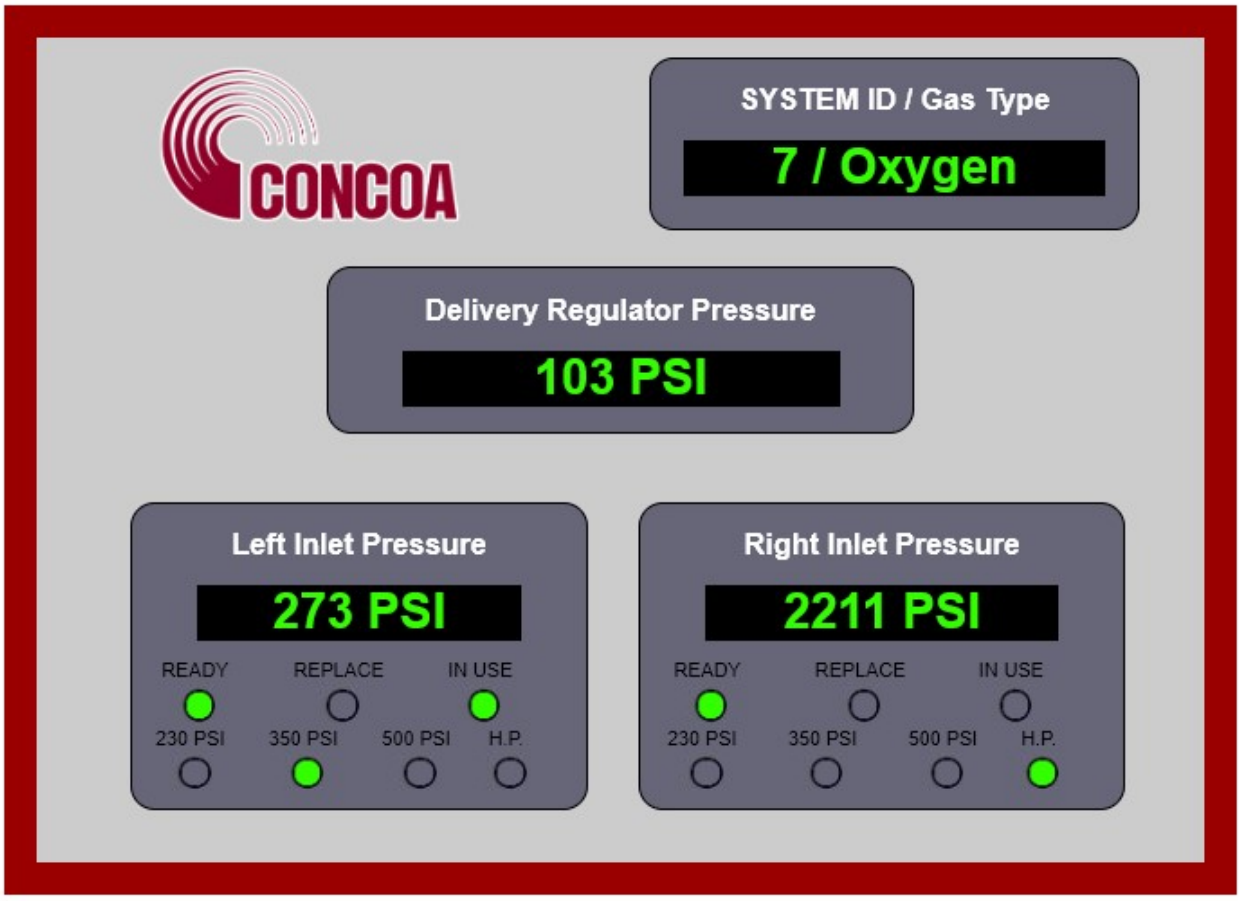
ADI 9535-A

INTELLISWITCH II™



Web Server

INSTALLATION AND USER'S GUIDE

Carefully Read These Instructions Before Operating

Controls Corporation of America

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Revision A

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Introduction

This document covers the use of the IntelliSwitch II web server 8355127. Users should receive proper training before access is granted to the Admin features.

The IntelliSwitch web server allows remote access and control of the IntelliSwitch over the network. The IP address should be properly guarded from external access by the local facility network administrators.

Gaining Access to the Web Server

WHAT YOU NEED Computer: capable of running Microsoft Edge, Chrome, or FireFox. Monitor: Capable of MINIMUM display resolution 1024 x 768. Local Area Network Connection for access to the on-line documentation. Web browsers confirmed to work are listed below:

- Microsoft Edge version 114.0.1823.51
- Google Chrome version 114.0.5735.134
- Mozilla FireFox version 114.0.2

Browse to the URL using the assigned IP address (default 192.168.0.83):

http://192.168.0.83/

If connected properly, an image similar to the one in Figure 1 Status Screen below should appear on your screen.

Navigation and Layout

All web pages include a navigation menu at the top of the screen. Each page also includes some web help content on the right or bottom of the screen.

The navigation menu contains the following choices:

- Status - Shows main status screen.
- View Settings – View of system settings
- Change Settings – This screen allows editing system settings.
- Security – Allows setting of administrator and operator accounts/passwords.
- Networking – Allows changing the TCP/IP network settings of the web server.
- Email – Allows enabling and configuration of email notifications for events/alarms.
- Logout – revokes access to administrator/operator pages if configured.

