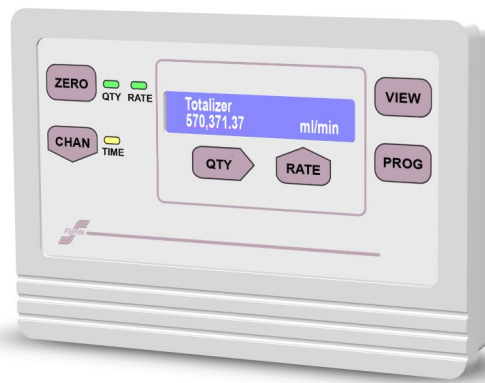




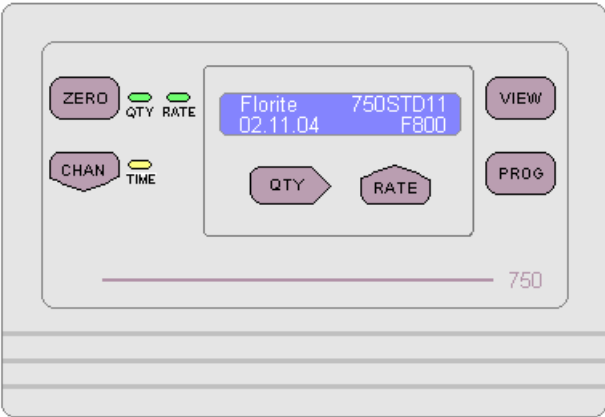
Instrument Training Guide

700 Series



700 Series Instrument

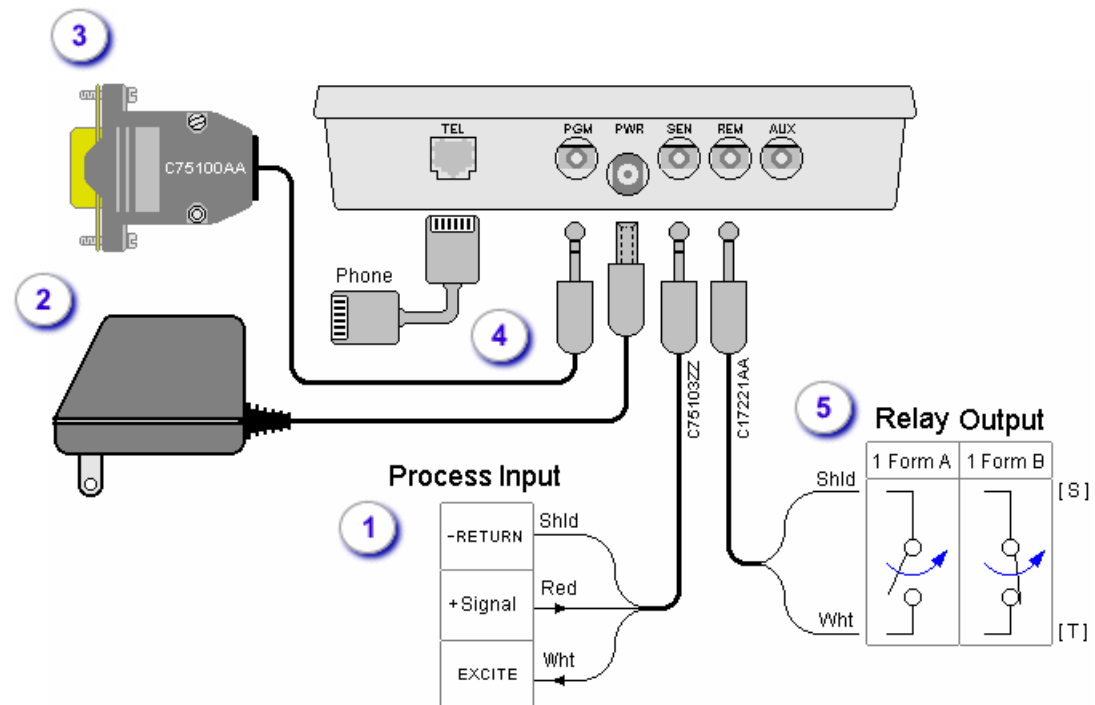
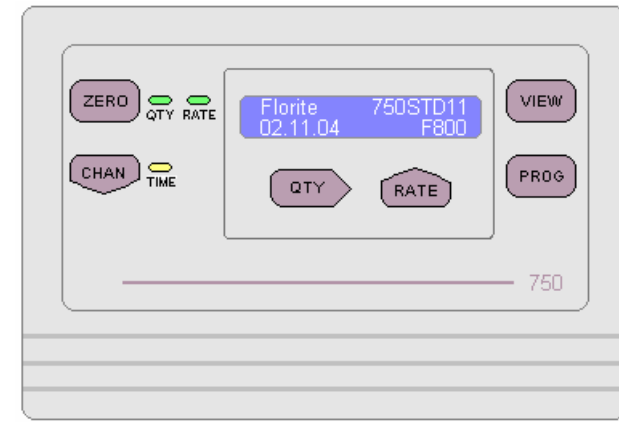
Wiring & Programming Guide



Installation Instruction

- 1 Connect input or output into the desired instrument port as shown.
- 2 Insert power plug into PWR jack as shown.
- 3 Plug the D9 part of a (C75100AA) RS-232 cable into a computer serial port. Insert the plug on the other end of the cable into the 700 Series PGM jack as shown.
- 4 When your unit is installed with the WAN modem option then plug either end of a (C75106AG) cable (RJ-11) into the corresponding jack and the other end of the cable into a standard telephone jack as shown.
- 5 When relay output option is installed then plug the (C17221AA) cable into the REM jack and connect the wires shown to the controlled equipment.

