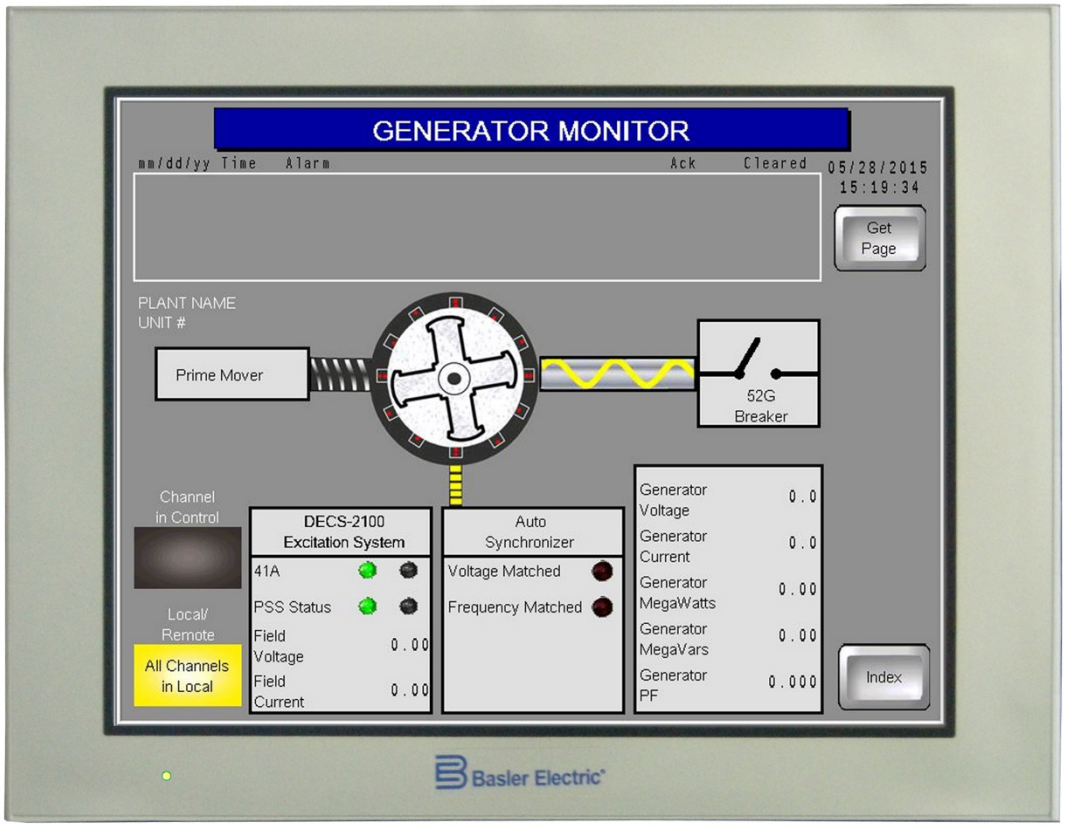
IDP-1201

Interactive Display Panel

Instruction Manual



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Preface

This instruction manual provides information about the installation and operation of the IDP-1201 Interactive Display Panel. To accomplish this, the following information is provided:

- Mounting and connections
- Communication requirements
- Display operation and screen navigation
- Product specifications

Conventions Used in this Manual

Important safety and procedural information is emphasized and presented in this manual through warning, caution, and note boxes. Each type is illustrated and defined as follows.

Warning!

Warning boxes call attention to conditions or actions that may cause personal injury or death.

Caution

Caution boxes call attention to operating conditions that may lead to equipment or property damage.

Note

Note boxes emphasize important information pertaining to installation or operation.

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Warning!

READ THIS MANUAL. Read this manual before installing, operating, or maintaining the IDP-1201 Note all warnings, cautions, and notes in this manual as well as on the product. Keep this manual with the product for reference. Only qualified personnel should install, operate, or service this system. Failure to follow warning and cautionary labels may result in personal injury or property damage. Exercise caution at all times.

To prevent personal injury or equipment damage, only qualified personnel should install, operate, or service this system.

Basler Electric does not assume any responsibility to compliance or noncompliance with national code, local code, or any other applicable code. This manual serves as reference material that must be well understood prior to installation, operation, or maintenance.

For terms of service relating to this product and software, see the *Commercial Terms of Products and Services* document available at www.basler.com/terms.

This publication contains confidential information of Basler Electric Company, an Illinois corporation. It is loaned for confidential use, subject to return on request, and with the mutual understanding that it will not be used in any manner detrimental to the interests of Basler Electric Company and used strictly for the purpose intended.

It is not the intention of this manual to cover all details and variations in equipment, nor does this manual provide data for every possible contingency regarding installation or operation. The availability and design of all features and options are subject to modification without notice. Over time, improvements and revisions may be made to this publication. Before performing any of the following procedures, contact Basler Electric for the latest revision of this manual.

The English-language version of this manual serves as the only approved manual version.

Revision History

A historical summary of the changes made to this instruction manual is provided below. Revisions are listed in reverse chronological order.

Manual Revision and Date	Change
E, Apr 2021	• Added new section *Operation with DECS-450* • Added a caution box to *Mounting* chapter.
D, Aug 2020	• Added new section *Operation with DECS-400* • Added new section *Operation with DECS-250, DECS-250N, and DECS-250E* • Removed Rev Letter from all pages • Changed sequential numbering to sectional numbering • Moved Instruction Manual Revision History into Preface • Removed standalone Revision History chapter
C, Dec 2016	• In *Operation with DECS-2100 and DECS/RW* chapter, corrected File Manager screen to show correct model number • Added caution statement about nonvolatile memory
B, Aug 2015	• Added comparison table of IDP-1201 and IDP-1200 features to the *Introduction* chapter
A, June 2015	• Initial release

Contents

1 • Introduction

The IDP-1201 Interactive Display Panel is a high-resolution, 12.1 inch/31 centimeter (measured diagonally) color touch screen interface that enables a user to monitor and control an ECS2100, ECS/RW, DECS-2100, or DECS/RW excitation system. IDP-1201 monitoring and control features include excitation system status, system control operations, and routine adjustments of the excitation setpoint. An additional IDP-1201 can be mounted remotely, such as, in the control room. The IDP-1201 is compatible with DECS-250, DECS-250N, DECS-250E, DECS-400, and DECS-450 Digital Excitation Control Systems.

Excitation system and generator system parameters are viewed and controlled through interactive pages displayed by the IDP-1201. Pages are organized by function. Navigation between pages and control of functions is achieved by touching buttons located on the IDP-1201 pages.

Communication between the IDP-1201 and the control system is facilitated through the Ethernet port of the IDP-1201 and the Ethernet port of the excitation control modules.

Application

The IDP-1201 serves as the successor to the IDP-1200. Other than slight differences in its connectors and their layout, the IDP-1201 is virtually identical to the IDP-1200 in form and function. Replacement of an IDP-1200 with an IDP-1201 requires no modification of the mounting panel and only a slight adjustment to the control power connections.

IDP-1201 and IDP-1200 features are compared in Table 1-1 on the next page.

Identification

The IDP-1201 can be differentiated from the IDP-1200 by the location of its Status LED indicator. As Figure 1-1 illustrates, an IDP-1201's Status LED is located near the lower, left corner of the display frame while an IDP-1200's Status LED is located on the right side of the display frame.

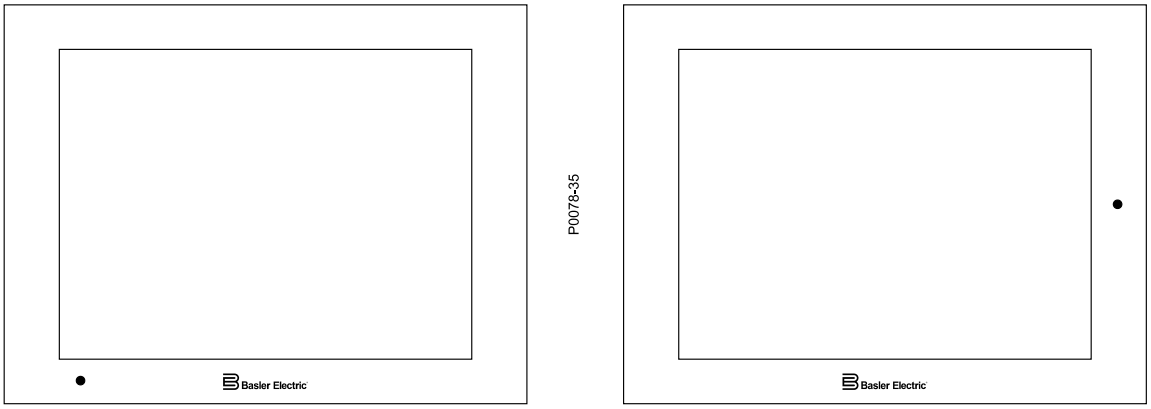


Figure 1-1. IDP-1201 and IDP-1200 Identification

Hardware

The IDP-1201 is supplied with an eight-port Ethernet switch (P/N 41133).

Optional accessories available for use with the IDP-1201 include:

- Power supply, 24 Vdc, 31 W, Basler P/N 9334503101
- DIN mounting rail for Ethernet switch, Basler P/N 9323900001

Table 1-1. IDP-1201 and IDP-1200 Features Comparison

Features		IDP-1200	IDP-1201
Display Type		TFT Color LCD	
Display Resolution		SVGA (800 x 600 pixels)	
Backlight		Fluorescent	LED
Border Color		Silver	Gray
Panel Cutout Dimensions		11.87"W x 8.96"H (301.5 mm x 227.6 mm)	
External Dimensions		12.32"W x 9.40"H x 2.20"D (312.9 mm x 238.8 mm x 55.9 mm)	12.40"W x 9.49"H x 2.20"D (315.0 mm x 241.0 mm x 55.9 mm)
Memory	Application	16 MB	32 MB
	SRAM	320 KB	
Nominal Input Voltage		24 Vdc	
Power Consumption		50 W or less	17 W or less
Temperature	Operating	0 to 122°F (0 to 50°C)	0 to 131°F (0 to 55°C)
	Storage	–4 to 140°F (–20 to 60°C)	
Humidity		10 to 90% noncondensing	
Serial	COM 1	D-Sub, 9-pin (plug) RS-232C/422/485	D-Sub, 9-pin (plug) RS-232C
	COM 2	D-Sub, 9-pin (socket) RS-422/485	D-Sub, 9-pin (plug) RS-422/485
Ethernet	Type	10Base-T/100Base-TX	
	Location	Left side of case	Bottom of case
USB	Type A	2 ports	1 port
	Type B	No	1 port
	Location	Bottom of case	
Front Panel LED State	Green	Normal operation	
	Red	Operation error	
	Red (Flashing)	Hardware error	
	Orange	Backlight malfunction	Software initializing
Agency/Certification	CE Compliance	Yes	Yes
	UL Recognized	Yes	Yes
	RoHS	Yes	Yes
	EAC	Yes	No

2 • Communication

Caution
This product contains one or more *nonvolatile memory* devices. Nonvolatile memory is used to store information (such as settings) that needs to be preserved when the product is power-cycled or otherwise restarted. Established nonvolatile memory technologies have a physical limit on the number of times they can be erased and written. During product application, consideration should be given to communications, logic, and other factors that may cause frequent/repeated writes of settings or other information that is retained by the product. Applications that result in such frequent/repeated writes may reduce the useable product life and result in loss of information and/or product inoperability.

IDP-1201 communication with the control system cannot take place until the Ethernet communication settings are configured for the IDP-1201 and the control system peripheral devices. The following procedures describe how to configure the communication settings for the IDP-1201 and peripheral devices.

IDP-1201 Ethernet Settings

Perform the following steps to configure the local Ethernet settings for the IDP-1201.

1. Press the Index button on any IDP-1201 page to access the General Index page.
2. Press the Setup button on the General Index page to access the System Configuration page.
3. Press the Offline Mode button.
4. Press the Main Unit Settings button located at the top of the page.
5. Press the Ethernet Local Settings button located at the right of page center.
6. Tap on the Local Name box and enter a local name for the main (IDP-1201) unit.
7. Enter the IP Address, Subnet Mask, Port, and Gateway as assigned by the network administrator.
8. Press the Back button located at the bottom of the page.
9. Press the Save button located at the bottom of the page.
10. Press the Yes button when prompted to save the current settings.

Control System Peripheral Settings

Perform the following steps to configure the control system peripherals for communication with the main (IDP-1201) unit.

1. Press the Index button on any IDP-1201 page to access the General Index page.
2. Press the Setup button on the General Index page to access the System Configuration page.
3. Press the Offline Mode button.
4. Press the Peripheral Settings button located at the top of the page
5. Press the Device/PLC Settings button located at the left of page center.
6. Press the Schneider Electric Industries button in the center of the page.
7. Press the Device button located at the top of the page.

8. Enter the IP Address, Port, and Unit ID for each of the following devices as assigned by the network administrator. Your system may not contain all of the devices listed here.
    a. em (ECM Main)
    b. fm (FCIM Main)
    c. er (ECM Redundant)
    d. fr (FCIM Redundant)
    e. es (ECM Supervisory)
    f. fs (FCIM Supervisory)
9. Note that em and fm share the same IP address, er and fr share the same IP address, and es and fs share the same IP address.
10. Press the Back button located at the bottom of the page.
11. Press the Digital Electronics Corporation button in the center of the page.
12. Press the Right Arrow button in the lower, right corner of the page.
13. Set control area address 1 to match the value entered for “em” in step 8
14. Set control area address 2 to match the value entered for “er” in step 8.
15. Press the Back button.
16. Press the Save button located at the bottom of the page.
17. Press the Yes button when prompted to save the current settings.

3 • Operation with DECS-2100 and DECS/RW

Control system and generator system parameters are viewed and controlled through interactive screens displayed by the IDP-1201. Screens are organized by function. Navigation between screens and control of functions are achieved by pressing buttons located on the IDP-1201 screens.

This chapter illustrates and describes IDP-1201 screen navigation and usage. The available IDP-1201 screens and their appearance will vary according to the number of control channels and rectifier bridges utilized in a particular control system.

Initial Screen

The Initial screen (Figure 3-1) is displayed upon power-up of the IDP-1201. The initial screen lists the version of the IDP-1201 firmware.

Figure 3-1. Initial Screen

Index Button

Most screens have an Index button that, when pressed, accesses the General Index screen. The General Index screen provides quick navigation to any other IDP-1201 screen.

Get Page Button and Screen

Most screens have a Get Page button that accesses the Get Page screen illustrated in Figure 3-2. This screen lists all screens and provides navigation to each screen. To navigate to a screen, the user scrolls through the screen description list by using the up and down scrolling buttons until the desired screen and screen number are found. The screen number is entered in a numeric keypad accessed by pressing the 86 button. (This button displays the number of the Get Page screen, which is 86.) Entering the screen number followed by the Enter (ENT) button takes the user to the requested screen. A complete list of IDP-1201 screens is provided in Table 3-1. Typically, your system/IDP-1201 will not have all of the equipment/screens listed here.

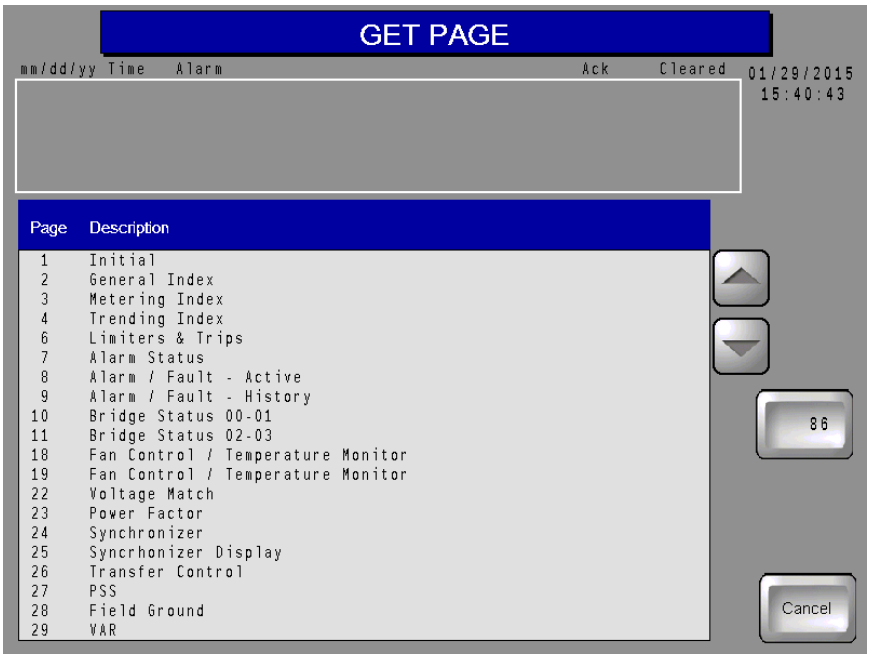


Figure 3-2. Get Page Screen

Table 3-1. IDP-1201 Screens

Page	Description
1	Initial
2	General Index
3	Metering Index
4	Trending Index
6	Limiters and Trips
7	Alarm Status
8	Alarm/Fault – Active
9	Alarm/Fault – History
10	Bridge 00, 01 Status
11	Bridge 02, 03 Status
12	Bridge 04, 05 Status
13	Bridge 06, 07 Status
14	Bridge 08, 09 Status
15	Bridge 10, 11 Status
16	Bridge 12, 13 Status
17	Bridge 14, 15 Status
18	Fan Control/Temperature Monitor
19	Fan Control/Temperature Monitor
22	Voltage Match
23	Power Factor
24	Synchronizer
25	Synchronizer Display

Page	Description
26	Transfer Control
27	Power System Stabilizer
28	Field Ground
29	Reactive Power
30	Output Control
31	Generator Simulation
32	Generator Monitor
34	Channel Comparison
35	Main Meter Panel
36	Redundant Meter Panel
38	Main Meter Panel – Analog
39	Redundant Meter Panel – Analog
41	Meter Panel – Analog Configuration
42	Generator Meter Panel – Analog
43	Generator Meter Panel – Analog Configuration
44	Meter Trending Graph – Main
45	Meter Trending Data – Main
46	Meter Trending Graph – Redundant
47	Meter Trending Data – Redundant
48	Meter Trending Configuration
49	Bridge 00 Temperature Trending Graph
50	Bridge 00 Temperature Trending Data
51	Bridge 01 Temperature Trending Graph
52	Bridge 01 Temperature Trending Data
53	Bridge 02 Temperature Trending Graph
54	Bridge 02 Temperature Trending Data
55	Bridge 03 Temperature Trending Graph
56	Bridge 03 Temperature Trending Data
57	Bridge 04 Temperature Trending Graph
58	Bridge 04 Temperature Trending Data
59	Bridge 05 Temperature Trending Graph
60	Bridge 05 Temperature Trending Data
61	Bridge 06 Temperature Trending Graph
62	Bridge 06 Temperature Trending Data
63	Bridge 07 Temperature Trending Graph
64	Bridge 07 Temperature Trending Data
65	Bridge 08 Temperature Trending Graph
66	Bridge 08 Temperature Trending Data
67	Bridge 09 Temperature Trending Graph
68	Bridge 09 Temperature Trending Data

Page	Description
69	Bridge 10 Temperature Trending Graph
70	Bridge 10 Temperature Trending Data
71	Bridge 11 Temperature Trending Graph
72	Bridge 11 Temperature Trending Data
73	Bridge 12 Temperature Trending Graph
74	Bridge 12 Temperature Trending Data
75	Bridge 13 Temperature Trending Graph
76	Bridge 13 Temperature Trending Data
77	Bridge 14 Temperature Trending Graph
78	Bridge 14 Temperature Trending Data
79	Bridge 15 Temperature Trending Graph
80	Bridge 15 Temperature Trending Data
81	Horizontal Capability Curve
82	Vertical Capability Curve
83	System Configuration
84	Cleaning Lock
85	Screen Saver
86	Get Page
88	File Manager

Alarms Banner

Most screens display an alarms banner that lists the six most recent system alarms. Each alarm is labeled with a description and the date and time of the alarm. The timestamp for acknowledgement and clearing (if applicable) of alarms is also displayed. Active alarms are displayed as white text on a red background. Acknowledged alarms are displayed as yellow text on a black background. Cleared alarms are displayed as red text on a white background.

System Configuration Screen

This screen (Figure 3-3) has provisions for adjusting the screen saver time delay, adjusting the display brightness, and selecting the display language.

If the IDP-1201 panel requires cleaning, the Lock for Cleaning button can be pressed to enable cleaning of the screen without inadvertently pressing buttons.

A Log In button accesses an alphanumeric keypad where the appropriate password can be entered to log in and make IDP-1201 settings changes. The IDP-1201 is delivered with a level 1 password of “1234” and a level 2 password of “4321”. The proper, level 1 password is required to select the IDP-1201 display language. The proper level 2 password is required to configure the IDP-1201 as a local or remote display or to change passwords. Instructions for changing the password are provided in *Password Settings*.

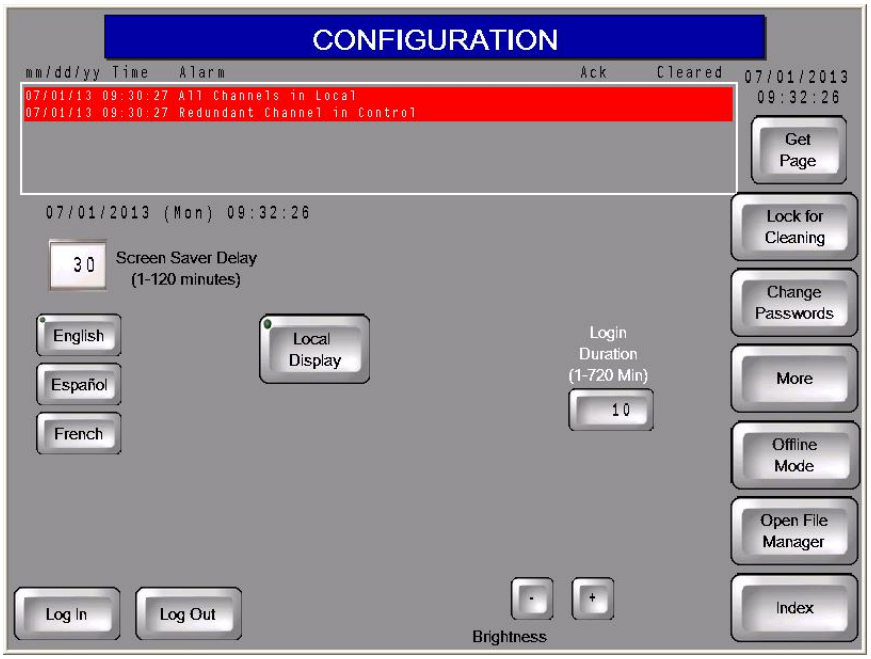


Figure 3-3. System Configuration Screen

File Manager

The Open File Manager button accesses the file manager which lists the files present on an inserted compact flash card and connected USB device. Files can be copied or moved from one storage device to the other or deleted. This button also accesses the file manager where you can download event records. See Figure 3-4.

Figure 3-4. File Manager Screen

An indicator turns red to indicate the connection of a USB device to the IDP-1201. A button below the indicator can be pressed to de-energize the IDP-1201 USB port for safe removal of a USB device from the IDP-1201.

Downloading Event Records

The following procedure is used to download event records.

1. Insert a USB drive into the USB 2 port on the front of the ECM-2 (Main).
2. Using the IDP-1201, navigate to the General Index screen.
3. Press Setup to enter the Configuration screen.
4. On the Configuration screen, select Open File Manager.
5. Verify that the M (Main) indicator next to “USB Device Ready” is illuminated.
6. Press the “Download Data From Controller” button under M (Main).
7. Wait until the M (Main) indicator next to “USB Download Complete” illuminates.
8. Press the “Push to Safely Remove USB Device” button under M (Main).
9. Wait until the M (Main) indicator next to “USB Device Not In Use.” illuminates.
10. Remove the USB drive.

General Index

The General Index screen (Figure 3-5) is accessed by pressing the Index button, located in the lower right corner of any other IDP-1201 screen. The General Index screen provides two methods of access to other screens within the IDP-1201. Buttons on the General Index page provide quick access to 20 frequently used IDP-1201 screens.

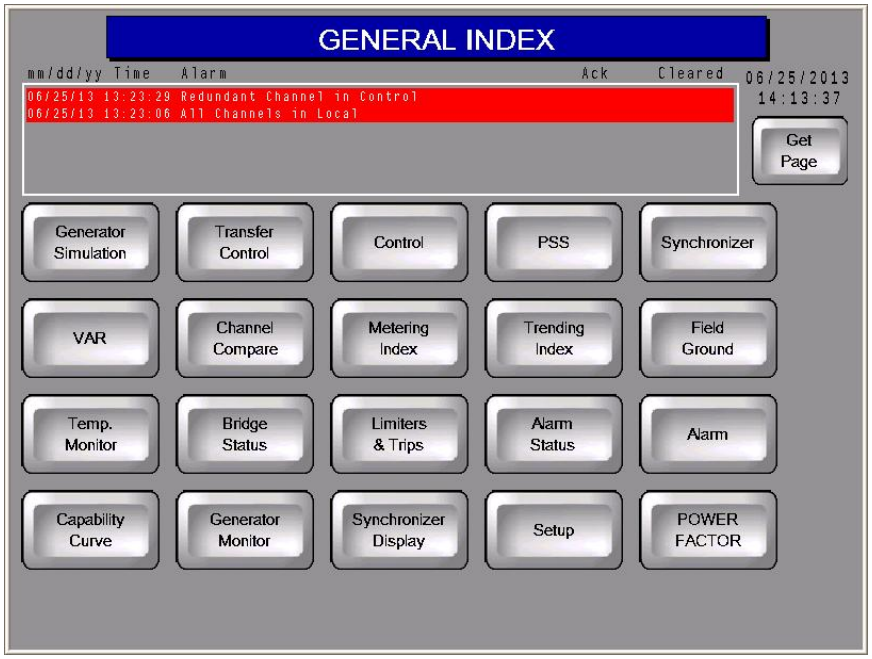


Figure 3-5. General Index Screen

Metering Index

Buttons on the Metering Index screen (Figure 3-6) are pressed to access the screens used to scale and display system metering values.

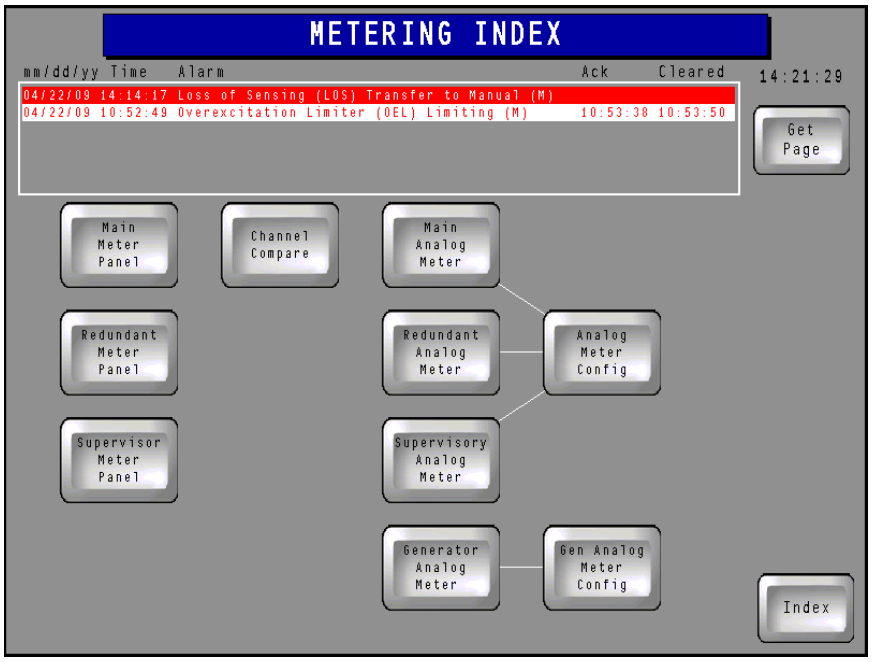


Figure 3-6. Metering Index Screen

Analog Meter Config Button

Pressing this Metering Index screen button accesses the Analog Meter Configuration screen (Figure 3-7) which sets the range of the metering values displayed on the Main, Redundant, and Supervisory Metering Panels (if so equipped). The minimum and maximum per-unit values for a metered parameter is changed by pressing the corresponding value. This displays a keypad which is then used to assign the desired metering limit. A per-unit value of –5.00 to 5.00 may be entered. Pressing the Enter (ENT) button saves the value.

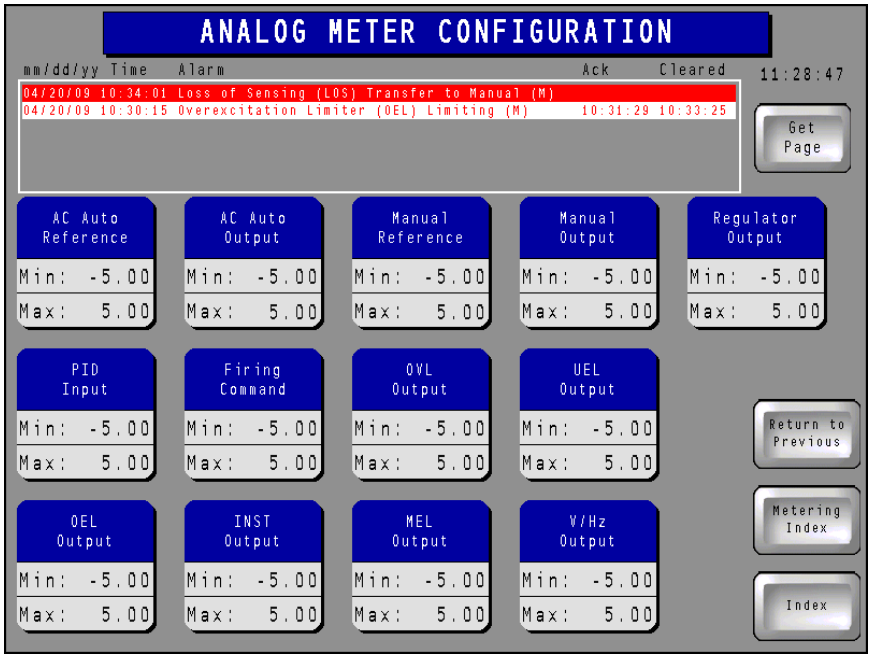


Figure 3-7. Analog Meter Configuration Screen

Main Analog Meter, Redundant Analog Meter, and Supervisory Analog Meter Buttons

Pressing one of these Metering Index screen buttons (if so equipped) accesses the corresponding metering page which displays the parameters illustrated in Figure 3-8. (Only the Main Meter Panel is shown here; the Redundant and Supervisory Meter Panels are similar.) The value of each parameter is graphically shown on an analog scale and also displayed in digital format. The minimum and maximum values established on the Analog Meter Configuration screen determine the metering ranges shown on this screen.

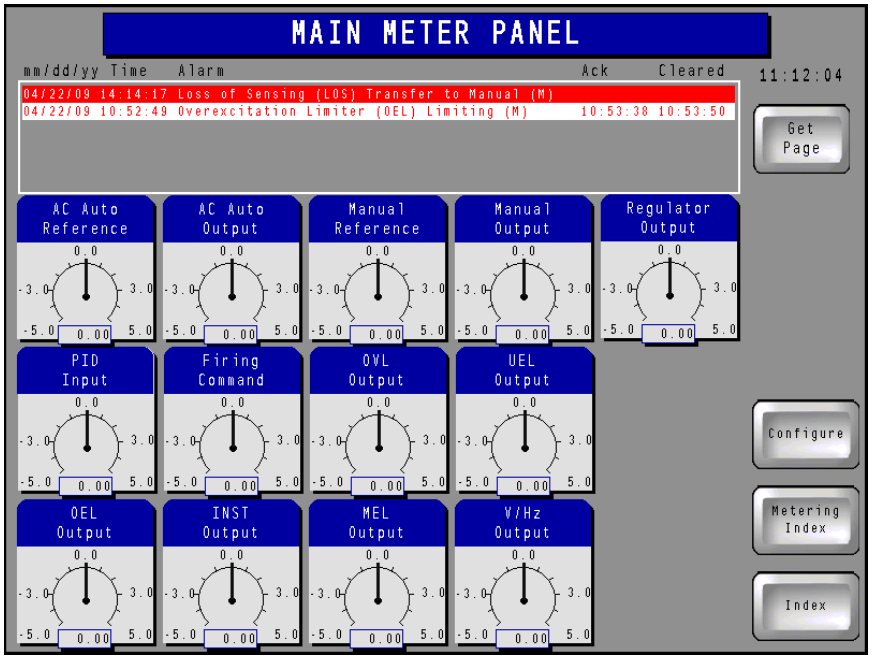


Figure 3-8. Main Meter Panel

Gen Analog Meter Config Button

Pressing this Metering Index screen button accesses the Generator Metering Configuration screen (Figure 3-9) which sets the range of the generator metering values displayed on the Generator Metering screen. The generator power factor metering range is fixed so no adjustment is provided. The minimum and maximum value for a metered parameter is changed by pressing the corresponding value. This displays a keypad which is then used to assign the desired metering limit. Pressing the Enter (ENT) button saves the value. Minimum and maximum metering parameter ranges are listed in Table 3-2.

Table 3-2. Metering Parameter Ranges

Parameter	Minimum	Maximum
Field Current	0	10000
Field Voltage	–1500	1500
Generator Current	0	30000
Generator Voltage	0	30000
Generator Megavars	–1500	1500
Generator Megawatts	0	1500

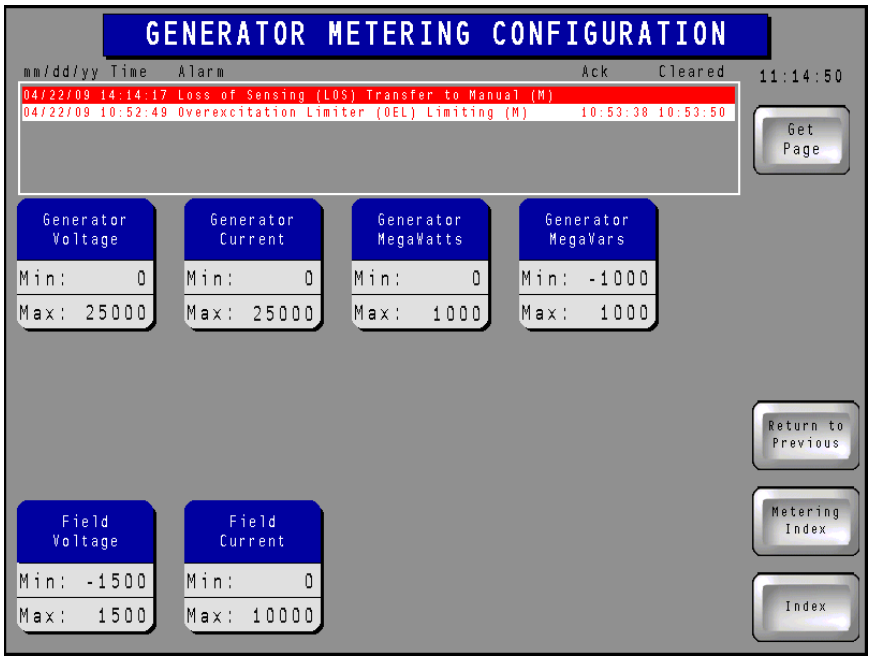


Figure 3-9. Generator Metering Configuration Screen

Generator Analog Meter Button

Pressing this Metering Index screen button accesses the Generator Metering screen which displays the parameters illustrated in Figure 3-10. The value of each parameter is graphically shown on an analog scale and also displayed in digital format. The minimum and maximum values established on the Generator Metering Configuration screen determine the metering ranges shown on this screen. The Generator Metering screen also indicates the control system channel that is controlling excitation.

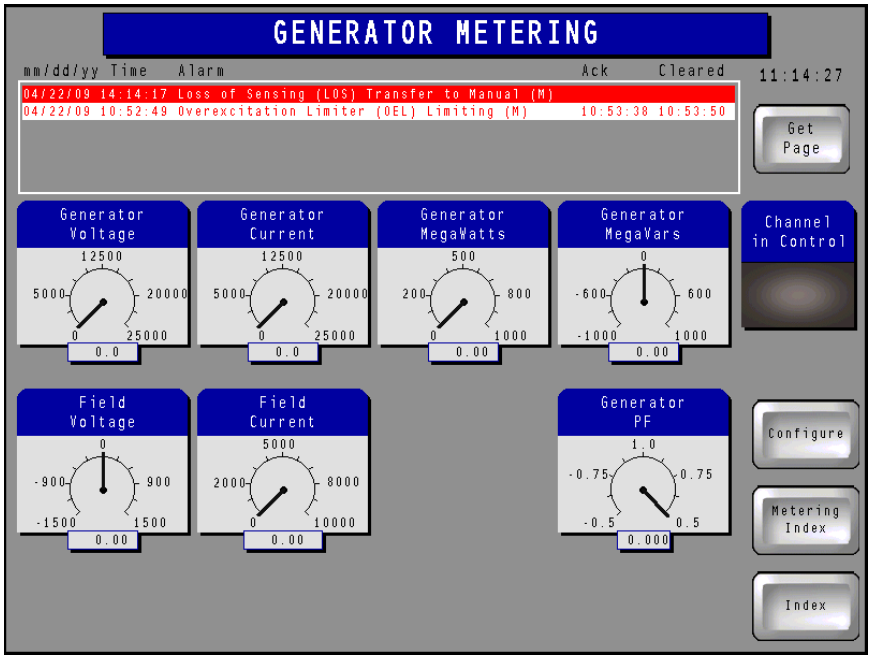


Figure 3-10. Generator Metering Screen

Channel Compare Button

Pressing this Metering Index screen button accesses the Channel Compare screen (Figure 3-11) which displays a list of parameters metered by the control system channels. Scroll buttons, located to the right of the list, can be used to scroll up and down through the list of parameters. (A particular system may not

be equipped with all of the channels shown here.) Three columns of indicators, located in the lower portion of the screen, show the status of various operating modes, functions, and devices for the three channels. The Channel in Control indicators turn green when active; all other indicators turn red when active.

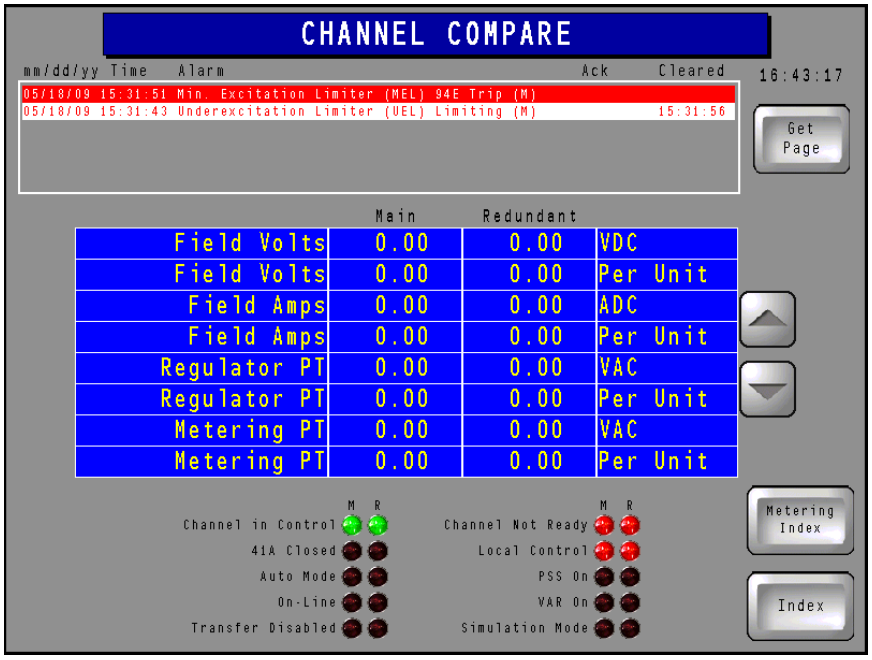


Figure 3-11. Channel Compare Screen

Main Meter Panel, Redundant Meter Panel, and Supervisory Meter Panel Buttons

Pressing one of these Metering Index screen buttons (if so equipped) accesses the corresponding meter panel screen which displays the digital-only version of the parameters illustrated in Figure 3-8. (Only the Main Meter Panel (Figure 3-12) is shown here; the Redundant and Supervisory Meter Panels are similar.) The minimum and maximum values established on the Analog Meter Configuration page determine the metering ranges shown on this screen.

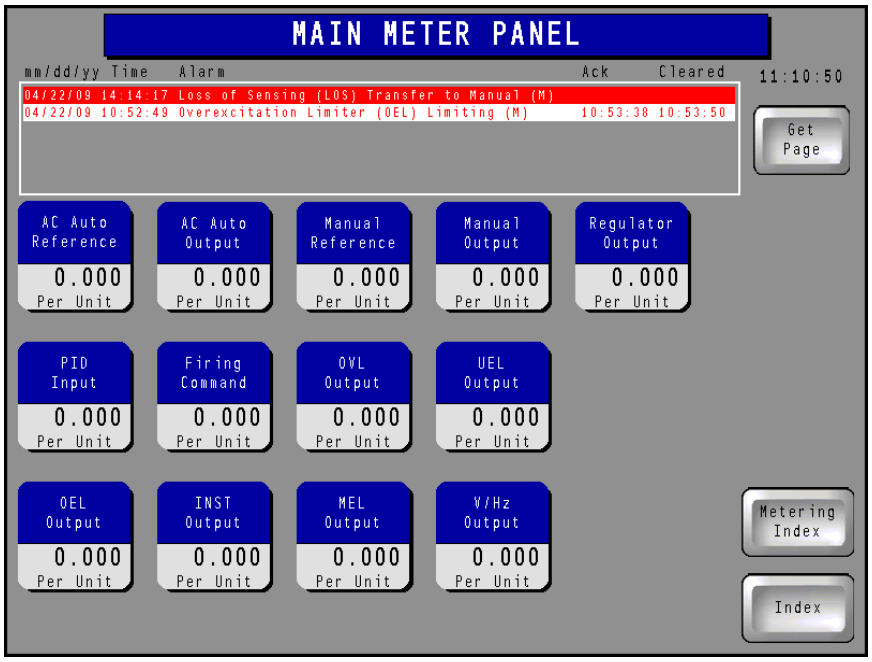


Figure 3-12. Main Meter Panel Screen

Trending Index

Buttons on the Trending Index screen (Figure 3-13) provide access to data lists and plots for user-selected control system parameters and temperature data lists and plots for the excitation system rectifier bridges. Appropriate buttons are provided based on the number of bridges included in the system.