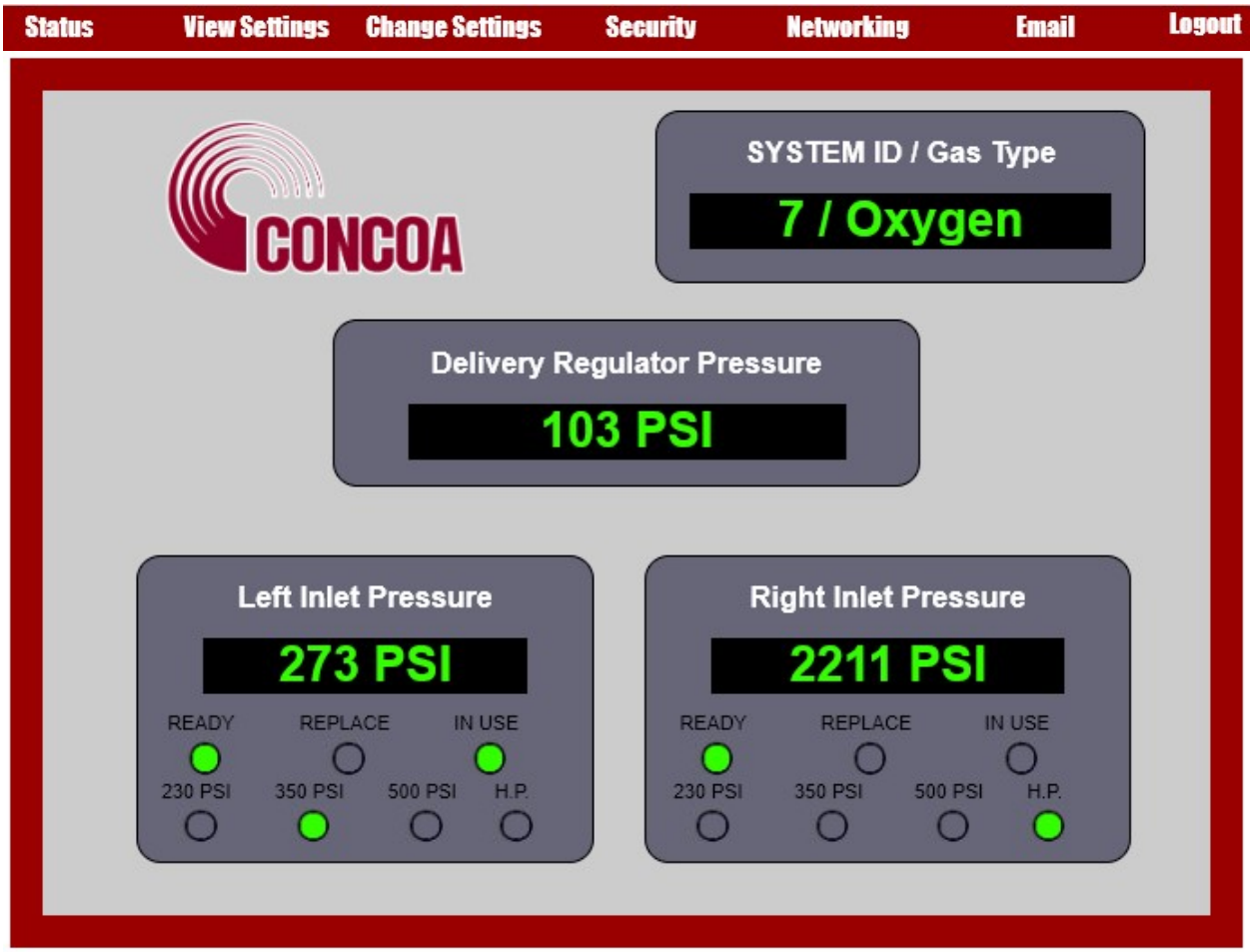

Figure 1 Status Screen

Status Screen

The main status screen appears when first accessed as shown in Figure 1 Status Screen. This screen provides the ability to monitor a number of parameters.

The status is auto-refreshed approximately every 10 seconds. A manual refresh will also refresh the log.

Item	Description
System ID	Shows a user assigned system id. This is useful when multiple units are involved
Gas Type	Shows the user assigned gas type for the unit
Delivery Regulator Pressure	Displays the Delivery Regulator Pressure
Inlet Pressure	Displays the Inlet Pressures
Inlet Status	Radio buttons display the current status of the inlet gas supply. Green Ready indicates that there is enough gas on the side so it can be used. Green In-Use indicates that the side is being used. Red Replace indicates that the gas supply needs to be replaced.
Cylinder Selection	Radio buttons indicate what type of cylinder selection is made for the inlet. Green indicates which cylinder type is selected

The main screen shows the most recent events from the log. Details include days/hours/minutes/seconds the unit has been powered on, the event of the log entry, and system pressures as shows in Figure 2 Status Screen Log. The event log view can be updated by pressing the REFRESH button. The entire log, up to 1.5 MB or approximately 16,000 events can be collected into a local file using the EXPORT LOG button. The most recent 16,000 events are kept in the log. Older entries fall out. If a permanent record of the log is desired, it should be collected and archived on a periodic basis.

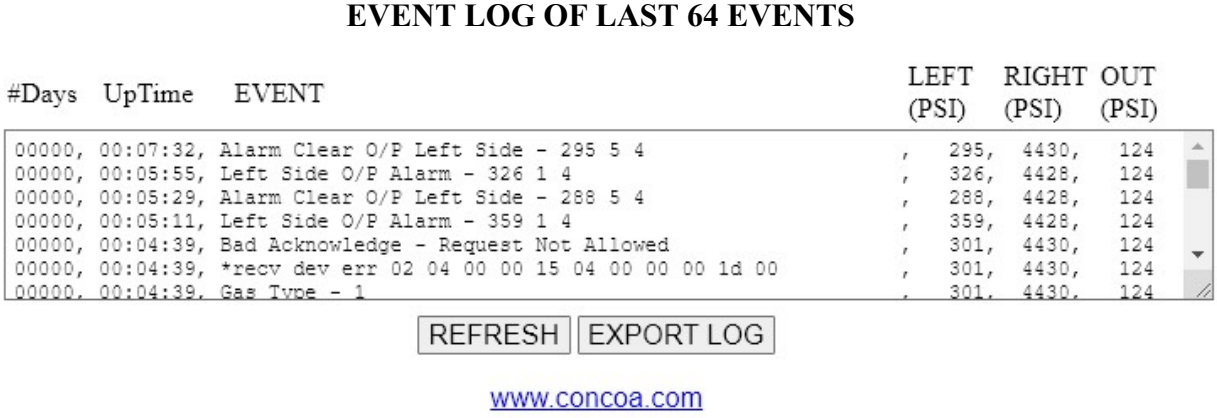

Figure 2 Status Screen Log

The Event Log provides a record of any events that may occur while the IntelliSwitch is running. This can be an alarm condition or a key press. Essentially, any "event" that may occur either as a result of a response to a change in conditions or operator intervention. A list of "events" that could be displayed in the event log is shown below.

