



# IDP-2020

## Interactive Display Panel

*Instruction Manual*



For use with  
DGC-2020 and DGC-2020HD  
Digital Genset Controllers

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# Preface

This instruction manual provides information about and instructions for the installation and operation of the IDP-2020 Interactive Display Panel. To accomplish this, the following information is provided:

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

## ***Conventions Used in this Manual***

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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!

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

# Revision History

The following information provides a historical summary of the changes made to this manual. Revisions are listed in reverse-chronological order.

Manual Revision, Date	Description
—, Dec 2024	<ul style="list-style-type: none"><li data-bbox="532 420 737 445">• Initial release</li></ul>



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# 1 • Introduction

The IDP-2020 Interactive Display Panel is a user-friendly, high-resolution color touchscreen interface that enables monitoring and control of a Basler Electric DGC-2020- or DGC-2020HD-based genset controller. The display is either 7 inches (18 centimeters) or 12.1 inches (31 centimeters) depending on the model, measured diagonally. IDP-2020 features include control, metering, and status for generators, engines, buses, and mains in a genset system. The IDP-2020 is only compatible with the DGC-2020 and DGC-2020HD Digital Genset Controllers.

DGC (Digital Genset Controller) and synchronous machine system parameters are viewed and controlled through interactive pages displayed by the IDP-2020. Pages are organized according to function and/or system component. Navigation between pages and control of functions is achieved by touching “buttons” located on the IDP-2020 screens.

Communication between the IDP-2020 and DGC is facilitated through either the Ethernet or the serial communication ports of the IDP-2020 and DGC, which provides access for system monitoring and control of the DGC. Only one of these ports can be used at a time for communication. For DGC-2020HD applications, one IDP-2020 can monitor up to four DGCs in a multiple DGC application.

## ***Application***

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The IDP-2020 is a display device currently compatible only with the DGC-2020 and DGC-2020HD Digital Genset Controllers. Replacement of another display with an IDP-2020 may require modification of the mounting panel and adjustment to the control power and communication connections.

## ***Hardware***

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The IDP-2020 is supplied with the following hardware:

- Terminal conversion adaptor

## **Accessories**

Optional accessories available for use with the IDP-2020 include:

- Ethernet switch, 8 ports, Basler P/N 41133
- DIN mounting rail for Ethernet switch, Basler P/N 9323900001



## 2 • Communication

Ethernet and serial are the communication methods available to exchange data and commands between the IDP-2020 and DGC controller. Only one of these communication methods can be used at a time. Ethernet communication is available only for DGC-2020HD applications. If available, Ethernet is recommended due to its higher speed capabilities. When connected, the IDP-2020 is polled via Modbus® to acquire data collected by the DGC.

### Note (DGC-2020HD Only)

When using a DGC-2020HD, regardless of which communication method is used, the Unsecured Access level for the method used must be set to Admin in the DGC's BESTCOMS*Plus*® settings (General Settings > Device Security Setup > Port Access Setup). If this setting is not configured correctly, metering will work on the IDP-2020, but any writes to the DGC, including emergency stop, will not function.

### Ethernet Communication (DGC-2020HD Only)

The Ethernet port enables the IDP-2020 to be polled over a LAN/Distributed Control System (DCS) at higher speeds than possible through the serial communication (RJ-45) port. An Ethernet switch is used to route IDP-2020 and DGC communication over a LAN. When connected, IP addresses of the IDP-2020 and the DGC must match.

### Serial Communication

The RS-485 port enables serial communication between the IDP-2020 and the DGC. When connected, the DGC communication settings should be configured as follows:

- Data length: 8
- Parity: None
- Stop bits: 1
- Modbus Address (DGC-2020 only): 1
- RS485 Unit ID (DGC-2020HD only): 1

The Baud, Parity, and Stop bits values of the IDP-2020 and the DGC must match.

### IDP-2020 Polling Configuration

To allow IDP-2020 polling to take place, perform the following steps to view the IDP-2020 communication settings and configure its IP address settings.

1. Login.
2. Press the "System Setup" button in the Menu.
3. Press the "Genset Controllers" button under "Communication Settings."
4. Select "Selected\_Generator."
5. Press the "Settings" button.
6. Press "Stations."
7. Configure the IP address(es) to match the connected DGC(s). If needed, consult your network administrator for the proper settings.



## 3 • Operations

This chapter describes IDP-2020 operations and screen navigation (not physical setup). The sections are organized by task:

- [Navigating the IDP-2020](#)
- [Setting up the IDP-2020](#)
- [Controlling the DCG with the IDP-2020](#)
- [Accessing Metering and Status](#)
- [Monitoring and Managing Alarms and Pre-Alarms](#)

DCG and genset system parameters are viewed and controlled through interactive screens displayed by the IDP-2020. Screens are organized according to function and/or system component. Navigation between screens and control of functions are achieved by pressing “buttons” on the IDP-2020 touchscreen.