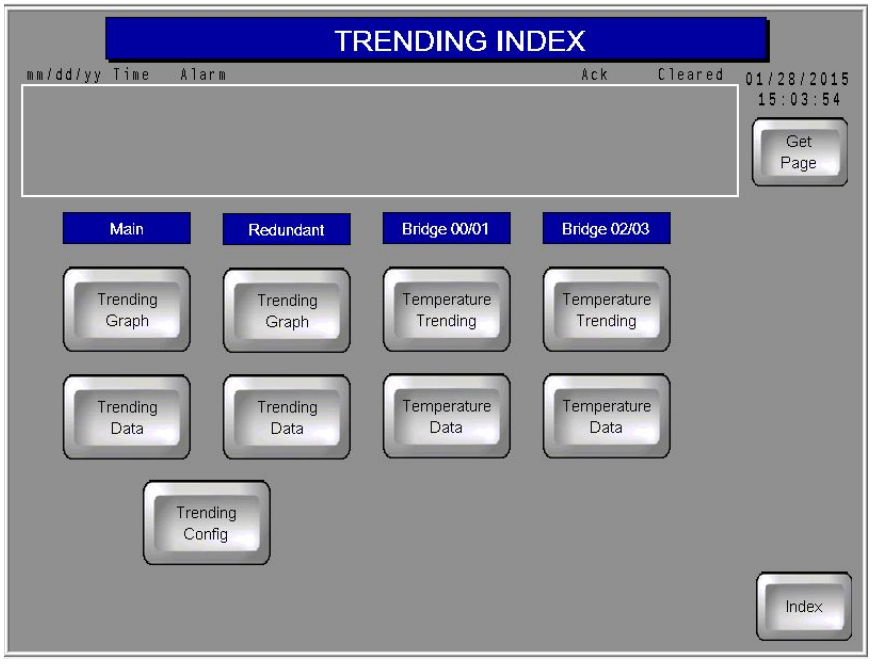


Figure 3-13. Trending Index Screen

Trending Config Button

Pressing this Trending Index screen button accesses the Meter Trending Configuration screen shown in Figure 3-14. Up to 12 control system channel parameters may be selected as part of a data list (accessed through the Trending Data buttons) or data graph (accessed through the Trending Graph buttons). A

Duration button can be pressed to access a keypad where the trending length can be selected. Up to 2,400 control channel data points and 100 bridge temperature data points are maintained. A legend indicates the line colors and patterns used when parameters are graphed.

Figure 3-14. Meter Trending Configuration Screen

Trending Data Buttons

Pressing these Trending Index screen buttons accesses the corresponding trending page (either the Main channel trending list or the Redundant channel trending list). The Main channel trending list screen is shown in Figure 3-15; the Redundant channel trending list screen is identical in appearance.

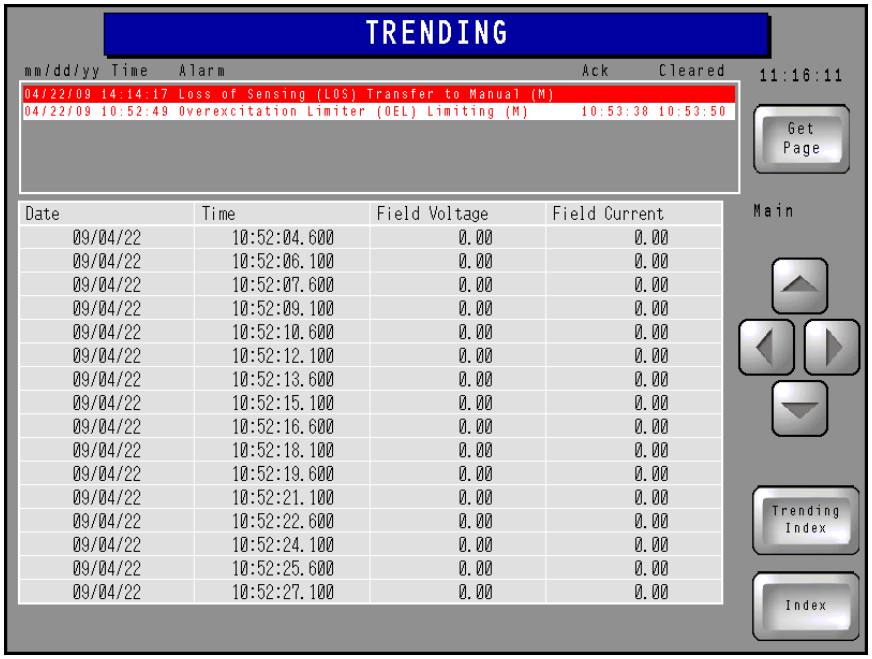


Figure 3-15. Main Channel Trending Data Screen

Parameter data are listed in columns along with dates and timestamps for each row of data. Note that the date format is yy/mm/dd. The parameters displayed are selected on the Meter Trending Configuration screen. Scrolling buttons enable the user to move through the record and view the desired data points.

Trending Graph Buttons

Pressing these Trending Index screen buttons accesses the corresponding trending graph page (either the Main channel trending graph or the Redundant channel trending graph). The Main channel trending graph screen (Figure 3-16) is shown here; the Redundant channel trending graph screen is identical in appearance.

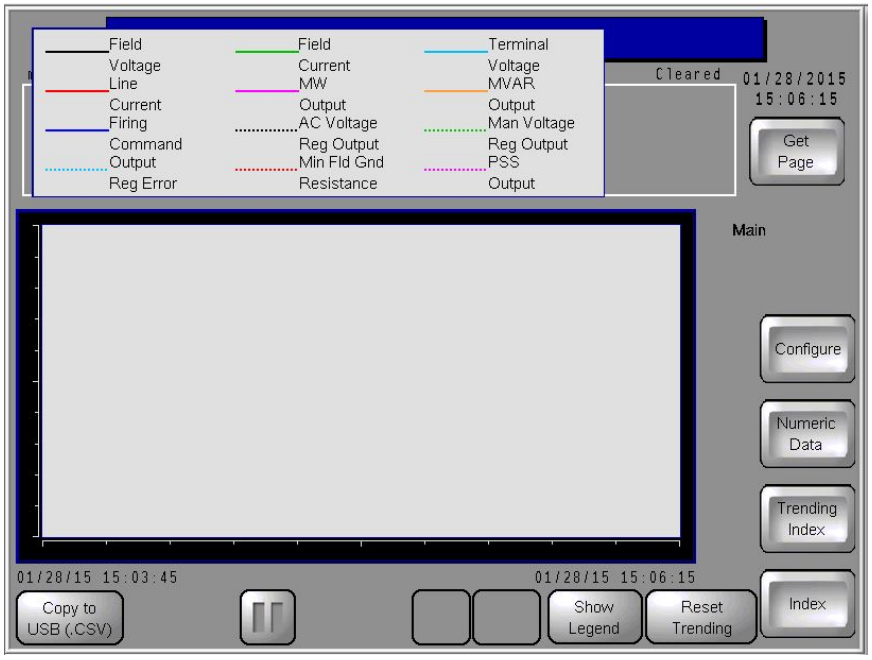


Figure 3-16. Main Channel Trending Graph Screen

Each trending graph screen has a graph window with buttons that are used to move forward and backward through the plot, zoom in and out, and reset the plot. Plotted parameters are selected on the Meter Trending Configuration screen. Pressing the Show Legend button displays a legend indicating the line colors and patterns used in the trending graph. A Copy to USB button provides the ability to export the plot data to the IDP-1201's USB port in a comma-separated-values file format.

Temperature Trending and Temperature Data Buttons

These Trending Index screen buttons are pressed to access a plot or list of temperature data for the rectifier bridges. Display and control layout of these pages are identical to that of the trending data and trending graph screens for the control system channels.

Limiters and Trips

This page (Figure 3-17) indicates the status of the following limiters and trip actions:

- Overexcitation (OEL)
- Volts per Hertz (HXL)
- Overvoltage (OVL)
- Instantaneous (INST)
- Minimum Excitation (MEL)
- Underexcitation (UEL)
- Loss of Sensing (LOS)
- External Initiated Lockout (86)
- Transformer Overtemperature (OTT)
- Loss of Both Cooling Fans (LBF)

Pressing the Acronym Key button displays a list of acronym definitions for the Limiters & Trips page.

Limiter/trip status is indicated by up to three columns of red (active) or black (inactive) indicators labeled M (main channel), R (redundant channel), and S (supervisory channel). The meaning of a red indicator depends upon the column it is located in. Indication categories (columns) are Timing, Timed Out, Limit, Redundant, Manual, and Trip.

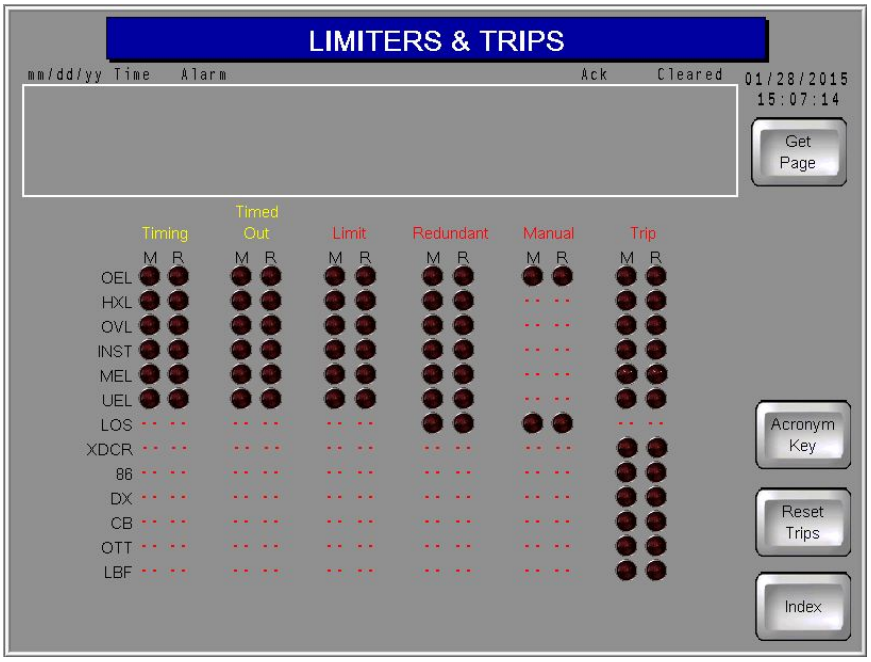


Figure 3-17. Limiters and Trips Screen

Alarm Status

The Alarm Status screen (Figure 3-18) lists control system parameters, conditions, and modules along with their alarm status. Alarm status is displayed by three columns of indicators that are either black (no alarm) or red (alarm). Depending upon the features of the control system, each parameter has up to three alarm indicators labeled M (main channel), R (redundant channel), and S (supervisory channel). An active alarm is annunciated by a red indicator and is listed in the alarms banner along the top of the page. More information about how alarms are displayed is provided in the description for the Alarms/Faults screen.

Navigation to the Index, Bridge Status, and Transfer Control screen is available through buttons located in the lower, right portion of the Alarm Status screen.

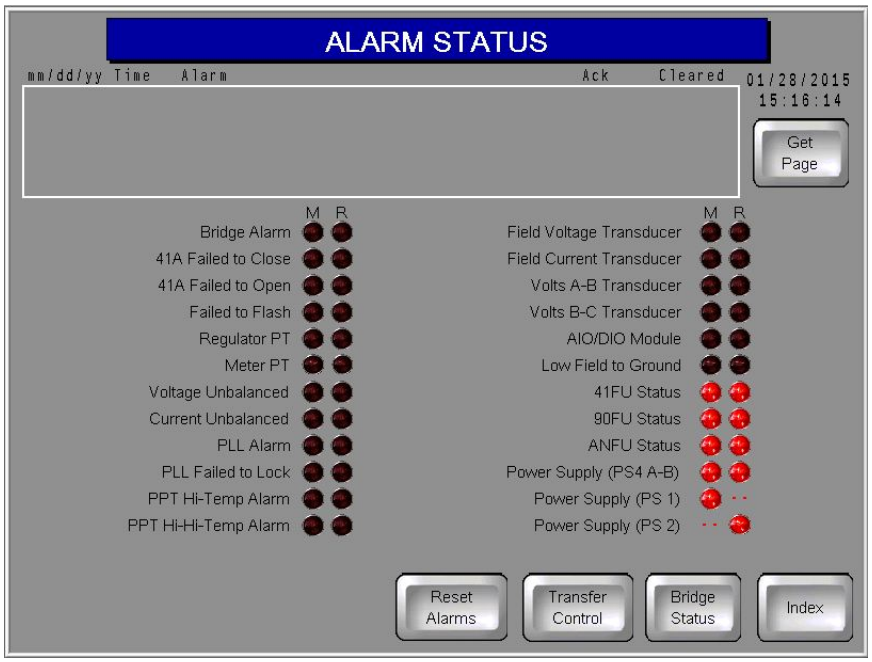


Figure 3-18. Alarm Status Screen

Active Alarms/Faults

This screen (Figure 3-19) lists only alarms that are active. Scrolling buttons along the right side of the list enable the user to navigate through the list of alarms. Individual alarms can be acknowledged by selecting the alarm and then pressing the Acknowledge Selected button. All alarms in the list can be acknowledged simultaneously by pressing the Acknowledge All button. The History button provides access to the Alarms/Faults History screen.

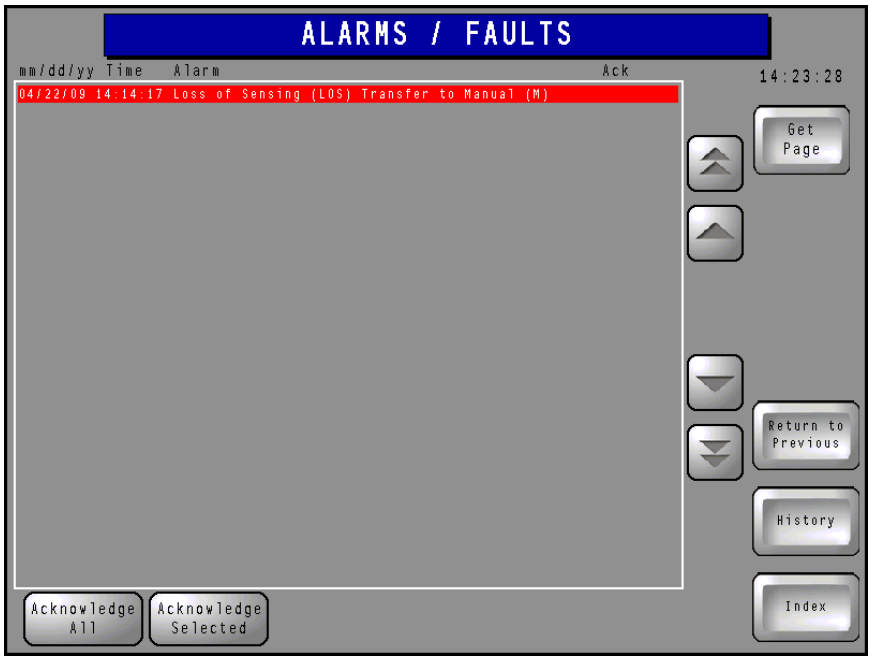


Figure 3-19. Active Alarms/Faults Screen

Alarms/Faults History

This screen (Figure 3-20) lists all active, acknowledged, and cleared alarms. Active alarms are displayed as white text on a red background. Alarms that have been acknowledged (but not cleared) are displayed as yellow text on a black background. Cleared alarms are displayed as red text on a white background. Scrolling buttons along the right side of the list enable the user to navigate through the list of alarms. Individual alarms can be acknowledged or cleared by selecting the alarm and then pressing the Acknowledge Selected or Clear Selected button. All alarms in the list can be simultaneously acknowledged or cleared by pressing the Acknowledge All or Clear All button. A Copy to USB button provides the ability to export the plot data to the 42BIDP-1201's USB port in a comma-separated-values file format. The History button provides access to the Active Alarms/Faults screen.

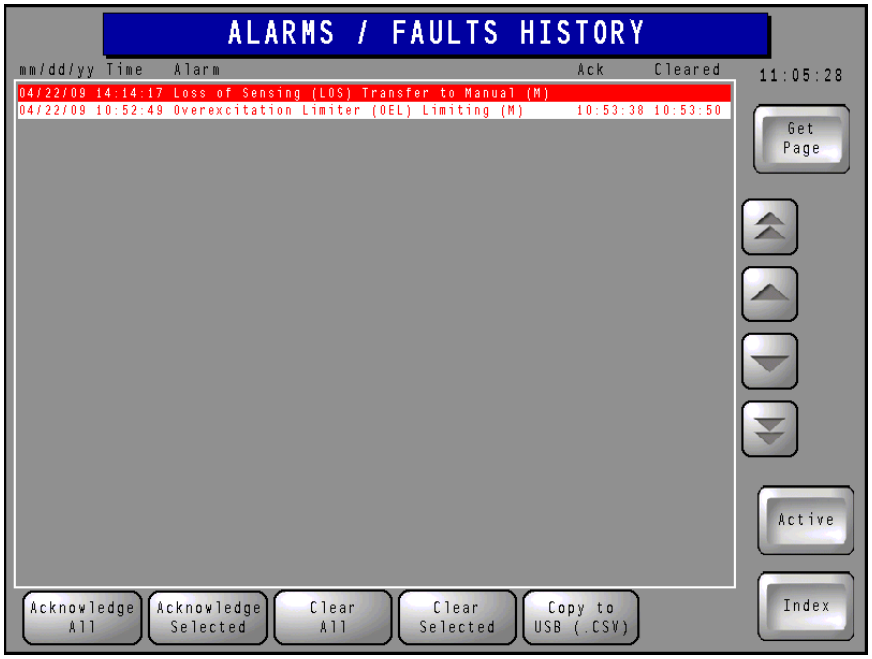


Figure 3-20. Alarms/Faults History Screen

Bridge Status

The Bridge Status screen (Figure 3-21) displays alarm conditions associated with the excitation system power converters. This screen indicates the status of up to two power converters; a system with more than two power converters will have more than one Bridge Status screen.

Alarm indications are provided for open input fuses, open or non-conducting SCRs, open or shorted RTDs, and cooling failures.

A Reset Alarms button can be used to reset any alarms associated with the Bridge Control Module.

The Return Bridge From Maint button must be pressed when an out-of-service power converter is ready to be returned to service.

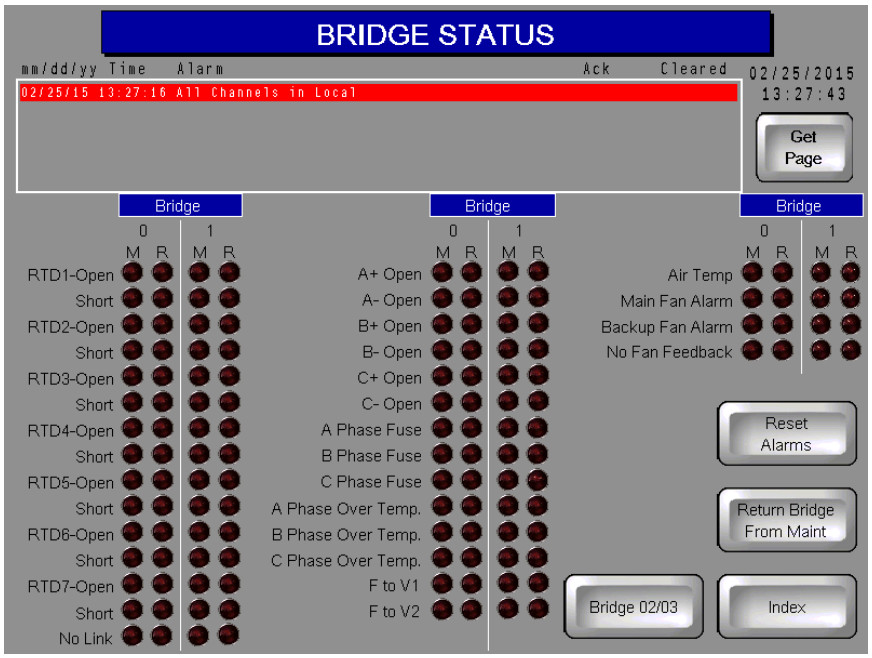


Figure 3-21. Bridge Status Screen

Fan Control and Temperature Monitor

This screen (Figure 3-22) displays a table of temperature data for the excitation system rectifier bridges. Heat sink temperature data is listed for each SCR. The ambient air temperature surrounding the bridge is also listed.

Buttons at the right side of the page enable the user to override the cooling fan logic and manually select which fans operate.

Indicators display the operating status of the rectifier bridge cooling fans.

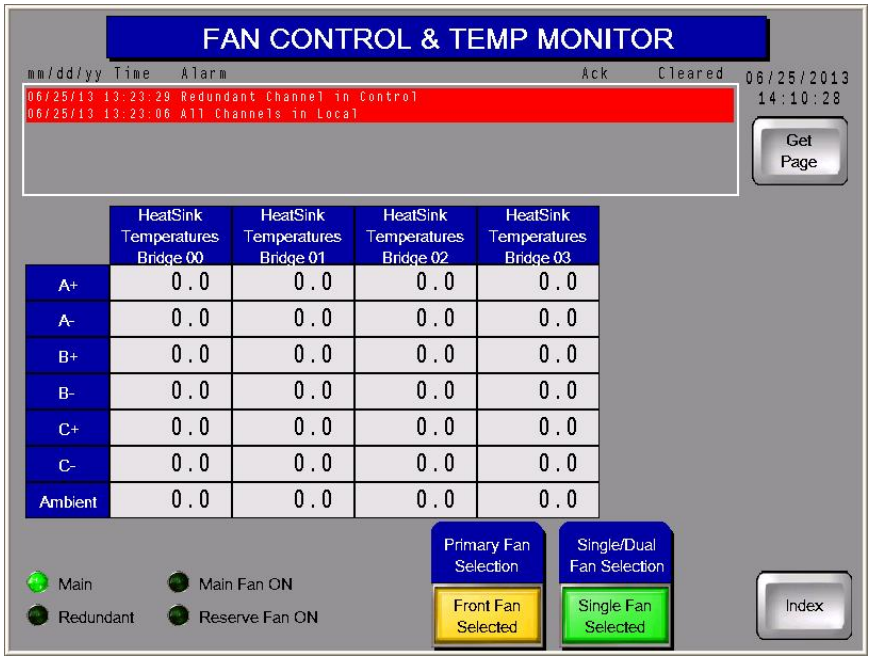


Figure 3-22. Fan Control and Temperature Monitor Screen

Transfer Control

This screen (Figure 3-23) is used to transfer control from one control system channel to another.

When transferring control system channel control, observe the following:

- The 42BIDP-1201 being used must be in control.
- You must know whether the IDP-1201 being used is Local or Remote (as displayed on the Local/Remote indicator). Note that the IDP-1201 located on the control system equipment enclosure is considered as the Local IDP-1201. An IDP-1201 at any other location is considered to be a Remote IDP-1201.
- Level 1 password access is required (through use of the Log In button).
- The redundant channel tracks the output of the main channel and displays the percent difference (error) between the outputs of the redundant and main channels.

To transfer control system channel control:

1. Ensure that the Enable Transfer indicator shows “Panel Transfer Enabled”. This is achieved by pressing the Enable Transfer button.
2. Press the Transfer indicator button and select the desired channel.

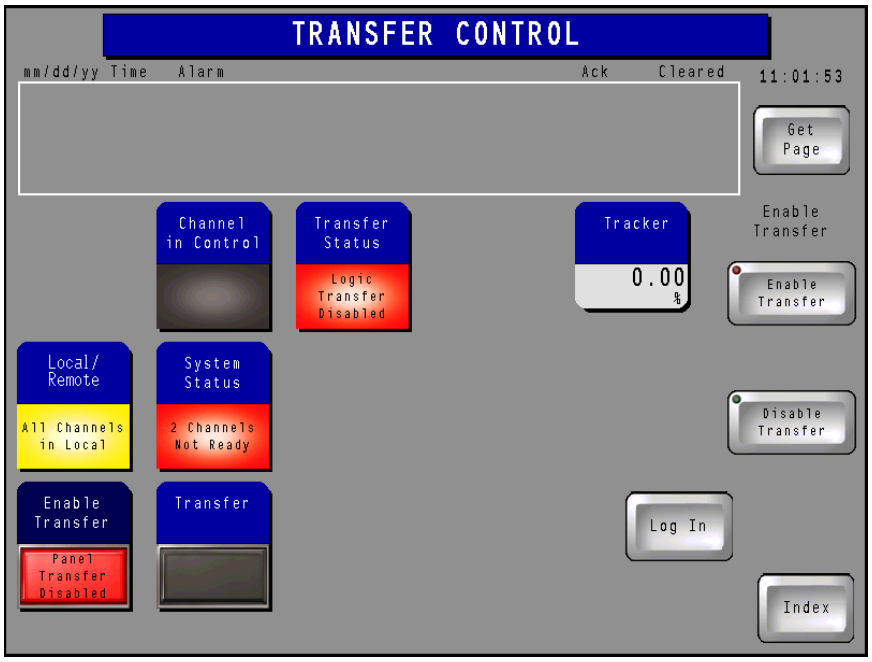


Figure 3-23. Transfer Control Screen

Power System Stabilizer

This page (Figure 3-24) displays power system stabilizer operating status and enables/disables PSS operation. PSS metering indications for each control system channel are displayed. The PSS output for the active channel is displayed adjacent to the Channel in Control indicator.

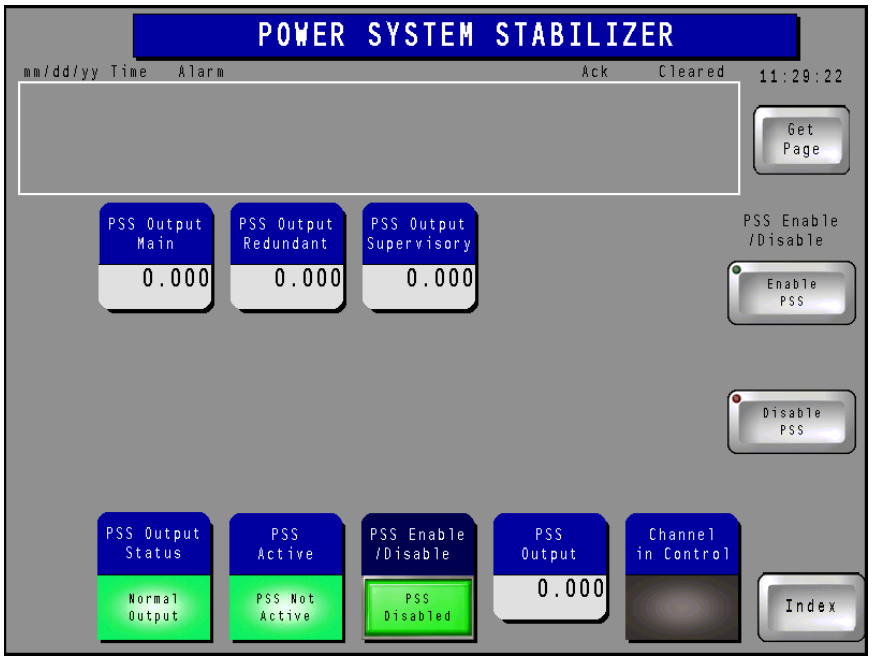


Figure 3-24. Power System Stabilizer Screen

Field Ground

This is an indications-only screen (Figure 3-25) that displays the field-to-ground resistance and calculated field temperature as measured/calculated by each channel. If the level of the field-to-ground resistance is detected as less than system variable FLDGND_RMIN, an alarm condition exists and is displayed in the Field Ground indicator(s).

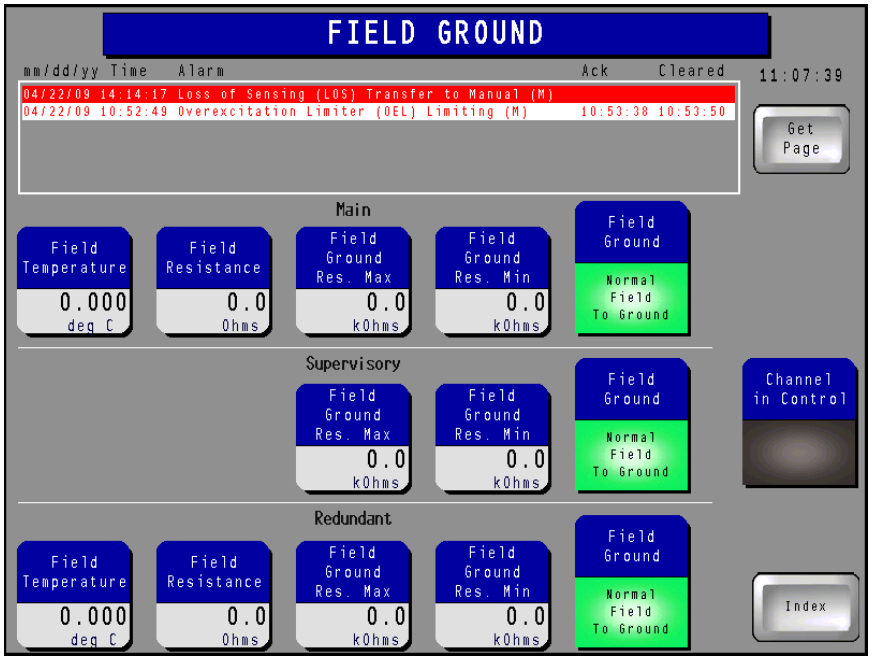


Figure 3-25. Field Ground Screen

Var

This screen (Figure 3-26) is available only on systems equipped with var control.

Control of reactive power is enabled and disabled by the VAR Control button. When this button is pressed, Enable and Disable buttons will appear and enable the user to turn control of vars on and off.

Var balance is adjusted by pressing the VAR Adjuster button. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the level of reactive power.

The 70BC-CS Manual button can be used to raise or lower the balance or manual reference. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the voltage while operating in Manual mode.

Similarly, the 90DV-CS Auto button can be used to raise or lower the voltage while operating in Auto mode.

Generator and excitation system values are displayed and controls are provided for control of the ac (41A) breaker.

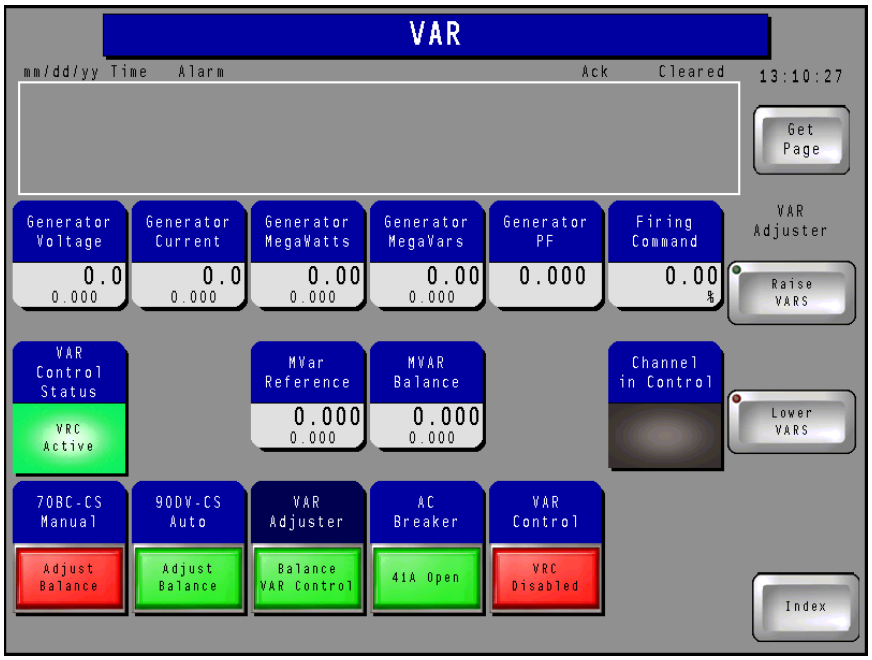


Figure 3-26. Var Screen

Power Factor

This screen is shown in Figure 3-27. This screen is available only on systems with PF control.

Control of power factor is enabled and disabled by the PF Control button. When this button is pressed, Enable and Disable buttons will appear and enable the user to turn control of power factor on and off.

Power factor balance is adjusted by pressing the PF Adjuster button. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the power factor.

The 70BC-CS Manual button can be used to raise or lower the balance or manual reference. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the voltage while operating in Manual mode.

Similarly, the 90DV-CS Auto button can be used to raise or lower the voltage while operating in Auto mode.

Generator and excitation system values are displayed and controls are provided for control of the ac (41A) breaker.

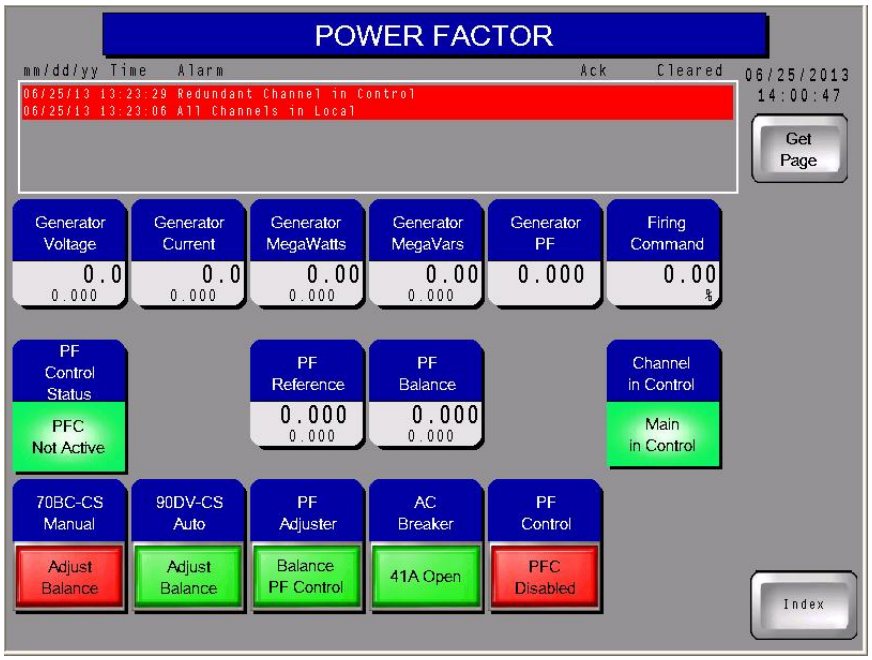


Figure 3-27. Power Factor Screen

Output Control

This screen (Figure 3-28) provides system control, status indication, and metering of generator and excitation system parameters.

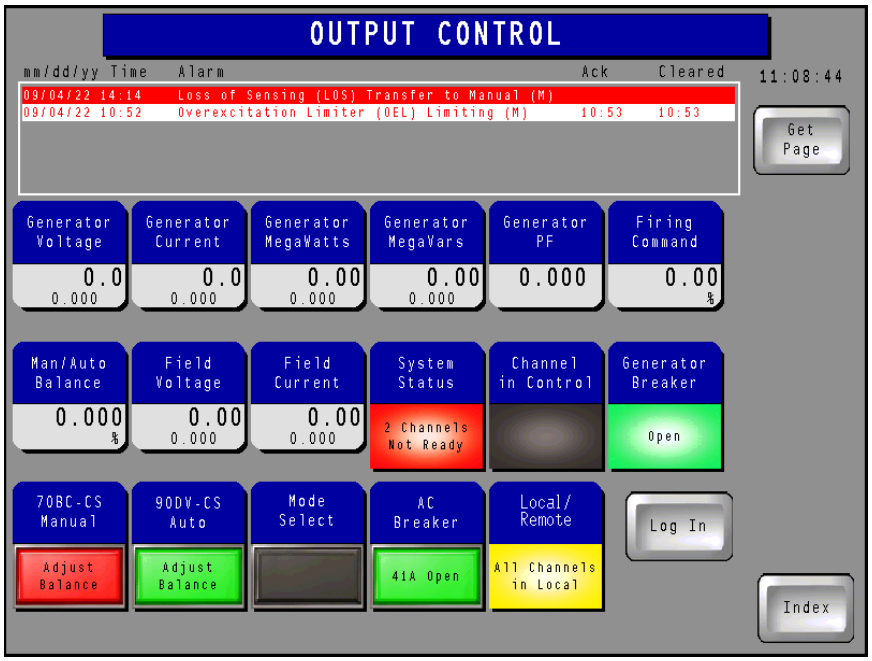


Figure 3-28. Output Control Screen

Controls

Controls include opening and closing of the ac (41A) breaker, selection of auto- or manual-mode regulation, and adjustment of the generator voltage in Manual or Auto mode.

Control of the 41A breaker is provided through the AC Breaker button. When this button is pressed, Trip and Close buttons will appear and enable the user to open and close the ac breaker.

Selection of auto- or manual-mode regulation is provided through the Mode Select button. When this button is pressed, Put Reg in Auto and Put Reg in Manual buttons will appear and enable the user to select either auto or manual regulation.

The 70BC-CS Manual button can be used to raise or lower the balance or manual reference. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the voltage while operating in Manual mode.

Similarly, the 90DV-CS Auto button can be used to raise or lower the voltage while operating in Auto mode.

Status Indicators

The System Status indicator displays the readiness of the control system channels.

The Channel in Control indicator displays which of the control system channels is actively controlling the excitation level.

The Generator Breaker indicator displays whether the generator breaker is open or closed.

The Local/Remote indicator displays the local/remote control status of all control system channels. When logged in with the Log In button and the proper password, this indicator is converted to a control button that can be used to select either local or remote control. When pressed, Local Control and Remote Control buttons appear and enable the user to select the operating mode. During proper operation, the control mode of all channels should match. That is, all channels should be under local control or all channels should be under remote control.

Metering

Metering indications are provided for generator voltage, current, watts, vars, and power factor. Metering indications are also provided for field voltage and current, the SCR firing command percentage, and manual/auto setpoint balance. Metering indications with two values display the actual reading in the upper row of numbers and the per-unit (PU) value in the lower row of numbers.

Generator Simulation

The Generator Simulation screen (Figure 3-29) gives the user the ability to test a group of settings offline. Controls are provided for enabling and disabling generator simulation (Simulation Enable), raising and lowering the Auto setpoint (Raise/Lower Volts), raising and lowering the output power (Turbine Control), toggling between Auto and Manual modes (Mode Select), and tripping and closing the 41A breaker (AC Breaker). Metering indicators are provided for common generator and excitation system parameters.

Provisions for tripping and closing the generator breaker are provided.

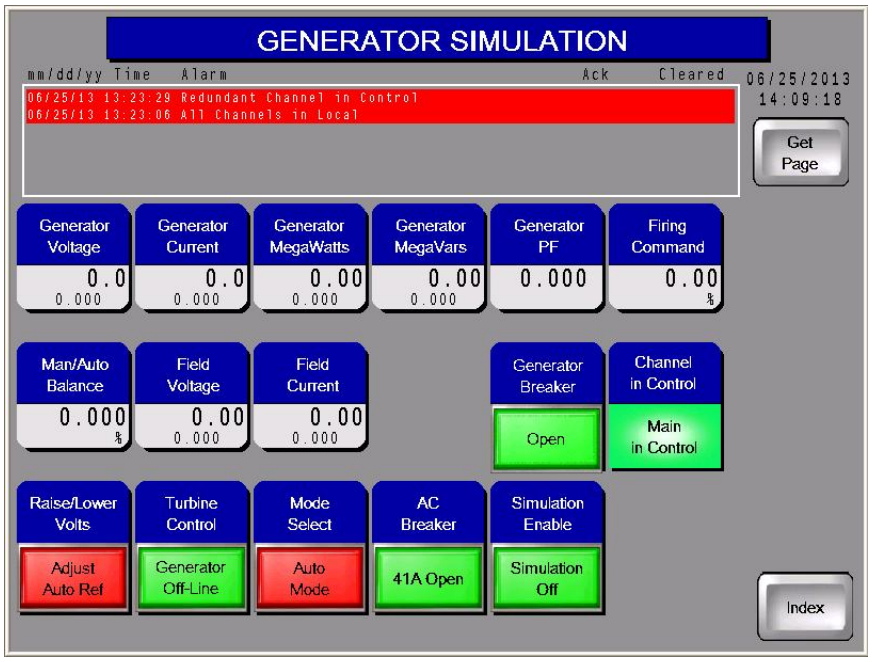


Figure 3-29. Generator Simulation Screen

Generator Monitor

The Generator Monitor screen (Figure 3-30) graphically illustrates excitation system and generator status. Excitation system indicators are provided for ac breaker and PSS status and field voltage and current levels. Generator voltage, current, watts, vars, and power factor are also displayed.