- Inlet Value Status – "description"
- Error – "description"
- Left Side O/P – "value" (O/P = over pressure)
- Right Side O/P – "value"
- Left Side U/P – "value" (U/P = under pressure)
- Right Side U/P – "value"
- Keypad Lock "description"
- Cylinder Selection Changed – "description"
- Alarm Clear U/P Left Side – "value"
- Alarm Clear O/P Left Side – "value"
- Alarm Clear U/P Right Side – "value"
- Alarm Clear O/P Right Side – "value"

The word "value" is replaced by a pressure in psi. The word "description" is replaced with an explanation of what happened.

Settings

There are parameters that control the behavior of the Intelliswitch. Some are internal, and some are user selectable. They can be accessed from the following three screens:

- If viewable, from the VIEW SETTINGS screen
- If editable, from the Change Settings screen
- All parameters can be collected into a file with the EXPORT SETTINGS button on the VIEW SETTINGS screen. This can be useful for sending back to CONCOA for system troubleshooting assistance. Not all settings in the file will be applicable to the installed unit.

The below table lists the available settings:

Item	Description
Up Time	Only available in the settings export file. This is the number of days – hours : minutes : seconds since its most recent reboot.
Web SW Version	Only available in the settings export file. This is the software version of the Web Server.
Device Version	This is CONCOA internal device type reported by the hardware.
Units of Measure	Choices are PSI, BAR and MPA. Pressures will be displayed on the STATUS screen in the units selected.
GAS Type	Displays the gas type the IntelliSwitch is controlling. When editing, select a value from the drop down list. The name of the gas will appear on the status screen. 10 common gas types are provided, as well as numbered gas types from “Gas Type 11” to “Gas Type 99”.
Software Version	This is the software version as reported by the IntelliSwitch control board.
System ID	This is a number that can be assigned by the user to identify the IntelliSwitch. Data range: 1-254.
Keypad Lockout	The IntelliSwitch has a keypad lockout feature that will prevent accidental or improper keypad activation. This lock out feature can be enabled or disabled from the CHANGE SETTINGS screen.
Left Inlet Pressure	This is the pressure measured by the left inlet pressure sensor.
Right Inlet Pressure	This is the pressure measured by the right inlet pressure sensor.
Delivery Regulator Pressure	This is the pressure measured by the Delivery Regulator pressure sensor.
Left Cylinder Select	Indicates what type of cylinder selection is made for the left inlet.
Right Cylinder Select	Indicates what type of cylinder selection is made for the right inlet.
Left Inlet Ready	This shows if left inlet is within usable pressure. It will be false for under or over pressure conditions.
Right Inlet Ready	This shows if right inlet is within usable pressure. It will be false for under or over pressure conditions.
Left Inlet In Use	This shows if left or right inlet is in use, or both.
Right Inlet In Use	This shows if left or right inlet is in use, or both.
Left Offset	This is a value that can be used to adjust the pressure transducer reading for the left inlet. This value should only be changed if it is necessary to recalibrate the transducer. Changing this value will

	change the left inlet pressure reading. A (+) or (-) value may be entered here. Refer to "Calibrating Transducers" section of the IntelliSwitch user's manual. Data range: +/- 200 psi.
Right Offset	This is a value that can be used to adjust the pressure transducer reading for the right inlet. This value should only be changed if it is necessary to recalibrate the transducer. Changing this value will change the right inlet pressure reading. A (+) or (-) value may be entered here. Refer to "Calibrating Transducers" section of the IntelliSwitch user's manual. Data range: +/- 200 psi.
Switchover Pressure	This is a preset pressure in the IntelliSwitch used to determine when an inlet can no longer provide enough gas pressure to the delivery regulator. Data range: 50-500psi
Hysteresis Pressure	This is a preset pressure value that is used to prevent the IntelliSwitch from "dithering" at the switchover point. Data range: 10-50 psi.
Look Back Time	This is a preset time in minutes used for liquid cylinders to determine when to look back at an inlet pressure to determine if pressure has been restored above the switchover point. The IntelliSwitch will look back at an inlet after the look back time has expired to see if its pressure has built back up above the switchover point. If it has, then the IntelliSwitch will switch back to that side to try to use more of the gas. Data range: 10-60 min.
Switch Back Time	A preset time in minutes used for liquid cylinders in conjunction with the look back time. If the look back feature is invoked and after time out has determine that it can switch back to a side whose pressure has built back, a switch back timer will start. If the inlet pressure on the same side drops again before the switchback time has expired the IntelliSwitch determines that that side is truly empty and will alarm and switch to the other inlet. Data range: 10-60 min.

View Settings Screen

The viewable settings from above display themselves on this screen as shown below in Figure 3 View Settings. In addition, all settings can be exported to a file using the EXPORT SETTINGS button.