700 Series Quick Sensor Connection

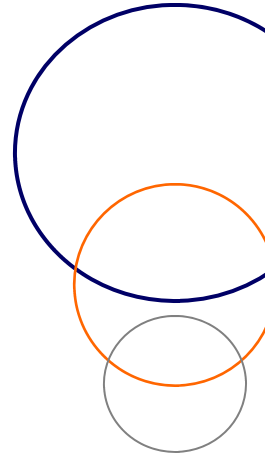
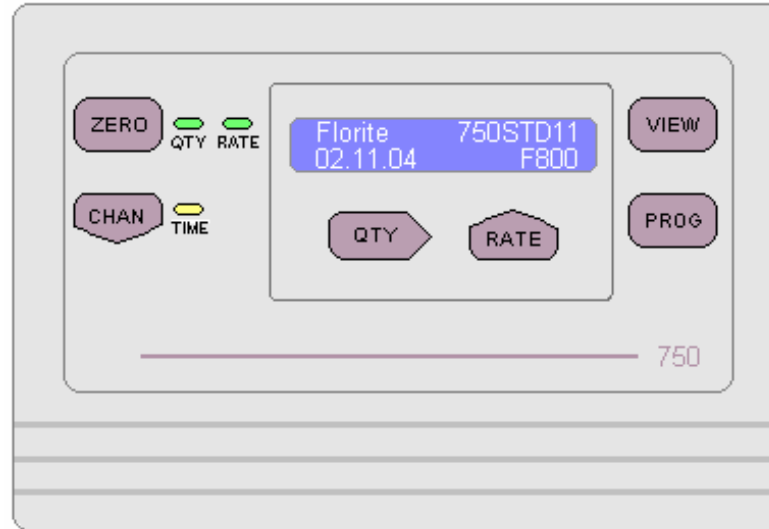


Pulse Output Sensors

Press the PROG button until reaching the Meter Constant screen followed by setting the number to correspond to the sensors number of pulses per quantity. After setting the sensors Meter Constant again press the PROG button to save that value.

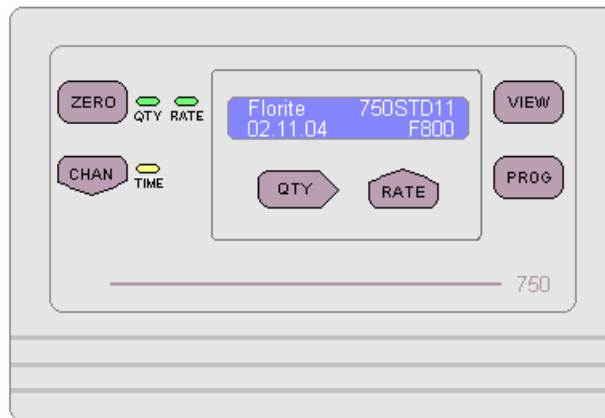
Press the VIEW key to return to the main screen.

To program the units of measure press the PROG button until reaching the Measure Units screen. Refer to page 18 in the 700 Series operator manual for more detailed instruction.



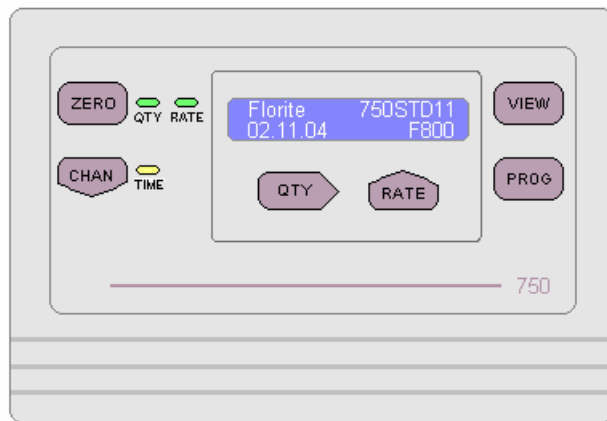
700 Series Instrumentation

- 1) Keypad & Functions
- 2) Lamp Indicators
- 3) Navigation & Structure
- 4) Programming Navigation
- 5) Viewing Navigation
- 6) Optional Configuration

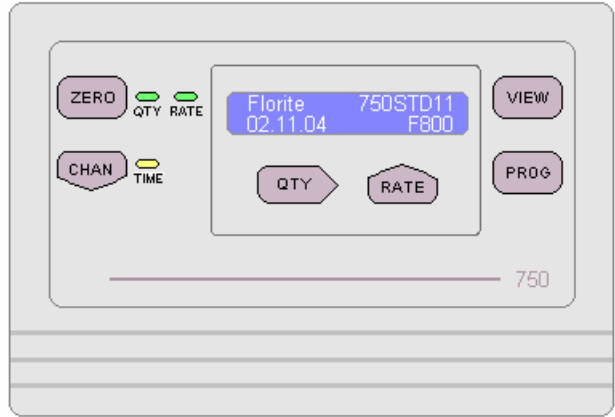


700 Series

Instrument Keypad & Functions



700 Series Key Functions



Basic Key Functions

View State

- VIEW** Enter view state
- PROG** Enter program state
- QTY** View Quantity 1 value
- RATE** View process rate
- ZERO** Zero value being viewed
- CHAN** Zero Quantity 2 value

