 0 to -25 degrees C.
- 2- The YSI temperature is now selectable for sample enable.

### **REVISION 2.24**

**Software Release Date: 03/24/03**

**Corrections:**

- 1- Fixed problem with 10 buffer calibration point that may have caused a less then perfect pH sensor to fail calibration and report an "Out of Range" error prematurely.
- 2- Fixed conductivity calibration for YSI Sondes.

**Enhancements:**

- 1- Added description entry fields for the equation and data point flow conversions.
- 2- Added the XL60 Trapezoidal flume.
- 3- Added ultrasonic transducer temperature in the diagnostics display.

### **REVISION 2.23**

**Software Release Date: 03/21/01**

**Enhancements:**

- 1- Made changes to the parameter calibration code so that the calibration values do not

appear in the reports, chart or partitions.

- 2- The Mechanical totalizer is always clicking 100 times slower than the display totalizer 100 to 1 ratio. If display clicks every 10 Gallons the mechanical will click every 1000 Gallons. (Totalizer 00010 X 100=1000 gallons)

#### **REVISION 2.22**

**Software Release Date: 08/14/00**

Corrections:

Fixed problem When the plotter ran out of paper, the unit would stop taking parameter measurements until new paper was installed.

Enhancements: Support for wireless communication.

#### **REVISION 2.20**

**Software Release Date: 3/02/00**

Corrections:

- 1- Fixed problem with negative Level SPA – Report # samples in reports.
- 2- Fixed problem with unstable pH readings. We now do not allow a pH reading to be taken when the plotter or the Ultrasonic has run. The A/D code now does selective filtering to eliminate non-repeatable readings.
- 3- Fixed problem with large partitions rolled over prematurely. Fixed problem by using a larger integer that would not roll over at 32768.
- 4- Fixed problem communicating with YSI Sondes with version 2.10 or greater software. Rewrote communication software

Enhancements:

- 1- Added code to allow negative levels to be stored in partitions. User needs to enter a SPA number to enable.
- 2- Added reporting of the number of samples taken during a report period.

#### **REVISION 2.16**

**Software Release Date: 7/7/98**

Corrections:

- 1- Fixed problem with year 2000 bug.
- 2- Fixed problem with dropped communication packets.
- 3- Fixed problem with Flowlink not being able to set level across the entire possible range.
- 4- Fixed problem with Rate of Change not working correctly
- 5- Fixed problem with not being able to use a site ID less than 100

Enhancements: None

**REVISION 2.14**

**Software Release Date: 4/15/97**

Corrections:

- 1- Fixed problem with incorrect bottle counts on the 2900 and 3700 when multiple samples are programmed for a single bottle

Enhancements: None

**REVISION 2.12**

**Software Release Date: 3/11/97**

Corrections:

- 1- Fixed problem that would display the Flowlink option when the user returns to that menu.
- 2- Fixed problem where the back light does not come on after software resets
- 3- Fixed problem with erratic bottle numbers flow pacing 2700's and 2900's in multiplex mode sampler per bottle.
- 4- Fixed problem with data points. When using data points the flow at Max head is less than  $\frac{1}{2}$  max. flow. The user needs to ensure that the flow at Max. head is greater than  $\frac{1}{2}$  Max flow.