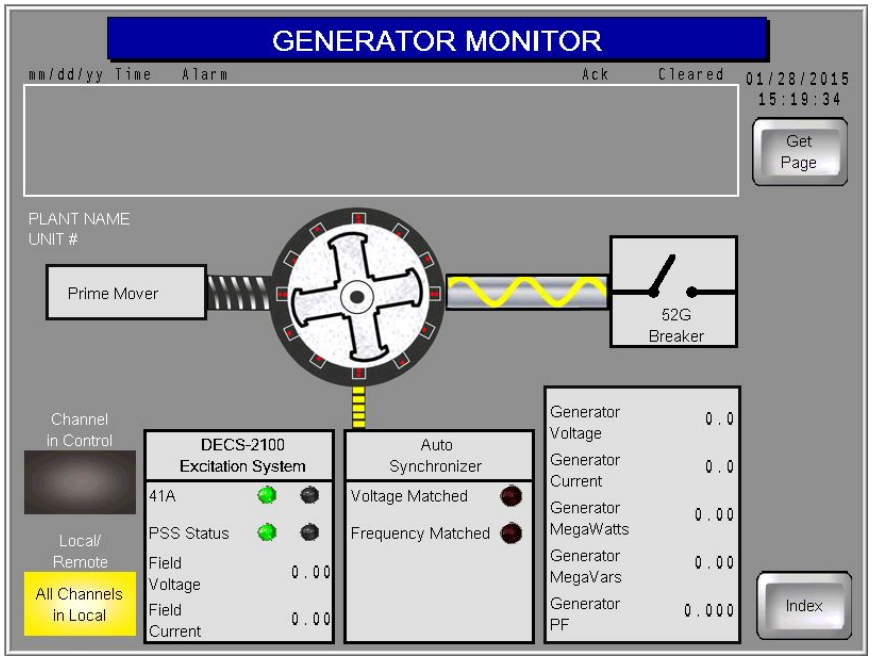


Figure 3-30. Generator Monitor Screen

Synchronizer

This screen (Figure 3-31) is used to enable/disable the synchronizer. The buttons labeled Regulator PT Primary, Regulator PT Secondary, Voltage Match PT Primary, and Voltage Match PT Secondary can be

used to enter the primary and secondary voltage magnitudes so that the synchronizing voltages can be displayed in actual voltage magnitudes in addition to per-unit values.

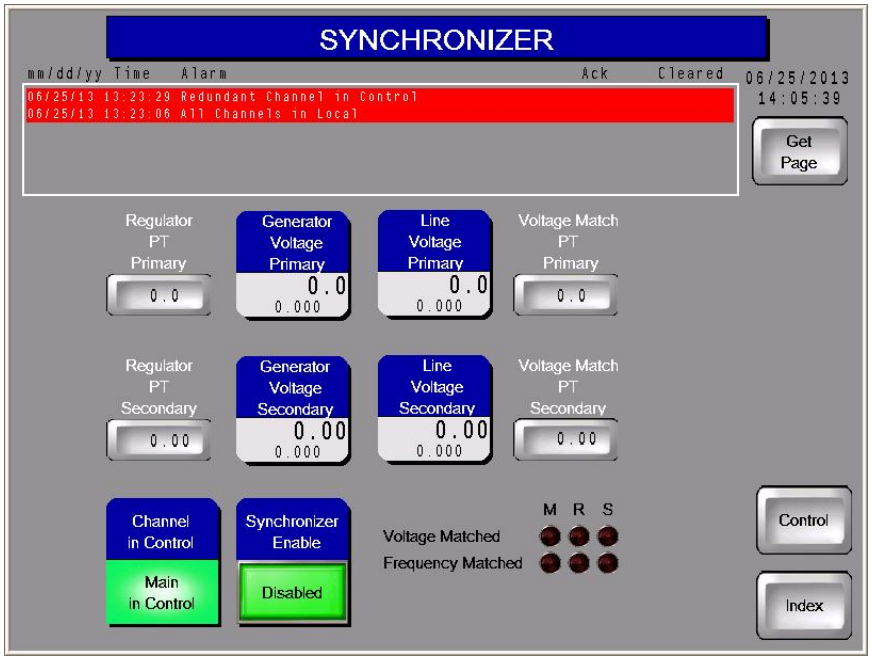


Figure 3-31. Synchronizer Screen

Synchronizer Display

This screen (Figure 3-32) displays the synchronization status.

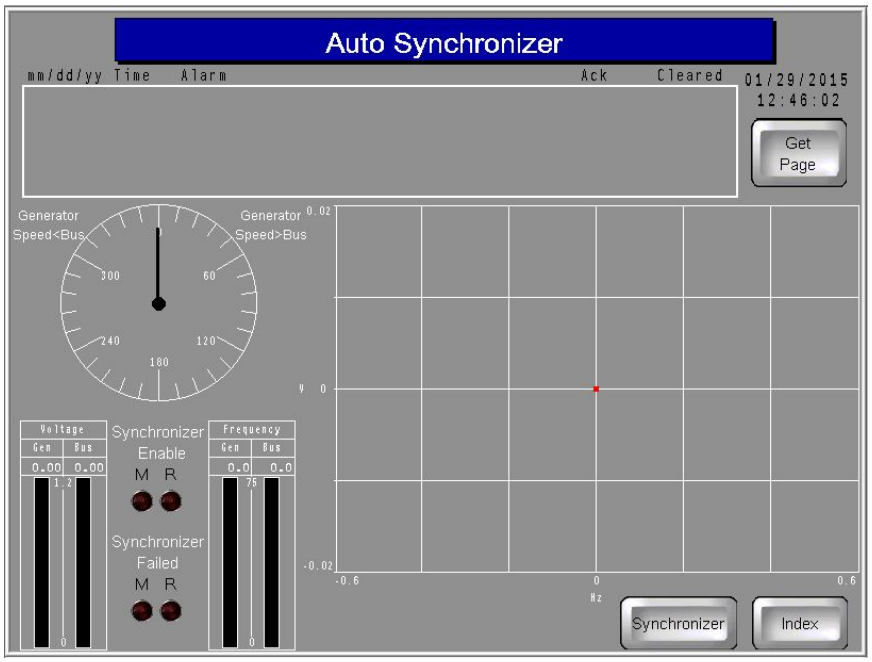


Figure 3-32. Auto Synchronizer Screen

Capability Curves

This screen displays the generator minimum excitation limit (MEL) capability curve in per- unit values and is superimposed on the actual excitation values. Click on the Curve Selection button to display either the

MEL or the UEL curve. The horizontal capability curve screen is shown in Figure 3-33. A vertical curve is also available.

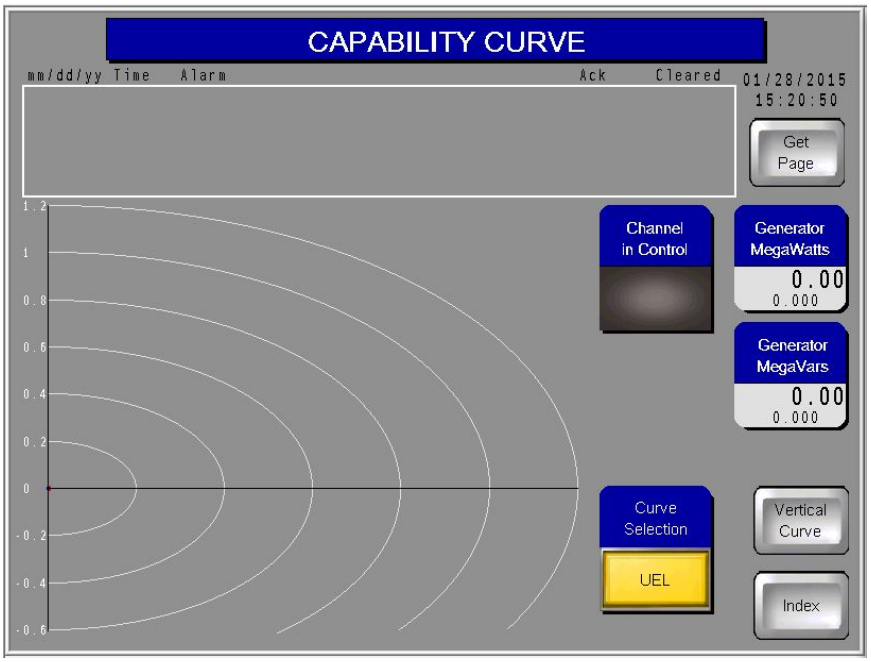


Figure 3-33. Capability Curve Screen

Task Guide

Table 3-3 lists common tasks along with the 42BIDP-1201 pages that provide the controls for performing the tasks.

Table 3-3. Tasks and Screens Cross-Reference

Task	Screen
Close ac breaker	Control
Flash the field	N/A, field is flashed automatically when ac field breaker is closed.
Place regulator in Auto or Manual mode	Control
Raise or lower voltage	Control Var
Change the controlling channel	Transfer Control
Change Local/Remote control	Control
View alarms	Any page
Acknowledge alarms	Alarm/Fault – Active Alarm/Fault – History

Password Settings

The default, level 2 password is “4321”. Use the following procedure to change the security password. A USB flash drive is required to change the password.

1. Create a CSV (comma-separated values) file named “Security.csv” that has its content structured as shown in Table 3-4. Place the new password where “New” is shown in the table. Passwords are case sensitive and have a maximum length of eight alphanumeric characters. It is not

necessary to enter a password for levels 3 through 14. The default level 15 password is “12345” and should not be changed.

2. Insert the USB flash drive into any available USB port on your PC.
3. Use normal Windows® techniques to create a root directory on the flash drive named “Security”.
4. Copy the CSV file created in Step 1 inside the “Security” directory on the flash drive.
5. Insert the USB flash drive into one of the USB ports on the side of the IDP-1201.
6. Press the **Index** button on any IDP-1201 page.
7. Press the **Setup** button on the *General Index* page.
8. Press the **Login** button at the bottom of the page.
9. Enter the default security password (4321).
10. Press the **Change Passwords** button located on the right side of the page.
11. If successful, the unit will display “Password change successful” to the left of the *Change Passwords* button.
12. If the unit displays “Password file not found”, verify that the CSV file is valid, named correctly, and located in the proper directory on the flash drive.

Table 3-4. Security.csv File Structure

Mode	PS
Level	Password
1	New
2	New
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	12345

Configuration Files

Each IDP-1201 is delivered with custom programming that is specific to the system and application where it will be used. If replacement of a display panel becomes necessary, the replacement IDP-1201 must be programmed with configuration files that are specific to the display panel model (IDP-1201) and its intended application. IDP-1200 configuration files are not compatible with the IDP-1201 and IDP-1201 configuration files are not compatible with the IDP-1200. Display panel model identification information is provided in the *Introduction* chapter.

Display panel configuration files are included on the documentation CD that accompanies the manual for an excitation system. If your system was supplied with an IDP-1201, then these files can be used to program a replacement IDP-1201display panel. If your system was supplied with an IDP-1200, Basler Electric will supply the files necessary for programming a replacement IDP-1201.

IDP-1201 Programming Procedure

Use the following procedure to program an IDP-1201 with a configuration file provided by Basler Electric.

1. Assemble the files required for programming the IDP-1201. These files include a configuration file (cml file extension), a “prj001” folder, and a “boot.cfg” file. The two latter items are typically located in a folder named “IDP Loader”.
2. Copy the configuration file, the “prj001” folder, and “boot.cfg” file into the root directory of a USB flash drive.
3. Insert the USB flash drive into one of the IDP-1201’s USB ports.
4. Press the Index button on any IDP-1201 page to access the General Index page.
5. Tap in the upper, left corner of the page and, within one second, tap in the lower right corner of the page. If done correctly, a menu should appear at the bottom of the page.
6. Press the CF/USB button at the bottom of the page.
7. Press the USB_Starting button at the bottom of the page.
8. Tap on the language box in the center of the page and select the desired language.
9. Press the Download (USB=>Display) button located to the right of the page center.
10. Select the configuration file (*.cml) file from the file list.
11. Tap on the password box in the center of the page and enter the appropriate password. (The default password is “5678”. On the popup control, use the Down arrow to toggle between letters and numbers.)
12. Press the Start button located in the center of the page.
13. Press the Yes button when asked to download the data. Downloading settings from a USB flash drive to the IDP-1201 takes approximately three minutes.
14. After completion of the download, press the Back button located at the bottom of the page.
15. Press the Back button again.
16. Press the Exit button at the bottom of the page.
17. Press the Yes button when prompted to restart the system.

4 • Operation with DECS-400

This chapter describes IDP-1201 operation and screen navigation with a DECS-400.

IDP-1201 screen appearance and availability will vary according to the type of DECS used and the configuration of the DECS system (single or dual DECS and generator or motor control).

DECS and generator/motor system parameters are viewed and controlled through interactive screens displayed by the IDP-1201. Screens are organized according to function. Navigation between screens and control of functions are achieved by touching “buttons” on the IDP-1201 screens.

Configuration Screens

Two configuration screens establish DECS and IDP-1201 operating modes: IDP-1201 Configuration and Screen Configuration. These configuration screens are available upon initial power-up of the IDP-1201. After initial configuration, these screens can be accessed through the Main View screen by entering the appropriate password.

IDP-1201 Configuration

Upon initial power-up, the IDP-1201 displays the IDP-1201 Configuration screen (Figure 4-1) where your product, product configuration, application, and communication method must be selected before proceeding to other IDP-1201 screens. Failure to make the proper selections may cause the IDP-1201 to annunciate false alarms.

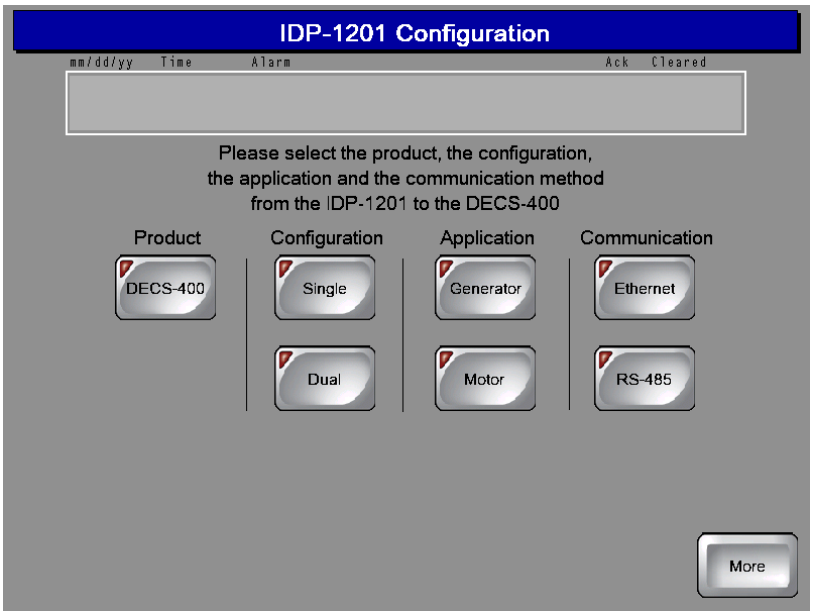


Figure 4-1. IDP-1201 Configuration Screen

Screen Configuration

Pressing the More button on the IDP-1201 Configuration screen accesses the Screen Configuration screen (Figure 4-2) which enables selection of the IDP-1201 language and other operating preferences. Individual screen preferences are described in the following paragraphs.

Language

Pressing the English (Anglais or Inglés) button selects English as the IDP-1201 display language. Pressing the French (Francais or Francés) button selects French as the display language. Pressing the Spanish (Espagnol or Español) button selects Spanish as the display language.

Date and Time

The date and time of an IDP-1201 connected to a DECS-400 is automatically synchronized with the date (month, day, and year) and time (hours and minutes) maintained by the DECS-400.

52L/M Input Switch Number

These buttons configure the IDP-1201 to monitor the same contact inputs that the DECS-400 is monitoring for the 52L/M contact input. Pressing the Standard Logic button configures the IDP-1201 to monitor contact input 3 for 52L/M contact status, which is the default assignment in standard DECS-400 logic. Pressing the Customized Logic button enables the user to configure the IDP-1201 to monitor the 52L/M contact input as configured in the customized DECS-400 logic.

Start/Stop Buttons Hidden/Visible

Pressing this button enables and disables visibility of the Start and Stop buttons on the DECS Control screen.

Records Duration

Trending records saved by the IDP-1201 retain up to six variables per record with each record consisting of 2,400 data points. Trending records saved by the IDP-1201 can have a user-defined duration ranging from 1 hour to 720 hours (30 days).

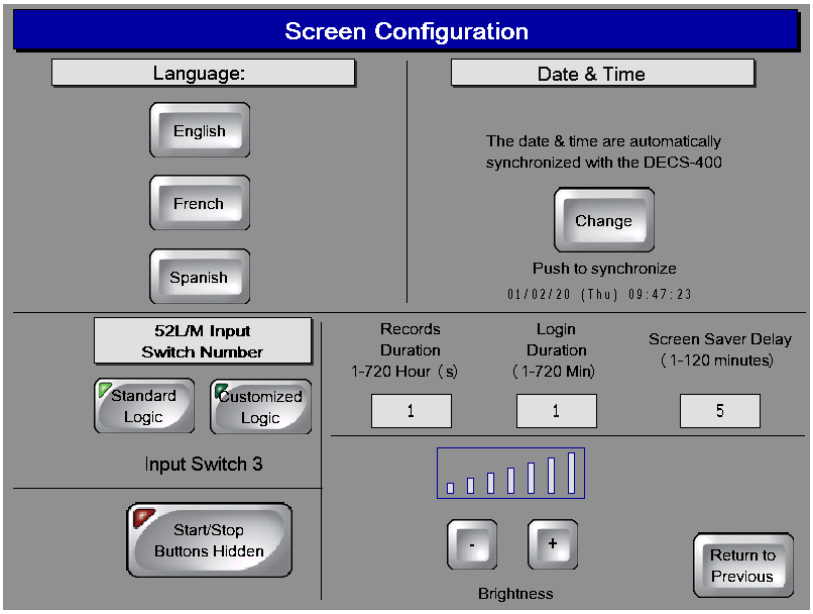


Figure 4-2. Screen Configuration Screen

Login Duration

Following login, the length of time that password access is available (if no button presses occur) is limited by the value of this setting. If no button presses are received for the duration of the setting, password access is lost and the user must log in again to make changes requiring password access. Login Duration is adjustable over the range of 1 to 720 minutes (12 hours).

Screen Saver Delay

A screensaver activates if no button presses are received at the display panel for the length of time specified by the Screen Saver Delay. A setting of 1 to 120 minutes may be entered.

Brightness

Display panel brightness can be increased and reduced by pressing the “+” and “–“ buttons. A bar graph above the buttons serves as a reference for adjusting the display brightness.

Main View Screen

This screen (Figure 4-3) serves as a gateway to the IDP-1201 status and control screens. It also provides access to file transfer functions and a screen lock to enable panel cleaning. The Login button can be used to enter the appropriate password and gain access to the configuration screens.

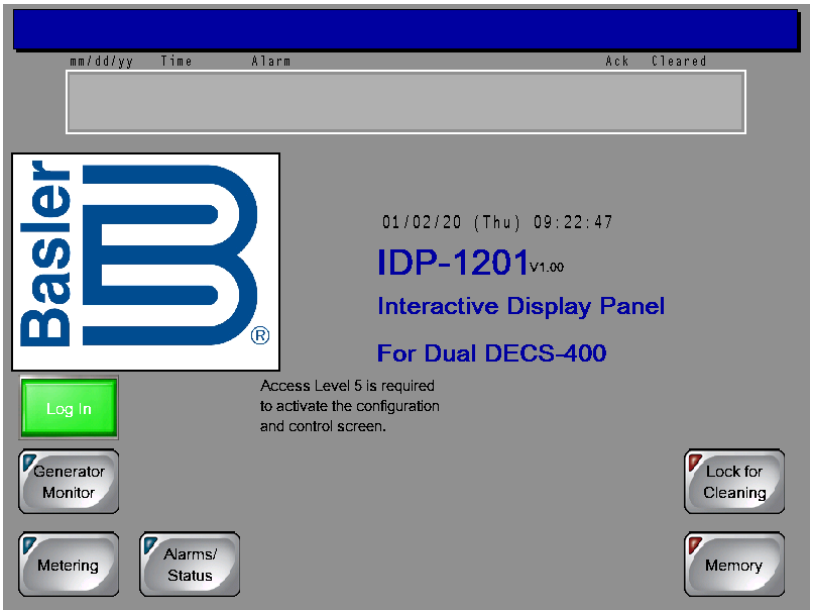


Figure 4-3. Main View Screen

Access to the Control button (and control screens) is possible only when logged into the IDP-1201 with the correct password.

IDP-1201 Passwords

Passwords protect the IDP-1201 from unauthorized settings changes, control commands, and transfers offline.

Two of the passwords are used when transferring the IDP-1201 offline. When taking the IDP-1201 offline, the offline and system passwords are used. The IDP-1201 is delivered with a system password of “4376” and an offline mode access password of “BASLER”.

A factory-default password of “idp8” gives (level 5) access to IDP-1201 configuration and control functions.

A factory-default password of “decs4” gives (level 1) access to only the IDP-1201 control functions.

A factory-default password of “idpx” provides start and stop control (access level 6) of the DECS through the Start and Stop buttons of the DECS Control screen.

Password access remains in effect based on display panel activity and the limit set by the Login Duration setting (Screen Configuration screen).

Gaining Password Access

The following example describes the process for using a password to gain configuration and control access.

1. Press the Login button on the Main View screen.
2. Use the alphanumeric keypad to enter the appropriate password and press the Enter button. The factory-default password is IDP8 and is case-sensitive.

Once the correct password is entered, the Main View screen is displayed with a Control button that provides access to the control screens and a Configure button that provides access to the configuration screens.

Generator/Motor Monitor

Depending upon the application selected on the IDP-1201 Configuration screen, either the Generator Monitor screen or Motor Monitor screen is accessed by pressing the Generator Monitor button or Motor Monitor button of the Main View screen. The Generator Monitor or Motor Monitor screen graphically illustrates generator/motor and excitation system status/activity. Generator and motor parameters include output voltage, output current, active (true) power, reactive power, and power factor. Excitation system parameters include field voltage, field current, and excitation on/off status. The Generator Monitor screen is shown in Figure 4-4 and the Motor Monitor screen is shown in Figure 4-5.

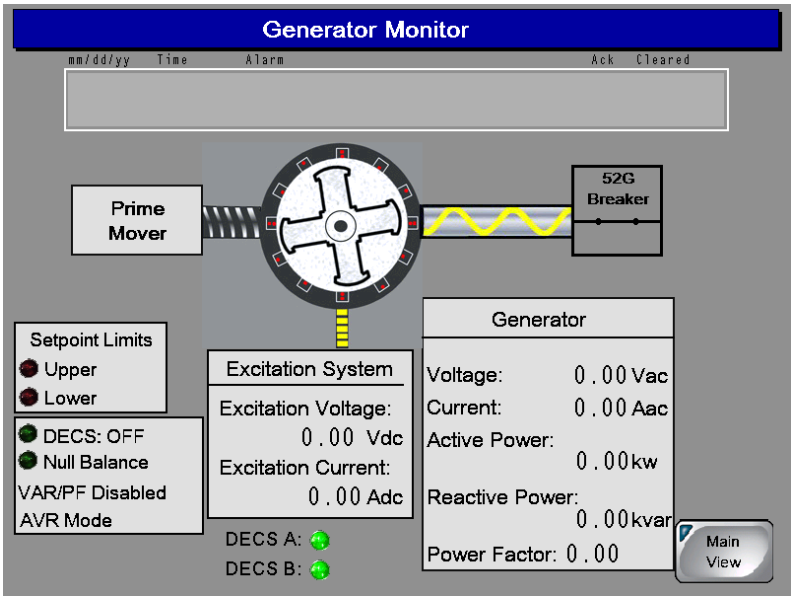


Figure 4-4. Generator Monitor Screen

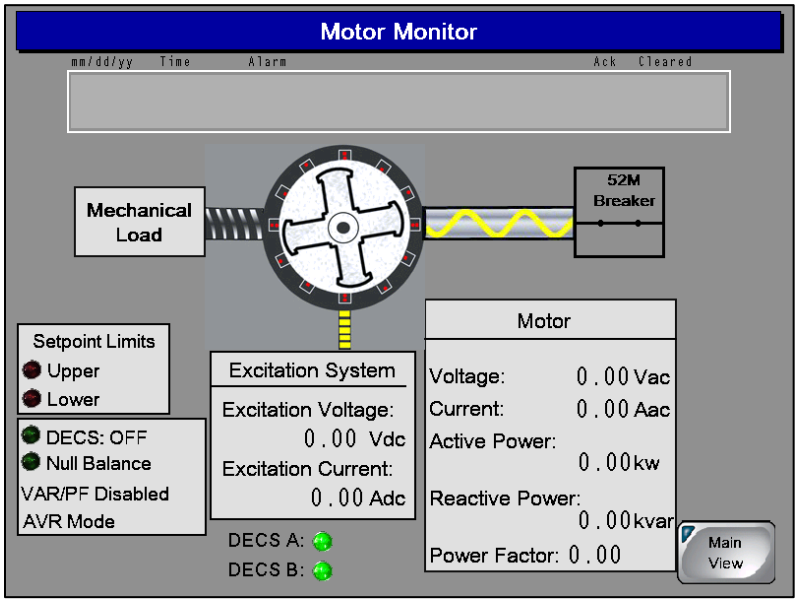


Figure 4-5. Motor Monitor Screen

DECS Metering Screen

Access the DECS Metering screen (Figure 4-6) by pressing the Metering button of the Main View screen. The DECS Metering screen displays digital metering values for the generator or motor, bus, and exciter field as well as the excitation setpoint position and control values.

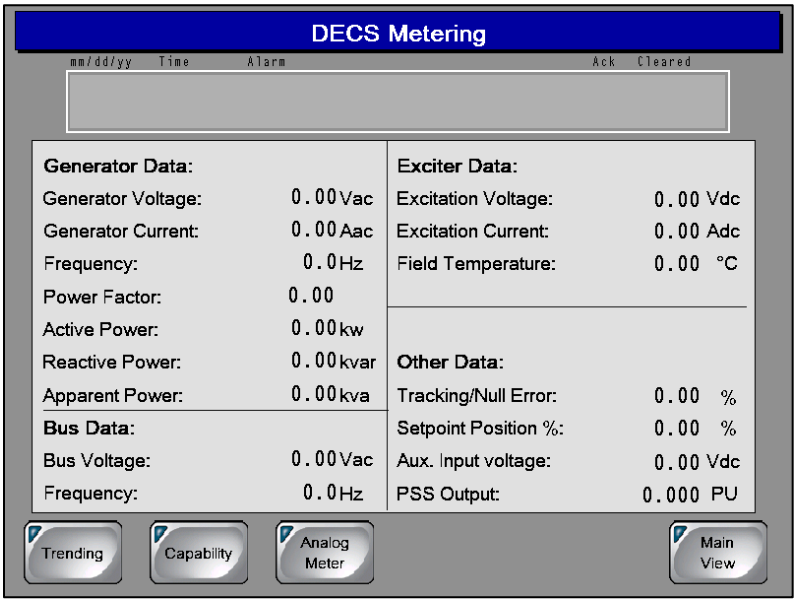


Figure 4-6. DECS Metering Screen

Analog Metering

Pressing the Analog Meter button accesses the analog representations of the digital values displayed on the DECS Metering screen. Analog metering values are divided among three screens accessed through buttons labeled Generator Values, Generator Power, and Exciter Values. Each parameter is represented by an analog meter along with the digital version of the metered value.

Trending

Access to the Trending and Capability Curve screens is also provided through the Trending and Capability buttons on the DECS Metering screen.

The Trending screen (Figure 4-7) is accessed by pressing the Trending button of the DECS Metering screen. Several system parameters can be selected and monitored over time in an amplitude-versus-time window. Buttons on the Trending screen enable selection of the parameters to be monitored. Available parameters include generator voltage (Vgen), apparent power (kVA), true power (kW), reactive power (kvar), field voltage (Vexc), and field current (Iexc). Parameters are plotted in a color that matches the color of the parameter buttons. Pressing the History button displays additional controls and a display for manipulating the cursor position within a data plot. Pressing the USB button accesses the Memory Transfer screen where the data from a trending plot can be transferred to USB memory device. Storage of trending information requires the installation of an SD/SDHC memory card.

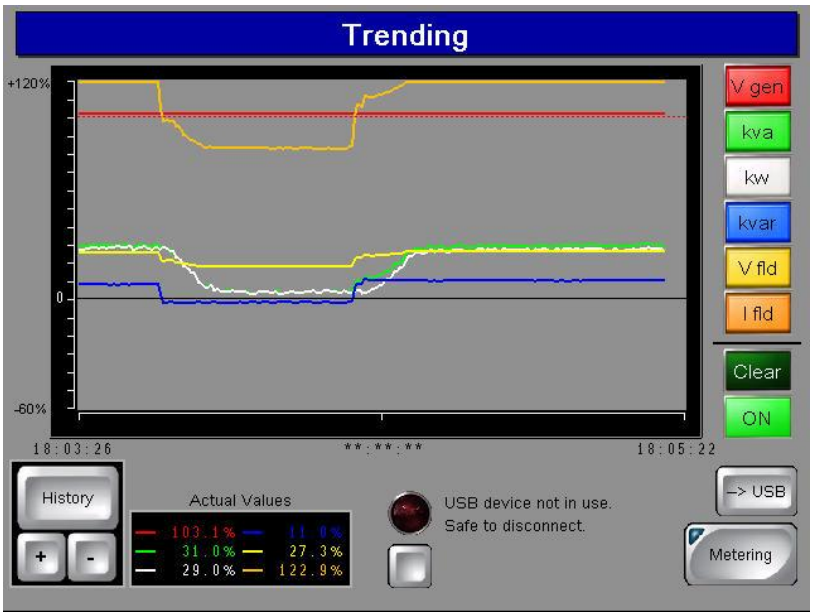


Figure 4-7. Trending Screen

Capability

Access the Capability screen (Figure 4-8) by pressing the Capability button on the DECS Metering screen. By default, a horizontal curve is displayed. Pressing the Vertical Curve button selects a vertical curve orientation.

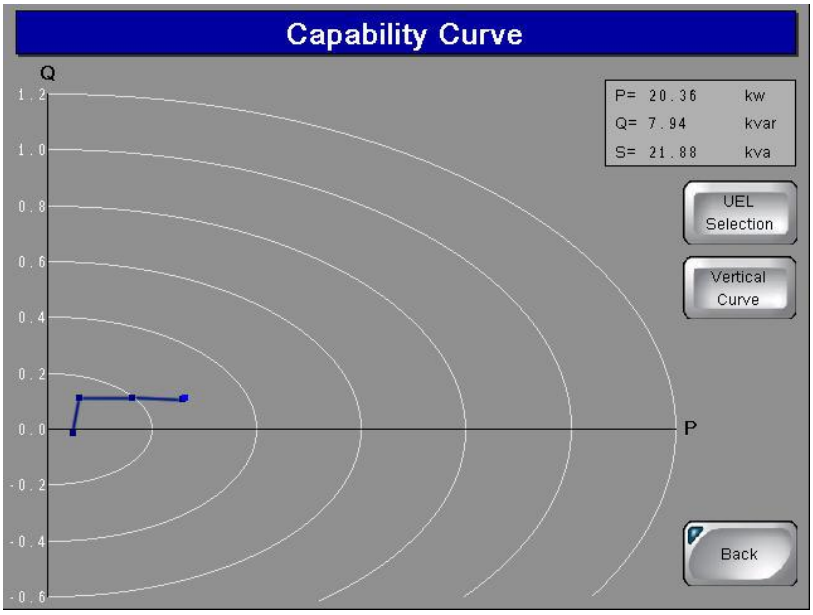


Figure 4-8. Capability Curve Screen

If a plot of the underexcitation limiter (UEL) curves is desired, the Internal UEL Curve button can be pressed to access the UEL Curve Selection screen (Figure 4-9). Here, the internal DECS UEL curve can be selected or a customized, three-, four-, or five-point curve can be selected and configured. UEL curve points must be selected in the DECS BESTCOMS software for an accurate representation on the IDP-1201. Pressing the None button disables the display of UEL curves.

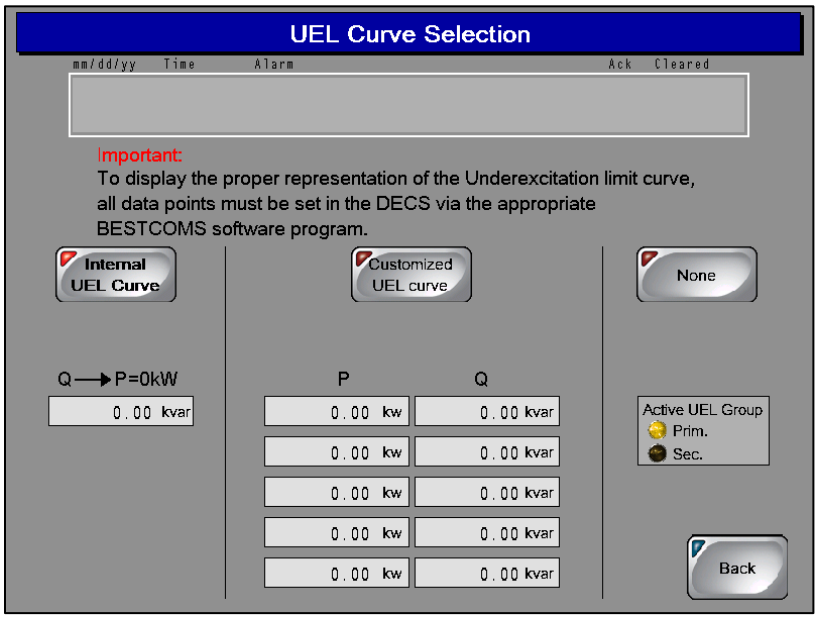


Figure 4-9. UEL Curve Selection Screen

DECS Analog Metering

Analog representations of the digital metering values shown on the DECS Metering screen (Figure 4-6) can be accessed by pressing the Analog Meter button. Pressing this button accesses the Generator Values or Motor Values screen which displays analog representations of the generator/motor voltage, current, frequency, and power factor. Each analog representation displays the digital equivalent in the upper, left corner. The remaining analog metering values are divided between two screens: the Generator Power or Motor Power screen and the Exciter values screen. The Generator Power or Motor Power screen is accessed from the Generator/Motor Values screen or Exciter Values screen by pressing the Generator Power or Motor Power button. This screen displays analog representations of the generator/motor active power, reactive power, and apparent power. The Exciter Values screen is accessed from the Generator/Motor Values screen or Generator/Motor Power screen by pressing the Exciter Values button. This screen displays analog representations of the excitation voltage and current. A Digital Meter button, on each analog metering screen, can be pressed to return to the DECS (digital) Metering screen.

DECS Control

Access to the DECS Control screen is possible only when logged in with the appropriate password. When logged in, a Control button on the Main View screen provides access to the DECS Control screen illustrated in Figure 4-10. This screen has buttons for start/stop control of the DECS, accessing the Setpoint Control screen and accessing the Regulation Control screen.

Start/Stop Control

Password-protected Start and Stop buttons provide start and stop control of the DECS controller. A red Start indicator lights when a start command is issued and a green Stop indicator lights when a stop command is issued. The Start and Stop buttons are enabled only after pressing the Log In button and entering the Level 6 password. These buttons remain enabled for the length of the Login Duration setting entered on the Screen Configuration screen.

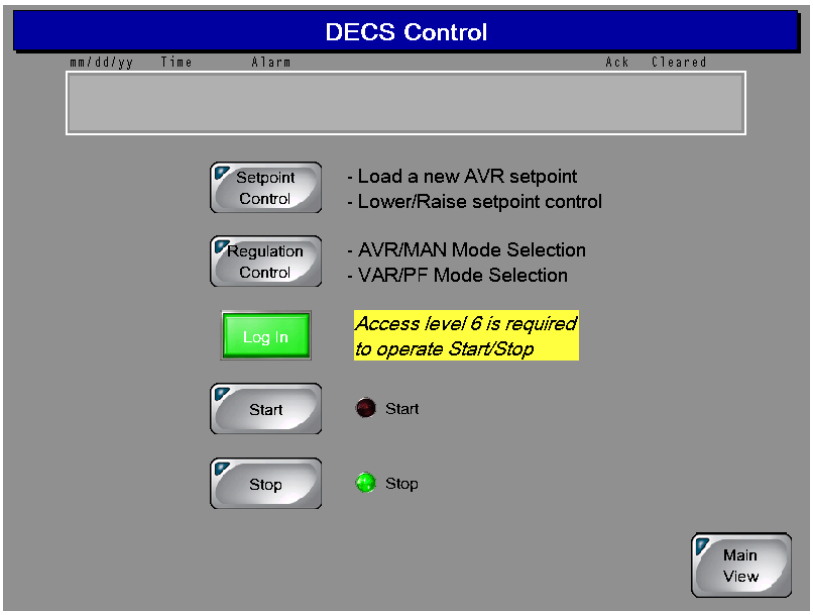


Figure 4-10. DECS Control Screen

Setpoint Control

Pressing the Setpoint Control button accesses the Setpoint Control screen (Figure 4-11). This screen displays the DECS-400 AVR, FCR, power factor, and var setpoints and provides two methods of setpoint adjustment. The “+” and “–“ buttons can be pressed to increment and decrement the active setpoint. A specific setpoint can be entered for any of the four setpoints. Pressing the New button associated with the setpoint can be entered for any of the four setpoints. Pressing the New button associated with the setpoint to be changed accesses a Setpoint Adjustment screen that displays the current setpoint value along with the minimum and maximum limits for the setting. Touching the setting field area displays a numeric keypad where the new value can be entered.

The Setpoint Control screen also has system status indicators and a metering display for generator and excitation system parameters.

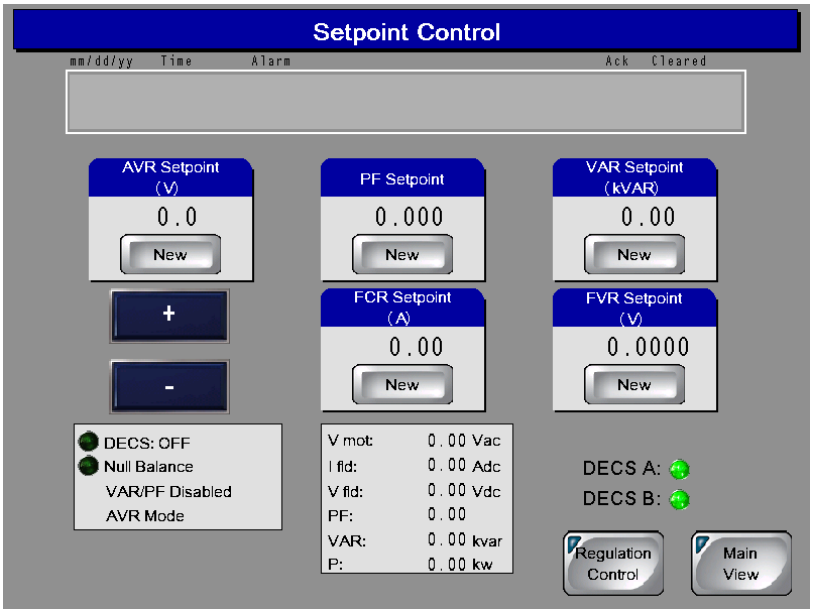


Figure 4-11. Setpoint Control Screen

Regulation Control

Pressing the Regulation Control button accesses the Regulation Control screen (Figure 4-12). This screen enables selection of the active regulation mode. The MAN/AVR button toggles between Manual and Auto modes. When operating in AVR mode, the OFF, PF, and VAR buttons can be used to enable or disable regulation of vars or power factor. Each change to the regulation mode requires a confirmation via an accept/reject dialog box.

The Regulation Control screen also has system status indicators and a metering display for generator/motor and excitation system parameters.

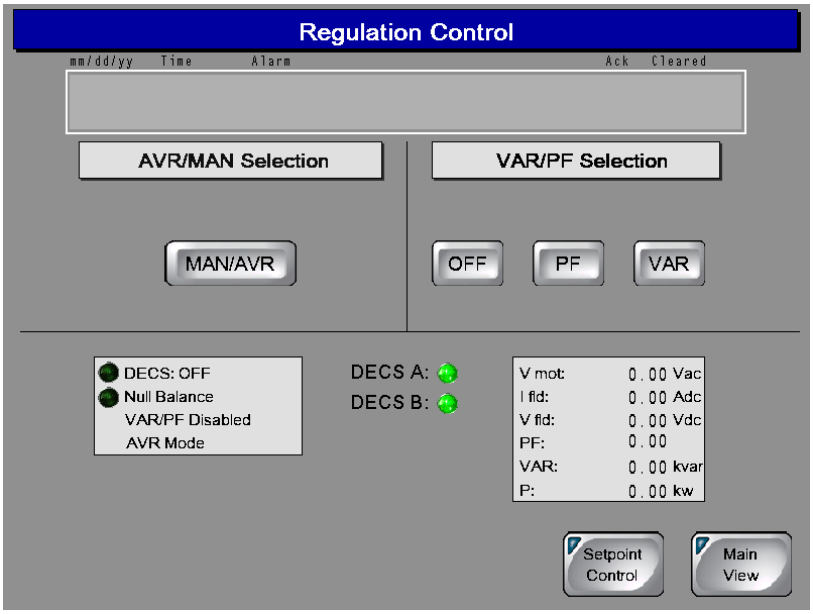


Figure 4-12. Regulation Control Screen

Alarms and Status

Three screens annunciate the state of DECS-400 alarms, functions, limiters, and relay outputs. Depending upon the annunciation, active indicators change to amber, green, or red when active.