Program State

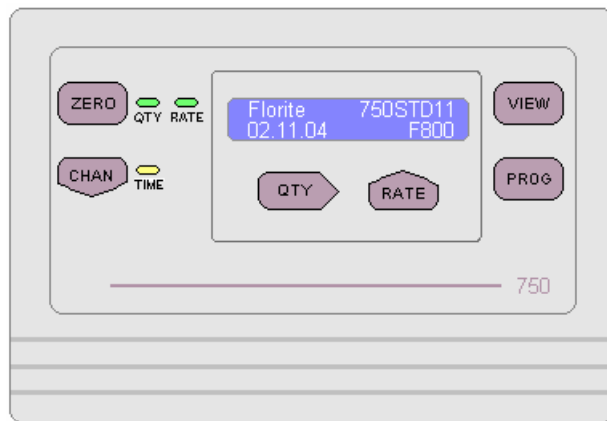
- Exit program state
- View and program values
- Scroll to next right character
- Increase blinking value
- Decrease blinking value

Macro Key Functions

- ZERO** + **CHAN** Zero all measured values
- VIEW** + **ZERO** Set factory defaults
- CHAN** + **RATE** Recall field unit values
- CHAN** + **PROG** Zero field unit measured values
- CHAN** + **VIEW** Zero field unit Quantity 2
- QTY** + **RATE** Wide area network log-on dial-out

700 Series

Instrument Lamp Indicators



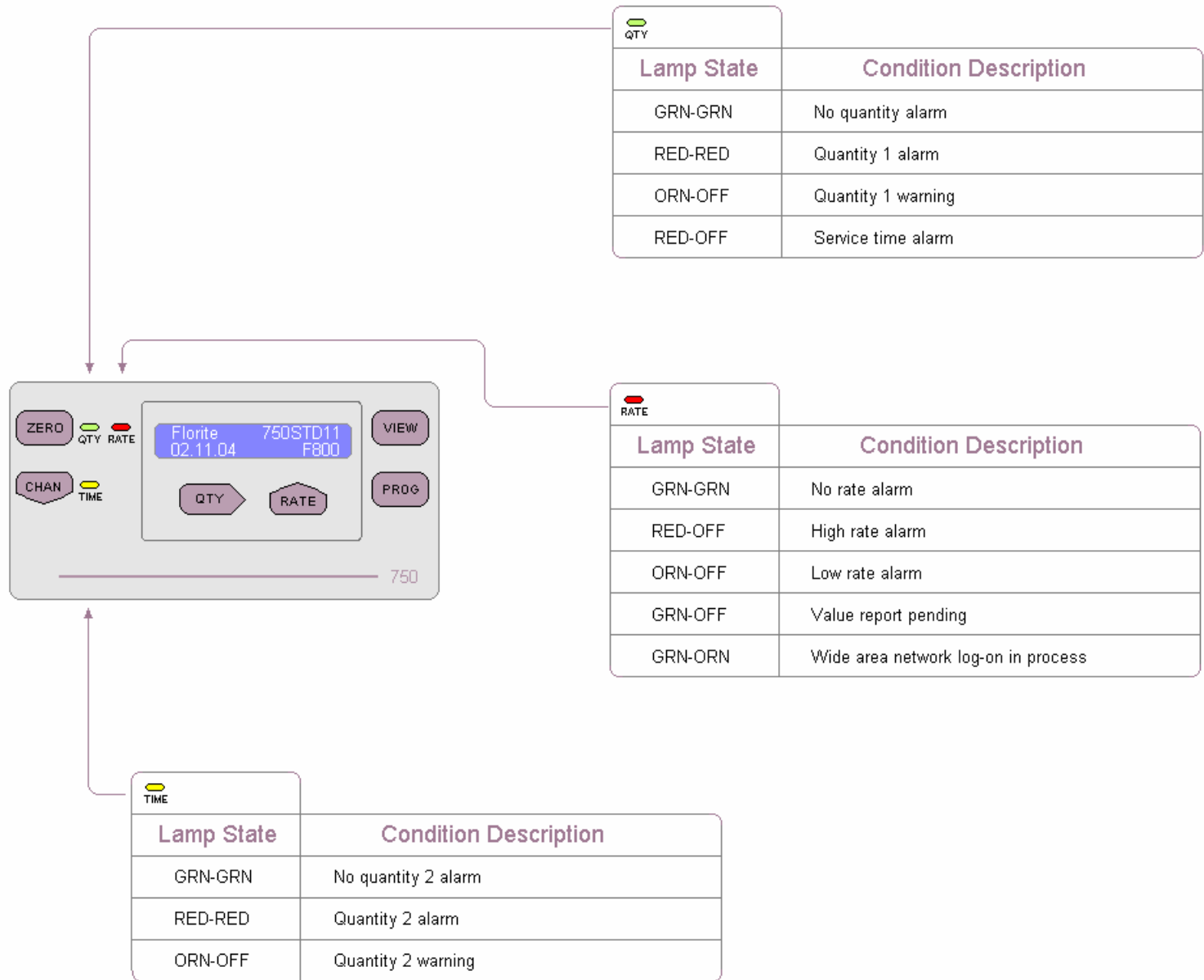
700 Series Configuration

Prog Value	Input	Output				
Quantity 1 Lim						
Quantity 1 Set						
Quantity 2 Lim						
Quantity 2 Set						
Time Limit						
Low Rate Lim						
High Rate Lim						
Meter Constant						
Rate Time Base						
Rate Alarm Type						
Measure Units						
Monitor						
Relay Operation						

System				
Prog Value		Prog Option		
Network Addr	00000	Report	ON	OFF
		Secure	ON	OFF
Date-Time	01Nov05	Error	ON	OFF
Report Start	01Jan06	Version	Max	Std
Report Freq	000 / min			
Pri Phone	0000000000000000			
Sec Phone	0000000000000000			
Answer Rings	000			