Enhancements: None

**REVISION 2.10****Software Release Date: 10/30/96**

## Corrections:

- 1- Fixed a problem that could cause a sample not to be reported by the flowmeter as a result of a interrupt window.
- 2- Fixed a problem with the DMA channel that could cause the unit to lock up if the plotter is running, reports are on, and the unit is powered by a battery through the sampler port.
- 3- Fixed a problem that could cause the unit to lock up if the unit is printing multiple items, the print buffer is full, and the printer jams.
- 4- Fixed problem that did not allow the report time interval to change for hours and minutes in German.
- 5- Fixed a problem that would cause the report interval to be incorrect if the first print time was set in the future at a date that is greater then the report interval.
- 6- Fixed problem that would cause the YSI communication port to permanently shut off if a YSI communication check was performed after a communication failure.
- 7- Fixed problem that could potentially cause gaps in partition data.
- 8- Fixed problem that could cause the unit to be reset if the ultrasonic gain was maxed out and power was cycled to the ultrasonic board.
- 9- Fixed problem that could cause the plotter to continuously print dots when the unit is connected to a computer.
- 10- Fixed problem with YSI DO calibration menu.
- 11- Fixed problem with modem hanging up during an interrogation. Added features were preventing the unit from respond quick enough to Flowlink.
- 12- Fixed problem with 4-20mA output toggling between 4 and 20mA when the level was at or above Max Level.
- 13- Fixed a problem that would cause the unit to reset when in Spanish.
- 14- Fixed problem with the set time text being displayed incorrectly.

Enhancements: Supports internal 4-20mA outputs.

**REVISION 2.06****Software Release Date: 4/25/96**

Corrections: The 2.05 Version Did Not Build Correctly. The Revision Was Changed To 2.06 And The Software Was Rebuilt. Very Few Units Were Shipped With 2.05. If A Customer Is Using 2.05, Immediately Update Them To 2.06. For A List Of Software Fixes From The 2.04 To 2.06 See Info For 2.05.

Enhancements: None.

**REVISION 2.05****Software Release Date: 4/22/96**

Corrections:

- 1- Fixed problem with unit resetting and losing all stored data when a ring signal occurs on the internal modem.
- 2- Fixed problem with partitions dropping a single data reading if a reading measurement is in progress and one or more of the following occurs:
  - A) A partition is created.
  - B) A partition is deleted.
  - C) A slate partition is restarted.
- 3- Fixed problem with not being able to calibrate pH when programming in the French language. This could possibly cause a unit reset or strange side effects.
- 4- On B0 (YSI) hardware revision, the Linear-Technology UART transceiver is never powered down. This will make a slight difference in power consumption.
- 5- The CPU was never being placed in a low drive mode to minimize RF emissions.

Enhancements: None.

**REVISION 2.04****Software Release Date: 3/22/96**

Corrections:

- 1- Fixed problem with unit storing 255 errors in non YSI600 partitions if the unit is setup to store YSI600 partition information at one minute intervals and the 600 is failing to communicate with the 4200.
- 2- Fixed a problem with the 4200 reporting a communication error when calibrating if the 600 has a revision greater than 1.03. The 4200 is now capable of detecting both the ASCII string received from the sonde indicating warnings and errors during calibration change on the YSI600 with revision 1.04 and as well as the older format.
- 3- Fixed a problem with the plotter time being one hour off from the report time.
- 4- Fixed a problem with the unit resetting if power was lost at just the right time.
- 5- Fixed the problem with the 4210 algorithm that resulted in level spikes. It was modified to identify the proper echo more dependably.
- 6- Fixed a bug that caused gain calculation problems.

Enhancements: None.

**REVISION 2.03****Software Release Date: 1/23/96**

## Corrections:

- 1- Fixed problem with the user seeing intermittent errant readings as a result of the A/D used to measure level, pH, DO, temperature and battery voltage could failing.
- 2- Fixed problem with the ultrasonic board in the 4210 not powering off. The current draw is excessive causing battery power loss. This problem was introduced in the last release (2.01).
- 3- Fixed problem with YSI 600 parameters appearing in the logic equation setup and printer plotline setup when the YSI 600 is not selected.
- 4- Fixed problem that caused errors in all partitions if the user has the YSI 600 data partition interval at 1 minute and the 600 fails or is disconnected.

## Enhancements:

- 1- Added French translation for YSI 600 text strings and Flowlink 3.20 parameter labels.
- 2- Added German translation for YSI 600 text strings and Flowlink 3.20 parameter labels.

## **REVISION 2.01**

**Software Release Date: 12/12/95**

### Corrections:

- 1- Modified real time clock configuration to make it more reliable in high humid environments. The new clock configuration is the same as that used in the 6700 platform.
- 2- The equation structure information was moved to extended memory to create more stack space.