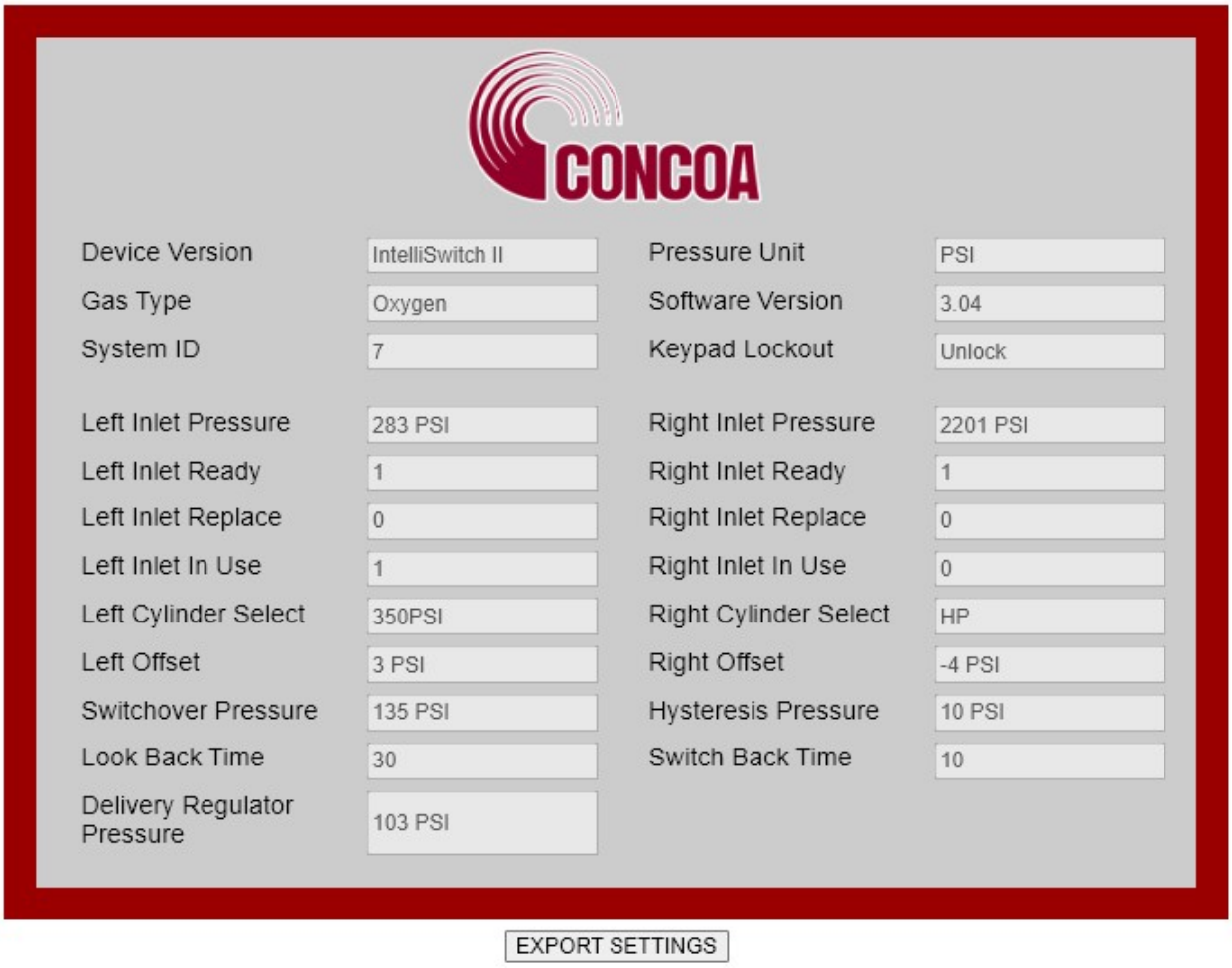

Figure 3 View Settings

Change Settings Screen

The CHANGE SETTINGS screen allows the user access to the IntelliSwitch operating parameters. This screen is Admin password protected if enabled. See the Security section for user/password options. If enabled, the Password pop-up appears, Figure 4 Security Sign-in.

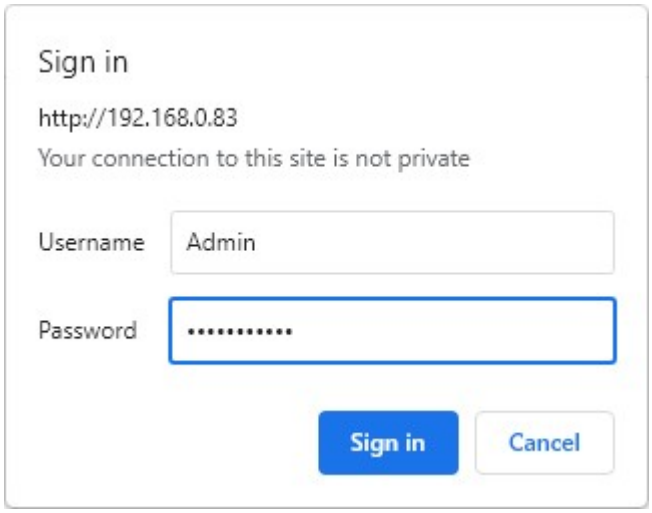

Figure 4 Security Sign-in

The Change Settings screen appears as shows below in Figure 5 Change Settings. The following actions can be performed when on this page:

Button	Feature
SET	This button is used to send the changed parameters to the IntelliSwitch.
DEFAULTS	The setup parameters that are set at the factory for the IntelliSwitch can be restored using this button. This is useful in cases where a user is unsure that the IntelliSwitch parameters are correct or have been modified in the field using the CHANGE SETTINGS screen.
CLEAR LOG	Deletes the log file off the system and starts a fresh log file. If an archive of the log files is desired, go to the main status screen and "Export Log" to a local file.
Zero Sensors	This button will zero the pressure displays. It serves as a type of calibration feature. If a pressure display reads a value other than 0 psi when there is no pressure applied to the inlets clicking this button will force the displays to zero psi. THIS BUTTON SHOULD ONLY BE USED IN CIRCUMSTANCES WHERE AN INLET TRANSDUCER HAS DRIFTED FROM 0 PSI.
CANCEL	This button is used to cancel any operation while in the EDIT screen. If any parameters in the EDIT screen have been modified and the "SET" button has not been selected "CANCEL" will abort any modifications before bringing the user back to the STATUS screen. Clicking on this button after using "SET" will bring the user back to the STATUS screen with the changes made.