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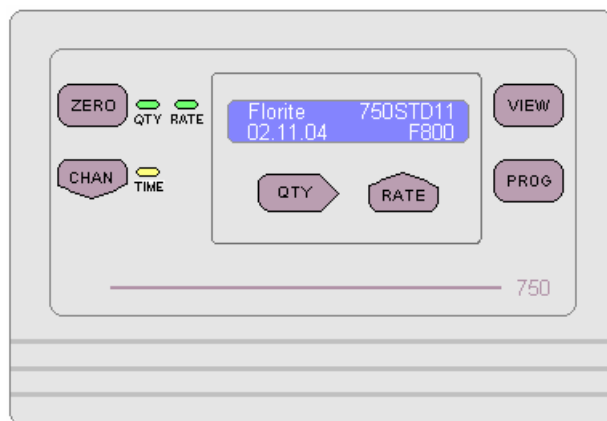
700 Series Lamp Indicators



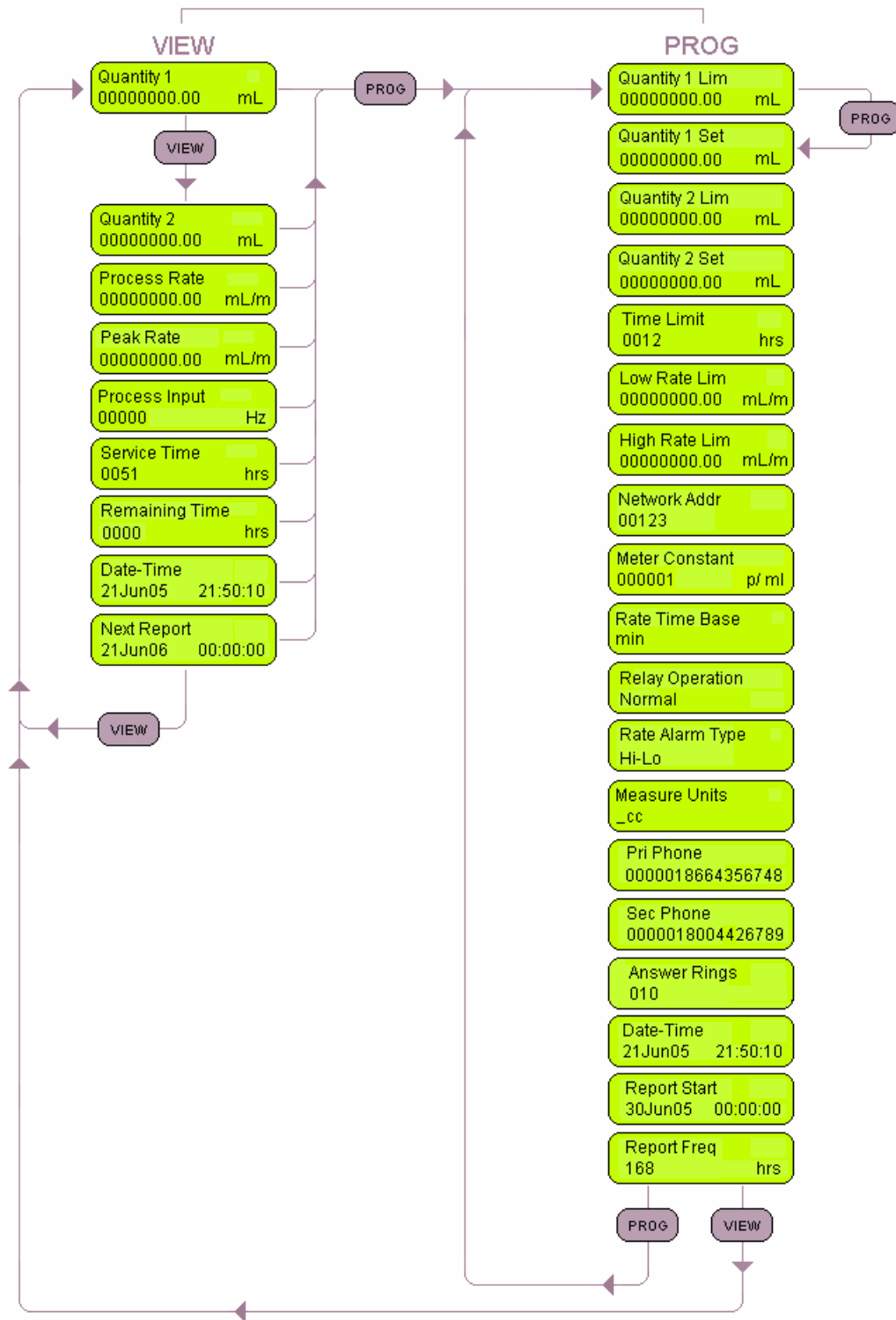
NOTE: LAMP STATES SHOWN AS ALTERNATING COLORS WHERE ORN-OFF MEANS CHANGING BETWEEN ORANGE THEN NOT ILLUMINATED