The Activated Alarms screen (Figure 4-13) is accessed from the Main View screen by pressing the Alarm/Status button. It can also be accessed from the DECS Status screen by pressing the Alarms button. This screen has indicators for active DECS-400 alarms, power system stabilizer status, and IDP-1201 inputs and clock status. An Alarms Reset button can be pressed to clear alarm annunciations. (An alarm cannot be cleared unless the condition causing the alarm has been cleared.) Pressing the History button accesses the Alarms History screen which lists the alarms captured by the DECS-400. Buttons are provided for scrolling through the alarms list, clearing selected alarms, and clearing all listed alarms. A →USB button enables the transfer of selected alarm records to a memory device plugged into the IDP-1201 USB port.

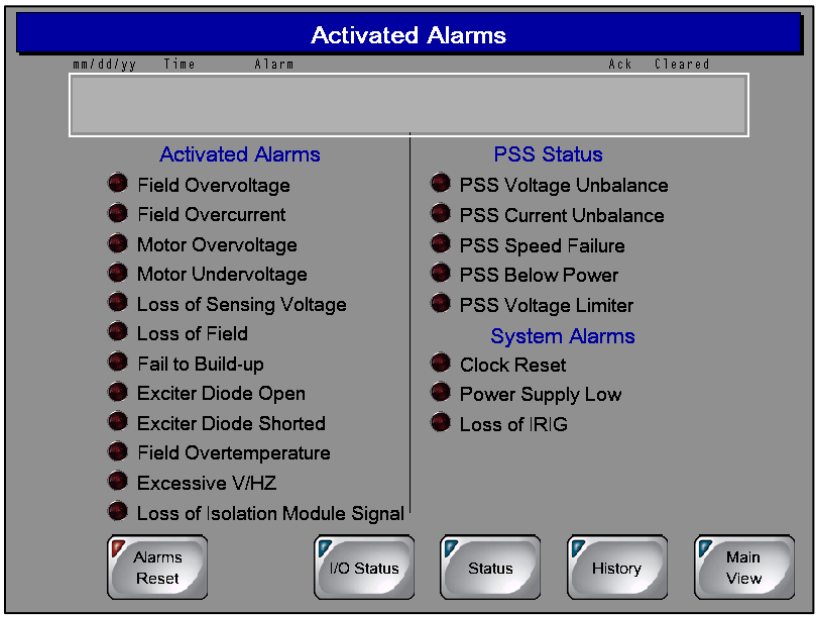


Figure 4-13. Activated Alarms Screen

The DECS I/O Status screen (Figure 4-14) is accessed from the Activated Alarms screen or the DECS Status screen by pressing the I/O Status button. This screen has indicators for the status of the DECS-400 contact inputs and relay outputs.

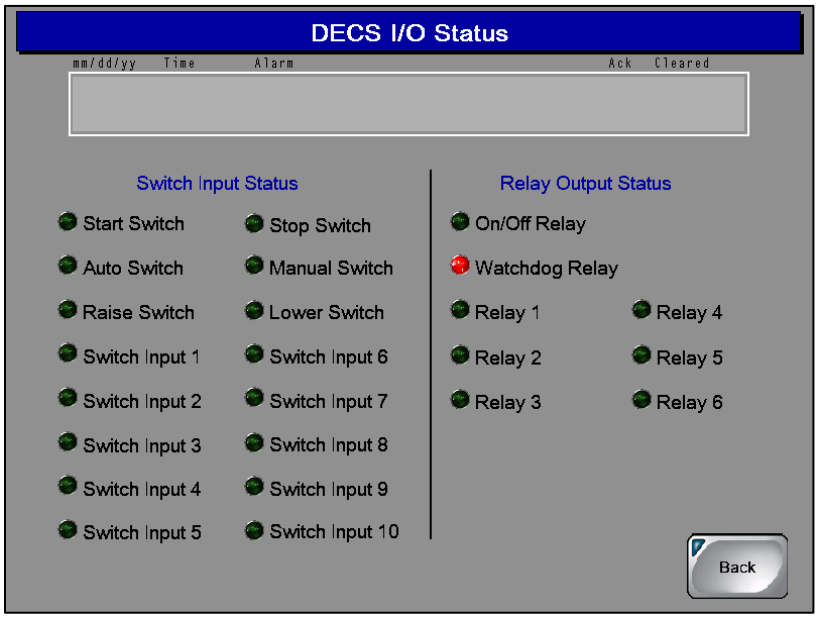


Figure 4-14. DECS I/O Status Screen

The DECS Status screen (Figure 4-15) is accessed from the Activated Alarms screen by pressing the Status button. This screen has indicators for DECS-400 operating conditions, DECS-400 setting groups, and DECS-400 limiters.

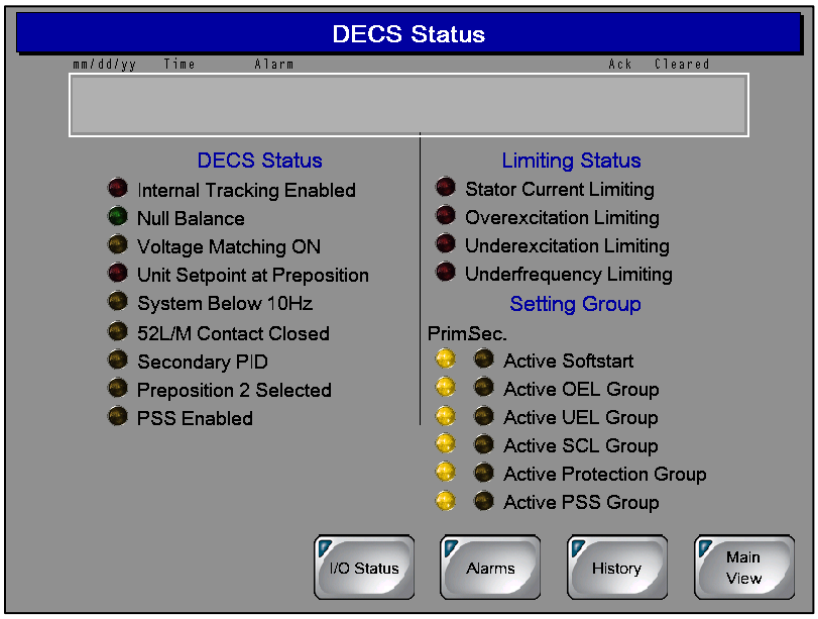


Figure 4-15. DECS Status Screen

5 • Operation with DECS-250, DECS-250N, and DECS-250E

This chapter describes IDP-1201 operation and screen navigation with a DECS-250, DECS-250N, or DECS-250E.

IDP-1201 screen appearance and availability will vary according to the type of DECS used and the configuration of the DECS system (single or dual DECS and generator or motor control).

DECS and generator/motor system parameters are viewed and controlled through interactive screens displayed by the IDP-1201. Screens are organized according to function. Navigation between screens and control of functions are achieved by touching “buttons” on the IDP-1201 screens.

Note
DECS-250/DECS-250N/DECS-250E firmware 1.03.00 or later is required to operate with the IDP-1201.

Configuration Screens

Two configuration screens establish DECS and IDP-1201 operating modes: IDP-1201 Configuration and Screen Configuration. These configuration screens are available upon initial power-up of the IDP-1201. After initial configuration, these screens can be accessed through the Main View screen by entering the appropriate password.

IDP-1201 Configuration

Upon initial power-up, the IDP-1201 displays the IDP-1201 Configuration screen (Figure 5-1) where your product, product configuration, and application must be selected before proceeding to other IDP-1201 screens. Failure to make the proper selections may cause the IDP-1201 to annunciate false alarms.

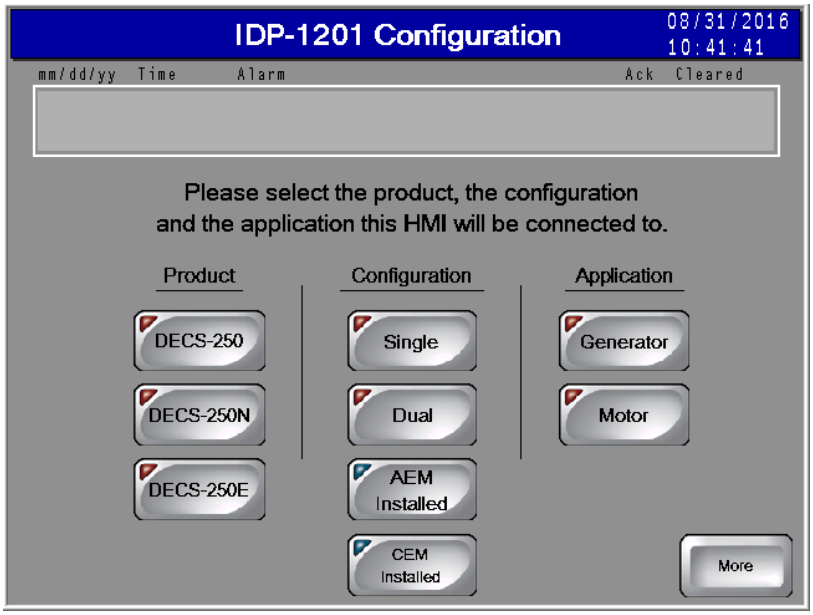


Figure 5-1. IDP-1201 Configuration Screen

Screen Configuration

Pressing the More button on the IDP-1201 Configuration screen accesses the Screen Configuration screen (Figure 5-2) which enables selection of the IDP-1201 date and time, and other IDP-1201 operating preferences. Individual screen functions are described in the following paragraphs.

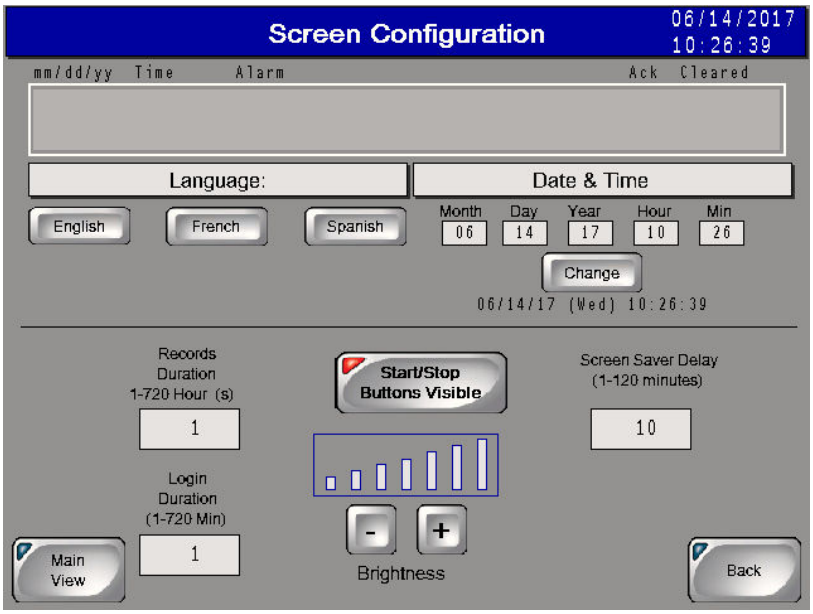


Figure 5-2. Screen Configuration

Language

Pressing the English (Anglais or Inglés) button selects English as the IDP-1201 display language. Pressing the French (Francais or Francés) button selects French as the display language. Pressing the Spanish (Espagnol or Español) button selects Spanish as the display language.

Date and Time

The date and time of the IDP-1201 must be set manually to match the date and time of the connected DECS. Enter the desired values in the date and time fields and press the Change button to save the values.

Start/Stop Buttons Hidden/Visible

Pressing this button enables and disables visibility of the Start and Stop buttons on the DECS Control screen.

Records Duration

Trending records saved by the IDP-1201 retain up to six variables per record with each record consisting of 2,400 data points. Trending records saved by the IDP-1201 can have a user-defined duration ranging from 1 hour to 720 hours (30 days).

Login Duration

Following login, the length of time that password access is available (if no button presses occur) is limited by the value of this setting. If no button presses are received for the duration of the setting, password access is lost and the user must log in again to make changes requiring password access. Login Duration is adjustable over the range of 1 to 720 minutes (12 hours).

Screen Saver Delay

A screensaver activates if no button presses are received at the display panel for the length of time specified by the Screen Saver Delay. A setting of 1 to 120 minutes may be entered.

Brightness

Display panel brightness can be adjusted by pressing the “+” and “–“ buttons. A bar graph above the buttons serves as a reference for adjusting the display brightness.

Main View Screen

The Main View screen (Figure 5-3) serves as a gateway to the IDP-1201 status and control screens. It also provides access to file transfer functions and a screen lock to enable panel cleaning. The Login button can be used to enter the appropriate password and gain access to the configuration screens.

Access to the control screens is possible only when logged into the IDP-1201 with the correct password. As a result, the Control button is visible only when logged into the IDP-1201.

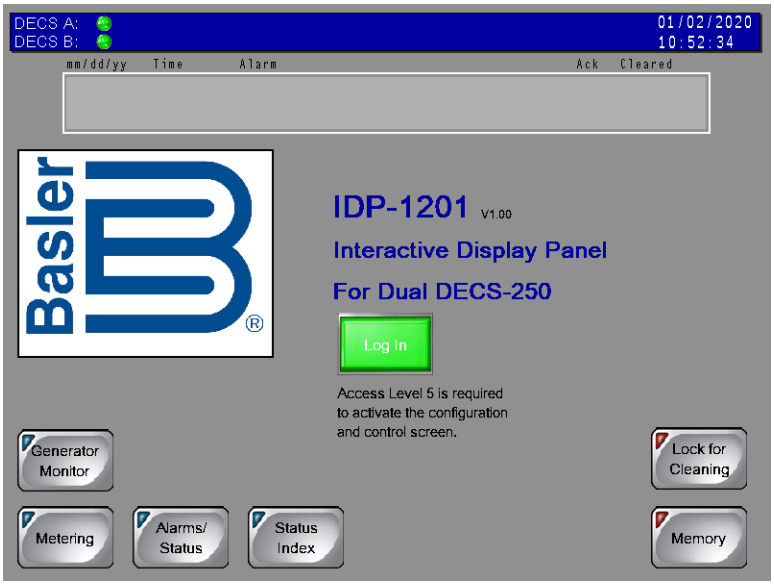


Figure 5-3. Main View Screen

IDP-1201 Passwords

Passwords protect the IDP-1201 from unauthorized settings changes, control commands, and transfers offline.

Two of the passwords are used when transferring the IDP-1201 offline. When taking the IDP-1201 offline, the offline and system passwords are used. The IDP-1201 is delivered with a system password of “4376” and an offline mode access password of “BASLER”.

A factory-default password of “idp8” gives (level 5) access to IDP-1201 configuration and control functions.

A factory-default password of “decs2” gives (level 1) access to only the IDP-1201 control functions.

A factory-default password of “idpx” provides start and stop control (access level 6) of the DECS through the Start and Stop buttons of the DECS Control screen.

Password access remains in effect based on display panel activity and the limit set by the Login Duration setting (Screen Configuration screen).

Gaining Password Access

The following example describes the process for using a password to gain configuration and control access.

1. Press the Login button on the Main View screen.

2. Use the alphanumeric keypad to enter the appropriate password and press the Enter button. The factory-default password is IDP8 and is case-sensitive.

Once the correct password is entered, the Main View screen is displayed with a Control button that provides access to the control screens and a Configure button that provides access to the configuration screens.

Generator/Motor Monitor

Depending upon the application selected on the IDP-1201 Configuration screen, either the Generator Monitor screen or the Motor Monitor screen is accessed by pressing the Generator Monitor button or Motor Monitor button of the Main View screen. The Generator Monitor or Motor Monitor screen graphically illustrates generator/motor and excitation system status/activity. Generator and motor parameters include output voltage, output current, active (true) power, reactive power, and power factor. Excitation system parameters include field voltage, field current, and excitation on/off status. The Generator Monitor screen is shown in Figure 5-4 and the Motor Monitor screen is shown in Figure 5-5.

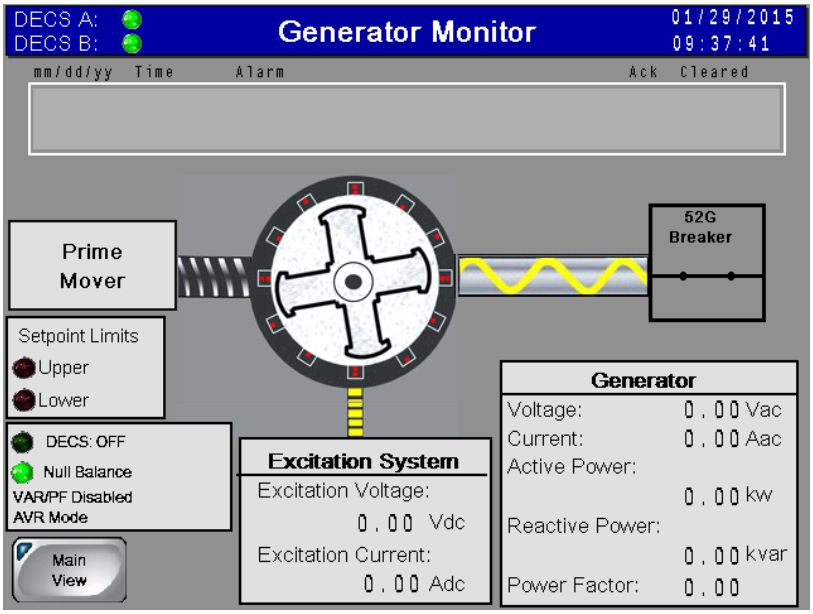


Figure 5-4. Generator Monitor Screen

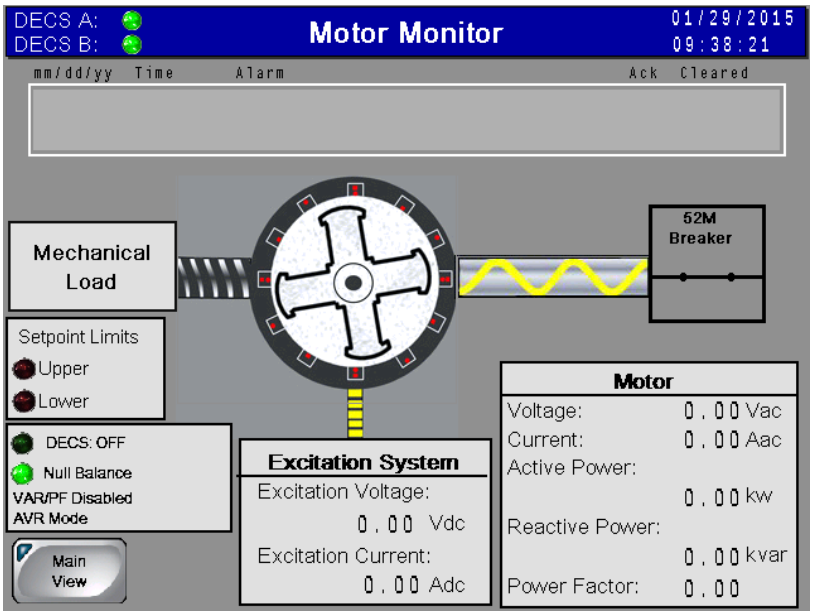


Figure 5-5. Motor Monitor Screen

DECS Metering Screen

The DECS Metering screen (Figure 5-6) is accessed by pressing the Metering button of the Main View screen. The DECS Metering screen displays digital metering values for the generator or motor, bus, and exciter field as well as the excitation setpoint position and control values. PSS Output data is not available when the IDP-1201 is configured for DECS-250E operation.

Access to the Trending, Capability Curve, Analog Meter, and DECS Status screens is also provided through the buttons at the bottom of the DECS Metering screen.

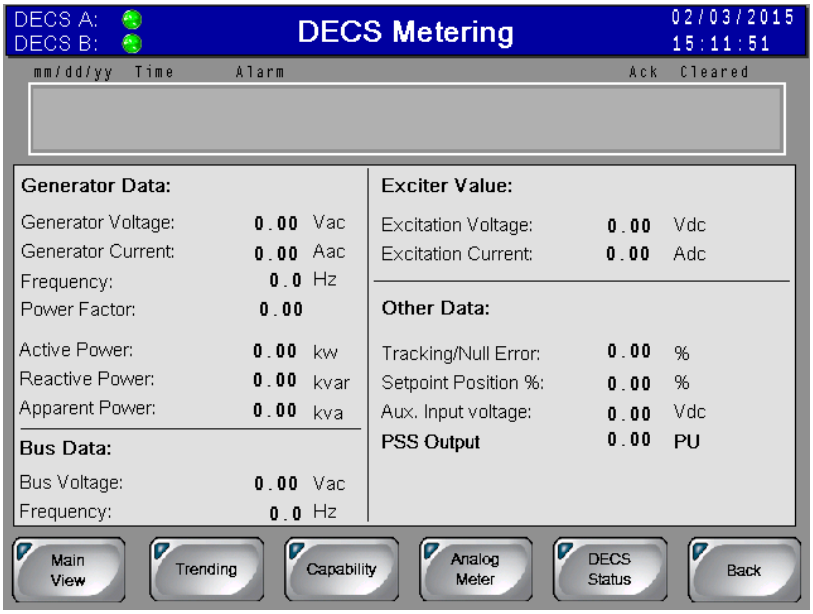


Figure 5-6. DECS Metering Screen

Trending

The Trending screen (Figure 5-7) is accessed by pressing the Trending button of the DECS Metering screen. Several system parameters can be selected and monitored over time in an amplitude-versus-time window. Buttons on the Trending screen enable selection of the parameters to be monitored. Available

parameters include generator voltage (Vgen), apparent power (kVA), true power (kW), reactive power (kvar), field voltage (Vexc), and field current (Iexc). Parameters are plotted in a color that matches the color of the parameter buttons. Pressing the History button displays additional controls and a display for manipulating the cursor position within a data plot. Pressing the USB button transfers the trending data to a connected USB memory device. Storage of trending information requires the installation of an SD/SDHC memory card.

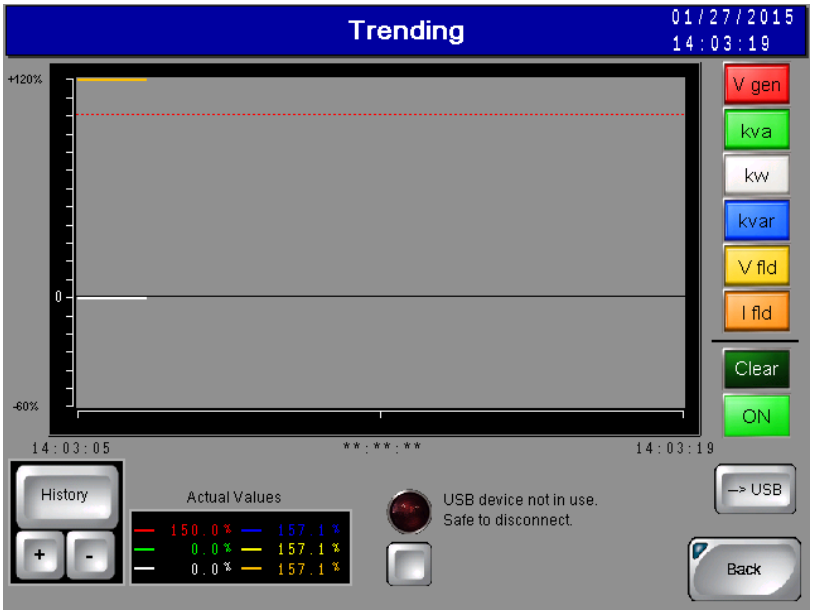


Figure 5-7. Trending Screen

Capability

The Capability screen (Figure 5-8) is accessed by pressing the Capability button on the DECS Metering screen. By default, a horizontal curve is displayed. Pressing the Vertical Curve button selects a vertical curve orientation.

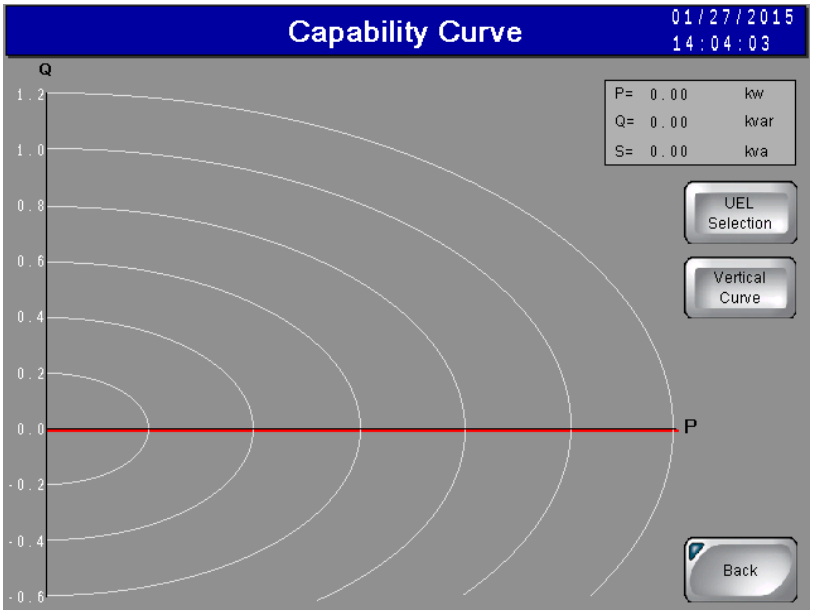


Figure 5-8. Capability Curve Screen

If a plot of the underexcitation limiter (UEL) curve is desired, the UEL Selection button can be pressed to access the UEL Curve Selection screen (Figure 5-9). Here, the internal DECS UEL curve can be selected or a customized, three-point, four-point, or five-point curve can be selected and configured. UEL curve points must be selected in BESTCOMS*Plus*® software for an accurate representation on the IDP-1201. Pressing the None button disables the display of UEL curves.

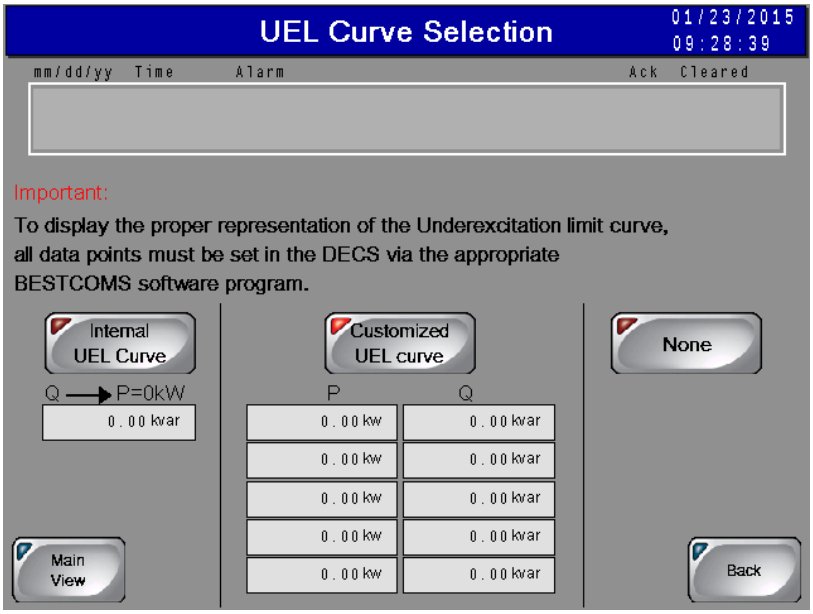


Figure 5-9. UEL Curve Selection Screen

Analog Metering

Analog representations of the digital metering values shown on the DECS Metering screen (Figure 5-6) can be accessed by pressing the Analog Meter button. Pressing this button accesses the Generator Values or Motor Values screen (Figure 5-10) which displays analog representations of the generator/motor voltage, current, frequency, and power factor.

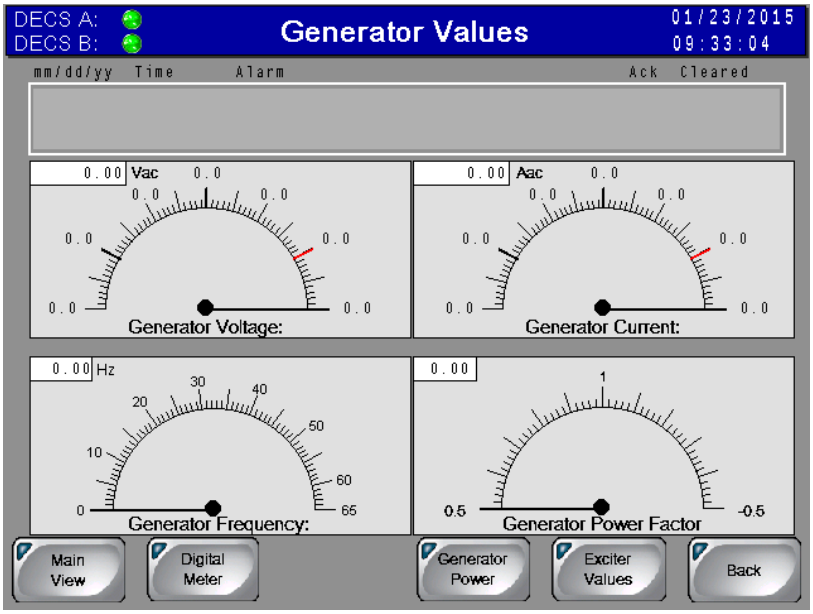


Figure 5-10. Generator Values Screen

Each analog representation displays the digital equivalent in the upper, left corner. The remaining analog metering values are divided between two screens: the Generator Power or Motor Power screen and the Exciter values screen.

The Generator Power or Motor Power screen is accessed from the Generator/Motor Values screen or Exciter Values screen by pressing the Generator Power or Motor Power button. This screen displays analog representations of the generator/motor active power, reactive power, and apparent power.

The Exciter Values screen is accessed from the Generator/Motor Values screen or Generator/Motor Power screen by pressing the Exciter Values button. This screen displays analog representations of the excitation voltage and current. A Digital Meter button, on each analog metering screen, can be pressed to return to the DECS (digital) Metering screen.

Status, I/O, and Alarm Screens

The Status Index screen (Figure 5-11) is accessed by pressing the Status Index button of the Main View screen. This screen provides access to alarms, alarm history, input/output status, DECS status, configurable protection, and AEM inputs.

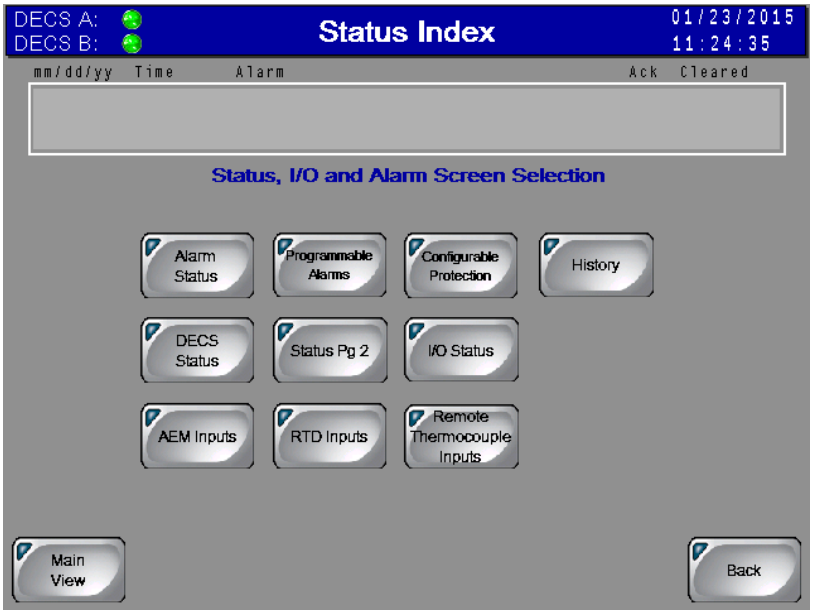


Figure 5-11. Status Index Screen

Alarm Status

The Alarm Status screen (Figure 5-12) shows active protection alarms and general alarms. Depending upon the annunciation, active indicators change to amber, green, or red when active. An Alarms Reset button can be pressed to clear alarm annunciations. (An alarm cannot be reset unless the condition causing the alarm has been cleared.)

Bridge Over-Temperature, Bridge Over-Temperature Warning, and Pole Slip general alarms are available only when the IDP-1201 is configured for DECS-250E operation.

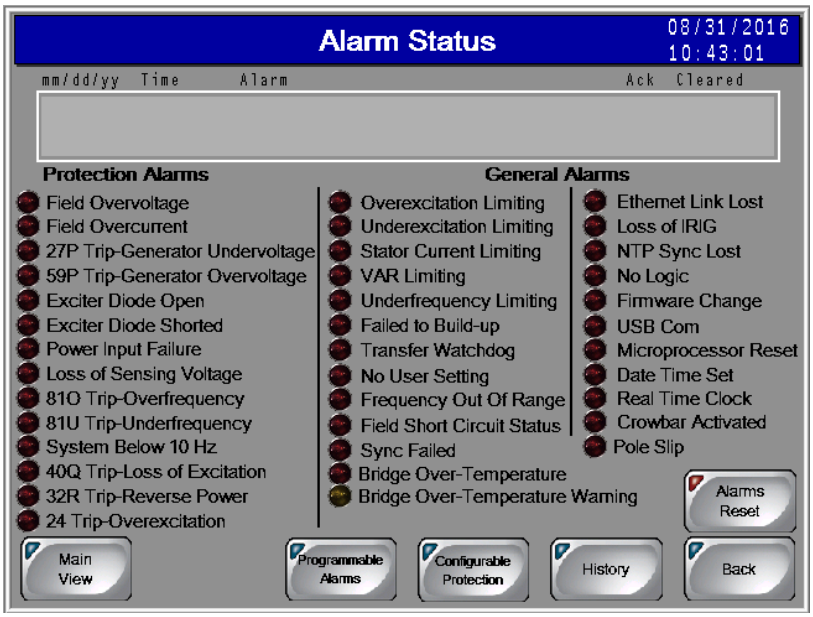


Figure 5-12. Alarm Status Screen

Alarms History

Pressing the History button accesses the Alarms History screen (Figure 5-13) which lists the alarms captured by the DECS. Buttons are provided for scrolling through the alarms list, clearing selected alarms, and clearing all listed alarms. A →USB button enables the transfer of selected alarm records to a memory device plugged into the IDP-1201 USB port.

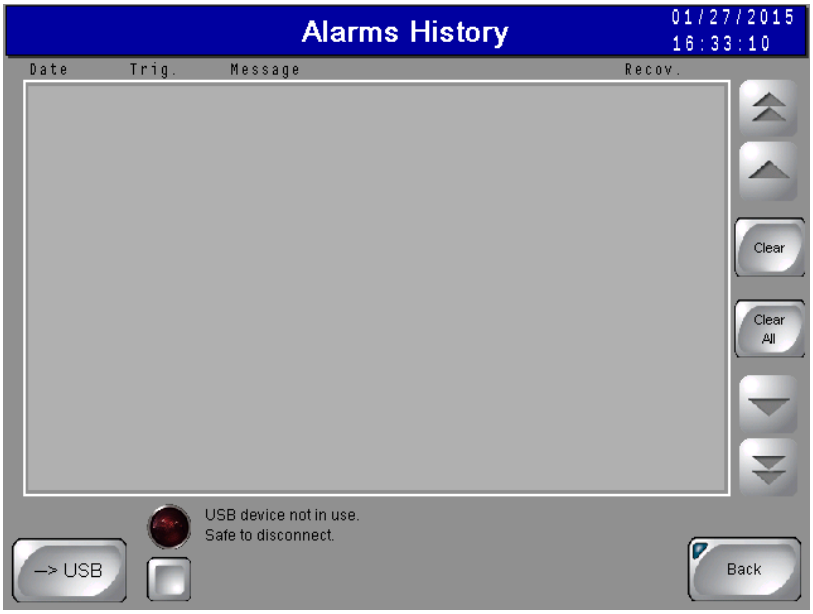


Figure 5-13. Alarms History Screen

Programmable Alarms

The Programmable Alarms screen (Figure 5-14) shows active programmable alarms. An Alarms Reset button can be pressed to clear alarm annunciations. (An alarm cannot be reset unless the condition causing the alarm has been cleared.)

Figure 5-14. Programmable Alarms Screen

Configurable Protection

The Configurable Protection screen (Figure 5-15) shows configurable protection alarms. An alarm is active when the configurable protection threshold has been exceeded. An Alarms Reset button can be pressed to clear alarm annunciations. (An alarm cannot be reset unless the condition causing the alarm has been cleared.)

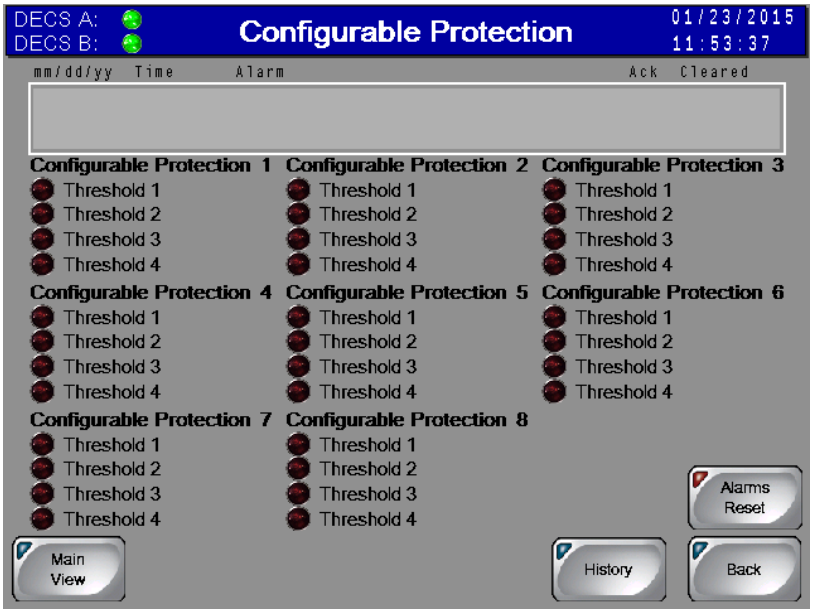


Figure 5-15. Configurable Protection Screen

DECS Status

The Status screen (Figure 5-16) shows active DECS operating modes, status, PSS status, and limiting status.

PSS Status indicators are not available when the IDP-1201 is configured for DECS-250E operation.

Figure 5-16. Status Screen

Status Page 2

The Status Page 2 screen (Figure 5-17) shows the secondary group status, setpoint pre-position, setpoint limit alarms, and AEM alarms.

The PSS Secondary Group indicator is not available when the IDP-1201 is configured for DECS-250E operation.

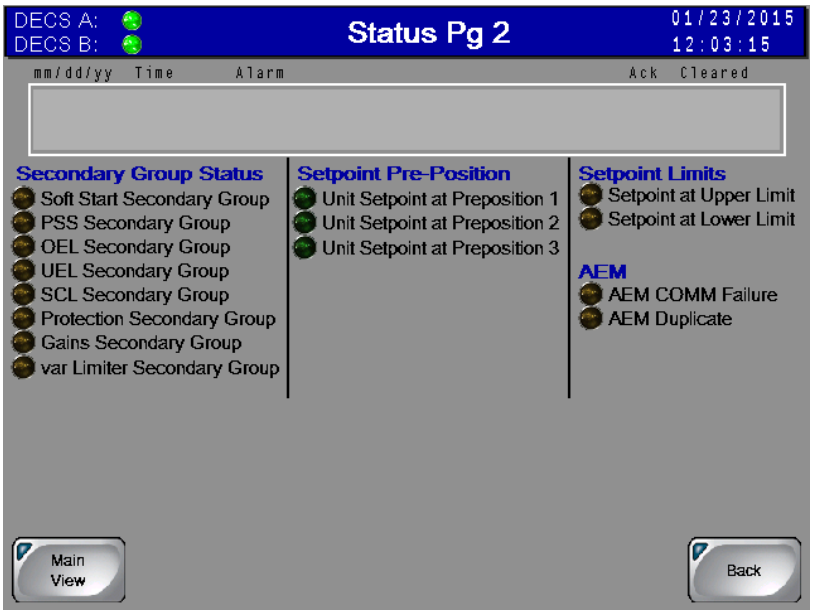


Figure 5-17. Status Page 2 Screen

I/O Status

The I/O Status screen (Figure 5-18) has indicators for DECS contact input status and relay output status (open or closed). CEM input and output status is also shown on this screen.

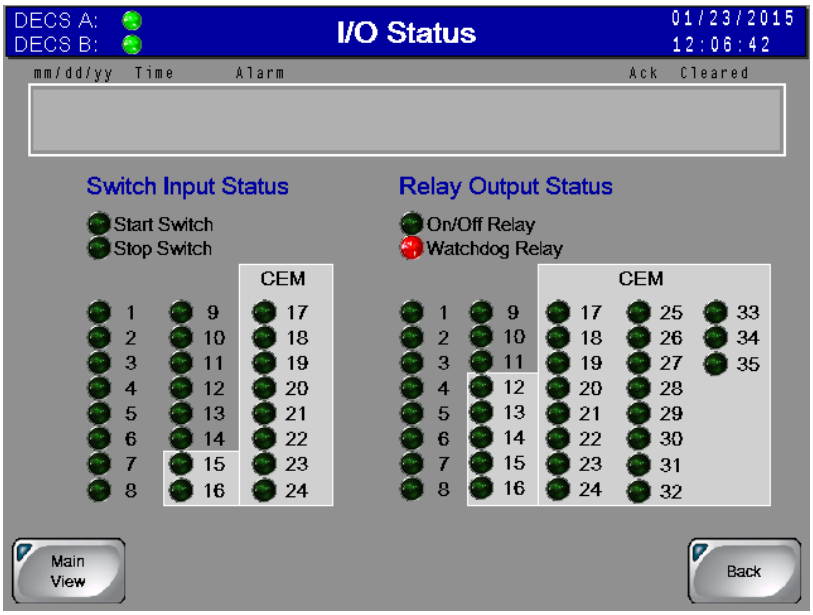


Figure 5-18. I/O Status Screen

AEM Inputs

The AEM Inputs screen (Figure 5-19) has indicators for analog inputs and alarms.