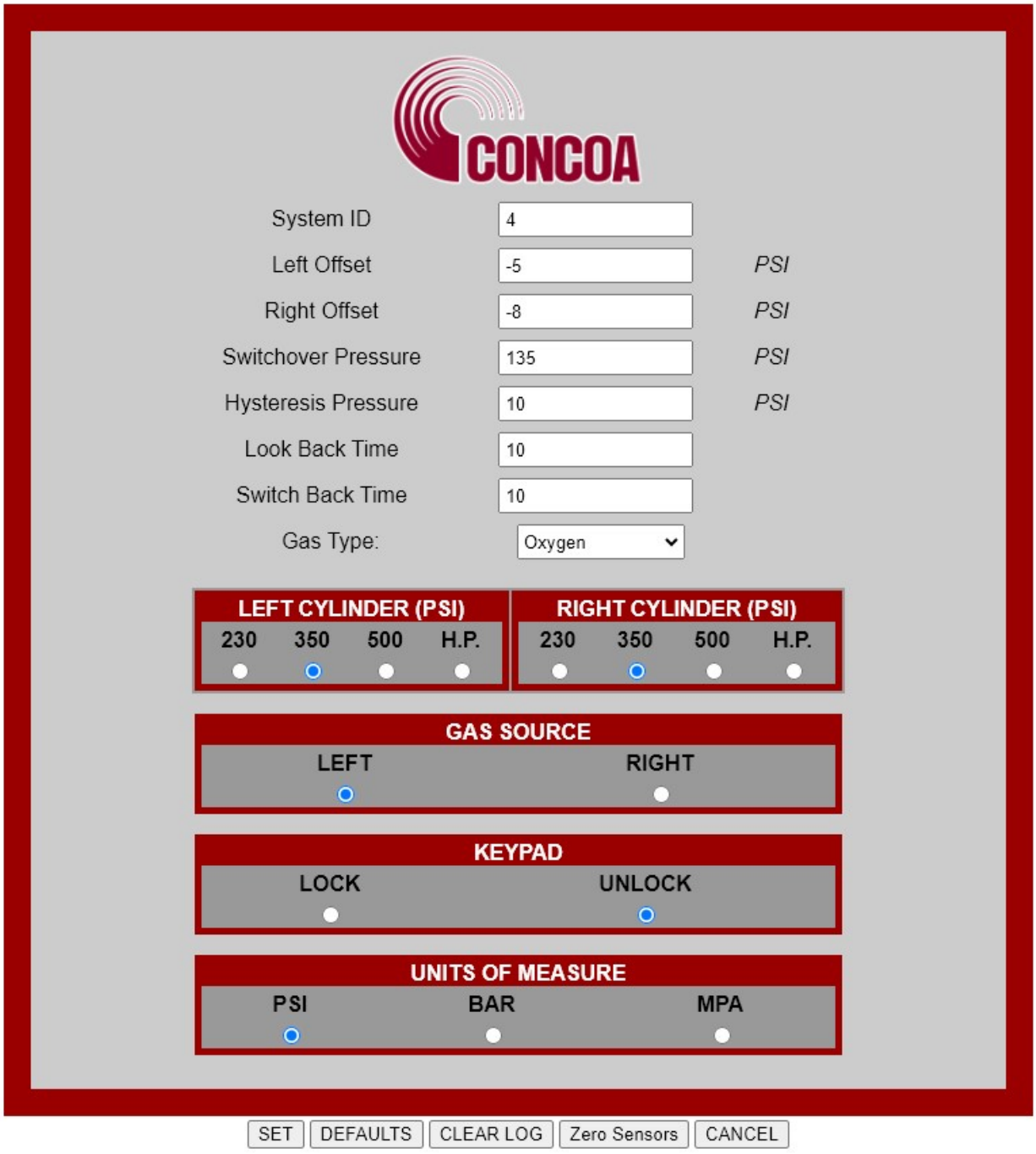

Figure 5 Change Settings

Tooltip messages are used throughout this screen to aid in setting parameters. Hovering over the entries causes associated pop-up messages to appear.

Once choices have been made, press SET to commit values on the IntelliSwitch. Switch SW4-3 on the IntelliSwitch controller must be "on" for web settings to take effect.

Numeric Values

Position the mouse pointer over the parameter to be changed. In the example below, it is positioned over the SWITCHOVER PRESSURE. Notice that the Tooltip message for this

parameter is displayed in Figure 6 Tooltip. Next, click the mouse while over the text box. Notice that the outline that was around the text box has changed. This is an indication that this text box has been selected to accept data. Enter the new value for the SWITCHOVER PRESSURE. When the first number is entered, the data currently in the text box will be overwritten.

Figure 6 Tooltip

The <Backspace> key may be used to correct a bad entry. This key will step back through the number entered one digit at a time. The <ESC> key can be used to cancel the entry. Either of these keys may be used for the current entry until the user clicks the mouse on another parameter or in the open space on the screen.

The method for changing all text boxes is the same. Use the pop-up message as a guide to entering the correct range of values.

Radio Buttons

The example that follows uses the Left Cylinder selection. Observe that, for this example, it is initially set to "HP" or high pressure as shown in Figure 7 Radio Buttons. Using the Mouse, click on the radio button that represents the selection to be made. The radio button representing "HP" will change from colored to clear and the one selected will change from clear to colored.

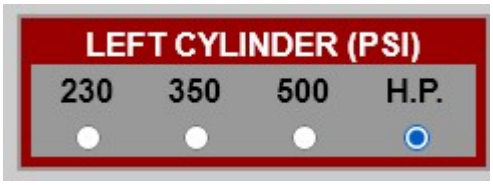

Figure 7 Radio Buttons

Security

There are three levels of security tied to the user name.