700 Series

Instrument Navigation & Structure

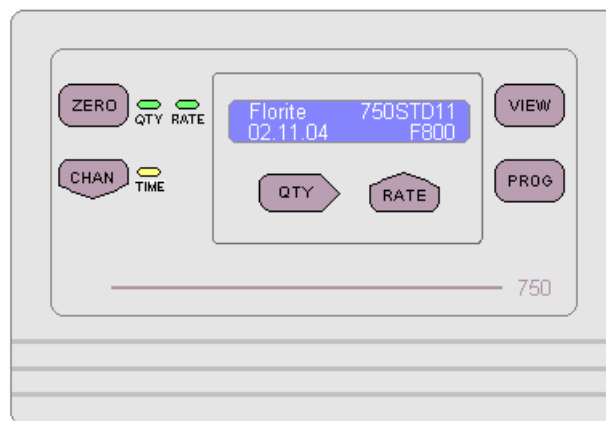


700 Series Navigate Input - Output - System

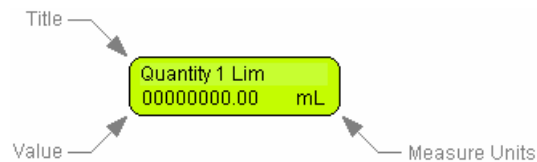


700 Series

Instrument Programming Navigation



Quantity 1 Lim - Input Program



Function

This screen is used to program the quantity amount above which a quantity 1 alarm condition is declared.

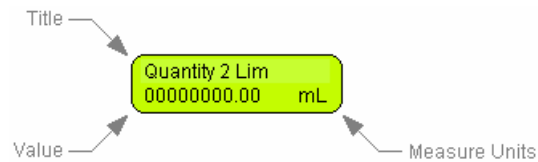
Navigation

Access this screen by using the using the PROG key until reaching this screen. Note the first numeric field blinks indicating readiness for programming.

Select

- Field - select value to change by pressing the QTY (right) key.
- Value - change value by pressing either the CHAN (down) or RATE (up) key.
- Program - save new selection by pressing the PROG key.

Quantity 2 Lim - Input Program



Function

This screen is used to program the quantity amount above which a quantity 2 alarm condition is declared.

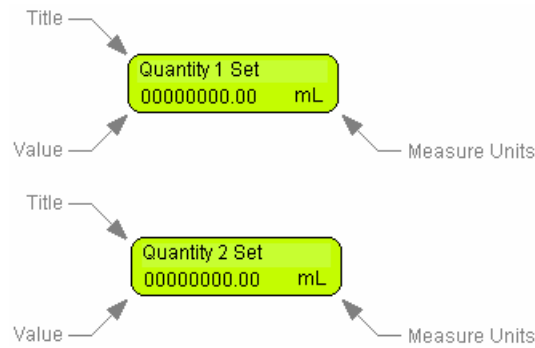
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first numeric field blinks indicating readiness for programming.

Select

- Field - select value to change by pressing the QTY (right) key.
- Value - change value by pressing either the CHAN (down) or RATE (up) key.
- Program - save new selection by pressing the PROG key.

Quantity 1 and Quantity 2 Set - Input Program



Function

These screens are used to program the associated quantity with a pre-set amount.

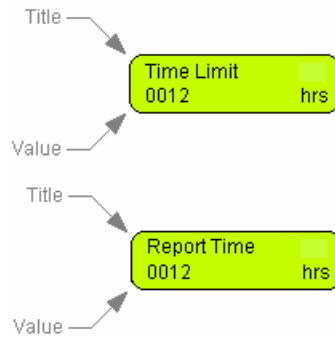
Navigation

Access this screen by using the using the PROG key until reaching this screen. Note the first numeric field blinks indicating readiness for programming.

Select

- Field - select value to change by pressing the QTY (right) key.
- Value - change value by pressing either the CHAN (down) or RATE (up) key.
- Program - save new selection by pressing the PROG key.

Time Limit and Report Time - Input Program



Function

This screen has two uses as determined by the Report configuration programmed state.

When Report is Off - this screen becomes Time Limit which is used to program a time amount above which a service time alarm condition is declared.

When Report is On - this screen becomes Report Time allowing periodic reports of measurements to be sent without the need for the real time clock option to be installed.

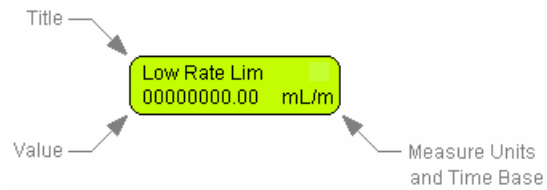
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first numeric field blinks indicating readiness for programming.

Select

- Field - select value to change by pressing the QTY (right) key.
- Value - change value by pressing either the CHAN (down) or RATE (up) key.
- Program - save new selection by pressing the PROG key.

Low Rate Lim



Function

This screen is used to program the rate value below which an alarm is detected.

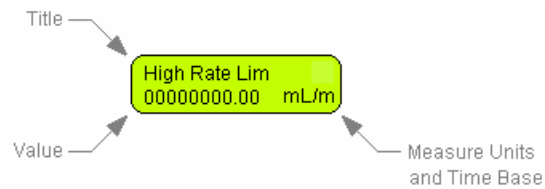
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first numeric field blinks indicating readiness for programming.

Select

- Field - select value to change by pressing QTY (right) key.
- Value - change value by pressing either the CHAN (down) or RATE (up) key.
- Program - save new selection by pressing the PROG key.

Hi Rate Lim - Input Program



Function

This screen is used to program the rate value above which an alarm is detected.

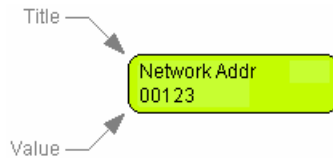
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first numeric field blinks indicating readiness for programming.

Select

- Field - select value to change by pressing the QTY (right) key.
- Value - change value by pressing either the CHAN (down) or RATE (up) key.
- Program - save new selection by pressing the PROG key.