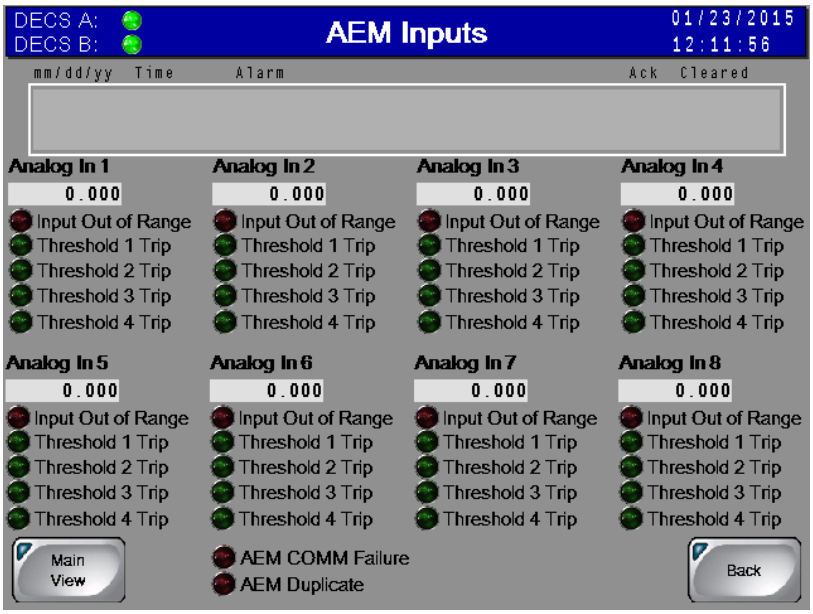


Figure 5-19. AEM Inputs Screen

RTD Inputs

The RTD Inputs screen (Figure 5-20) has indicators for RTD inputs and alarms.

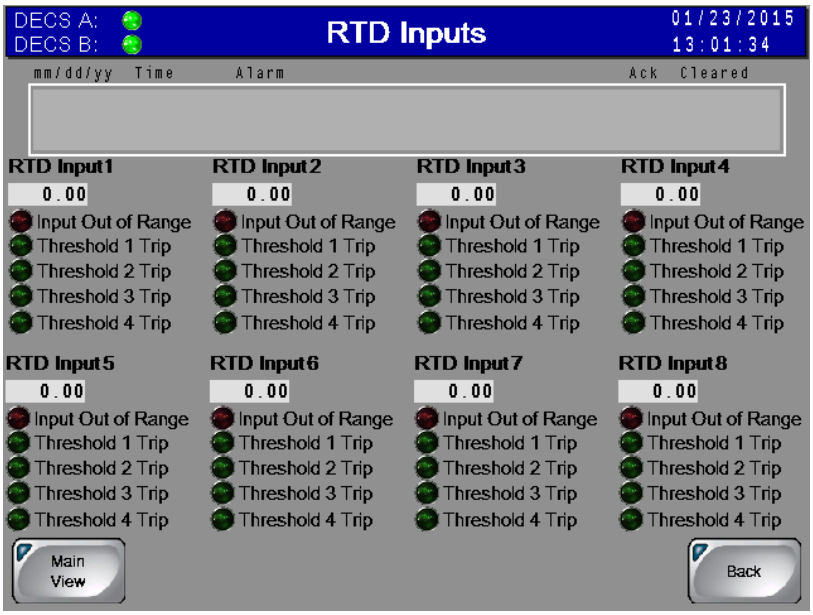


Figure 5-20. RTD Inputs Screen

Remote Thermocouple Inputs

The Remote Thermocouple Inputs screen (Figure 5-20) has indicators for RTD inputs.

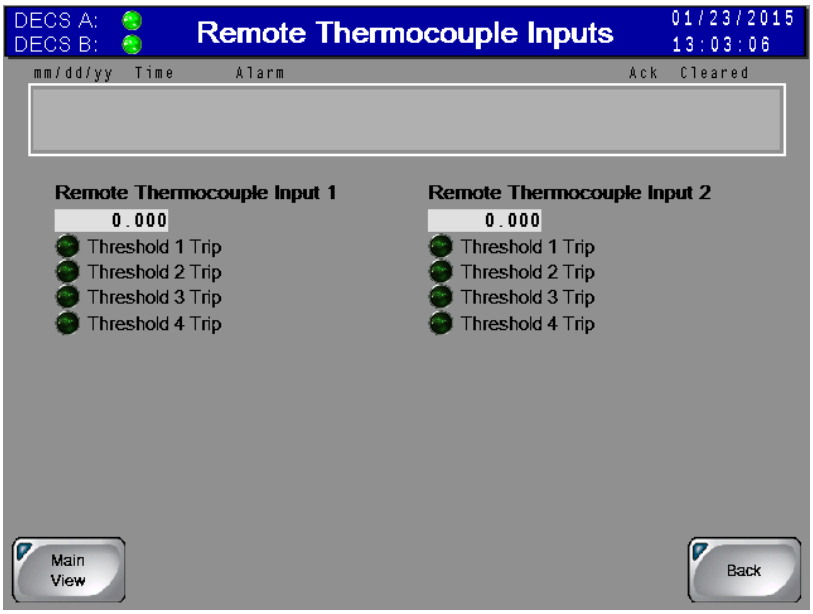


Figure 5-21. Remote Thermocouple Inputs Screen

DECS Control

Access to the DECS Control screen is possible only when logged in with the appropriate password. When logged in, a Control button on the Main View screen provides access to the DECS Control screen illustrated in Figure 5-22. This screen has buttons for start/stop control of the DECS, accessing the Setpoint Control screen, and accessing the Regulation Control screen.

Start/Stop Control

Password-protected Start and Stop buttons provide start and stop control of the DECS controller. A red Start indicator lights when a start command is issued and a green Stop indicator lights when a stop

command is issued. The Start and Stop buttons are enabled only after pressing the Log In button and entering the Level 6 password. These buttons remain enabled for the length of the Login Duration setting entered on the Screen Configuration screen.

Figure 5-22. DECS Control Screen

Setpoint Control

Pressing the Setpoint Control button accesses the Setpoint Control screen (Figure 5-23). This screen displays the DECS AVR, FCR, power factor, and var setpoints and provides two methods of setpoint adjustment. The “+” and “–“ buttons can be pressed to increment and decrement the active setpoint. A specific setpoint can be entered for any of the four setpoints. Pressing the New button associated with the setpoint to be changed accesses a Setpoint Adjustment screen that displays the current setpoint value along with the minimum and maximum limits for the setting. Touching the setting field area displays a numeric keypad where the new value can be entered.

The Setpoint Control screen also has system status indicators and a metering display for generator and excitation system parameters.

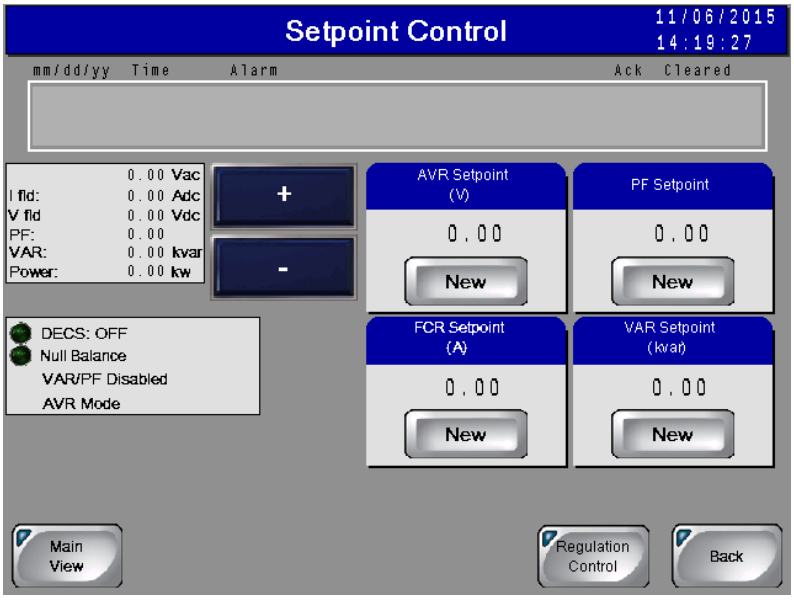


Figure 5-23. Setpoint Control Screen

Regulation Control

Pressing the Regulation Control button accesses the Regulation Control screen (Figure 5-24). This screen enables selection of the active regulation mode. The AUTO and MANUAL buttons toggle between Auto and Manual modes. When operating in AVR mode, the Off, PF, and VAR buttons can be used to enable or disable regulation of vars or power factor. Each change to the regulation mode requires a confirmation via an accept/reject dialog box.

The Regulation Control screen also has system status indicators and a metering display for generator/motor and excitation system parameters.

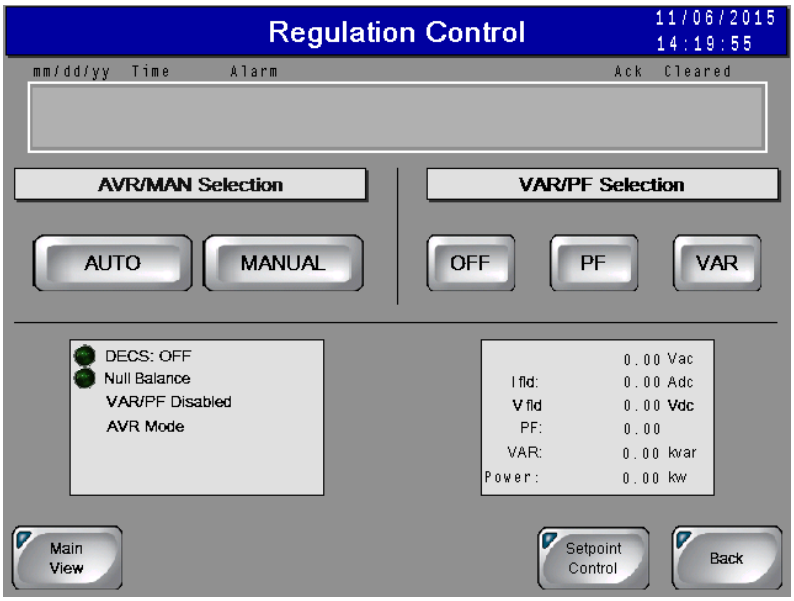


Figure 5-24. Regulation Control Screen

6 • Operation with DECS-450

The IDP-1201 is applied in applications using the DECS-450. This chapter describes IDP-1201 operation and screen navigation.

IDP-1201 screen appearance and availability will vary according to the type of DECS used and the configuration of the DECS system (single or dual DECS).

DECS and generator system parameters are viewed and controlled through interactive screens displayed by the IDP-1201. Screens are organized according to function. Navigation between screens and control of functions are achieved by touching “buttons” on the IDP-1201 screens.

Configuration Screens

Two configuration screens establish DECS and IDP-1201 operating modes: IDP-1201 Configuration and Screen Configuration. These configuration screens are available upon initial power-up of the IDP-1201. After initial configuration, these screens can be accessed through the Main View screen by entering the appropriate password.

Configuration for IDP-1201

Upon initial power-up, the IDP-1201 displays the IDP-1201 Configuration screen (Figure 6-1) where your product, product configuration, application, and communication method must be selected before proceeding to other IDP-1201 screens. Failure to make the proper selections may cause the IDP-1201 to annunciate false alarms.

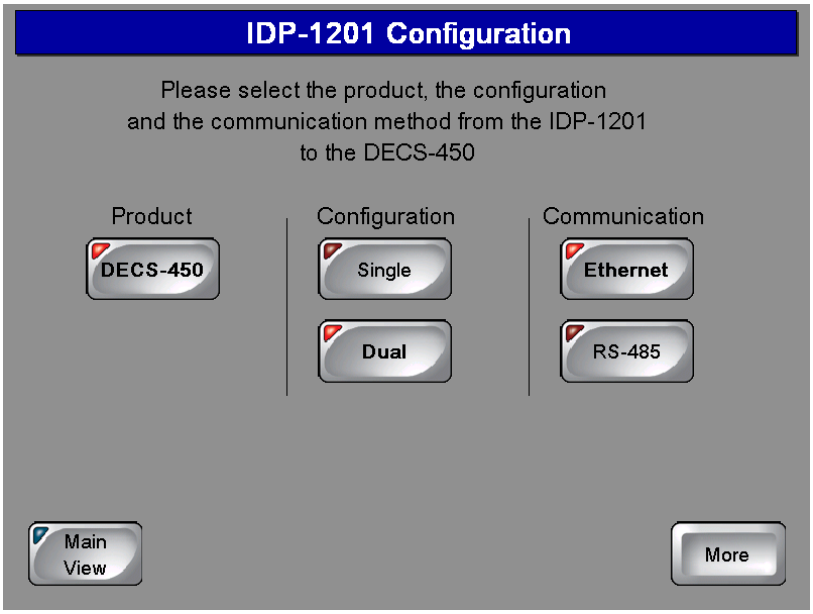


Figure 6-1. IDP-1201 Configuration Screen

Screen Configuration

Pressing the More button on the IDP-1201 Configuration screen accesses the Screen Configuration screen (Figure 6-2) which enables selection of the IDP-1201 language and other operating preferences. Individual screen preferences are described in the following paragraphs.

Language

Pressing the English (Anglais or Inglés) button selects English as the IDP-1201 display language. Pressing the French (Francais or Francés) button selects French as the display language. Pressing the Spanish (Espagnol or Español) button selects Spanish as the display language.

Date and Time

The date and time of an IDP-1201 connected to a DECS-450 is automatically synchronized with the date (month, day, and year) and time (hours and minutes) maintained by the DECS-450.

52L/M Input Switch Number

These buttons configure the IDP-1201 to monitor the same contact inputs that the DECS-450 is monitoring for the 52L/M contact input. Pressing the Standard Logic button configures the IDP-1201 to monitor contact input 3 for 52L/M contact status, which is the default assignment in standard DECS-450 logic. Pressing the Customized Logic button enables the user to configure the IDP-1201 to monitor the 52L/M contact input as configured in the customized DECS-450 logic.

Start/Stop Buttons Hidden/Visible

Pressing this button enables and disables visibility of the Start and Stop buttons on the DECS Control screen.

Records Duration

Trending records saved by the IDP-1201 retain up to six variables per record with each record consisting of 2,400 data points. Trending records saved by the IDP-1201 can have a user-defined duration ranging from 1 hour to 720 hours (30 days). Note: requires installation of an SD/SDHC memory card.

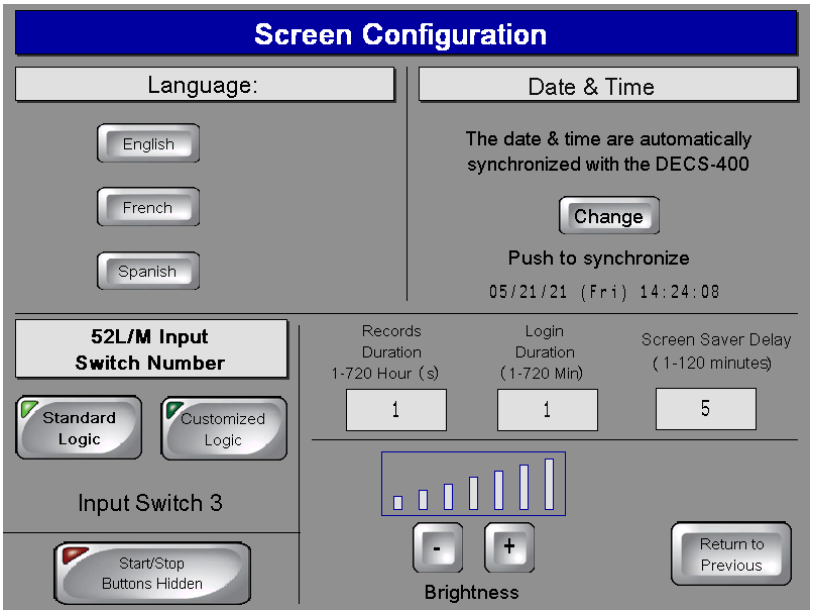


Figure 6-2. Screen Configuration Screen

Login Duration

Following login, the length of time that password access is available (if no button presses occur) is limited by the value of this setting. If no button presses are received for the duration of the setting, password access is lost and the user must log in again to make changes requiring password access. Login Duration is adjustable over the range of 1 to 720 minutes (12 hours).

Screen Saver Delay

A screensaver activates if no button presses are received at the display panel for the length of time specified by the Screen Saver Delay. A setting of 1 to 120 minutes may be entered.

Brightness

Display panel brightness can be increased and reduced by pressing the “+” and “–“ buttons. A bar graph above the buttons serves as a reference for adjusting the display brightness.

Main View Screen

This screen (Figure 6-3) serves as a gateway to the IDP-1201 status and control screens. It also provides access to file transfer functions and a screen lock to enable panel cleaning. The Login button can be used to enter the appropriate password and gain access to the configuration screens.

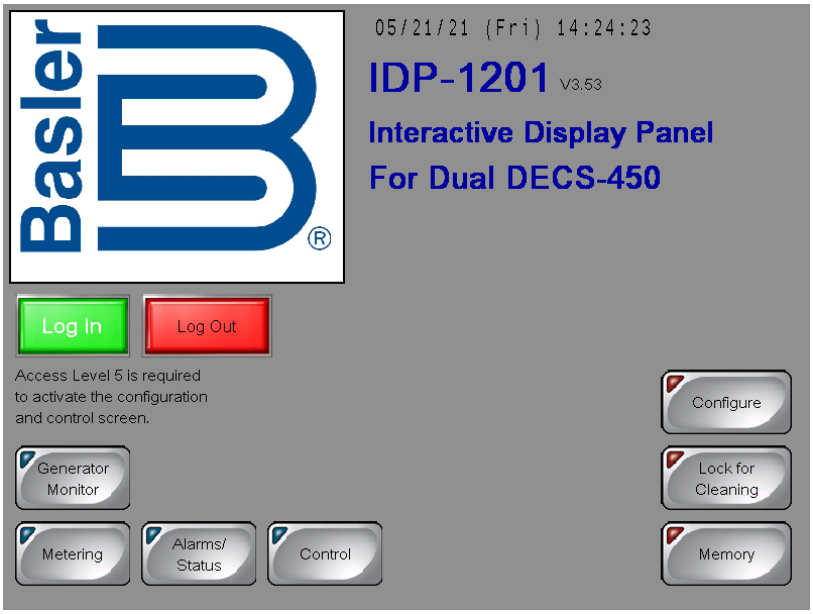


Figure 6-3. Main View Screen

Access to the Control button (and control screens) is possible only when logged into the IDP-1201 with the correct password.

IDP-1201 Passwords

Passwords protect the IDP-1201 from unauthorized settings changes, control commands, and transfers offline.

Two of the passwords are used when transferring the IDP-1201 offline. When taking the IDP-1201 offline, the offline and system passwords are used. The IDP-1201 is delivered with a system password of “4376” and an offline mode access password of “BASLER”.

A factory-default password of “idp8” gives (level 5) access to IDP-1201 configuration and control functions.

A factory-default password of “decs4” gives (level 1) access to only the IDP-1201 control functions.

A factory-default password of “idpx” provides start and stop control (access level 6) of the DECS through the Start and Stop buttons of the DECS Control screen.

Password access remains in effect based on display panel activity and the limit set by the Login Duration setting (Screen Configuration screen).

Gaining Password Access

The following example describes the process for using a password to gain configuration and control access.

1. Press the Login button on the Main View screen.
2. Use the alphanumeric keypad to enter the appropriate password and press the Enter button. The factory-default password is IDP8 and is case-sensitive.

Once the correct password is entered, the Main View screen is displayed with a Control button that provides access to the control screens and a Configure button that provides access to the configuration screens.

Generator Monitor

The Generator Monitor screen is accessed by pressing the Generator Monitor button of the Main View screen. The Generator Monitor screen graphically illustrates generator and excitation system status/activity. Generator parameters include output voltage, output current, active (true) power, reactive power, and power factor. Excitation system parameters include field voltage, field current, and excitation on/off status. The Generator Monitor screen is shown in Figure 6-4.

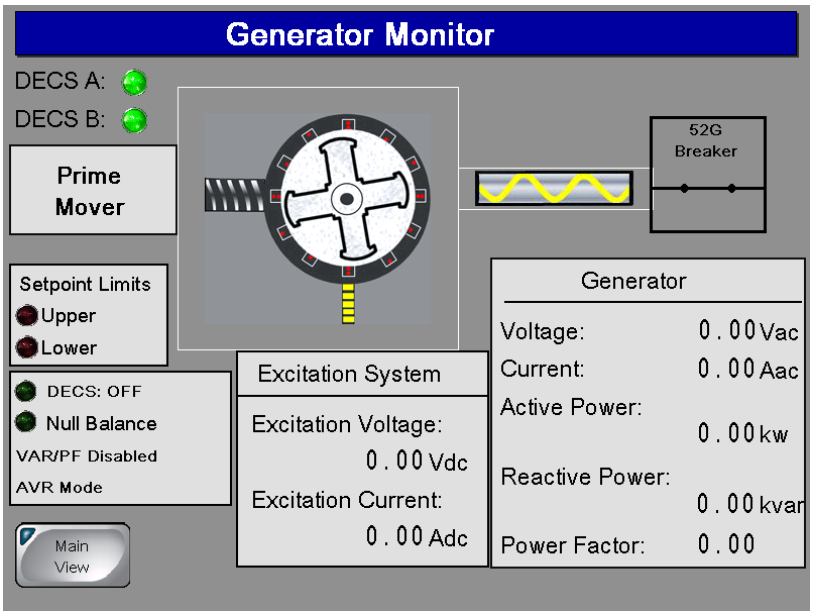


Figure 6-4. Generator Monitor Screen

DECS Metering Screen

Access the DECS Metering screen (Figure 6-5) by pressing the Metering button of the Main View screen. The DECS Metering screen displays digital metering values for the generator, bus, and exciter field as well as the excitation setpoint position and control values.

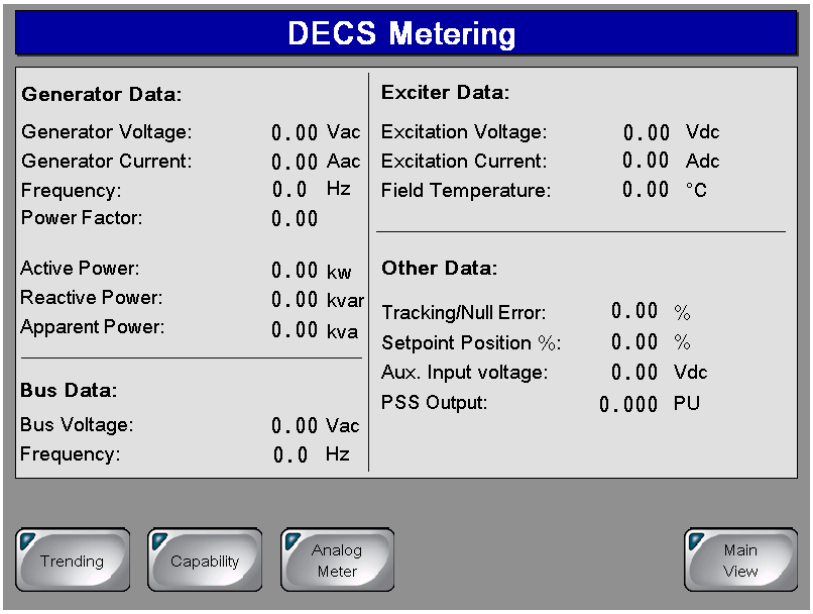


Figure 6-5. DECS Metering Screen

Analog Metering

Pressing the Analog Meter button accesses the analog representations of the digital values displayed on the DECS Metering screen. Analog metering values are divided among three screens accessed through buttons labeled Generator Values, Generator Power, and Exciter Values. Each parameter is represented by an analog meter along with the digital version of the metered value.

Trending

Access to the Trending and Capability Curve screens is also provided through the Trending and Capability buttons on the DECS Metering screen.

The Trending screen (Figure 6-6) is accessed by pressing the Trending button of the DECS Metering screen. Several system parameters can be selected and monitored over time in an amplitude-versus-time window. Buttons on the Trending screen enable selection of the parameters to be monitored. Available parameters include generator voltage (Vgen), apparent power (kVA), true power (kW), reactive power (kvar), field voltage (Vexc), and field current (Iexc). Parameters are plotted in a color that matches the color of the parameter buttons. Pressing the History button displays additional controls and a display for manipulating the cursor position within a data plot. Pressing the USB button accesses the Memory Transfer screen where the data from a trending plot can be transferred to USB memory device. Storage of trending information requires the installation of an SD/SDHC memory card.

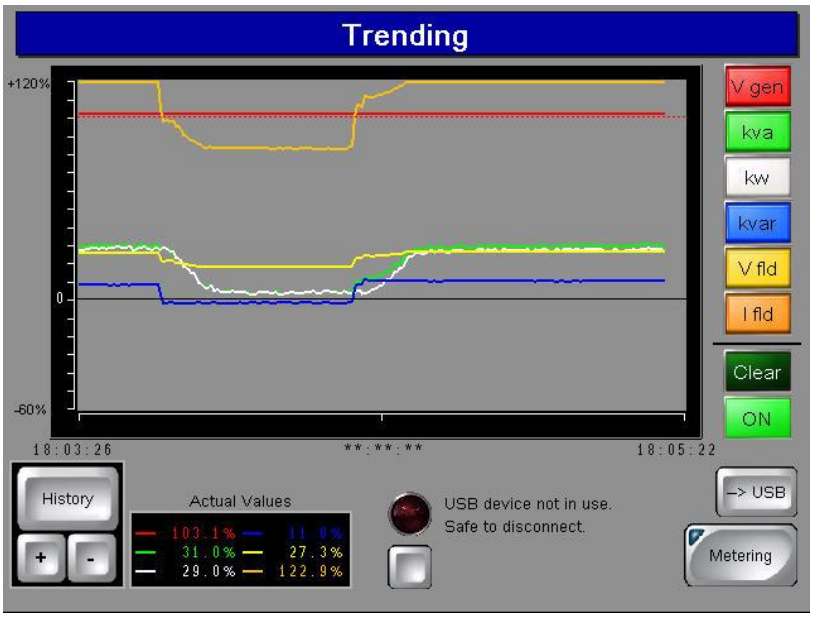


Figure 6-6. Trending Screen

Capability

Access the Capability screen (Figure 6-7) by pressing the Capability button on the DECS Metering screen. By default, a horizontal curve is displayed. Pressing the Vertical Curve button selects a vertical curve orientation.

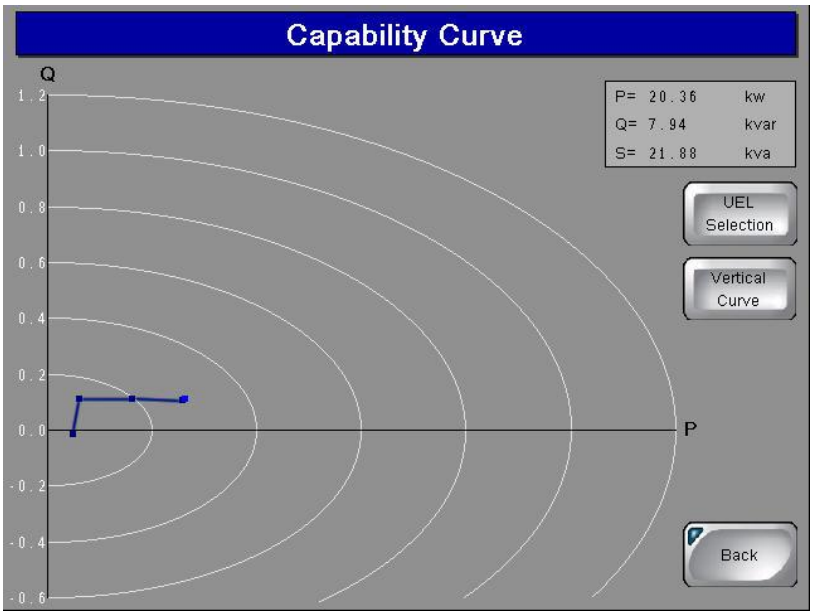


Figure 6-7. Capability Curve Screen

If a plot of the underexcitation limiter (UEL) curves is desired, the Internal UEL Curve button can be pressed to access the UEL Curve Selection screen (Figure 6-8). Here, the internal DECS UEL curve can be selected or a customized, three-, four-, or five-point curve can be selected and configured. UEL curve points must be selected in the DECS BESTCOMS*Plus*® software for an accurate representation on the IDP-1201. Pressing the None button disables the display of UEL curves.

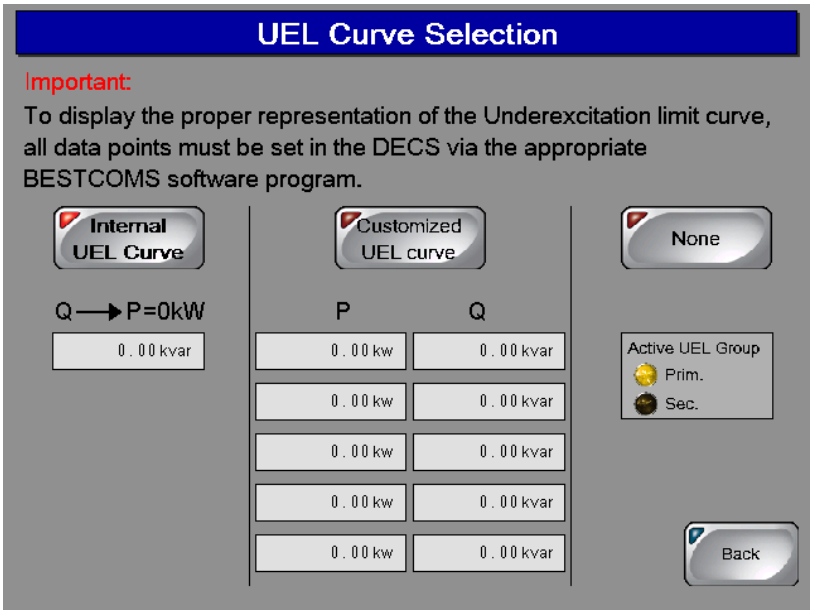


Figure 6-8. UEL Curve Selection Screen

DECS Analog Metering

Analog representations of the digital metering values shown on the DECS Metering screen (Figure 6-5) can be accessed by pressing the Analog Meter button. Pressing this button accesses the Generator Values screen which displays analog representations of the generator voltage, current, frequency, and power factor. Each analog representation displays the digital equivalent in the upper, left corner. The remaining analog metering values are divided between two screens: the Generator Power screen and the Exciter values screen. The Generator Power screen is accessed from the Generator Values screen or Exciter Values screen by pressing the Generator Power button. This screen displays analog

representations of the generator active power, reactive power, and apparent power. The Exciter Values screen is accessed from the Generator Values screen or Generator Power screen by pressing the Exciter Values button. This screen displays analog representations of the excitation voltage and current. A Digital Meter button, on each analog metering screen, can be pressed to return to the DECS (digital) Metering screen.

DECS Control

Access to the DECS Control screen is possible only when logged in with the appropriate password. When logged in, a Control button on the Main View screen provides access to the DECS Control screen illustrated in Figure 6-9. This screen has buttons for start/stop control of the DECS, accessing the Setpoint Control screen and accessing the Regulation Control screen.

Start/Stop Control

Password-protected Start and Stop buttons provide start and stop control of the DECS controller. A red Start indicator lights when a start command is issued and a green Stop indicator lights when a stop command is issued. The Start and Stop buttons are enabled only after pressing the Log In button and entering the Level 6 password. These buttons remain enabled for the length of the Login Duration setting entered on the Screen Configuration screen.

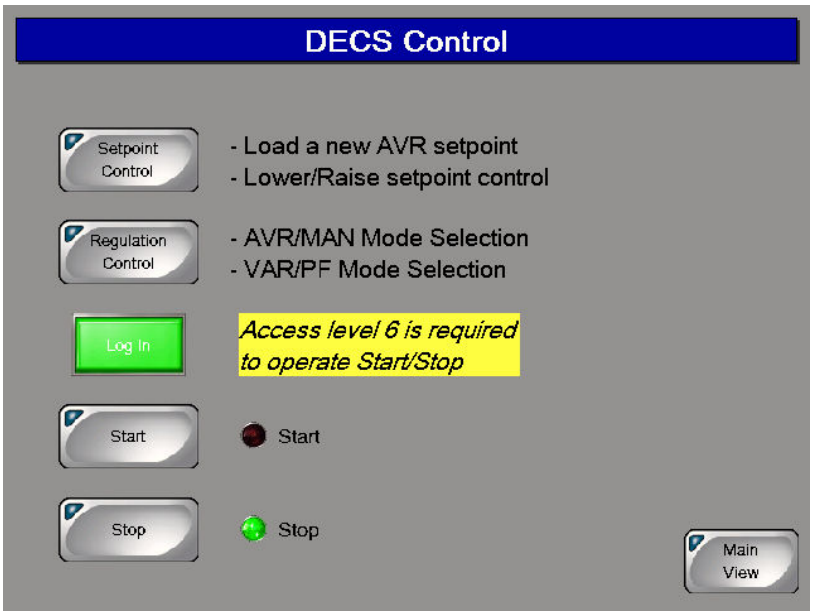


Figure 6-9. DECS Control Screen

Setpoint Control

Pressing the Setpoint Control button accesses the Setpoint Control screen (Figure 6-10). This screen displays the DECS-450 AVR, FCR, power factor, and var setpoints and provides two methods of setpoint adjustment. The “+” and “–“ buttons can be pressed to increment and decrement the active setpoint. A specific setpoint can be entered for any of the four setpoints. Pressing the New button associated with the setpoint can be entered for any of the four setpoints. Pressing the New button associated with the setpoint to be changed accesses a Setpoint Adjustment screen that displays the current setpoint value along with the minimum and maximum limits for the setting. Touching the setting field area displays a numeric keypad where the new value can be entered.

The Setpoint Control screen also has system status indicators and a metering display for generator and excitation system parameters.

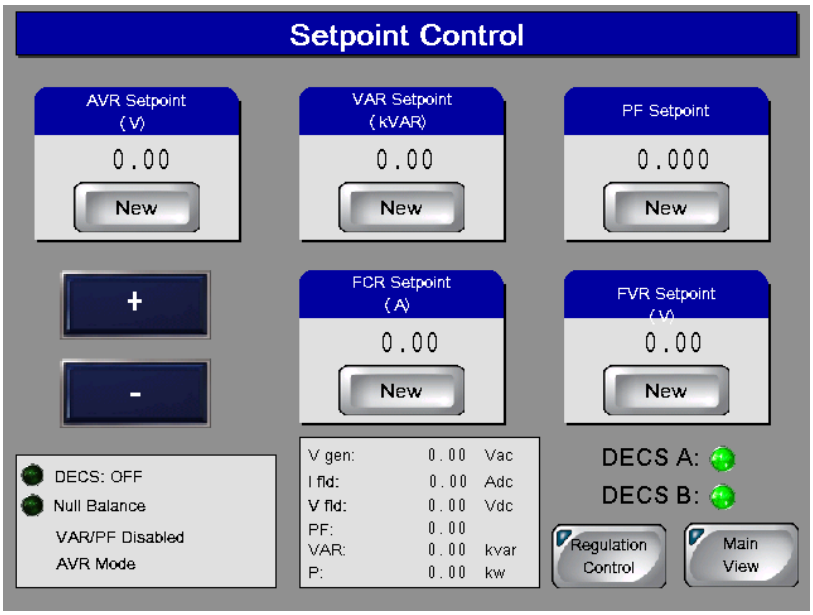


Figure 6-10. Setpoint Control Screen

Regulation Control

Pressing the Regulation Control button accesses the Regulation Control screen (Figure 6-11). This screen enables selection of the active regulation mode. The MAN/AVR button toggles between Manual and Auto modes. When operating in AVR mode, the OFF, PF, and VAR buttons can be used to enable or disable regulation of vars or power factor. Each change to the regulation mode requires a confirmation via an accept/reject dialog box.

The Regulation Control screen also has system status indicators and a metering display for generator and excitation system parameters.

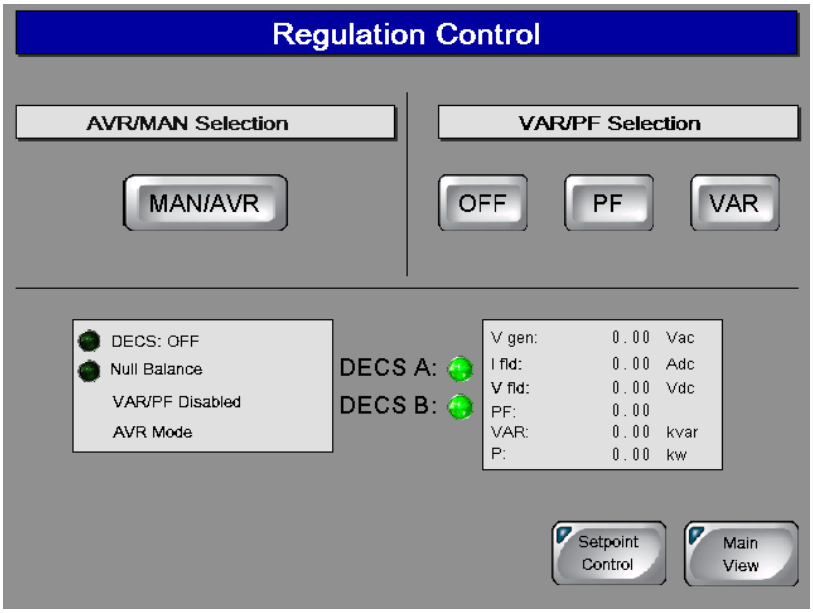


Figure 6-11. Regulation Control Screen

Alarms and Status

Three screens annunciate the state of DECS-450 alarms, functions, limiters, and relay outputs. Depending upon the annunciation, active indicators change to amber, green, or red when active.

The Activated Alarms screen (Figure 6-12) is accessed from the Main View screen by pressing the Alarm/Status button. It can also be accessed from the DECS Status screen by pressing the Alarms button. This screen has indicators for active DECS-450 alarms, power system stabilizer status, and IDP-1201 inputs and clock status. An Alarms Reset button can be pressed to clear alarm annunciations. (An alarm cannot be cleared unless the condition causing the alarm has been cleared.) Pressing the History button accesses the Alarms History screen which lists the alarms captured by the DECS-450. Buttons are provided for scrolling through the alarms list, clearing selected alarms, and clearing all listed alarms. A →USB button enables the transfer of selected alarm records to a memory device plugged into the IDP-1201 USB port.

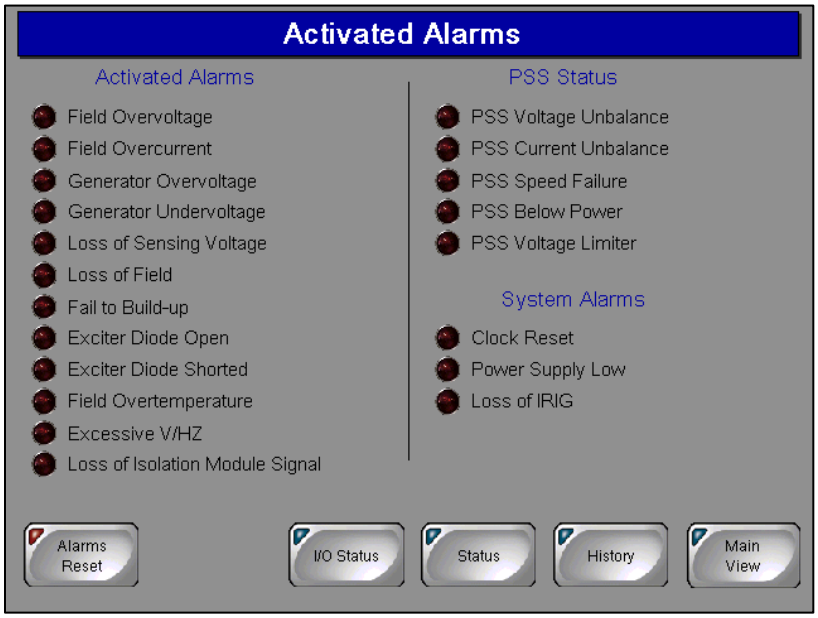


Figure 6-12. Activated Alarms Screen

Note
The DECS must be configured for Settings-level password access in order to enable alarm resets initiated by the IDP-1201.

The DECS I/O Status screen (Figure 6-13) is accessed from the Activated Alarms screen or the DECS Status screen by pressing the I/O Status button. This screen has indicators for the status of the DECS-450 contact inputs and relay outputs.