### Enhancements:

- 1- Added RS232 communication support for YSI 600.
- 2- The number of active partitions were increased from 6 to 12.
- 3- Equations can be setup using any measured YSI ports.
- 4- The reload algorithm was enhanced and will allow a site file to turn on ports when an active partition for that port is present.
- 5- The plotter prints a title for all lines on the next available line after the scale.
- 6- The plotter can be setup to print any of the YSI 600 ports.
- 7- Print program prints the model, unit ID, hardware revision and software revision on the first two lines.
- 8- The labels for all ports are controlled by the meter and not by Flowlink. This allows the meter to have for example, a "pH" port and a "YSI pH" port at the same time.
- 9- Assuming the user has 3.20 Flowlink or greater, the 4200 can define a port to flowlink. This includes units, label and partition storage information.
- 10- Reports were enhanced to print average, maximum and minimum values for all YSI parameters. This information can be turned off and not reported from the setup menu.
- 11- Similar to other measured parameters, the YSI 600 can be set to measure continuously (every 5 seconds) or at one, two or five minutes intervals.

Enhancements: None

**REVISION 1.29****Software Release Date: 12/15/95**

Corrections:

- 1- Fixed the problem that would result in the report generator calculating incorrect averages over a interval, if the interval was greater than one day.
- 2- Fixed the problem with the logic equations used for enabling and pacing a attached sampler.
- 3- Fixed a potential problem which could prevent data collection intervals of 2 or 5 minute from working all the time.
- 4- Fixed the problem that would prevent the user from entering a dial out phone number after setting up the storm condition.
- 5- Fixed a problem that would cause the unit to send a burst of flow pulses when trigger paced.
- 6- Fixed a problem that would cause the unit to fail sampler port test.

Enhancements: None.

**REVISION 1.28****Software Release Date: 11/28/95**

Corrections: Fixed problems that could cause the unit to lock up if it is operated with the transducer disconnected.

Enhancements: None.

**REVISION 1.26****Software Release Date: 11/9/95**

Corrections: Fixed problem with report interval averages being calculated incorrectly if interval is longer then 24 hours.

Enhancements: None.

**REVISION 1.25****Software Release Date: 10/20/95**

Corrections: Fixed problem that would prevent a user from entering a dial out phone number after setting up the storm condition.

Enhancements: None.

**REVISION 1.24****Software Release Date: 8/1/95**

Corrections:

- 1- Fixed problem with the meter's power-up routine that could cause data locations that store the sampler enable equation, based on rain, to be overwritten.
- 2- Fixed problem with modem not reliably hanging up when using noisy phone lines.

Enhancements: None.

**REVISION 1.23****Software Release Date: 6/22/95**

Corrections: Fixed problem with the meter temporarily locking up when the sensor is disconnected and the unit attempts to print. It would be locked until the sensor was reconnected. This problem only appears in software rev. 1.22.

Enhancements: None.

**REVISION 1.22****Software Release Date: 8/1/95**

Corrections:

- 1- Fixed problem with report interval totalizer not being correct.
- 2- Fixed problem with average on report sometimes being less than minimum.
- 3- Fixed problem with unit giving the appearance of not taking readings as a result of the reading interval being something other than continuous. Now if connected with Flowlink the interval will be continuous. Also, the unit will read continuous for 2 minutes after a keypad depression.
- 4- Fixed problem with pacing by volume condition.
- 5- Fixed problem with sampler enable latch resetting if the user stepped through the program, printed a program, or interrogated the unit. It will only reset now if told to do so.
- 6- Fixed problem with data time stamp being incorrect after a slate partition has been reset.
- 7- Fixed problem with the unit sending out multiple flow pulses if sampler pacing is set to a lower value.
- 8- Fixed problem with unit incorrectly weighing relevant echo information and causing spikes with the level reading.