- Admin – If enabled, the following screens require an Admin login:
  - Change Settings
  - Security
  - Networking
  - Email
- Operator – If enabled, the following screens require an Operator or Admin Login.
  - Status
  - View Settings
- None – If either are disabled, those screens are accessible by anyone on the network.

Note that if Operator security is enabled, then Admin security must also be enabled.

User names and passwords are case-sensitive, and the user names Admin and Operator may not be changed. Authentication requires cookies to be enabled on the browser. CONCOA strongly recommends that Admin security be enabled at all times to prevent inadvertent changes to settings that may affect the functionality of the product.

The factory default settings are as follows:

User Admin password:
concoa23454
User Operator password:
(none set, available to all)

Figure 8 Security screen shows the fields that should be entered. If enabled, that section must have a password entered.

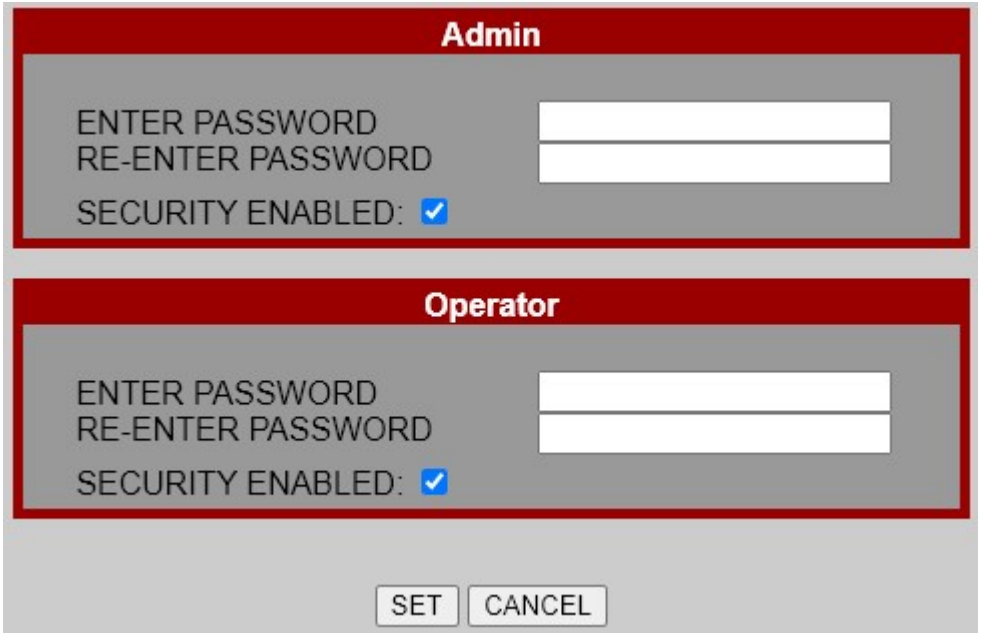

Figure 8 Security

Networking

In order for the web server to be used, and to properly communicate with email servers the following network parameters must be configured. It is important that a knowledgeable LAN administrator identify and enter these parameters. Entering incorrect values can cause an inability for local network routing, and can make the IntelliSwitch inaccessible.

Once the settings have been chosen, press "SET" for them to take effect.