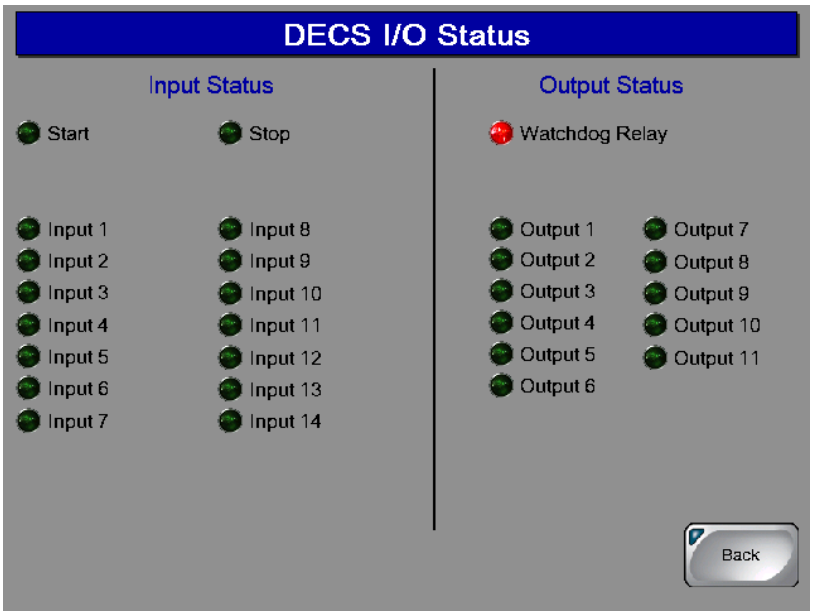


Figure 6-13. DECS I/O Status Screen

The DECS Status screen (Figure 6-14) is accessed from the Activated Alarms screen by pressing the Status button. This screen has indicators for DECS-450 operating conditions, DECS-450 setting groups, and DECS-450 limiters.

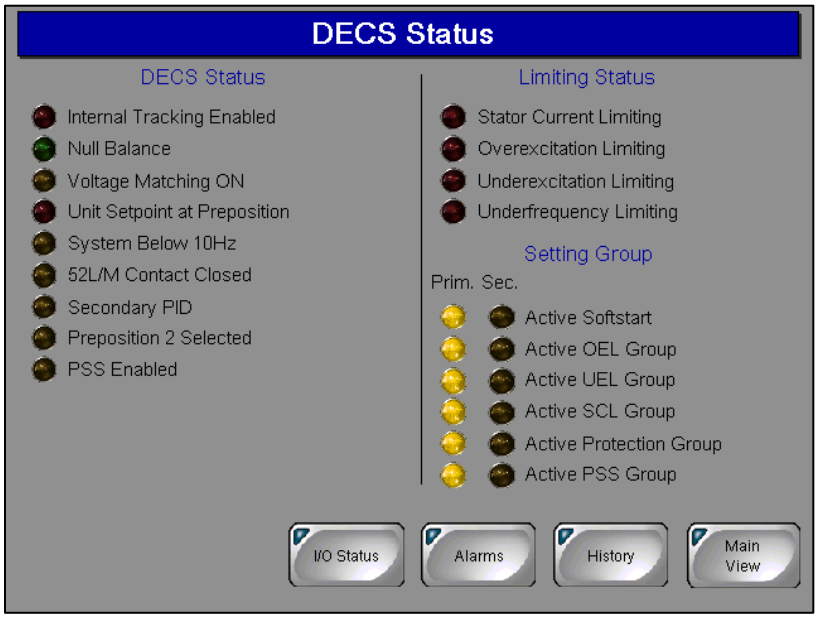


Figure 6-14. DECS Status Screen

7 • Operation with ECS2100 and ECS/RW

Control system and generator system parameters are viewed and controlled through interactive screens displayed by the IDP-1201. Screens are organized by function. Navigation between screens and control of functions are achieved by pressing buttons located on the IDP-1201 screens.

This chapter illustrates and describes IDP-1201 screen navigation and usage. The available IDP-1201 screens and their appearance will vary according to the number of control channels and rectifier bridges utilized in a particular control system.

Initial Screen

The Initial screen (Figure 7-1) is displayed upon power-up of the IDP-1201. The initial screen lists the number of control system channels and the version of the IDP-1201 firmware.

Figure 7-1. Initial Screen

Index Button

Most screens have an Index button that, when pressed, accesses the General Index screen. The General Index screen provides quick navigation to any other IDP-1201 screen.

Get Page Button and Screen

Most screens have a Get Page button that accesses the Get Page screen illustrated in Figure 7-2. This screen lists all screens and provides navigation to each screen. To navigate to a screen, the user scrolls through the screen description list by using the up and down scrolling buttons until the desired screen and screen number are found. The screen number is entered in a numeric keypad accessed by pressing the 86 button. (This button displays the number of the Get Page screen, which is 86.) Entering the screen number followed by the Enter (ENT) button takes the user to the requested screen. A complete list of IDP-1201 screens is provided in Table 7-1. Typically, your system/IDP-1201 will not have all of the equipment/screens listed here.

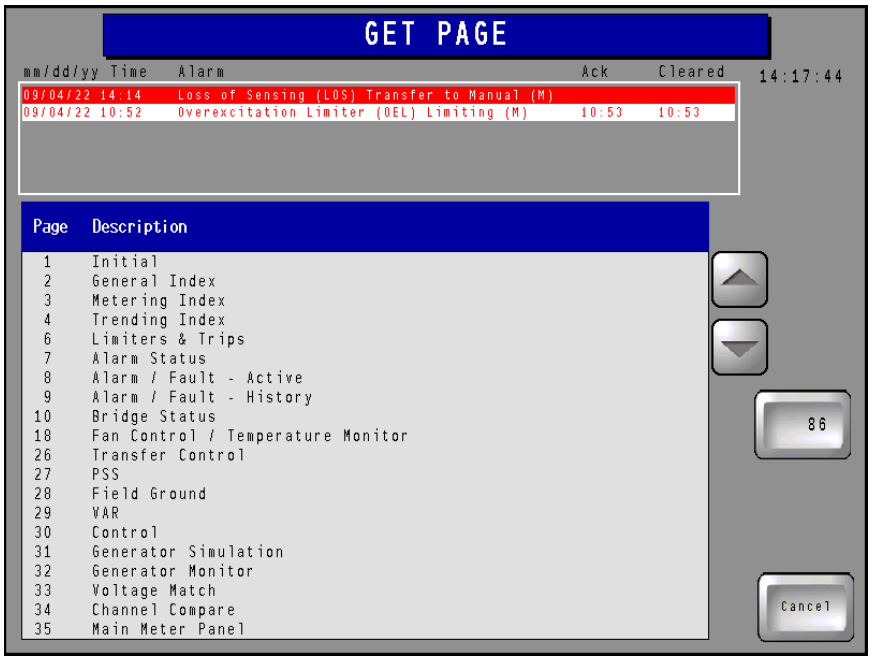


Figure 7-2. Get Page Screen

Table 7-1. IDP-1201 Screens

Page	Description
1	Initial
2	General Index
3	Metering Index
4	Trending Index
6	Limiters and Trips
7	Alarm Status
8	Alarm/Fault – Active
9	Alarm/Fault – History
10	Bridge 00, 01 Status
11	Bridge 02, 03 Status
12	Bridge 04, 05 Status
13	Bridge 06, 07 Status
14	Bridge 08, 09 Status
15	Bridge 10, 11 Status
16	Bridge 12, 13 Status
17	Bridge 14, 15 Status
18	Fan Control/Temperature Monitor
26	Transfer Control
27	Power System Stabilizer
28	Field Ground
29	Reactive Power
30	Output Control

Page	Description
31	Generator Simulation
32	Generator Monitor
33	Voltage Matching
34	Channel Comparison
35	Main Meter Panel
36	Redundant Meter Panel
37	Supervisory Meter Panel
38	Main Meter Panel – Analog
39	Redundant Meter Panel – Analog
40	Supervisory Meter Panel – Analog
41	Meter Panel – Analog Configuration
42	Generator Meter Panel – Analog
43	Generator Meter Panel – Analog Configuration
44	Meter Trending Graph – Main
45	Meter Trending Data – Main
46	Meter Trending Graph – Redundant
47	Meter Trending Data – Redundant
48	Meter Trending Configuration
49	Bridge 00 Temperature Trending Graph
50	Bridge 00 Temperature Trending Data
51	Bridge 01 Temperature Trending Graph
52	Bridge 01 Temperature Trending Data
53	Bridge 02 Temperature Trending Graph
54	Bridge 02 Temperature Trending Data
55	Bridge 03 Temperature Trending Graph
56	Bridge 03 Temperature Trending Data
57	Bridge 04 Temperature Trending Graph
58	Bridge 04 Temperature Trending Data
59	Bridge 05 Temperature Trending Graph
60	Bridge 05 Temperature Trending Data
61	Bridge 06 Temperature Trending Graph
62	Bridge 06 Temperature Trending Data
63	Bridge 07 Temperature Trending Graph
64	Bridge 07 Temperature Trending Data
65	Bridge 08 Temperature Trending Graph
66	Bridge 08 Temperature Trending Data
67	Bridge 09 Temperature Trending Graph
68	Bridge 09 Temperature Trending Data
69	Bridge 10 Temperature Trending Graph
70	Bridge 10 Temperature Trending Data

Page	Description
71	Bridge 11 Temperature Trending Graph
72	Bridge 11 Temperature Trending Data
73	Bridge 12 Temperature Trending Graph
74	Bridge 12 Temperature Trending Data
75	Bridge 13 Temperature Trending Graph
76	Bridge 13 Temperature Trending Data
77	Bridge 14 Temperature Trending Graph
78	Bridge 14 Temperature Trending Data
79	Bridge 15 Temperature Trending Graph
80	Bridge 15 Temperature Trending Data
81	Horizontal Capability Curve
82	Vertical Capability Curve
83	System Configuration
84	Cleaning Lock
85	Screen Saver
86	Get Page
87	System Configuration 2

Alarms Banner

Most screens display an alarms banner that lists the six most recent system alarms. Each alarm is labeled with a description and the date and time of the alarm. The timestamp for acknowledgement and clearing (if applicable) of alarms is also displayed. Active alarms are displayed as white text on a red background. Acknowledged alarms are displayed as yellow text on a black background. Cleared alarms are displayed as red text on a white background.

System Configuration Screen

This screen (Figure 7-3) has provisions for adjusting the screen saver time delay, adjusting the display brightness, and selecting the display language.

An indicator turns red to indicate the connection of a USB device to the IDP-1201. A button below the indicator can be pressed to de-energize the IDP-1201 USB port for safe removal of a USB device from the IDP-1201.

If the IDP-1201 panel requires cleaning, the Lock for Cleaning button can be pressed to enable cleaning of the screen without inadvertently pressing buttons.

A Log In button accesses an alphanumeric keypad where the appropriate password can be entered to log in and make IDP-1201 settings changes. The IDP-1201 is delivered with a level 1 password of “1234” and a level 2 password of “4321”. The proper, level 1 password is required to select the IDP-1201 display language. The proper level 2 password is required to configure the IDP-1201 as a local or remote display or to change passwords. Instructions for changing the password are provided in *Password Settings*.

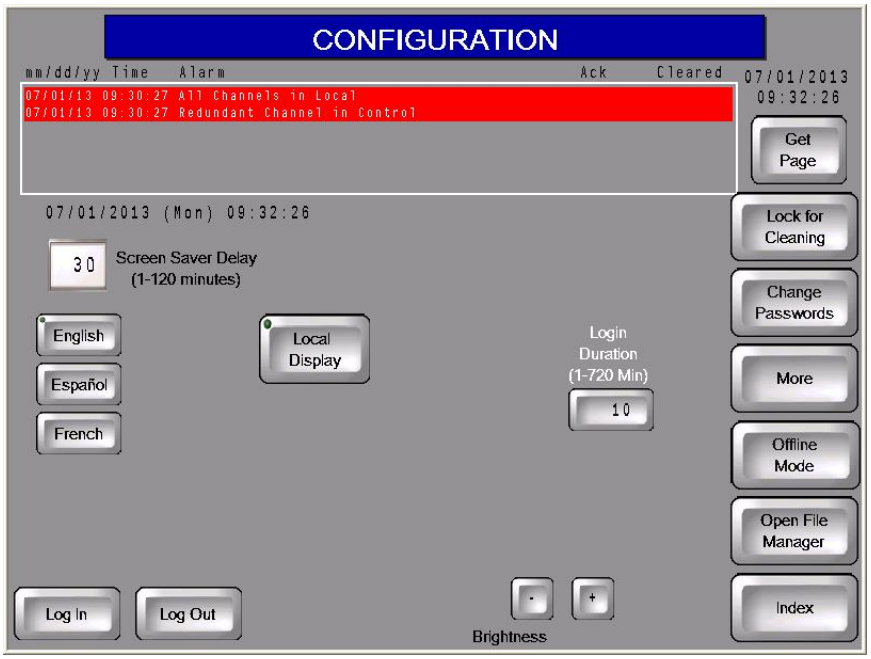


Figure 7-3. System Configuration Screen

Additional Configuration Screen

Pressing the More button accesses a second Configuration screen, illustrated in Figure 7-4. This screen enables selection of the firmware version being used by the control system and the Modbus address of the main and redundant channels.

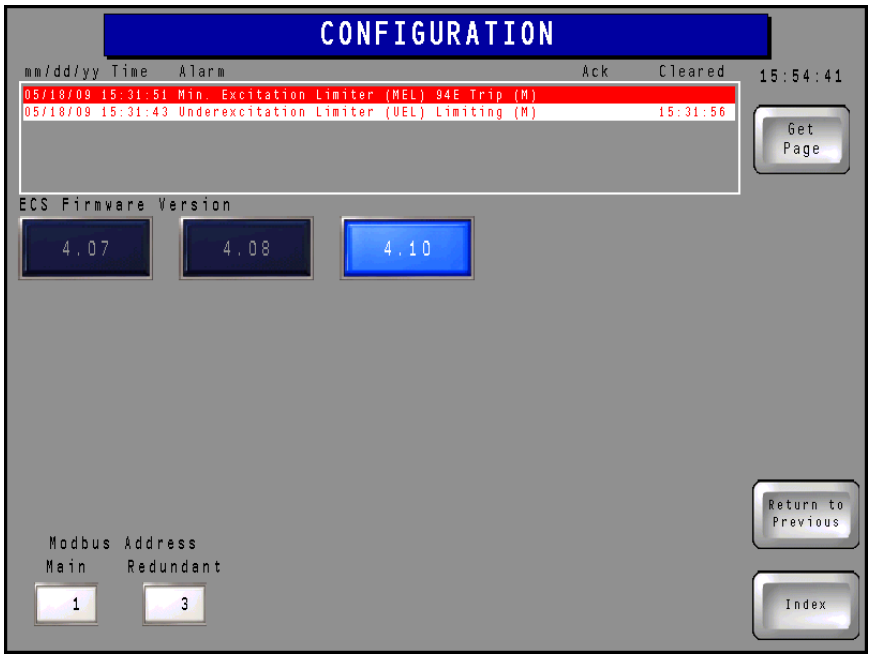


Figure 7-4. Firmware and Modbus Address Configuration Screen

File Manager

The Open File Manager button accesses the file manager which lists the files present on an inserted compact flash card and connected USB device. Files can be copied or moved from one storage device to the other or deleted.

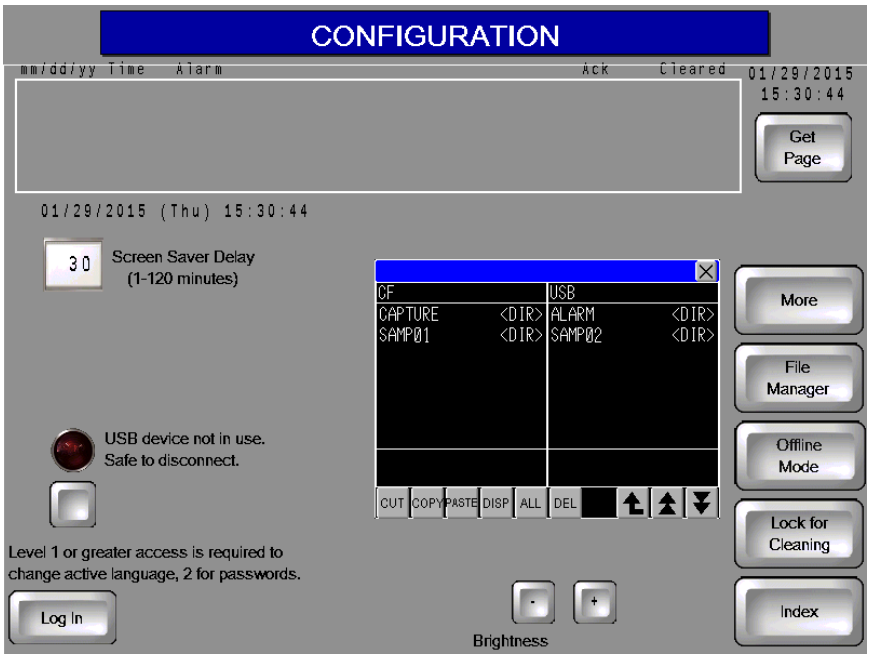


Figure 7-5. File Manager Screen

General Index

The General Index screen (Figure 7-6) is accessed by pressing the Index button, located in the lower right corner of any other IDP-1201 screen. The General Index screen provides two methods of access to other screens within the IDP-1201. Buttons on the General Index page provide quick access to 18 frequently used IDP-1201 screens.

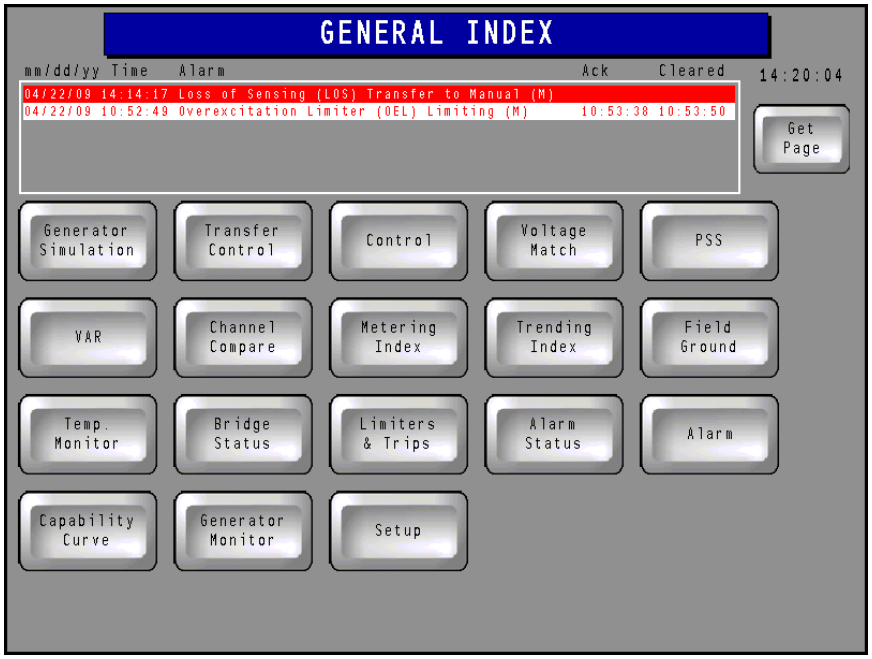


Figure 7-6. General Index Screen

Metering Index

Buttons on the Metering Index screen (Figure 7-7) are pressed to access the screens used to scale and display system metering values.

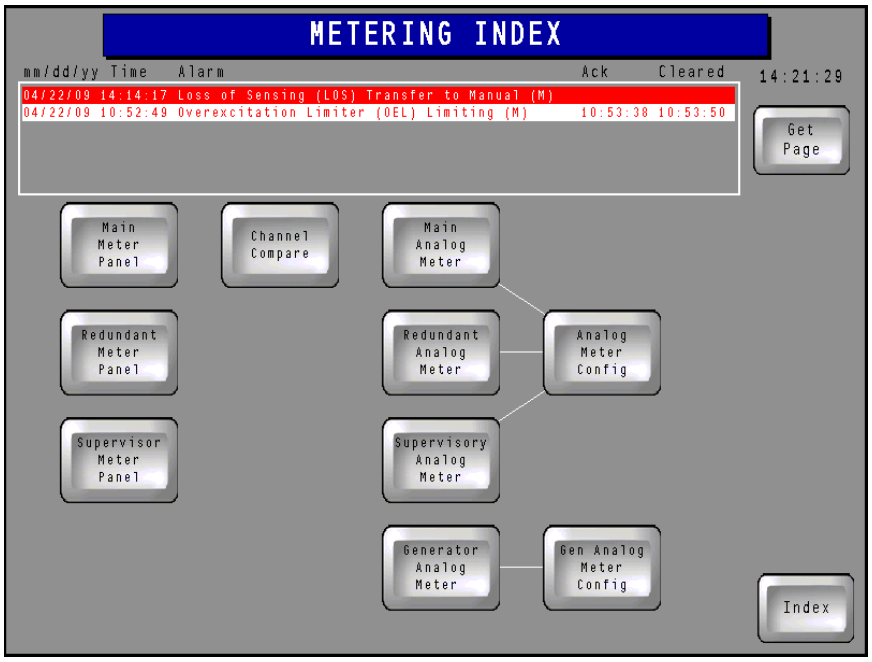


Figure 7-7. Metering Index Screen

Analog Meter Config Button

Pressing this Metering Index screen button accesses the Analog Meter Configuration screen (Figure 7-8) which sets the range of the metering values displayed on the Main, Redundant, and Supervisory Metering Panels (if so equipped). The minimum and maximum per-unit values for a metered parameter is changed by pressing the corresponding value. This displays a keypad which is then used to assign the desired metering limit. A per-unit value of –5.00 to 5.00 may be entered. Pressing the Enter (ENT) button saves the value.

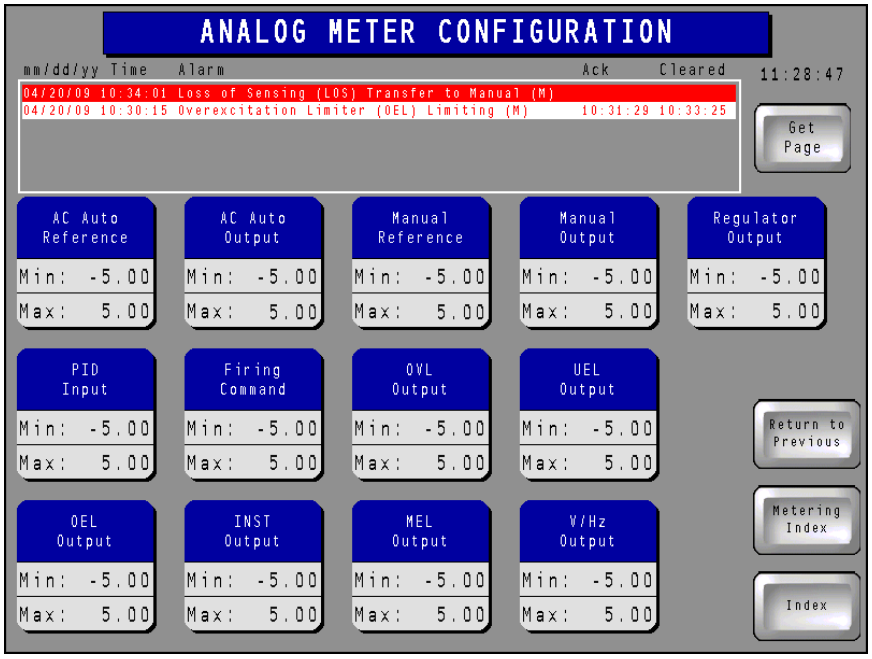


Figure 7-8. Analog Meter Configuration Screen

Main Analog Meter, Redundant Analog Meter, and Supervisory Analog Meter Buttons

Pressing one of these Metering Index screen buttons (if so equipped) accesses the corresponding metering page which displays the parameters illustrated in Figure 7-9. (Only the Main Meter Panel is shown here; the Redundant and Supervisory Meter Panels are similar.) The value of each parameter is graphically shown on an analog scale and also displayed in digital format. The minimum and maximum values established on the Analog Meter Configuration screen determine the metering ranges shown on this screen.

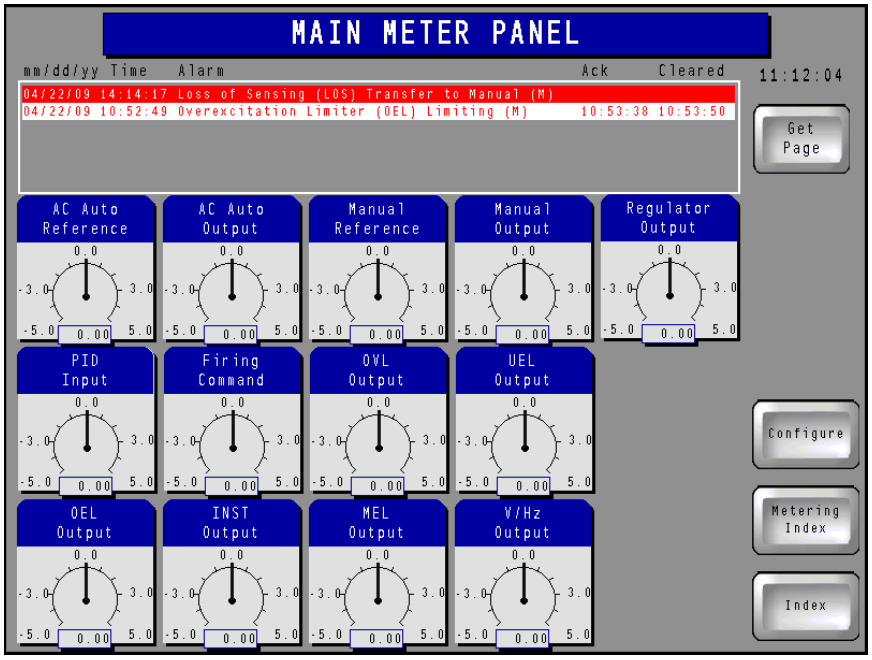


Figure 7-9. Main Meter Panel

Gen Analog Meter Config Button

Pressing this Metering Index screen button accesses the Generator Metering Configuration screen (Figure 7-10) which sets the range of the generator metering values displayed on the Generator Metering screen. The generator power factor metering range is fixed so no adjustment is provided. The minimum and maximum value for a metered parameter is changed by pressing the corresponding value. This displays a keypad which is then used to assign the desired metering limit. Pressing the Enter (ENT) button saves the value. Minimum and maximum metering parameter ranges are listed in Table 7-2.

Table 7-2. Metering Parameter Ranges

Parameter	Minimum	Maximum
Field Current	0	10000
Field Voltage	–1500	1500
Generator Current	0	30000
Generator Voltage	0	30000
Generator Megavars	–1500	1500
Generator Megawatts	0	1500

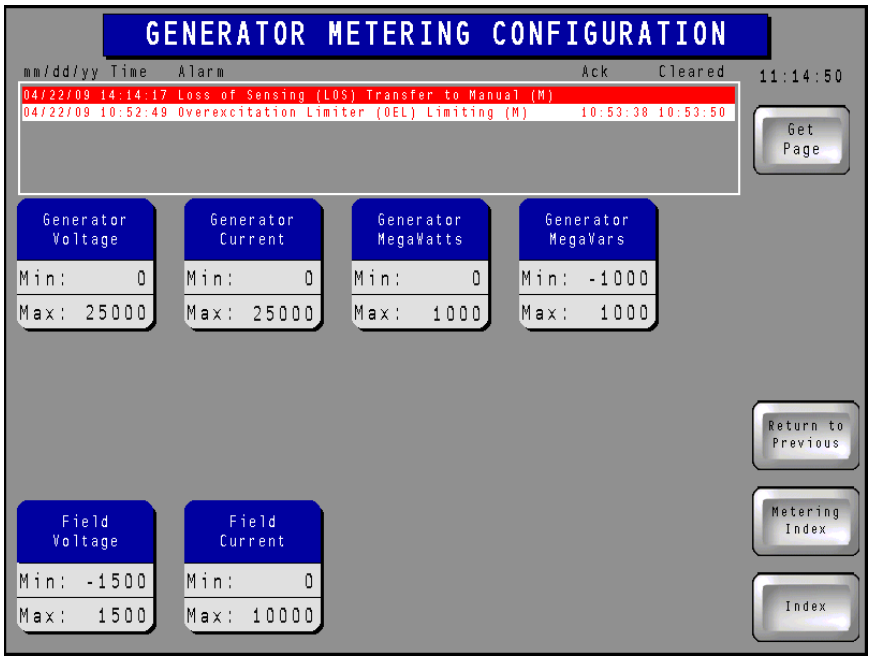


Figure 7-10. Generator Metering Configuration Screen

Generator Analog Meter Button

Pressing this Metering Index screen button accesses the Generator Metering screen which displays the parameters illustrated in Figure 7-11. The value of each parameter is graphically shown on an analog scale and also displayed in digital format. The minimum and maximum values established on the Generator Metering Configuration screen determine the metering ranges shown on this screen. The Generator Metering screen also indicates the control system channel that is controlling excitation.

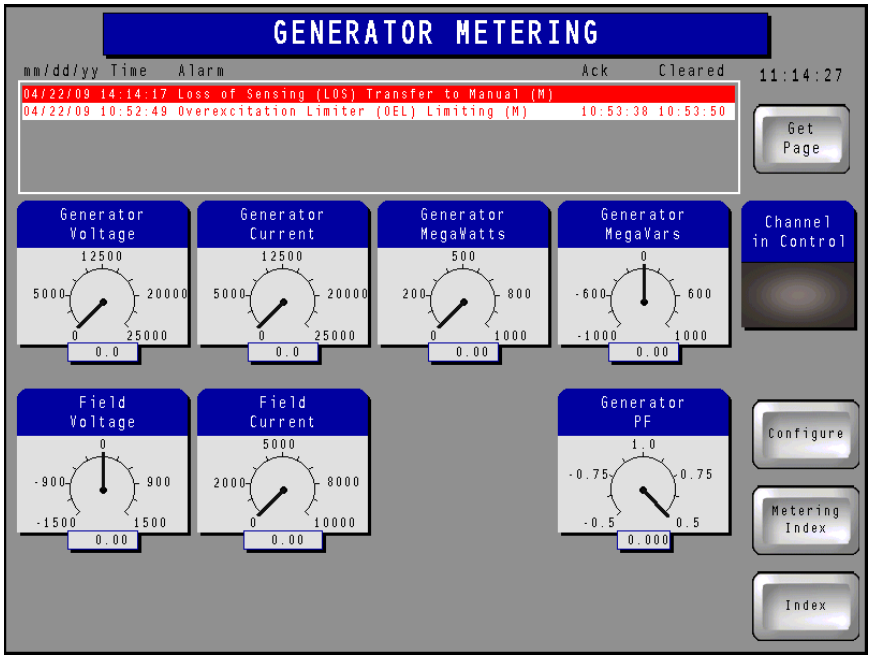


Figure 7-11. Generator Metering Screen

Channel Compare Button

Pressing this Metering Index screen button accesses the Channel Compare screen (Figure 7-12) which displays a list of parameters metered by the control system channels. Scroll buttons, located to the right of the list, can be used to scroll up and down through the list of parameters. (A particular system may not

be equipped with all of the channels shown here.) Three columns of indicators, located in the lower portion of the screen, show the status of various operating modes, functions, and devices for the three channels. The Channel in Control indicators turn green when active; all other indicators turn red when active.

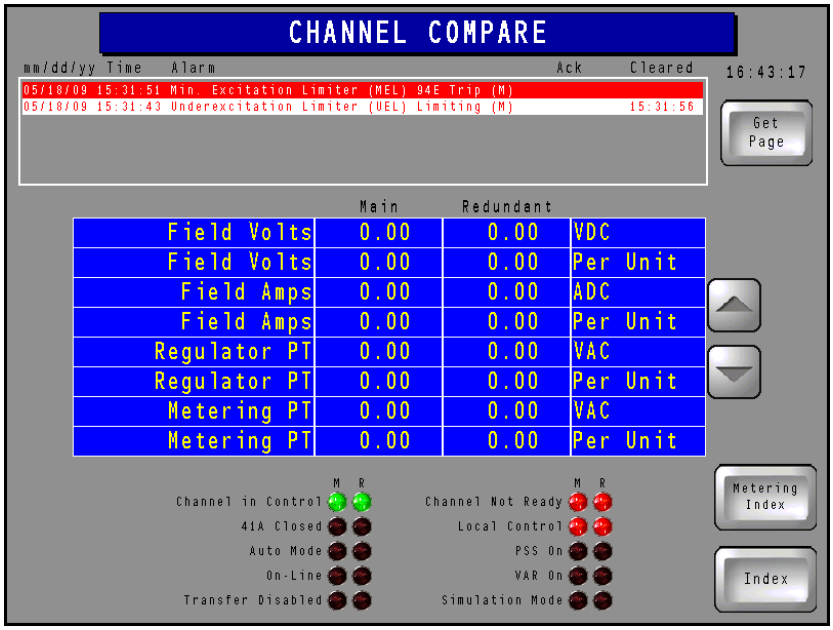


Figure 7-12. Channel Compare Screen

Main Meter Panel, Redundant Meter Panel, and Supervisory Meter Panel Buttons

Pressing one of these Metering Index screen buttons (if so equipped) accesses the corresponding meter panel screen which displays the digital-only version of the parameters illustrated in Figure 7-9. (Only the Main Meter Panel (Figure 7-13) is shown here; the Redundant and Supervisory Meter Panels are similar.) The minimum and maximum values established on the Analog Meter Configuration page determine the metering ranges shown on this screen.

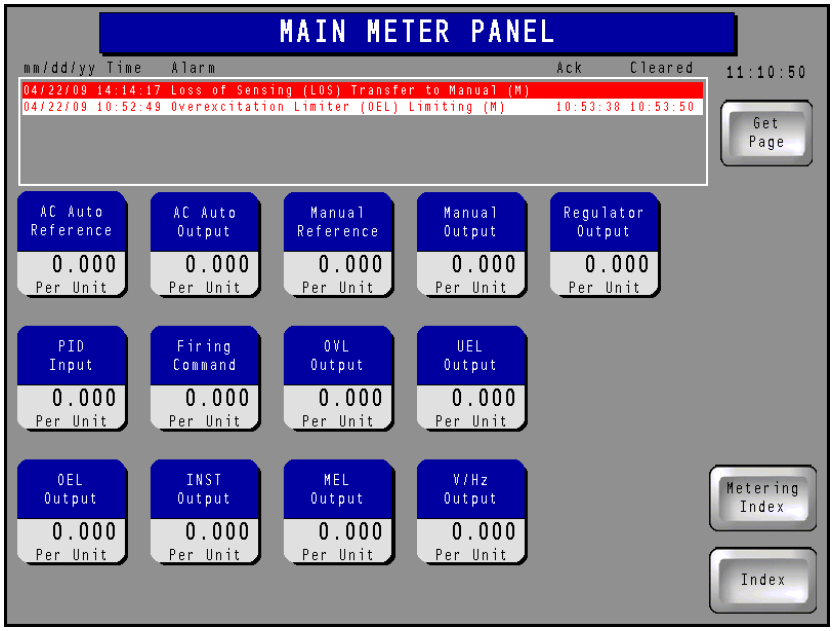


Figure 7-13. Main Meter Panel Screen

Trending Index

Buttons on the Trending Index screen (Figure 7-14) provide access to data lists and plots for user-selected control system parameters and temperature data lists and plots for the excitation system rectifier bridges. Appropriate buttons are provided based on the number of bridges included in the system.

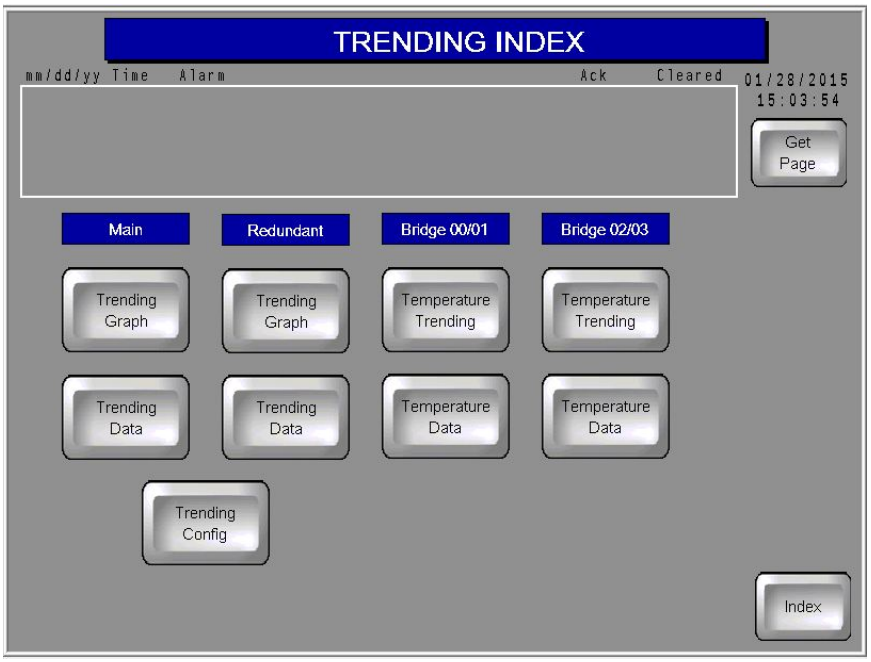


Figure 7-14. Trending Index Screen

Trending Config Button

Pressing this Trending Index screen button accesses the Meter Trending Configuration screen shown in Figure 7-15. Up to 12 control system channel parameters may be selected as part of a data list (accessed through the Trending Data buttons) or data graph (accessed through the Trending Graph buttons). A Duration button can be pressed to access a keypad where the trending length can be selected. Up to 2,400 control channel data points and 100 bridge temperature data points are maintained. A legend indicates the line colors and patterns used when parameters are graphed.

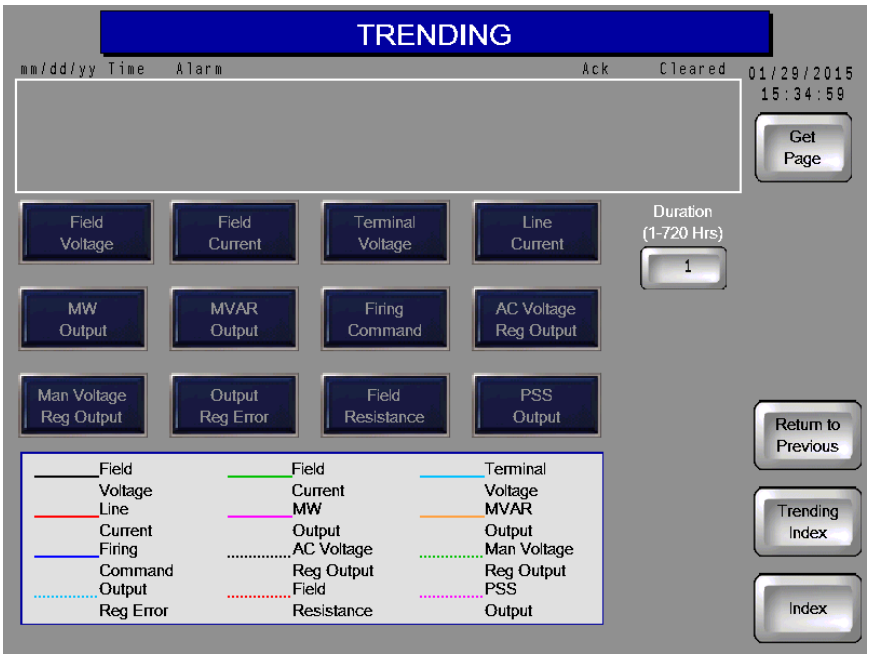
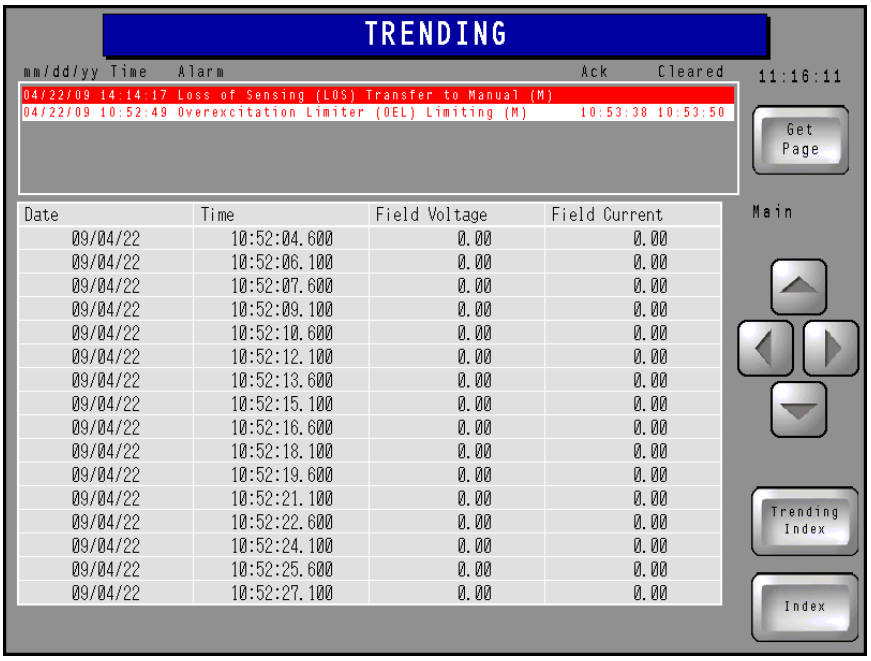


Figure 7-15. Meter Trending Configuration Screen

Trending Data Buttons

Pressing these Trending Index screen buttons accesses the corresponding trending page (either the Main channel trending list or the Redundant channel trending list). The Main channel trending list screen is shown in Figure 7-16; the Redundant channel trending list screen is identical in appearance.