#### Enhancements:

- 1- The following modifications were made to the totalizers:
  - A) Each totalizer is stored as a 9-digit integer value.
  - B) Each totalizer is formatted to update between 1 and 9.99 times a second when flow equals flow at max head (5 ft/sec times the maximum area for area/velocity).
  - C) The totalizers will rollover between 3 and 30 years if flow is constant and equal to the flow at maximum head.
  - D) To display the totalizer, the software inserts a decimal, leading zeros, and trailing zeros where appropriate and writes the number to the display.
  - E) The totalizers range without exponential notation is from .000000001 to 9999999990000. The decimal location is fixed and will only change if the totalizer units or primary device changes.
  - F) Each increment of the totalizer is a finite volume. This volume depends upon the totalizer units selected and the maximum flow calculated for the primary device used.
  - G) If the user makes changes to the totalizer units or the primary device, the meter will automatically adjust the totalizer format.
  - H) If the appropriate totalizer is not updated within 5 minutes from the last update, the increment to the totalizer will be calculated as if only 5 minutes passed. In other words, if the user removes power for 3 minutes, the totalizer will be updated as if flow was constant for those 3 minutes. The same would be true if the user unplugged his unit for any amount of time less than 5 minutes. If the time is in excess of 5 minutes, the totalizer will be updated assuming the flow for the last 5 minutes was constant at the current rate and all flow prior to the last 5 minutes was zero.
- 2- The mechanical totalizer will now always increment 100 times slower than the 9-digit LCD totalizer.
- 3- Multiple languages are now available; English, German, and French.

#### REVISION 1.17

**Software Release Date: 3/21/94**

#### Corrections:

- 1- Fixed a problem in the report generator interval totalizer was not cleared upon the setup of the report. This would cause a greater than usual interval volume for the first report.
- 2- Added code from the 4110 to correct the echo processing code. The Error could cause erratic levels.
- 3- Fixed problem with triggering by net\_volume where it would not trigger when sample pacing by volume was enabled.
- 4- Fixed a problem with triggered slate partitions which would cause the new data to be recorded, after the slate had been reset, in the current data block with an old time stamp. It now begins storing data in the next block and fills the remainder of the current block with 0xFFs.
- 5- Fixed problem with sampler pacing by volume that would cause multiple sampler initiation pulses to be sent when pacing volume was changed to a smaller value than was previously set.

Enhancements: Added code to do character translation to the display using the selected language translating table.

#### **REVISION 1.14**

**Software Release Date: 12/29/94**

Corrections:

- 1- Fixed problem where multiple readings could be stored in a partition when a rain or sample event occurs.
- 2- The temperature hysteresis now does units conversion properly.
- 3- pH calibration has been limited to only accept reasonable ranges for the 4.0 and 7.0 buffer solutions, preventing inadvertent calibration.
- 4- Fixed problem where entry of user equation was rejected.
- 5- Fixed problem that could result in incorrect full scale value being printed on the plotter.
- 6- Fixed problem in the report code that caused monthly reports to not print in December or January.
- 7- Fixed problem with spikes in the level reading occurring when the paper take-up runs.
- 8- Fixed problem with the unit locking up when a sampler pacing of 0.0 volume was sent by Flowlink. The 4200 will now report a DISABLED sampler pacing setting correctly to Flowlink.

Enhancements: Added a diagnostic dump for the ultrasonic measurement system. In the "STATUS", "SIGNAL STRENGTH" display, pressing the "PRINT REPORT" key will start the dump of diagnostic information to the printer. The user should send this information to Isco for evaluation.

#### **REVISION 1.05**

**Software Release Date: 8/5/94**

Corrections:

- 1- The mechanical totalizer will no longer update when flow rate is "NOT MEASURED".
- 2- Fixed problem with data retrieval from partitions.
- 3- Fixed problem with unit crashing if data points were updated using Flowlink and the program printed or unit interrogated.
- 4- Fixed sampler port test.
- 5- Max head for a large trapezoidal flume was set at 6".

Enhancements:

- 1- The "MECHANICAL TOTALIZER" option no longer appears as part of the "OPTIONAL OUTPUTS" menu under "SETUP". It now defaults to "ON" so that it cannot be turned off by accident.
- 2- Changed upper limit of the power of the user entered equation to 5.
- 3- Changed the upper limit of the manning trapezoidal to 20ft.