Network Address - System Program



Function

This screen is used to program the base address for serial communication programming and information reporting.

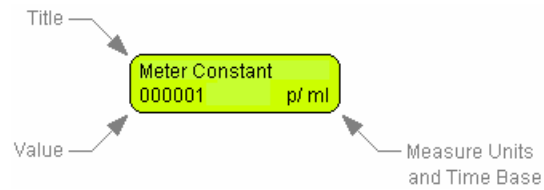
Navigation

Access this screen by pressing the PROG key until reaching the desired screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new value by pressing the PROG key.

Meter Constant - Input Program



Function

This screen is used to program the factor by which measured pulses are converted to an engineering value in the measure units indicated.

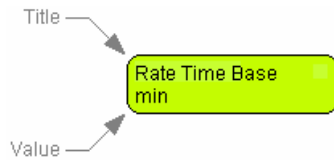
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Value - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new units character string by pressing the PROG key.

Time Base - Input Program



Function

This screen is used to program the time base used for input signal rate and quantity measurements in units of seconds, minutes or hours.

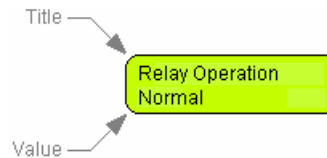
Navigation

Access this screen by using the PROG key until reaching this screen. Note the value field blinks indicating readiness for programming.

Select

- Press either CHAN (down) or RATE (up) to select the desired time base.
- Press PROG key to save the new selection.

Relay Operation - Output Program



Function

This screen is used to program the desired relay contact state conditions. Normal operation without activation criterion causes Form-A relay contacts to be OPEN (un-energized) - and Form-B contacts to be CLOSED (un-energized). Reverse operation causes opposite contact states such as without activation criterion - Form-A contacts CLOSED or Form-B contacts OPEN.

This selection provides a means to pre-determine critical default power loss contact state conditions.

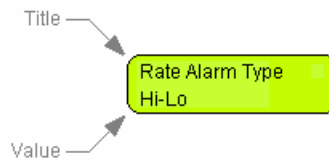
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first character field blinks indicating readiness for programming.

Select

- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new units character string by pressing the PROG key.

Rate Alarm Type - Input Program



Function

This screen is used to program the source of a rate alarm as either from immediate High or Low rate conditions, or long-term average value state. The default setting is Hi-Lo.

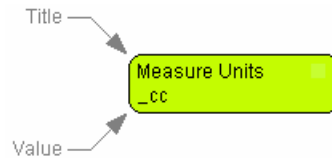
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first character field blinks indicating readiness for programming.

Select

- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new units character string by pressing the PROG key.

Measure Units - Input Program



Function

This screen is used to program a three character field defining units of measure representing the physical engineering measurement.

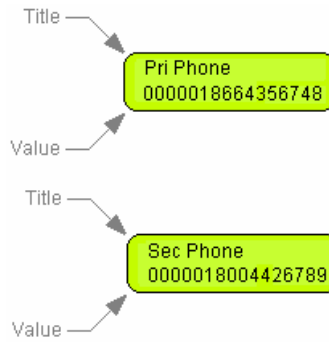
Navigation

Access this screen by using the PROG key until reaching this screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new units character string by pressing the PROG key.

Alarm and Report Phone Numbers - System Program



Function

These screens are used to program the phone numbers to remotely access computers and data collection equipment to report either one or more alarm conditions, or send scheduled measured information.

Should an alarm condition occur without the primary number programmed - the alarm will be sent to the secondary number to insure alarm information is reported. When scheduled reports are enabled - alarm information will be sent along with the value report which will be delayed by the programmed Report Frequency.

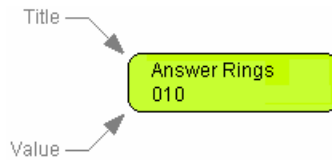
Navigation

Access these screens by pressing the PROG key until reaching the desired screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new value by pressing the PROG key.

Answer Rings - System Program



Function

This screen is used to program the number of public switched telephone system rings after which the ringing line is answered by the instrument when the modem option is installed. This function is often used for maintenance, diagnostic, and general remote access purposes. The line will not be answered if Answer Rings is set to zero

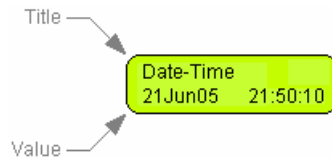
Navigation

Access this screen by pressing the PROG key until reaching this screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new value by pressing the PROG key.

Date-Time - System Program



Function

This screen is used to program the real time clock date and time. It is comprised of a date field and a 24 hour clock time field. This screen will not exist in the program list unless the real time option is installed.

Navigation

Access this screen by pressing the PROG key until reaching the desired screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing QTY (right) key.
- Character - change by pressing RATE (up) key.
- Program - save new value by pressing the PROG key.

Report Start - System Program



Function

This screen is used to program the date and time that scheduled value reports are to then be sent. It is comprised of a date field and a 24 hour clock time field. This screen will not exist in the program list unless the real time option is installed.

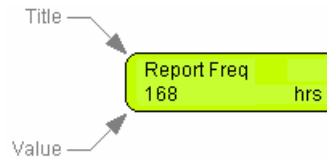
Navigation

Access this screen by pressing the PROG key until reaching this screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Character - change by pressing RATE (up) key.
- Program - save new value by pressing the PROG key.

Reporting Frequency - System Program



Function

This screen is used to program the rate at which measurement information is sent. It is comprised of a three character numeric field, and a time field of seconds, minutes, hours, days or months. This screen will not exist in the program list unless the real time option is installed.