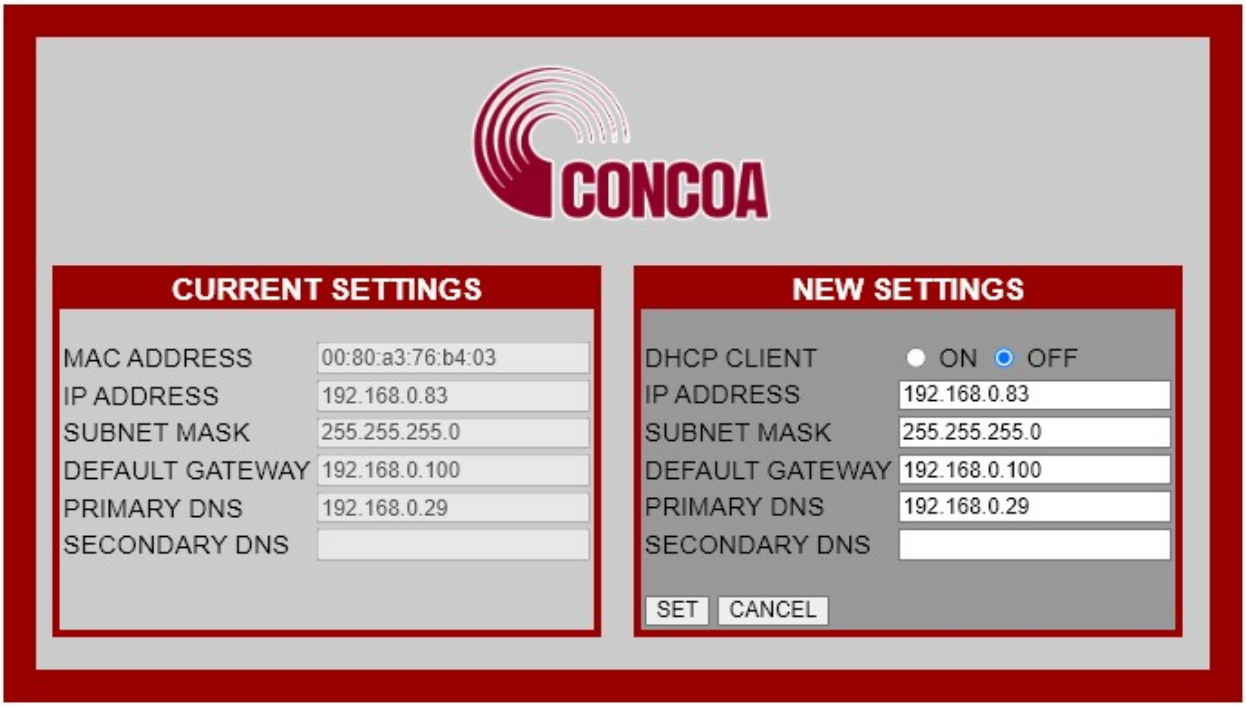

Figure 9 Networking

Item	Description
DHCP CLIENT	If DHCP CLIENT is set to ON, all other settings will be ignored, and the IntelliSwitch web server will seek both IP and DNS settings from a DHCP server.
IP Address	This identifies the IP Address at which the Web Server can be accessed, and should be assigned and set by the network administrator.
SUBNET Mask	This identifies the subnet of the IP Address, and should be assigned and set by the network administrator.
Default Gateway	This is generally the IP address for a firewall. Many Networks place a firewall between the network and the outside world. If the web server is behind a firewall it will be necessary to place the IP address for the firewall here. (xxx.xxx.x.xxx)
Primary DNS Server	Domain Name System (DNS) servers help route your computer to appropriate locations. The Primary DNS server should be automatically detected when the web server is initialized. If it has been detected the IP address for the Primary DNS Server will appear in the box. If it does not appear it can be typed in. (xxx.xxx.x.xxx)

Secondary DNS Server	The Secondary DNS server should be automatically detected when the web server is initialized. If it has been detected the IP address for the Secondary DNS Server will appear in the box. If it does not appear it can be typed in. (xxx.xxx.x.xxx)

The below buttons are provided and described below:

Button	Function
SET	Clicking this button will save any new values entered into the screen fields. If a value entered in one of the fields is an invalid number a pop up will be displayed directing that the value be corrected.
CANCEL	This button brings the user back to the email screen.

IoT

The web server supports exposing status data to remote servers with the following URL query (default IP address shown):

192.168.0.83/mainUpdate.php

The returned data is a JSON parameter:value data set that can be used for remote processing/logging. It is the same data used to populate the main status screen. Shown below is an example data set returned by the query:


```
{
"DeliveryRegulatorPressure" : "103 PSI",
"LeftInletPressure" : "283 PSI",
"RightInletPressure" : "2202 PSI",
"LeftInletReady" : "1",
"LeftCylinderSelect" : "350PSI",
"LeftInletReplace" : "0",
"RightInletReady" : "1",
"RightCylinderSelect" : "HP",
"RightInletReplace" : "0",
"LeftDeliveryFault" : "0",
"RightDeliveryFault" : "0",
"LeftInletInUse" : "1",
"RightInletInUse" : "0",
"ReserveSupplyInUse" : "0",
"ReserveSupplyFault" : "0"
}
```

Remote Access to the Web Server

The web server is capable of emailing to any location that has a valid email address. However, if there is a need to view or configure the web server from outside the Local Area Network the network will have to be configured to allow this to happen. Most networks are protected through a firewall to prevent unauthorized access. Gaining access from external sources will require setting up a Port. CONCOA recommends using a strong password, and proper IT precautions if setting up external access. Setting up remote access requires the knowledge of a competent LAN Administrator.

EMail

Email Settings can be set to send emails in the event of an alarm or an event. The web server is only capable of sending email. It cannot receive email. PROPER SETUP OF THE EMAIL FUNCTION FOR THE INETLLISWITCH II REQUIRES A KNOWLEDGEABLE LAN ADMINISTRATOR.

EMAIL1

EMAIL1 is used to report "alarm" conditions only. Reported alarm conditions are:

- Error – "description"
- Left Side U/P – "value" (U/P = under pressure)
- Right Side U/P – "value"
- Alarm Clear U/P Left Side – "value"
- Alarm Clear O/P Left Side – "value"
- Alarm Clear U/P Right Side – "value"
- Alarm Clear O/P Right Side – "value"

The word "value" is replaced by a pressure in psi, and the word "description" is replaced with an explanation of what happened when an email is sent.

EMAIL2

EMAIL2 is used to send more frequent alarm and notification events, similar to the log events. This is especially useful for initial troubleshooting, or if an email log of events is desired.

- Inlet Value Status – "description"
- Error – "description"
- Left Side O/P – "value" (O/P = over pressure)
- Right Side O/P – "value"
- Left Side U/P – "value" (U/P = under pressure)
- Right Side U/P – "value"
- Keypad Lock "description"
- Cylinder Selection Changed – "description"
- Alarm Clear U/P Left Side – "value"
- Alarm Clear O/P Left Side – "value"
- Alarm Clear U/P Right Side – "value"
- Alarm Clear O/P Right Side – "value"

Email Settings

Email settings are shows in Figure 10 Email, the below provides an explanation of the contents of the EMAIL1 screen. Email 2 is the same.

Item	Description
ENABLE / DISABLE	The radio buttons enable or disable the EMAIL1 function. Clicking on the radio button works the same as in other radio buttons in the CHANCE SETTINGS screen
TO	This is the email address of any recipients who wishes to receive notification of an "alarm". If the user wishes to send to more than one recipient then use a semicolon to separate the email addresses.
CC	This is the email address of any additional recipients who wishes to receive a CC notification of an "alarm". If the user wishes to send to more than one recipient then use a semicolon to separate the email addresses.
FROM	This location holds the email address of the person or system* sending the email.
REPLY TO	If someone tries to reply to the system generated email, the "REPLY TO:" email address is the address that will be used.
SERVER PORT	The TCP port on the recipient host server to which the IntelliSwitch web server will attempt to open a connection, often 25.
LOCAL PORT	The port on the IntelliSwitch web server from which this connection attempt will originate, usually leave as "<Random>".
OVERRIDE DOMAIN	Indicates how the IntelliSwitch web server will identify itself to the target host.
RELAY ADDRESS	To force all mail to be sent via relay regardless of recipient domain, enter the name or address of the relay server in RELAY ADRESS. If this setting is blank, the SMTP server on the IntelliSwitch web server will attempt to open a connection directly to the recipient domain.
RELAY PORT	RELAY PORT controls the port on the relay server to which the IntelliSwitch web server will connect. Changing either of the RELAY settings will affect both e-mail alerts.