Date	Time	Field Voltage	Field Current
09/04/22	10:52:04.600	0.00	0.00
09/04/22	10:52:06.100	0.00	0.00
09/04/22	10:52:07.600	0.00	0.00
09/04/22	10:52:09.100	0.00	0.00
09/04/22	10:52:10.600	0.00	0.00
09/04/22	10:52:12.100	0.00	0.00
09/04/22	10:52:13.600	0.00	0.00
09/04/22	10:52:15.100	0.00	0.00
09/04/22	10:52:16.600	0.00	0.00
09/04/22	10:52:18.100	0.00	0.00
09/04/22	10:52:19.600	0.00	0.00
09/04/22	10:52:21.100	0.00	0.00
09/04/22	10:52:22.600	0.00	0.00
09/04/22	10:52:24.100	0.00	0.00
09/04/22	10:52:25.600	0.00	0.00
09/04/22	10:52:27.100	0.00	0.00

Figure 7-16. Main Channel Trending Data Screen

Parameter data are listed in columns along with dates and timestamps for each row of data. Note that the date format is yy/mm/dd. The parameters displayed are selected on the Meter Trending Configuration screen. Scrolling buttons enable the user to move through the record and view the desired data points.

Trending Graph Buttons

Pressing these Trending Index screen buttons accesses the corresponding trending graph page (either the Main channel trending graph or the Redundant channel trending graph). The Main channel trending graph screen (Figure 7-17) is shown here; the Redundant channel trending graph screen is identical in appearance.

Figure 7-17. Main Channel Trending Graph Screen

Each trending graph screen has a graph window with buttons that are used to move forward and backward through the plot, zoom in and out, and reset the plot. Plotted parameters are selected on the Meter Trending Configuration screen. Pressing the Show Legend button displays a legend indicating the line colors and patterns used in the trending graph. A Copy to USB button provides the ability to export the plot data to the IDP-1201's USB port in a comma-separated-values file format.

Temperature Trending and Temperature Data Buttons

These Trending Index screen buttons are pressed to access a plot or list of temperature data for the rectifier bridges. Display and control layout of these pages are identical to that of the trending data and trending graph screens for the control system channels.

Limiters and Trips

This page (Figure 7-18) indicates the status of the following limiters and trip actions:

- Overexcitation (OEL)
- Volts per Hertz (HXL)
- Overvoltage (OVL)
- Instantaneous (INST)
- Minimum Excitation (MEL)
- Underexcitation (UEL)
- Loss of Sensing (LOS)
- External Initiated Lockout (86)
- Transformer Overtemperature (OTT)
- Loss of Both Cooling Fans (LBF)

Pressing the Acronym Key button displays a list of acronym definitions for the Limiters & Trips page.

Limiter/trip status is indicated by up to three columns of red (active) or black (inactive) indicators labeled M (main channel), R (redundant channel), and S (supervisory channel). The meaning of a red indicator depends upon the column it is located in. Indication categories (columns) are Timing, Timed Out, Limit, Redundant, Manual, and Trip.

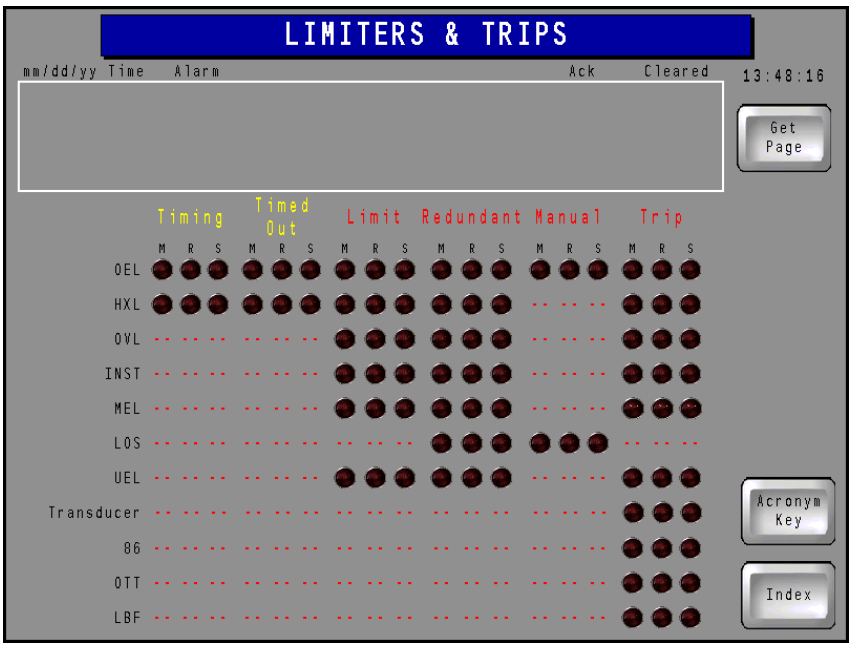


Figure 7-18. Limiters and Trips Screen

Alarm Status

The Alarm Status screen (Figure 7-19) lists control system parameters, conditions, and modules along with their alarm status. Alarm status is displayed by three columns of indicators that are either black (no alarm) or red (alarm). Depending upon the features of the control system, each parameter has up to three alarm indicators labeled M (main channel), R (redundant channel), and S (supervisory channel). An active alarm is annunciated by a red indicator and is listed in the alarms banner along the top of the page. More information about how alarms are displayed is provided in the description for the Alarms/Faults screen.

Navigation to the Index, Bridge Status, and Transfer Control screen is available through buttons located in the lower, right portion of the Alarm Status screen.

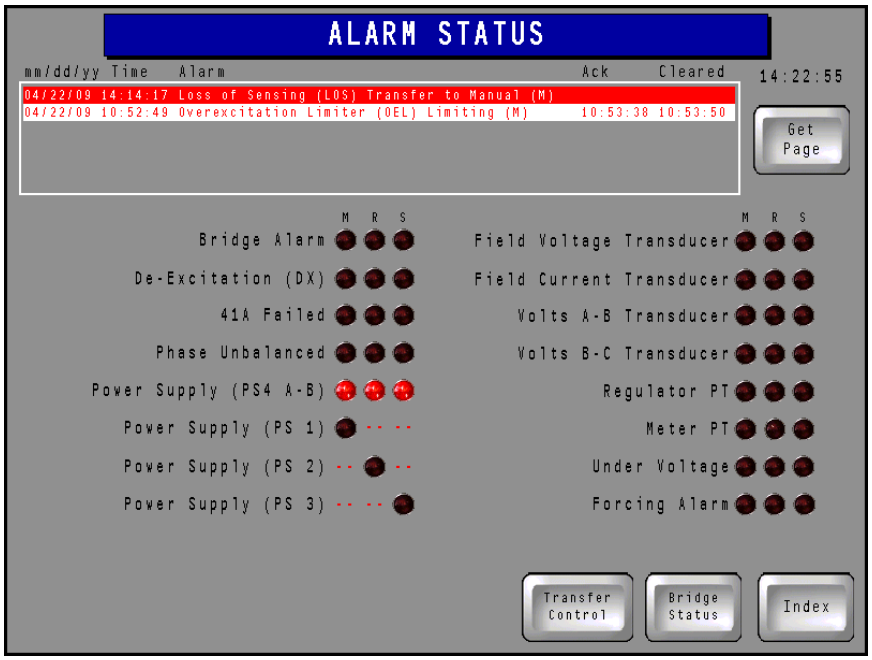


Figure 7-19. Alarm Status Screen

Active Alarms/Faults

This screen (Figure 7-20) lists only alarms that are active. Scrolling buttons along the right side of the list enable the user to navigate through the list of alarms. Individual alarms can be acknowledged by selecting the alarm and then pressing the Acknowledge Selected button. All alarms in the list can be acknowledged simultaneously by pressing the Acknowledge All button. The History button provides access to the Alarms/Faults History screen.

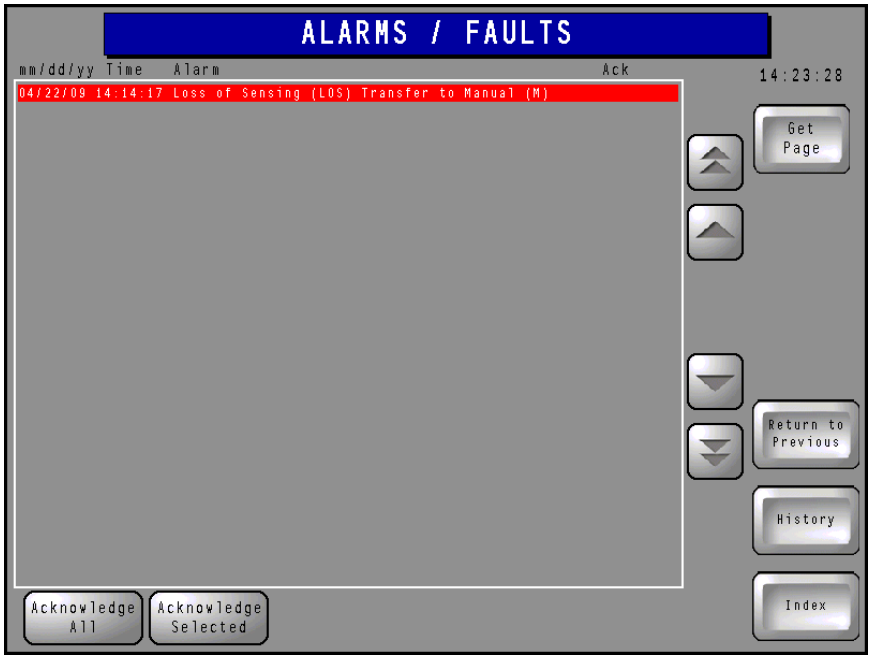


Figure 7-20. Active Alarms/Faults Screen

Alarms/Faults History

This screen (Figure 7-21) lists all active, acknowledged, and cleared alarms. Active alarms are displayed as white text on a red background. Alarms that have been acknowledged (but not cleared) are displayed as yellow text on a black background. Cleared alarms are displayed as red text on a white background. Scrolling buttons along the right side of the list enable the user to navigate through the list of alarms. Individual alarms can be acknowledged or cleared by selecting the alarm and then pressing the Acknowledge Selected or Clear Selected button. All alarms in the list can be simultaneously acknowledged or cleared by pressing the Acknowledge All or Clear All button. A Copy to USB button provides the ability to export the plot data to the IDP-1201's USB port in a comma-separated-values file format. The History button provides access to the Active Alarms/Faults screen.

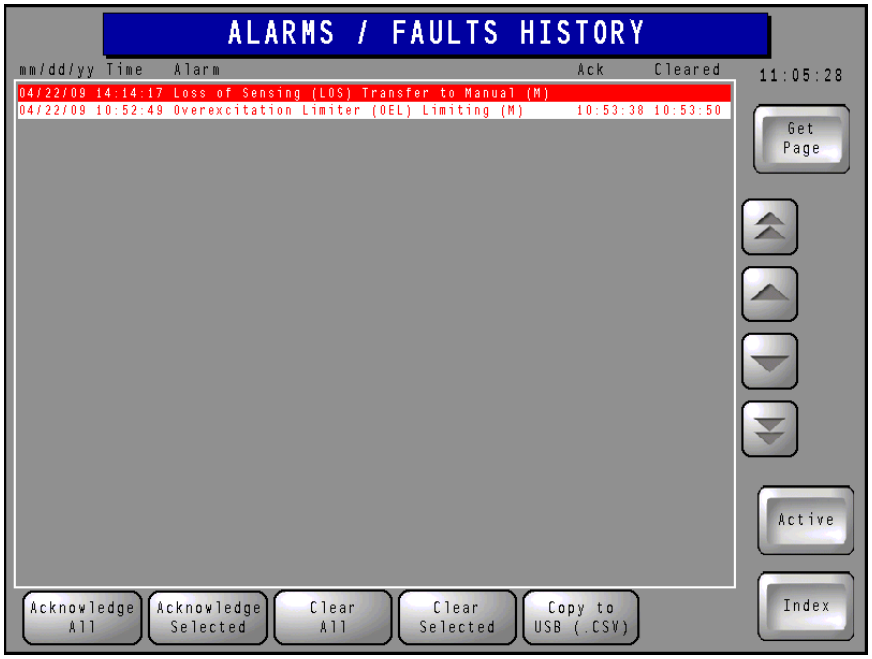


Figure 7-21. Alarms/Faults History Screen

Bridge Status

The Bridge Status screen (Figure 7-22) displays alarm conditions associated with the excitation system power converters. This screen indicates the status of up to two power converters; a system with more than two power converters will have more than one Bridge Status screen.

Alarm indications are provided for open input fuses, open or non-conducting SCRs, open or shorted RTDs, and cooling failures.

A Reset FCIM Alarms button can be used to reset any alarms associated with the Field Control Interface Module.

The Return Bridge From Maint button must be pressed when an out-of-service power converter is ready to be returned to service.

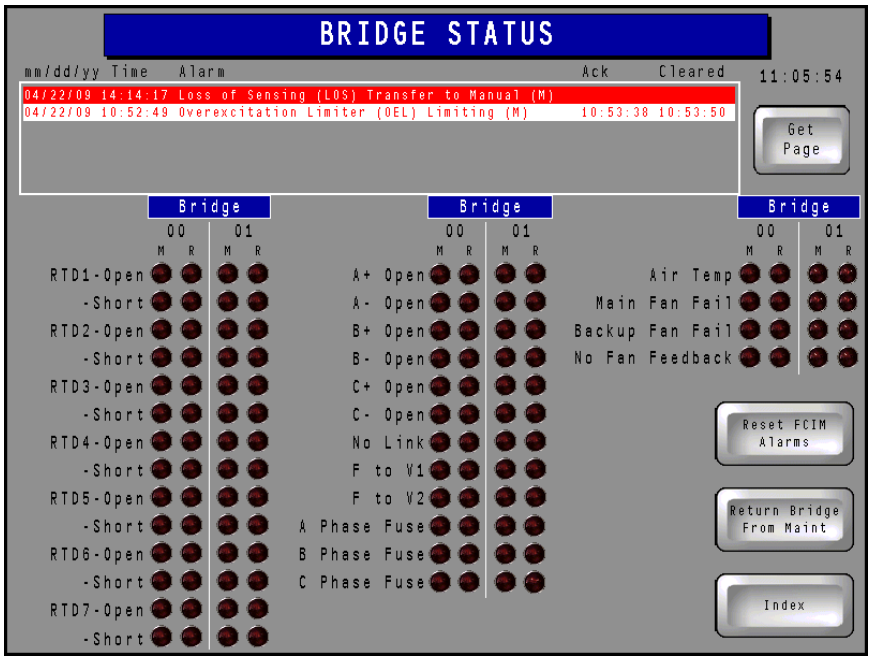


Figure 7-22. Bridge Status Screen

Fan Control and Temperature Monitor

This screen (Figure 7-23) displays a table of temperature data for the excitation system rectifier bridges. Heat sink temperature data is listed for each SCR. The ambient air temperature surrounding the bridge is also listed.

Buttons at the right side of the page enable the user to override the cooling fan logic and manually select which fans operate.

Indicators display the operating status of the rectifier bridge cooling fans.

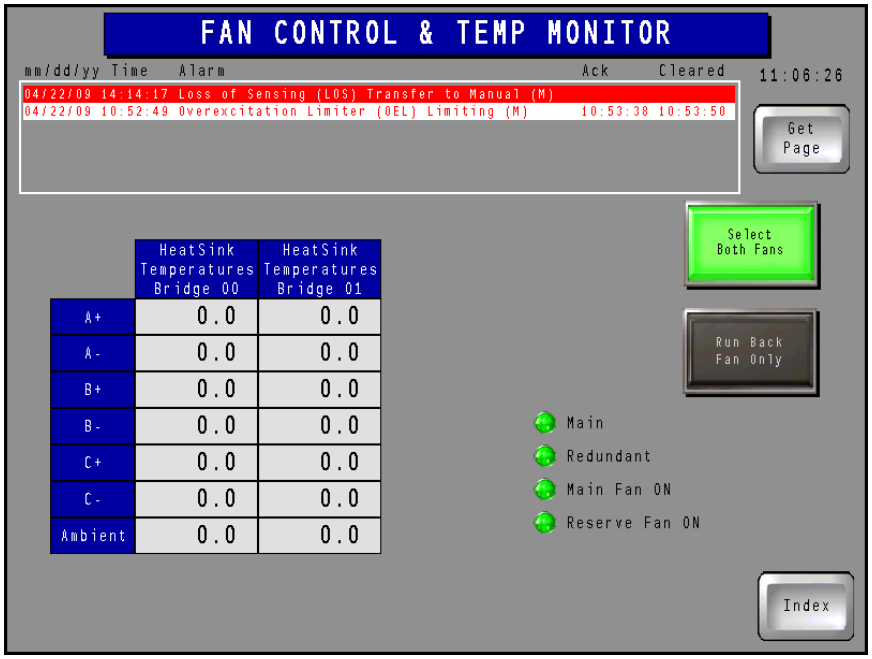


Figure 7-23. Fan Control and Temperature Monitor Screen

Transfer Control

This screen (Figure 7-24) is used to transfer control from one control system channel to another.

When transferring control system channel control, observe the following:

- The IDP-1201 being used must be in control.
- You must know whether the IDP-1201 being used is Local or Remote (as displayed on the Local/Remote indicator). Note that the IDP-1201 located on the control system equipment enclosure is considered as the Local IDP-1201. An IDP-1201 at any other location is considered to be a Remote IDP-1201.
- Level 1 password access is required (through use of the Log In button).
- The redundant channel tracks the output of the main channel and displays the percent difference (error) between the outputs of the redundant and main channels.

To transfer control system channel control:

1. Ensure that the Enable Transfer indicator shows “Panel Transfer Enabled”. This is achieved by pressing the Enable Transfer button.
2. Press the Transfer indicator button and select the desired channel.

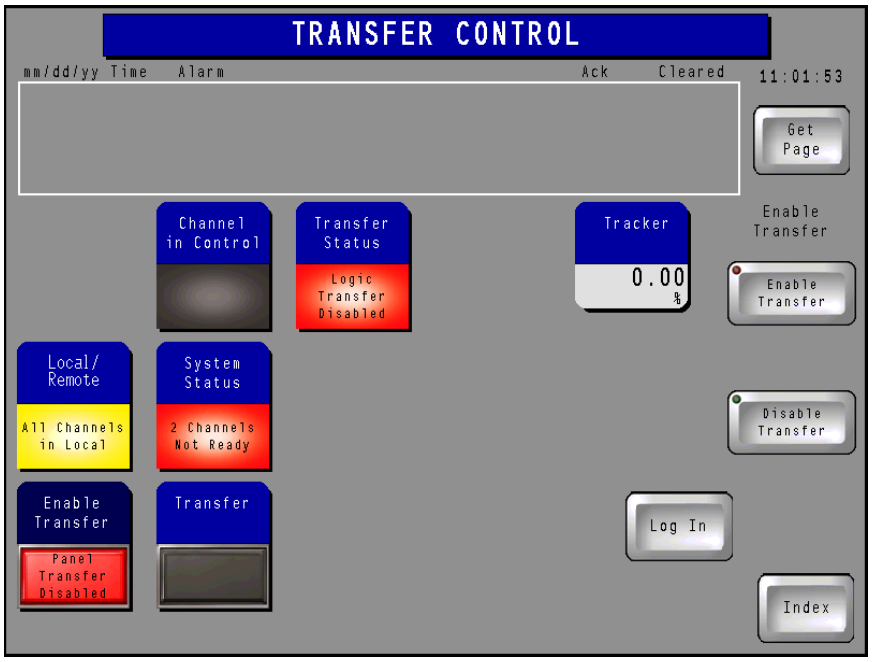


Figure 7-24. Transfer Control Screen

Power System Stabilizer

This page (Figure 7-25) displays power system stabilizer operating status and enables/disables PSS operation. PSS metering indications for each control system channel are displayed. The PSS output for the active channel is displayed adjacent to the Channel in Control indicator.

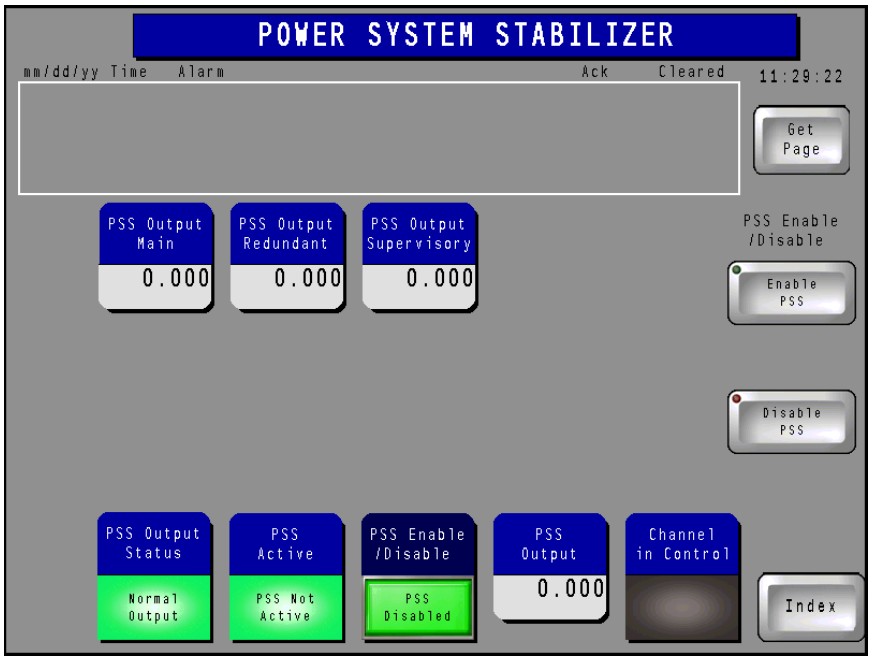


Figure 7-25. Power System Stabilizer Screen

Field Ground

This is an indications-only screen (Figure 7-26) that displays the field-to-ground resistance and calculated field temperature as measured/calculated by each channel. If the level of the field-to-ground resistance is detected as less than system variable FLDGND_RMIN, an alarm condition exists and is displayed in the Field Ground indicator(s).

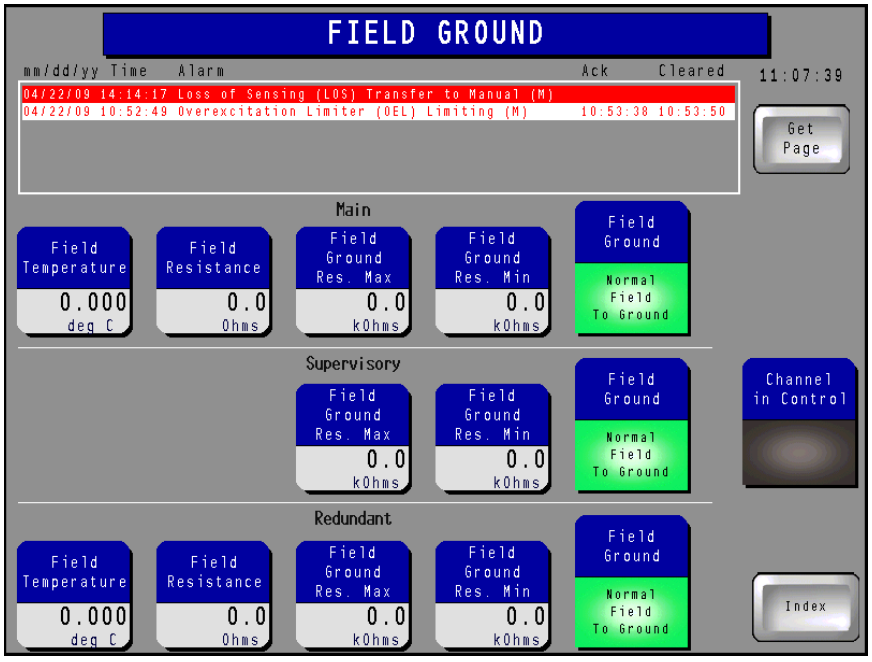


Figure 7-26. Field Ground Screen

Var

This screen (Figure 7-27) is available only on systems equipped with var control.

Control of reactive power is enabled and disabled by the VAR Control button. When this button is pressed, Enable and Disable buttons will appear and enable the user to turn control of vars on and off.

Var balance is adjusted by pressing the VAR Adjuster button. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the level of reactive power.

The 70BC-CS Manual button can be used to raise or lower the balance or manual reference. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the voltage while operating in Manual mode.

Similarly, the 90DV-CS Auto button can be used to raise or lower the voltage while operating in Auto mode.

Generator and excitation system values are displayed and controls are provided for control of the ac (41A) breaker.

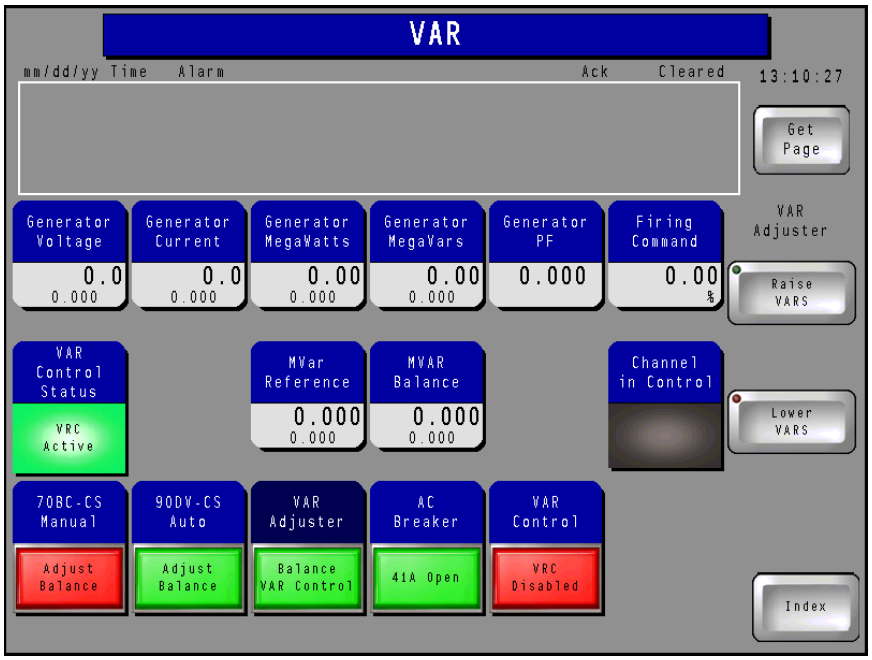


Figure 7-27. Var Screen

Output Control

This screen (Figure 7-28) provides system control, status indication, and metering of generator and excitation system parameters.

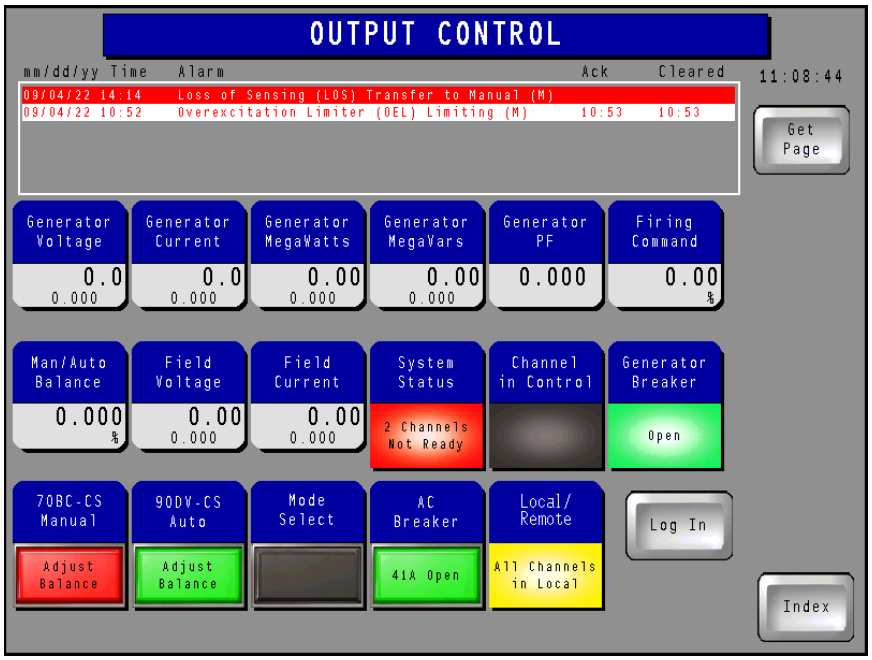


Figure 7-28. Output Control Screen

Controls

Controls include opening and closing of the ac (41A) breaker, selection of auto- or manual-mode regulation, and adjustment of the generator voltage in Manual or Auto mode.

Control of the 41A breaker is provided through the AC Breaker button. When this button is pressed, Trip and Close buttons will appear and enable the user to open and close the ac breaker.

Selection of auto- or manual-mode regulation is provided through the Mode Select button. When this button is pressed, Put Reg in Auto and Put Reg in Manual buttons will appear and enable the user to select either auto or manual regulation.

The 70BC-CS Manual button can be used to raise or lower the balance or manual reference. When the button is pressed, Raise and Lower buttons will appear and enable the user to raise and lower the voltage while operating in Manual mode.

Similarly, the 90DV-CS Auto button can be used to raise or lower the voltage while operating in Auto mode.

Status Indicators

The System Status indicator displays the readiness of the control system channels.

The Channel in Control indicator displays which of the control system channels is actively controlling the excitation level.

The Generator Breaker indicator displays whether the generator breaker is open or closed.

The Local/Remote indicator displays the local/remote control status of all control system channels. When logged in with the Log In button and the proper password, this indicator is converted to a control button that can be used to select either local or remote control. When pressed, Local Control and Remote Control buttons appear and enable the user to select the operating mode. During proper operation, the control mode of all channels should match. That is, all channels should be under local control or all channels should be under remote control.

Metering

Metering indications are provided for generator voltage, current, watts, vars, and power factor. Metering indications are also provided for field voltage and current, the SCR firing command percentage, and

manual/auto setpoint balance. Metering indications with two values display the actual reading in the upper row of numbers and the per-unit (PU) value in the lower row of numbers.

Generator Simulation

This screen (Figure 7-29) gives the user the ability to test a group of settings offline. Controls are provided for enabling and disabling generator simulation (Simulation Enable), raising and lowering the Auto setpoint (Raise/Lower Volts), raising and lowering the output power (Turbine Control), toggling between Auto and Manual modes (Mode Select), and tripping and closing the 41A breaker (AC Breaker). Metering indicators are provided for common generator and excitation system parameters.

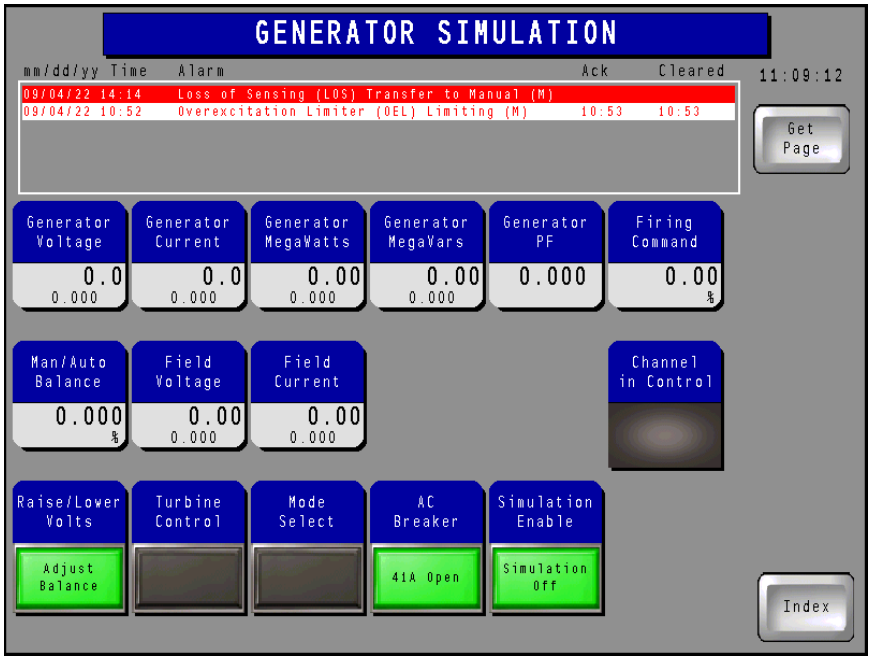


Figure 7-29. Generator Simulation Screen

Generator Monitor

The Generator Monitor screen (Figure 7-30) graphically illustrates excitation system and generator status. Excitation system indicators are provided for ac breaker and PSS status and field voltage and current levels. Generator voltage, current, watts, vars, and power factor are also displayed.

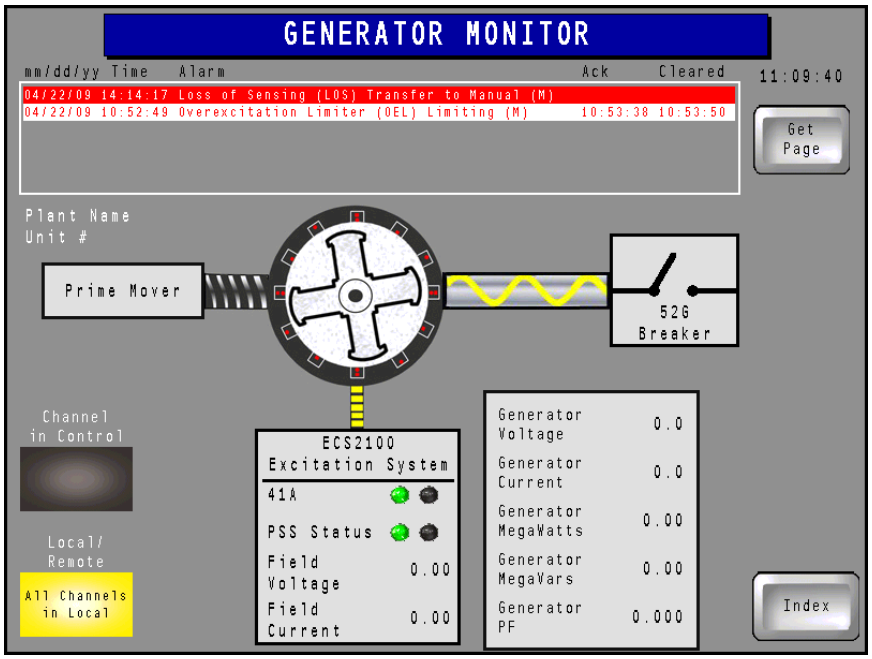


Figure 7-30. Generator Monitor Screen

Voltage Match

The Voltage Match screen (Figure 7-31) toggles voltage matching on and off (Voltage Match Enable control) and monitors voltage matching progress through generator and line voltage metering values. A Voltage Match indicator annunciates when the generator voltage level matches the level of line voltage.

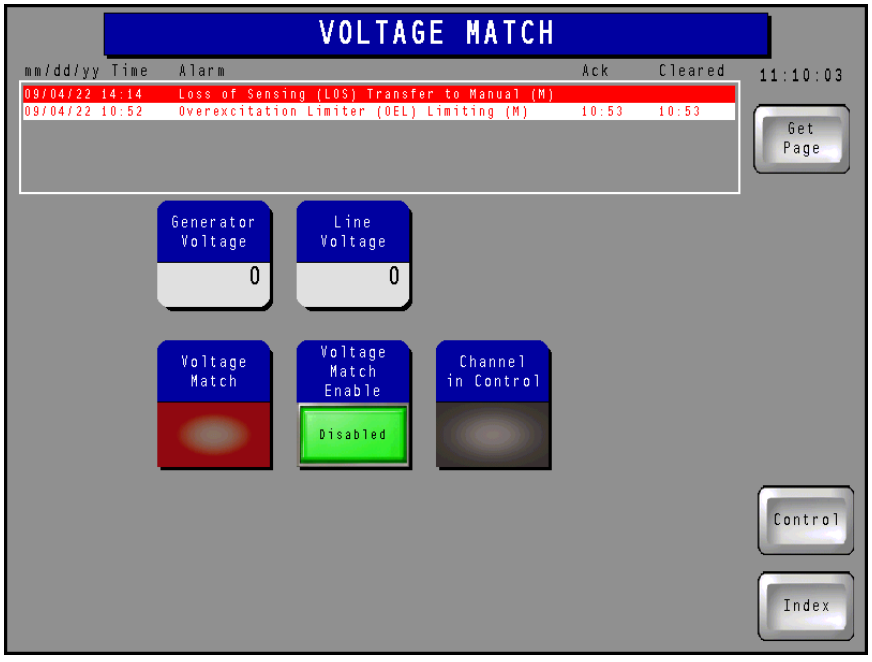


Figure 7-31. Voltage Match Screen

Capability Curves

This screen displays the generator minimum excitation limit (MEL) capability curve in per- unit values and is superimposed on the actual excitation values. The horizontal capability curve screen is shown in Figure

7-32. A vertical curve is also available. For proper display of plotted values, the version of control system firmware, resident in the Excitation Control Module (ECM) must be selected on the Capability Curve Configuration screen. This screen is accessed by pressing the Configure button.

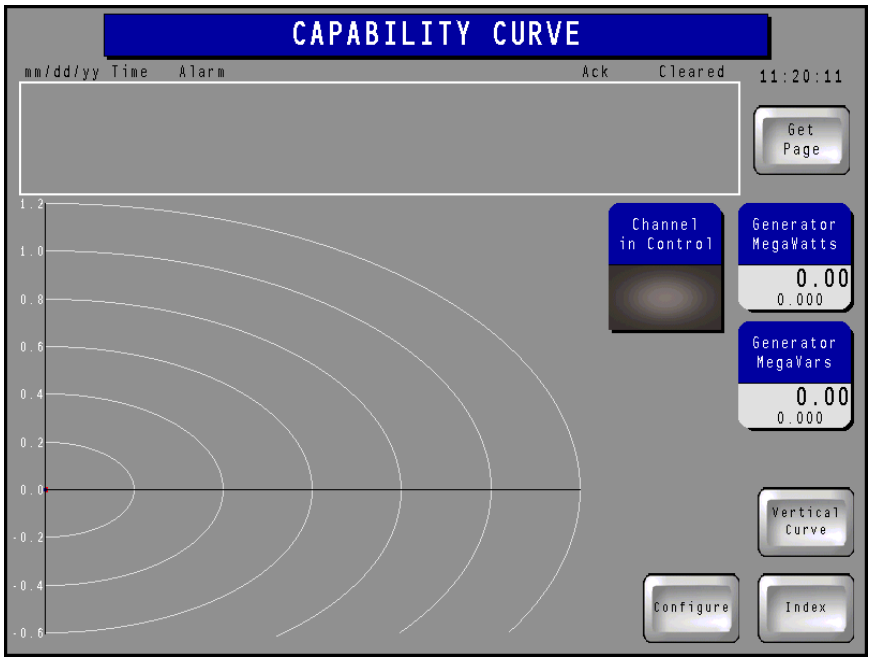


Figure 7-32. Capability Curve Screen

Task Guide

Table 7-3 lists common tasks along with the IDP-1201 pages that provide the controls for performing the tasks.

Table 7-3. Tasks and Screens Cross-Reference

Task	Screen
Close ac breaker	Control
Flash the field	N/A, field is flashed automatically when ac field breaker is closed.
Place regulator in Auto or Manual mode	Control
Raise or lower voltage	Control Var
Change the controlling channel	Transfer Control
Change Local/Remote control	Control
View alarms	Any page
Acknowledge alarms	Alarm/Fault – Active Alarm/Fault – History

Password Settings

The default, level 2 password is “4321”. Use the following procedure to change the security password. A USB flash drive is required to change the password.

1. Create a CSV (comma-separated values) file named “Security.csv” that has its content structured as shown in Table 7-4. Place the new password where “New” is shown in the table. Passwords

are case sensitive and have a maximum length of eight alphanumeric characters. It is not necessary to enter a password for levels 3 through 14. The default level 15 password is “12345” and should not be changed.

2. Insert the USB flash drive into any available USB port on your PC.
3. Use normal Windows® techniques to create a root directory on the flash drive named “Security”.
4. Copy the CSV file created in Step 1 inside the “Security” directory on the flash drive.
5. Insert the USB flash drive into one of the USB ports on the side of the IDP-1201.
6. Press the **Index** button on any IDP-1201 page.
7. Press the **Setup** button on the *General Index* page.
8. Press the **Login** button at the bottom of the page.
9. Enter the default security password (4321).
10. Press the **Change Passwords** button located on the right side of the page.
11. If successful, the unit will display “Password change successful” to the left of the *Change Passwords* button.
12. If the unit displays “Password file not found”, verify that the CSV file is valid, named correctly, and located in the proper directory on the flash drive.

Table 7-4. Security.csv File Structure

Mode	PS
Level	Password
1	New
2	New
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	12345

Configuration Files

Each IDP-1201 is delivered with custom programming that is specific to the system and application where it will be used. If replacement of a display panel becomes necessary, the replacement IDP-1201 must be programmed with configuration files that are specific to the display panel model (IDP-1201) and its intended application. IDP-1200 configuration files are not compatible with the IDP-1201 and IDP-1201 configuration files are not compatible with the IDP-1200. Display panel model identification information is provided in the *Introduction* chapter.

Display panel configuration files are included on the documentation CD that accompanies the manual for an excitation system. If your system was supplied with an IDP-1201, then these files can be used to program a replacement IDP-1201display panel. If your system was supplied with an IDP-1200, Basler Electric will supply the files necessary for programming a replacement IDP-1201.

Programming Procedure for IDP-1201

Use the following procedure to program an IDP-1201 with a configuration file provided by Basler Electric.