Navigation

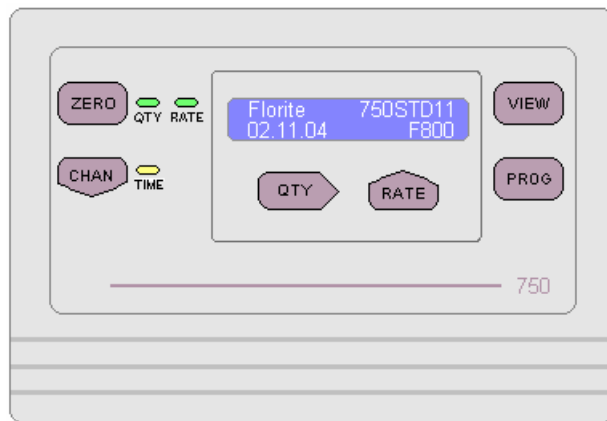
Access this screen by pressing the PROG key until reaching this desired screen. Note the first character field blinks indicating readiness for programming.

Select

- Field - by pressing the QTY (right) key.
- Character - change by pressing either the CHAN (down) or RATE (up) key.
- Program - save new value by pressing the PROG key.

700 Series

Instrument Viewing Navigation



Quantity 1 - Input View



Function

This screen is used to independently view and zero the accumulated port quantity 1 when the port time base is set for seconds, minutes, or hours.

Navigation

Access this screen by using the VIEW key until reaching this screen.

Zero

Press the ZERO key while viewing.

Quantity 2 - Input View



Function

This screen is used to independently view and zero the accumulated port quantity 2 when the port time base is set for seconds, minutes, or hours.

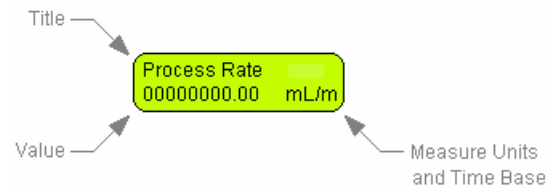
Navigation

Access this screen by using the VIEW key until reaching this screen.

Zero

Press the ZERO key while viewing.

Rate - Input View



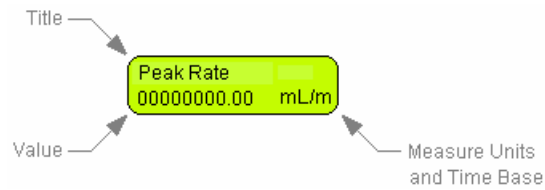
Function

This screen is used to view the present process rate when the port time base is set for seconds, minutes, hours.

Navigation

Access this screen by using the VIEW key until reaching this screen.

Peak Rate - Input View



Function

This screen is used to view the highest detected process rate since last cleared to zero when the port time base is set for seconds, minutes, or hours.

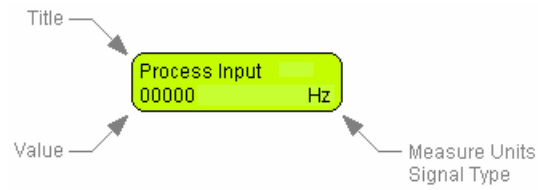
Navigation

Access this screen by using the VIEW key until reaching this screen.

Zero

The highest detected peak value is cleared to zero by pressing the ZERO key while viewing.

Process Input - Input View



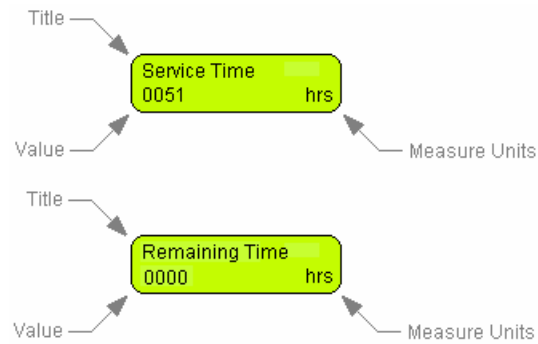
Function

This screen is used to view input signal measurement value for install diagnostic purposes. It indicates the value pulse frequency presently being input into the port.

Navigation

Access this screen by using the VIEW key until reaching this screen.

Service and Remaining Time - Input View



Function

The Service Time screen is used to view the present accumulated service time. This value is often used for such purposes as maintenance scheduling as a Hobbs Hour-Meter would be used.

The Remaining Time screen counts down the amount of time remaining prior to detecting a Time alarm if a Time Limit alarm value is programmed.

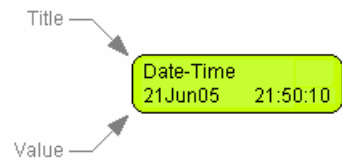
Navigation

Access this screen by using the VIEW key until reaching these screens.

Zero

Press the ZERO key while viewing the Service Time screen to cause the accumulated hours to be cleared to zero.

Date-Time - System View



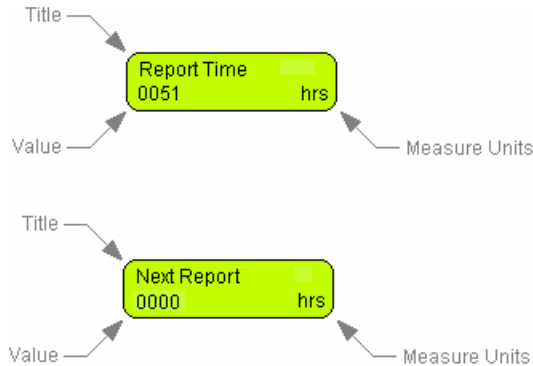
Function

This screen is used to view the real time clocks date and time when the real time clock option is installed. The clock field is in 24 hour format.