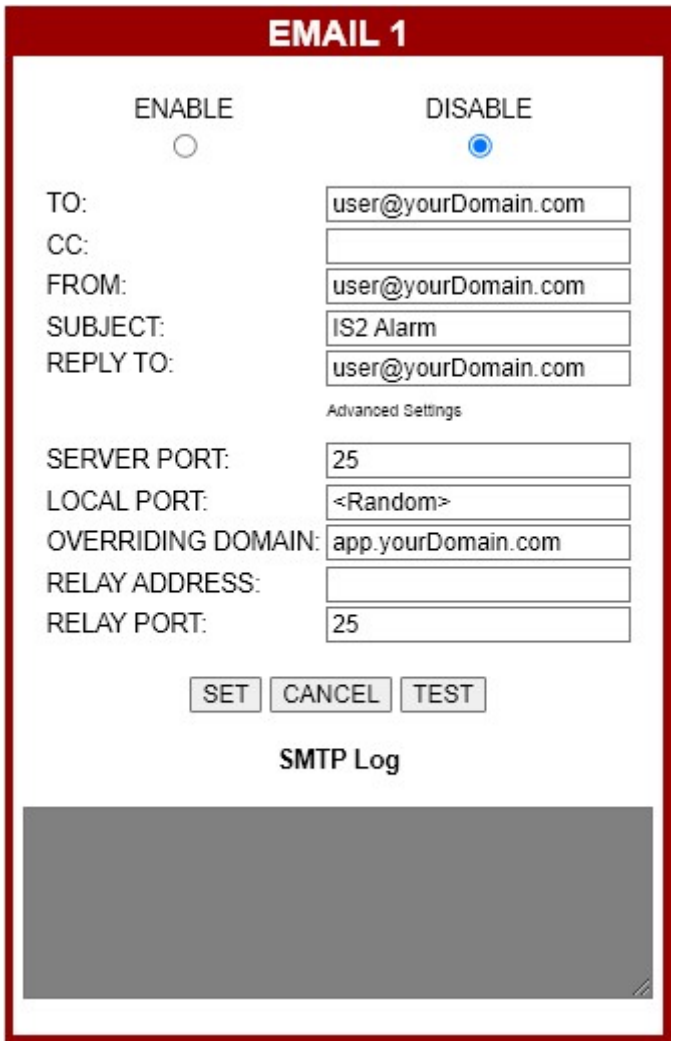

Figure 10 Email

The three buttons perform the following actions:

Button	**Function**
SET	Clicking this button will save the parameters that have been entered.
TEST	This button allows the user to test the email function. Clicking this button should send out an email message to the name(s) entered in the "To:" and "cc:" boxes. An SMTL log is captured that may aid an IT expert in solving any network issues related to sending emails.
CANCEL	The CANCEL button reverts all fields back to their initial values.

* - The LAN Administrator may choose to create an email address for the IntelliSwitch so that the recipient of an email will know which IntelliSwitch is reporting. Example: laser_room@yourDomain.com.

Troubleshooting

General Guidelines

The web server status screen will refresh itself automatically every 10 seconds. There is some latency between what might be observed on the IntelliSwitch front panel and the web server screen. This is normal and is not a problem with the product.

Troubleshooting table

Symptom	Possible Cause	Possible Solution
The web server extends beyond the top & bottom of the screen.	• Incorrect display resolution setting	• Check the display resolution of the Computer. Minimum display resolution should be 1024 x 768 • Try F11. This will remove the header & footer sections of your web browser. F11 toggles full screen ON and OFF. Press again to return to normal screen.
Web server is not loading on the screen.	• No power to the IntelliSwitch	• Check power to IntelliSwitch • Cycle power to IntelliSwitch on and off
	• Ethernet Cable not connected or bad cable	• Check that RJ-45 connection is made. If so, replace cable if defective.
	• Incorrect IP address may be selected for the device.	• Check that correct IP address is entered in your web browser.
Web server will not email	• Incorrect email address entered	• Verify that the email address entered is valid.
	• The Primary and Secondary DNS Servers, Default Gateway, Overriding Domain, or Server Port may be incorrect.	• Verify with LAN Administrator that the Primary Server, Overriding domain and Port values are correct

Configuration Data

Enter information for the IntelliSwitch below for future reference

Network Settings:

DHCP Client (ON/OFF) _____

IP Address:_____

Subnet Mask: _____

Default Gateway: _____

Primary DNS Server: _____

Secondary DNS Server:_____

Email Settings:

Server Port: _____

Local Port: _____

Overriding Domain: _____

Relay Address:_____

Relay Port: _____

Warranty Information

This equipment is sold by CONTROLS CORPORATION OF AMERICA under the warranties set forth in the following paragraphs. Such warranties are extended only with respect to the purchase of this equipment directly from CONTROLS CORPORATION OF AMERICA or its Authorized Distributors as new merchandise and are extended to the first Buyer thereof other than for the purpose of resale.

For a period of one (1) year from the date of original delivery (90 days in corrosive service) to Buyer or to Buyer's order, this equipment is warrantied to be free from functional defects in materials and workmanship and to conform to the description of this equipment contained in this manual and any accompanying labels and/or inserts, provided that the same is properly operated under conditions of normal use and that regular periodic maintenance and service is performed or replacements made in accordance with the instructions provided. The foregoing warranties shall not apply if the equipment has been repaired: other than by CONTROLS CORPORATION OF AMERICA or a designated service facility in accordance with written instructions provided by CONTROLS CORPORATION OF AMERICA; or altered by anyone other than CONTROLS CORPORATION OF AMERICA; or if the equipment has been operated under improper conditions or outside published specifications; or if the equipment has been damaged or does not function due to improper installation, improper supply of required utilities, accident, abuse, misuse, natural disaster, insufficient or excessive electrical supply, abnormal mechanical or environmental conditions, or debris or particles in the gas or liquid source of supply.

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