1. Assemble the files required for programming the IDP-1201. These files include a configuration file (cml file extension), a “prj001” folder, and a “boot.cfg” file. The two latter items are typically located in a folder named “IDP Loader”.
2. Copy the configuration file, the “prj001” folder, and “boot.cfg” file into the root directory of a USB flash drive.
3. Insert the USB flash drive into one of the IDP-1201’s USB ports.
4. Press the Index button on any IDP-1201 page to access the General Index page.
5. Tap in the upper, left corner of the page and, within one second, tap in the lower right corner of the page. If done correctly, a menu should appear at the bottom of the page.
6. Press the CF/USB button at the bottom of the page.
7. Press the USB_Starting button at the bottom of the page.
8. Tap on the language box in the center of the page and select the desired language.
9. Press the Download (USB=>Display) button located to the right of the page center.
10. Select the configuration file (*.cml) file from the file list.
11. Tap on the password box in the center of the page and enter the appropriate password. (The default password is “5678”. On the popup control, use the Down arrow to toggle between letters and numbers.)
12. Press the Start button located in the center of the page.
13. Press the Yes button when asked to download the data. Downloading settings from a USB flash drive to the IDP-1201 takes approximately three minutes.
14. After completion of the download, press the Back button located at the bottom of the page.
15. Press the Back button again.
16. Press the Exit button at the bottom of the page.
17. Press the Yes button when prompted to restart the system.

8 • Mounting

This chapter provides the information needed for mounting the IDP-1201 and the Ethernet switch.

Mounting the IDP-1201

Information is provided for two types of IDP-1201 installations:

- Retrofit installation in an ECS2100 enclosure that currently houses a PanelMate display
- New installation in a panel separate from the control system enclosure

Mounting Considerations

The IDP-1201 is intended for mounting in a cutout on a vertical panel in an environment where the ambient temperature falls between 0 and 55°C (32 and 131°F). Observe the following considerations and guidelines when preparing to mount the IDP-1201.

Location and Environmental Considerations

The IDP-1201 is intended for mounting in a vertical panel. If mounting the IDP-1201 in a slanted panel, the panel should not deviate more than 30° from vertical. If the panel slants more than 30°, you must ensure that the ambient temperature surrounding the IDP-1201 does not exceed 40° (104°F). This may require the use of external cooling equipment (a fan or air conditioner). To enhance ventilation and maintenance, the IDP-1201 should be installed at least 4 inches (102 millimeters) away from adjacent equipment. Heat created by nearby equipment must not cause the ambient temperature surrounding the IDP-1201 to exceed its maximum operating temperature.

Caution

Do not install or store the IDP-1201 where it is exposed to sunlight. The heat and ultraviolet rays from sun exposure can cause the touchscreen to deteriorate, shortening the life of the IDP-1201.

Mounting Panel Thickness

The IDP-1201 can be mounted on a panel whose thickness is no less than 0.06 inches (1.6 millimeters) and no more than 0.20 inches (5.0 millimeters).

Retrofit Installations

Two types of IDP-1201 installation kits are available for retrofit installation. Kit part number 9437200102 is designed for replacement of a PanelMate display mounted in a system enclosure door hinged on the left-hand side. Kit part number 9437200104 is designed for replacement of a PanelMate display mounted in a system enclosure door hinged on the right-hand side. Each kit consists of the following:

- IDP-1201 display panel
- Mounting bracket
- Mounting bracket hinge assembly
- Ethernet switch
- Rubber grommet (kit P/N 9437200102 only)

Warning!

The excitation cubicle housing the display panel must be removed from service and all related operating/control power voltage de-energized before proceeding with the following procedures.

Preparation for Mounting—Doors Hinged on the Left Side

The following procedure applies only to cubicle doors hinged on the left-hand side. To replace the display panel on a door hinged on the right-hand side, see *Preparation for Mounting—Doors Hinged on the Right Side.*

1. Remove the excitation control system from service and de-energize all operating/control power voltage.
2. Open the cubicle door and loosen the thumbscrew holding the hinged display panel mounting bracket against the door.
3. Remove the nuts and screws securing the display panel to the mounting bracket and remove the display panel.
4. Separate the display mounting bracket from the hinge assembly by removing the three screws shown in Figure 8-1 (locator A). Retain these screws for use later.

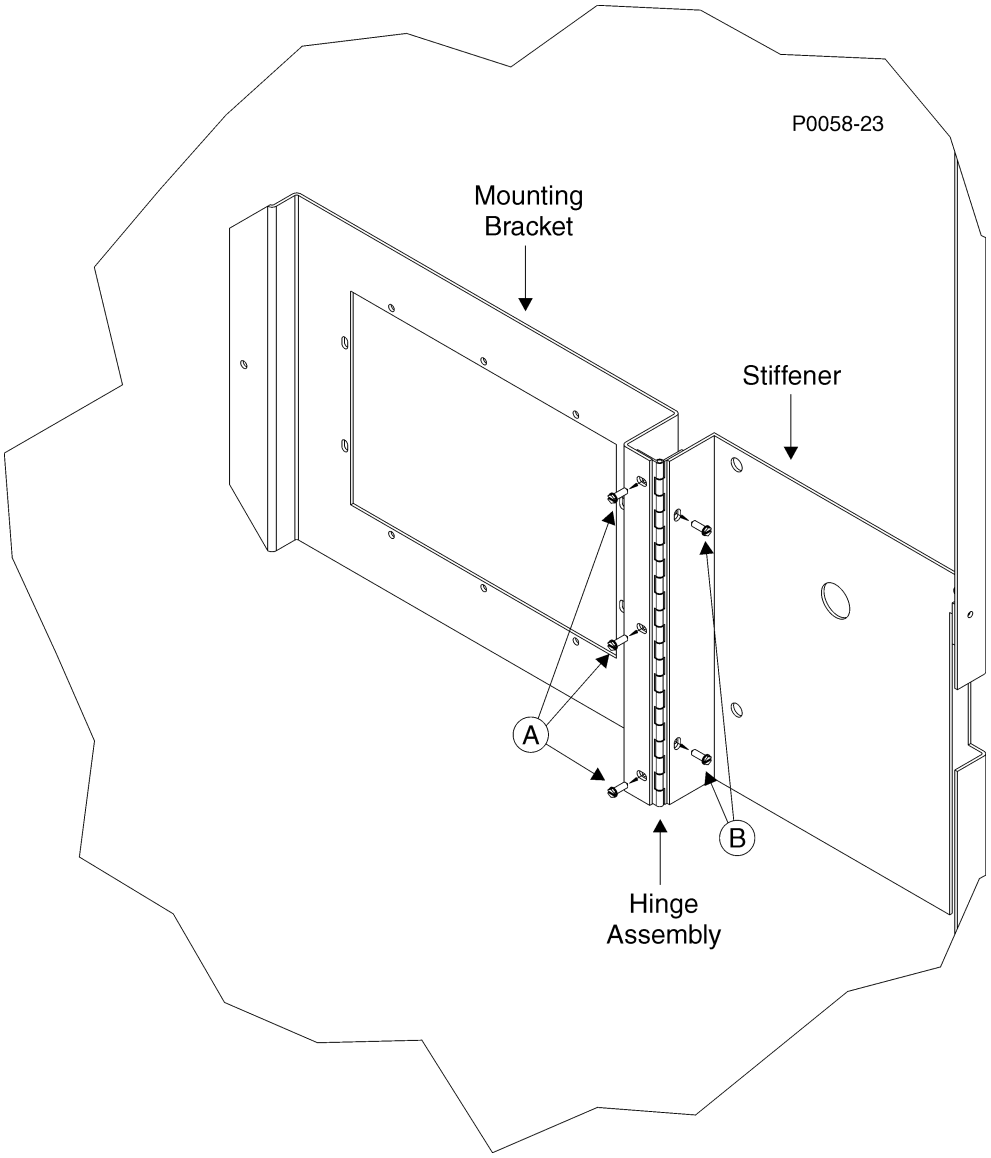


Figure 8-1. Removal of Display Panel Mounting Bracket and Hinge Assembly

5. Separate the hinge assembly from the stiffener by removing the two screws shown in Figure 8-1 (locator B). Retain these screws for use later.
6. Cut the stiffener to match the illustration of Figure 8-2.

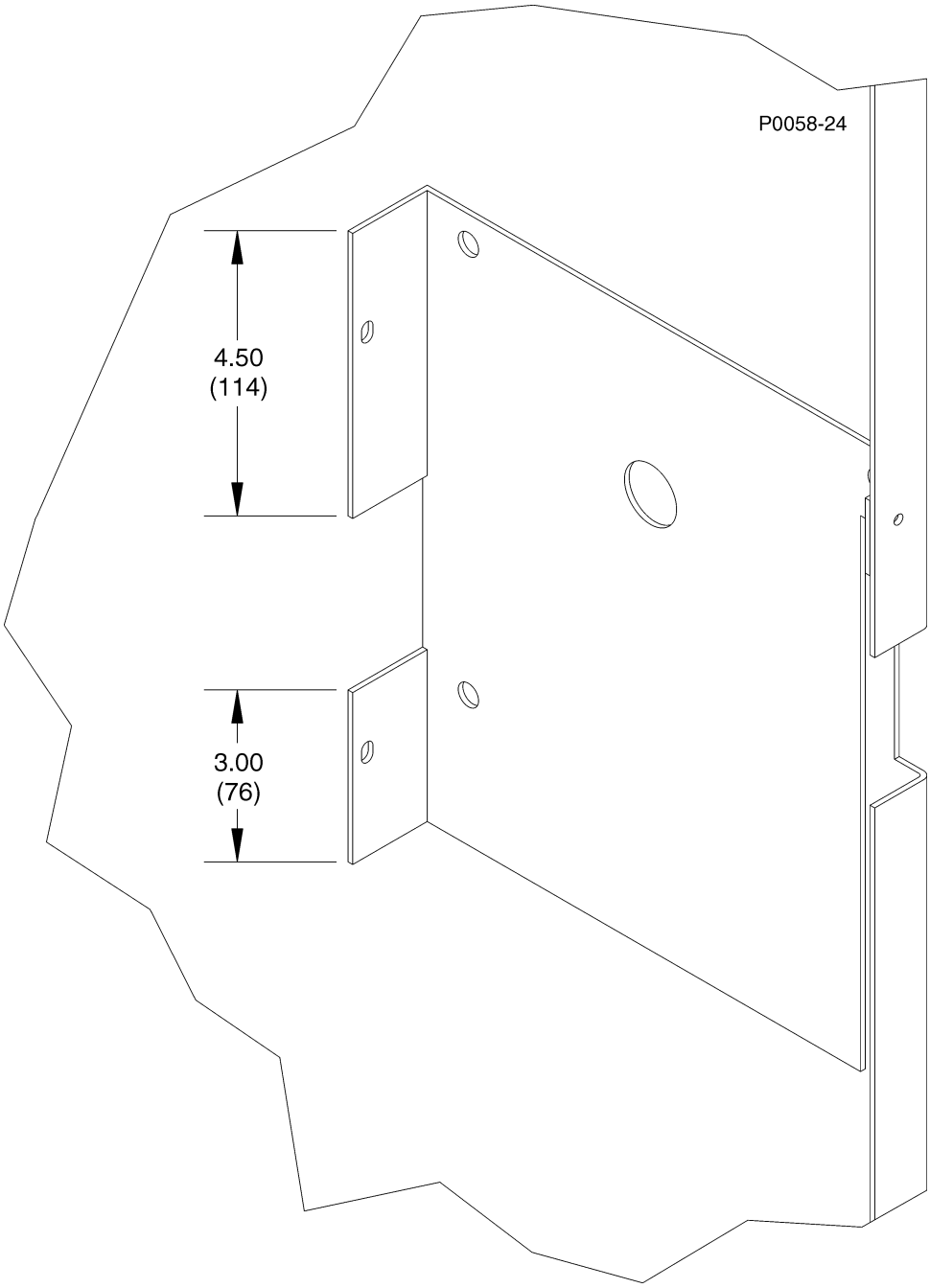
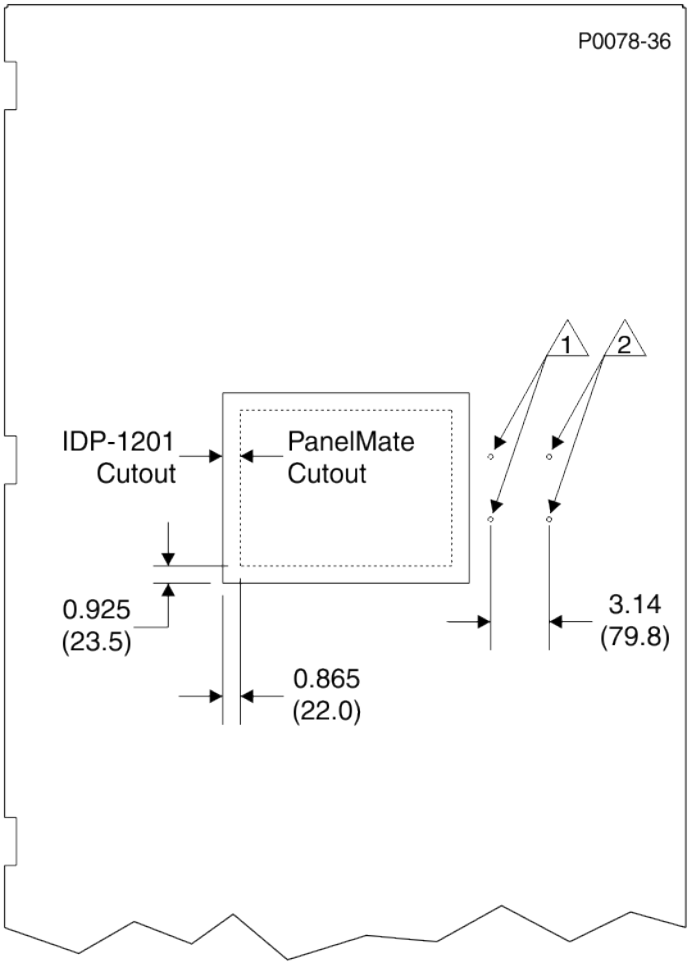


Figure 8-2. Stiffener Cutting Dimensions

7. Using the cutting dimensions illustrated in Figure 8-3, enlarge the door cutout to accommodate the larger IDP-1201 display panel. Using the drilling dimensions shown in Figure 8-3, drill new holes for relocation of the doorstop assembly (shown in Figure 8-5).
8. Attach the hinge and mounting bracket, supplied with the IDP-1201, to the stiffener. (Use the screws removed during steps 4 and 5.) Install the rubber grommet on the mounting bracket. Figure 8-4 shows the assembly detail.



1 Existing door stop mounting holes used with PanelMate display panel.

2 Two, 0.26 (6.60) diameter holes to be drilled for mounting doorstop in new location for use with IDP-1201.

Figure 8-3. Door Cutting and Drilling Dimensions

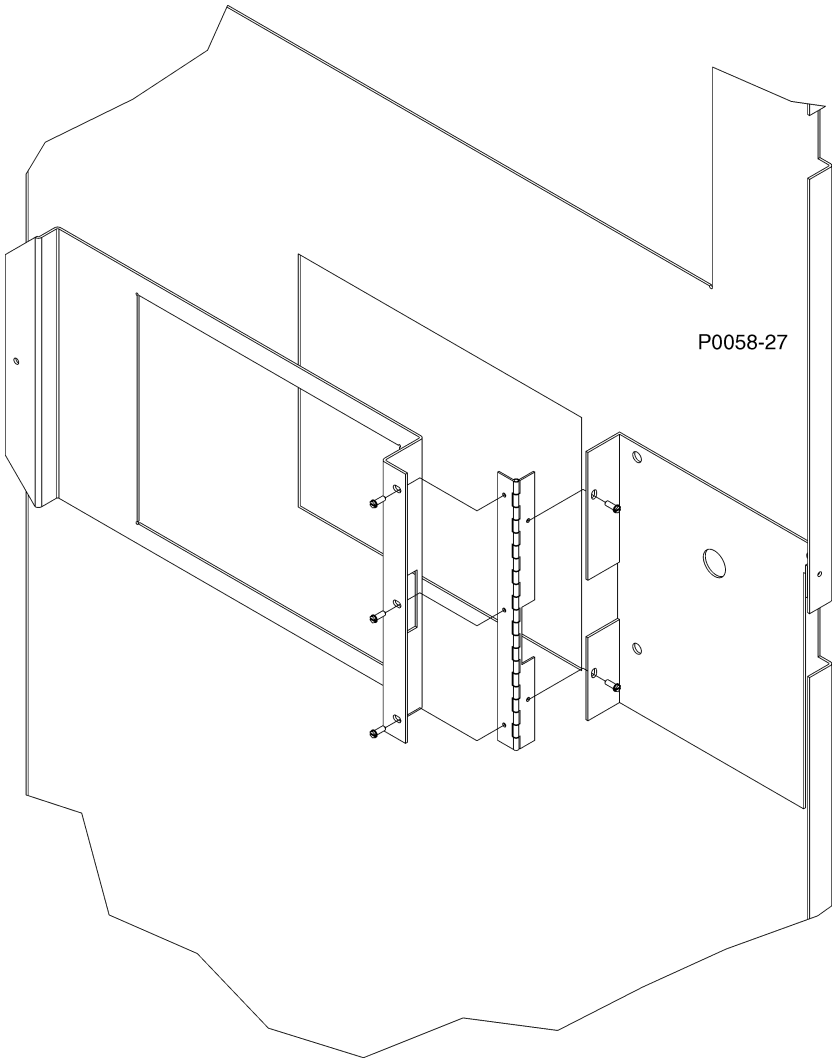


Figure 8-4. Mounting Bracket and Hinge Assembly Detail

9. Remove the doorstop assembly and reattach it to the door using the mounting holes drilled in step 7. Figure 8-5 illustrates the new mounting location for the doorstop.

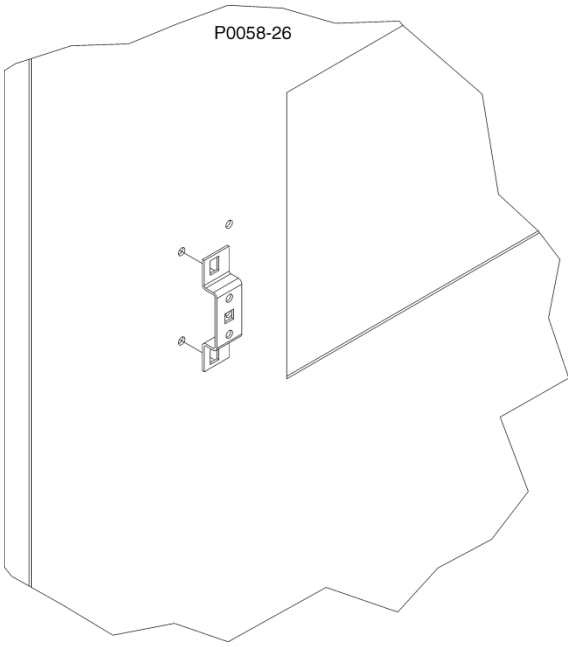


Figure 8-5. New Doorstop Mounting Location

10. Secure the IDP-1201 to the mounting bracket by performing the procedure of *Securing the IDP-1201*.

Preparation for Mounting—Doors Hinged on the Right Side

The following procedure applies only to cubicle doors hinged on the right-hand side. To replace the display panel on a door hinged on the right-hand side, see *Preparation for Mounting—Doors Hinged on the Left Side.*

1. Remove the excitation control system from service and de-energize all operating/control power voltage.
2. Open the cubicle door and loosen the thumbscrew holding the hinged display panel mounting bracket against the door.
3. Remove the nuts and screws securing the display panel to the mounting bracket and remove the display panel.
4. Separate the display mounting bracket from the hinge assembly by removing the three screws shown in Figure 8-6 (locator A). Retain these screws for use later.

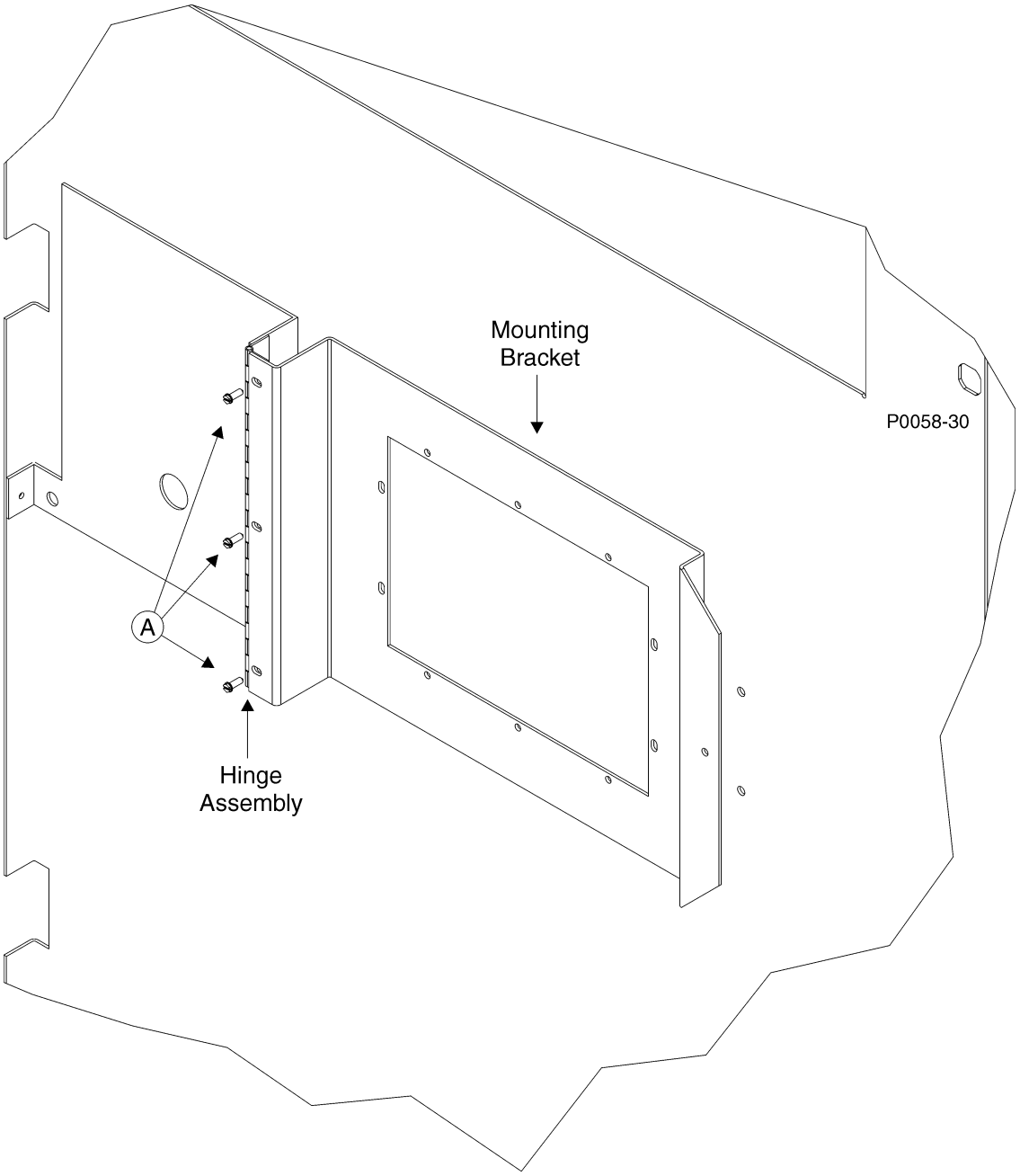
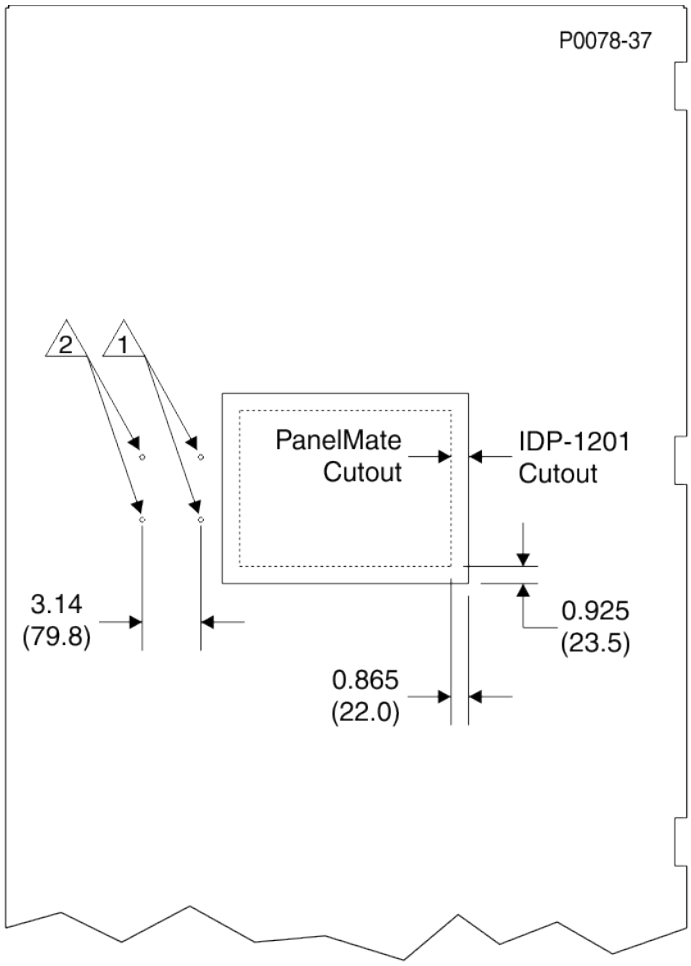


Figure 8-6. Removal of Display Panel Mounting Bracket and Hinge Assembly

5. Using the cutting dimensions illustrated in Figure 8-7, enlarge the door cutout to accommodate the larger IDP-1201 display panel. Using the drilling dimensions shown in Figure 8-7, drill new holes for relocation of the doorstop assembly (shown in Figure 8-9).



1 Existing door stop mounting holes used with PanelMate display panel.

2 Two, 0.26 (6.60) diameter holes to be drilled for mounting doorstop in new location for use with IDP-1201.

Figure 8-7. Door Cutting and Drilling Dimensions

6. Attach the mounting bracket, supplied with the IDP-1201, to the hinge assembly. (Use the screws removed in step 4.) Figure 8-8 shows the assembly detail.

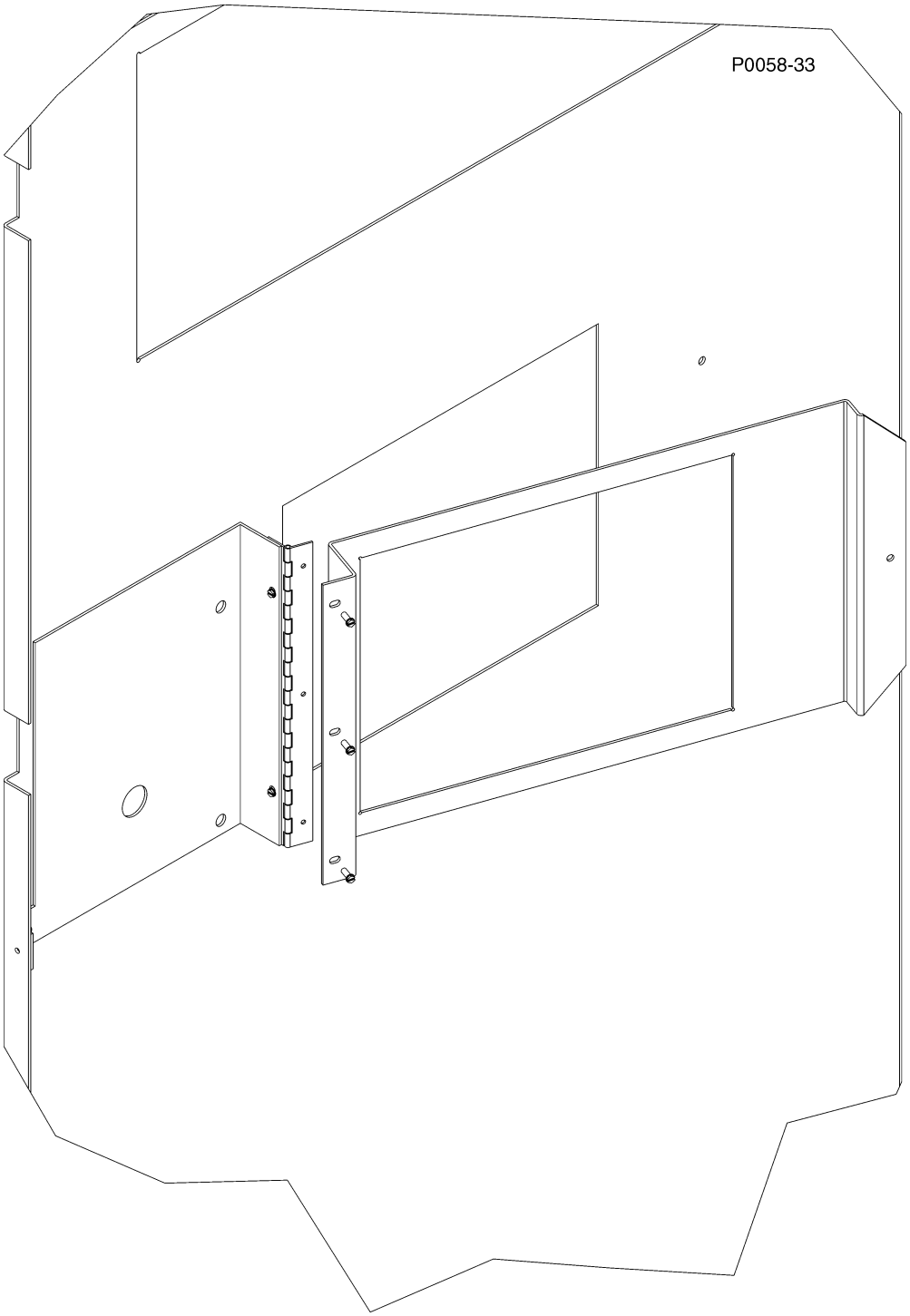


Figure 8-8. Mounting Bracket and Hinge Assembly Detail

7. Remove the doorstop assembly and reattach it to the door using the mounting holes drilled in step 5. Figure 8-9 shows the doorstop mounting detail.

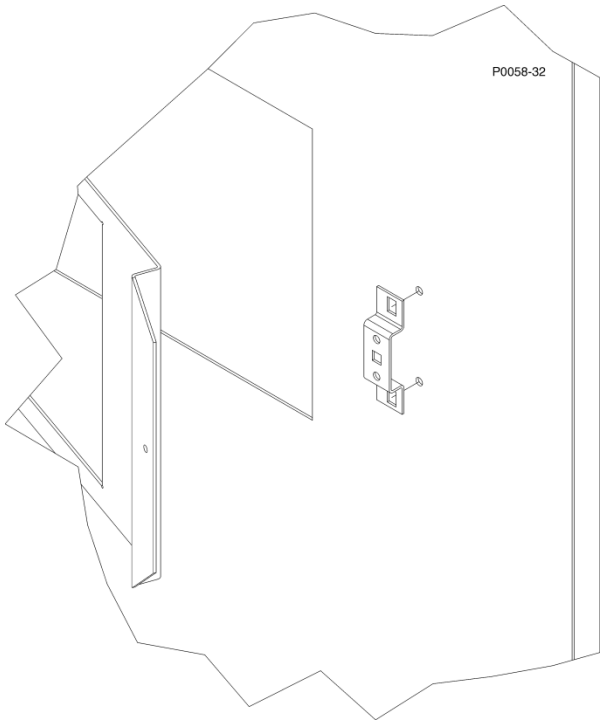


Figure 8-9. Relocation of Doorstop

8. Secure the IDP-1201 to the mounting bracket by performing the procedure of *Securing the IDP-1201*.

Securing the IDP-1201

The IDP-1201 is secured to the mounting bracket with four hook-and-screw fasteners. The hook of each fastener is inserted in one of four display panel insertion slots (Figure 8-10) and the fastener screw is tightened against the mounting bracket (Figure 8-11).

Caution
Over-tightening the fastener screws will damage the display panel housing. Maximum screw torque is 4.43 in-lb (0.5 N•m).

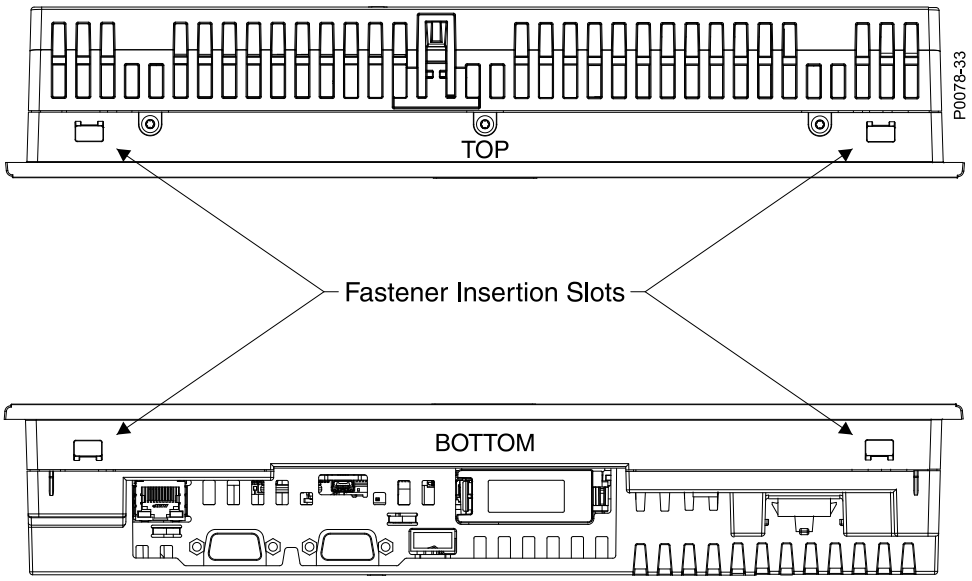


Figure 8-10. Fastener Insertion Slots

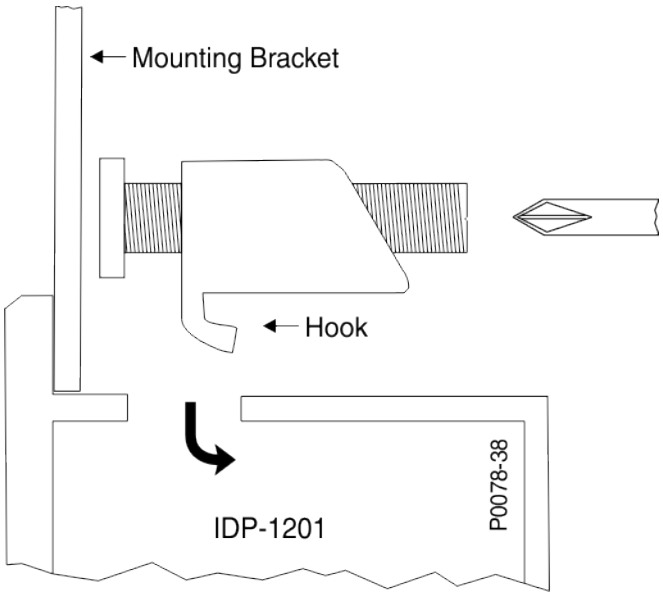


Figure 8-11. Fastener Attachment Detail

1. Insert the IDP-1201 into the mounting bracket opening and hold the display panel against the mounting bracket.
2. Insert the hook of a hook-and-screw fastener in one of the four display panel insertion slots and rotate the screw clockwise to tighten the screw against the mounting bracket.
3. Repeat step 2 for the three remaining fasteners and insertion slots.
4. As necessary, adjust the display panel's position in the mounting bracket opening so that, when the display is secured against the door, the display panel is centered in the door opening.

New Installations

Cut an opening in the mounting panel that is 11.9 inches (302 millimeters) wide and 9 inches (228 millimeters) high. Figure 8-12 illustrates the panel cutting dimensions. Secure the IDP-1201 to the mounting panel according to the instructions provided in *Securing the IDP-1201*.

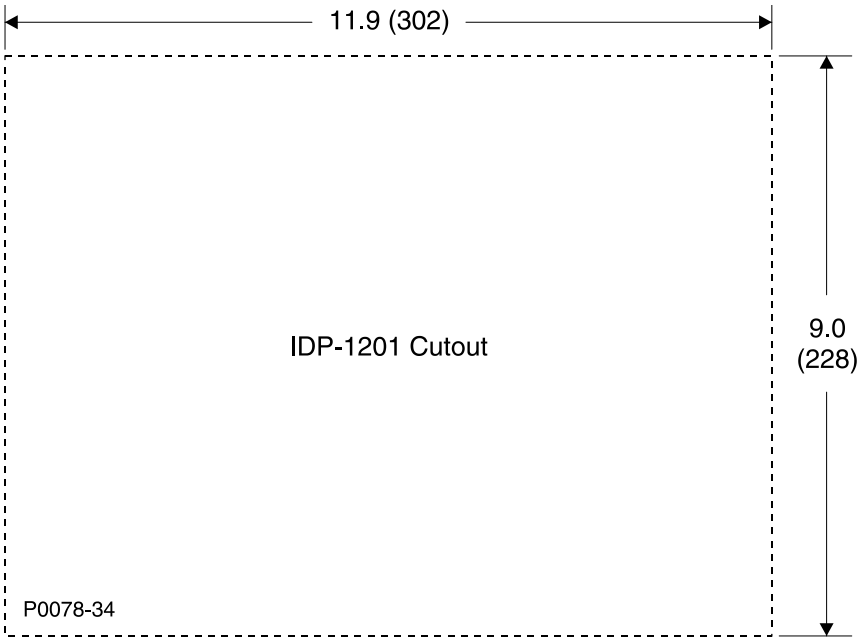


Figure 8-12. IDP-1201 Panel Cutting Dimensions for New Installations

Mounting the Ethernet Switch

When replacing a PanelMate display with the IDP-1201, the Multi-Drop Adapter (MDA) used with the PanelMate must be replaced with the supplied Ethernet switch. The Ethernet switch should be mounted within the control system enclosure. Mount the Ethernet switch according to the instructions provided in the Ethernet switch user manual.

9 • Connections

IDP-1201 and Ethernet switch connections consist of control power wiring and communication connections.

IDP-1201 Control Power

1. If replacing a PanelMate or IDP-1200 display, cut the existing 24 Vdc control power and ground wires at the power connector that was used with the display.
2. Strip the insulation from each wire so that 0.39 inches (10 millimeters) of conductor is exposed at the end of each wire.
3. Insert each conductor into the connector as follows:
   a. Open one of the connector's wire clamps by pressing the corresponding release tab with a small flat-blade screwdriver.
   b. Insert the appropriate wire and release the tab to clamp the wire in the connector.
   c. Repeat steps a and b for the remaining wires.
4. Insert the connector in the power input terminal block of the IDP-1201.

Ethernet Switch Control Power

Connect the supplied Ethernet switch power cable wires to 24 Vdc control power. Plug the power cable connector into the Ethernet switch.

Communication Connections

Use cables terminated with RJ-45 connectors to connect the IDP-1201 and excitation control modules (ECMs) to the Ethernet switch. The cables must be eight-conductor, with four twisted pairs. The connections made at the Ethernet switch replace the connections previously made at the Multi-Drop Adapter (MDA). If the existing cables to the MDA are used, they must be reconnected and plugged into jack J16 of the ECM.

10 • Maintenance and Troubleshooting

Maintenance

The IDP-1201 requires no maintenance other than periodic cleaning of the touch screen. A Cleaning Lock page prevents system control buttons from being pressed inadvertently during cleaning. When cleaning the touch screen, use nothing more than a soft cloth, water, and mild detergent. Soak the cloth in the solution and wring the cloth tightly before wiping the screen.

Troubleshooting

Status LED

A three-color, status LED, located on the IDP-1201 frame, indicates display panel operating status. Table 10-1 lists various status LED states and the conditions that they represent.

Table 10-1. Status LED Indications

LED State	Indication
Green	Normal operation
Red	Operation error
Red (flashing)	Hardware error
Orange	Software initializing

Blank Indication Fields

Blank indication fields indicate a communication failure. Possible causes of a communication failure include:

- Incorrect IP address. Verify the IDP-1201 address settings by referring to the *Communication* chapter.
- Faulty/incorrect communication connections. Verify all communication connections. Confirm that the Ethernet switch is functioning properly.

Capability Curve Fails to Display MEL Curve

A failure of the Capability Curves pages to display the generator minimum excitation limit curve can indicate an incorrect Modbus address or control system firmware version selection. Verify these selections on the second System Configuration screen.

Storage

This device contains long-life aluminum electrolytic capacitors. For devices that are not in service (spares in storage), the life of these capacitors can be maximized by energizing the device for 30 minutes once per year.

11 • Specifications

IDP-1201 specifications are listed in the following paragraphs.

Control Power

Nominal Voltage.....24 Vdc
Voltage Range .....19.2 to 28.8 Vdc
Typical Current Draw .....0.71 Adc at 24 Vdc

Display

Type .....TFT color LCD
Size .....12.1 in (307.3 mm), measured diagonally
Resolution .....800 (wide) by 600 (high) pixels
Color.....65 k

Communication Interfaces

Ethernet

Type .....Ethernet, IEEE 802.3u, 10Base-T/100Base-TX
Connection .....RJ-45 jack

USB

Type .....USB 2.0, one Type A port, one Mini Type B port
Power Supply Voltage.....DC 5 V ±5 %
Output Current .....500 mA or less
Communication Distance .....5 m or less

Environment

Operating Temperature.....0 to 55°C (32 to 131°F)
Storage Temperature.....–20 to 60°C (–4 to 140°F)
Humidity .....10 to 90%, non-condensing

Vibration and Shock Resistance

Vibration

Complies with IEC 61131-2
Withstands.....5 to 9 Hz single-amplitude, 3.5 mm
9 to 150 Hz constant-accelerated velocity, 9.8 m/s^2
X, Y, and Z directions for 10 cycles (100 minutes)

Shock

Complies with IEC 61131-2
Withstands.....147 m/s^2 in X, Y, and Z directions, 3 times

ESD Immunity

Withstands.....6 kV (complies with EN 61000-4-2 Level 3)

Weight

Maximum.....2.5 kg (5.5 lb.)

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