Navigation

Access this screen by pressing the VIEW key until reaching this screen.

Report Time and Next Report - Input View



Function

These functions allow sending periodic reports of measurements without the need for installation of the real time clock option. This report function is enabled when Report configuration is programmed ON.

The Report Time screen indicates the elapsed time from having sent a previous report of measurements when the Report Time is programmed to be greater than zero - otherwise reporting is disabled when set to zero.

The Next Report screen counts down the amount of programmed Report Time to indicating the amount of time remaining prior to sending the next report.

Format

The report format depends on the programmed Version configuration.

Version = Std (standard) format is the Classic backwardly compatible for all previous 700 and 500 Series instruments.

Version = Max (maximum) format is the enhanced current standard 900 Series format described in greater detail in the currently published 900 Series Communication Protocol.

Navigation

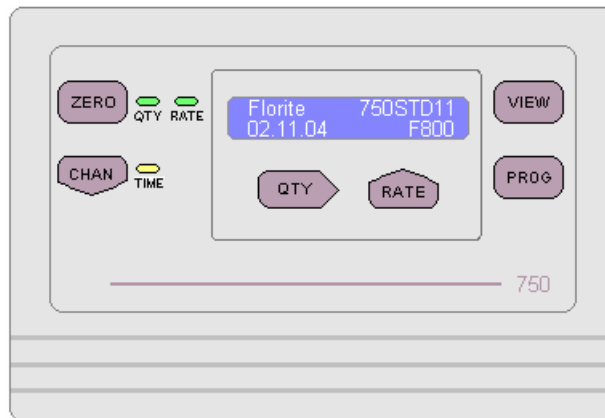
Access these screens by using the VIEW key until reaching the screen.

Zero

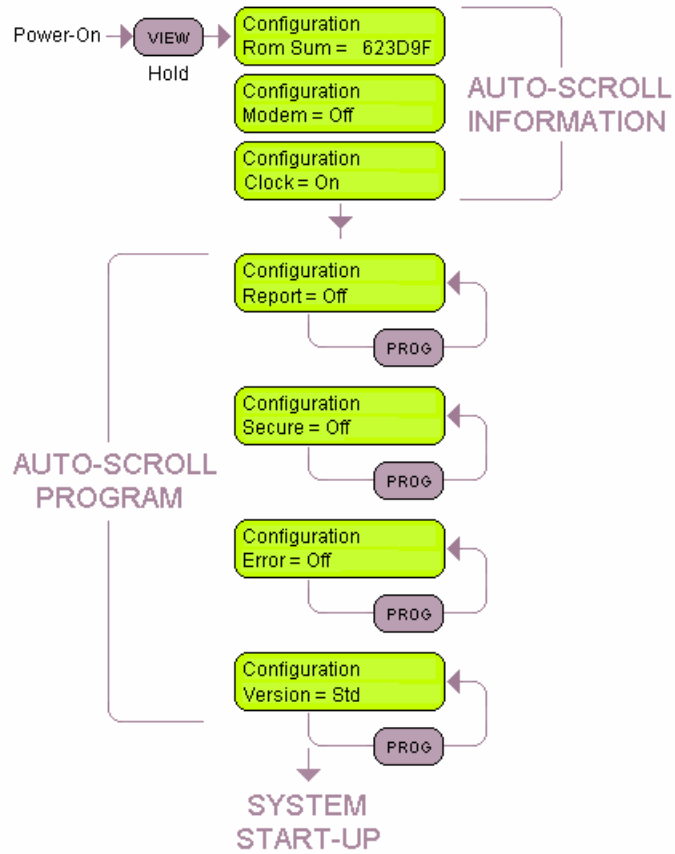
Press the ZERO key while viewing the Report Time screen to cause the accumulated hours to be cleared to zero which lengthens the time before sending the next report.

700 Series

Instrumentation Optional Configuration



700 Series Navigate Option Configuration



Configuration - System Program

Function

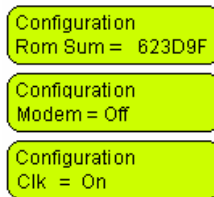
These screens are used to select certain system level configuration settings.

Navigation

Access to these screens is instigated by removing instrument power - pressing and holding the VIEW key, re-applying instrument power while holding the VIEW key pressed - then releasing the VIEW key when the first Configuration screen appears, or upon hearing an audio annunciation

Information

These first screen set are not programmable and auto-scroll in sequence to provide instrument integrity and facility installation information.



An ON condition is defined as follows:

- Rom Sum - quality assurance object code version control.
- Modem - wide area network communication adapter installed and operating.
- Clock - real time clock installed and operating.

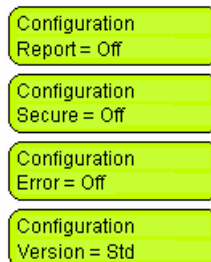
Programming

The values in this set of screens are selectable to be either On or Off. Auto-scrolling from the proceeding screens automatically continues forward to the Report screen shown below.

Navigation

Select - the screen auto-scrolls unless the key to change the selection is pressed within two seconds - otherwise auto-scrolling continues to the next screen.

Program - immediately while viewing a selected configuration value - press the PROG key to change the configuration selection.



An ON condition is defined as follows:

- Report - send periodic value report information.
- Secure - prohibit accumulated value zeroing and prohibit any programmed value change.
 - Error - provide remote serial communication error controlled.
 - Version - selects format of report communication and includes ability to pre-set quantity values.