### ***Navigating the IDP-2020***

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Navigate the IDP-2020 using the navigation menu (hereafter referred to as the Menu). The Menu is located across the bottom of all IDP-2020 screens. Press the “MENU” button to access the Menu as a pop-up screen. The Menu allows easy access to the following screens:

- Alarms
- Breaker Status (DGC-2020HD only)
- Bus
- Comm Pre-Alarm
- Engine
- Events
- Generator
- Generator Control
- Inputs
- Load Share (DGC-2020HD only)
- Mains Power
- Outputs
- Pre-Alarms
- Security
- Status
- Sync
- System Setup

For DGC-2020HD applications with multiple generators, use the dropdown in the top left corner of applicable screens to navigate to the correct generator.

Arrows on the right or left side of the Menu can be used to scroll through screen icons, or the Menu can be dragged manually for the same purpose.

### ***Setting up the IDP-2020***

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Upon startup of the IDP-2020, the device will attempt to connect to a DCG. If it is able to connect, the IDP-2020 will automatically configure itself based on previous configurations and the DGC’s setup. If not, or if the automatic configuration is incorrect, the user must manually configure the System Settings. Setup is only possible when [logged into the IDP-2020 with the correct password](#).

To configure the IDP-2020, users must use the Setup screen (Figure 3-1), accessible via “System Setup” in the Menu. Failure to make the proper settings selections may cause the IDP-2020 to annunciate false alarms or pre-alarms.

## Changing General Settings

Configure the date, time, time zone, region, language, and security settings using the buttons listed under “General Settings.”

### Language Setup

To select the display language, use the “Language Setup” button. Currently available display languages include Chinese, English, French, German, and Spanish.

### Security

To add, remove, or edit users, passwords, or user descriptions, use the “Security Setup” button. These settings are also accessible from the Menu under “Security.”

### Understanding IDP-2020 Security

Passwords protect the IDP-2020 from unauthorized settings changes and control commands. As such, users who are not signed in will experience read-only functionality. Default passwords are included below.

**Table 3-1. Default Credentials**

Username	Password	Permissions
OEM	OEM	Admin, Design, Settings, Operator, Control, Read
Operator	OP	Operator, Read
Settings	SET	Settings, Operator, Control, Read

Users with administrative access can create user profiles with various levels of access.

Password access remains in effect based on display panel activity and the limit set by the [Screen Saver Delay](#) setting.



**Figure 3-1. IDP-2020 Setup Screen (DGC-2020HD Version)**

## Logging In

Use this process to gain configuration and control access:

1. Press the Login button in the top right corner of the screen.
2. Use the alphanumeric keypad to enter the appropriate password and press the Enter button. The username and password are case-sensitive.

## Changing System Settings

To configure the IDP-2020 to match the physical genset system, use the dropdown menus under “System Settings.”

### System Type (DGC-2020HD Only)

Select either Single Generator or Multiple Generators.

### System Breaker Configuration

The System Breaker Configuration drop down is only enabled when System Type is set to Single Generator. Select either Generator Breaker Control or Generator and Mains Breaker Control.

### Fuel Type

Select None, Diesel, Natural Gas, or Propane.

### Number of Generators (DGC-2020HD Only)

The Number of Generators drop down is only visible when System Type is set to Multiple Generators. This number can be set to 2, 3, or 4.

## Changing Communication Settings

To configure the screen and communications, use the buttons under “Communication Settings.”

### HMI

To specify an IP address for the IDP-2020 or set the IDP-2020 to DHCP-auto mode, use the “HMI” button.

### Genset Controllers

To change the communication mode or the IP address(es) for the DGC(s), use the “Genset Controllers” button. Access these settings by following these steps:

1. Press the Genset Controllers button.
2. Select “Selected\_Generator.”
3. Press the “Settings” button.
4. Press either “Settings” or “Stations” to access the desired tab and settings.

Use the Settings tab to switch between serial (RS485) and Ethernet communication by changing the Communication mode setting. (Note that Ethernet communication is only available for DGC-2020HD applications.) No other settings in the Settings tab should be changed.

If utilizing Ethernet communication, use the Station tab to set or change the IP address of each of the (up to four) DGCs. The IDP-2020 only supports up to four controllers, so any more added on this screen will be ignored. Station, Port, and Node values should not be changed.

### **Note**

While the Properties pop-up is open, the IDP-2020 will throw a “Selected\_Generator: Offline – In configuration mode” exception on the screen. This will stop when the window is closed.

### Red-Green Color

To reverse the color scheme of the graphic representations on the Overview screen, press the “Red ON, Green OFF” or “Green ON, Red OFF” button.

### Screen Saver Delay

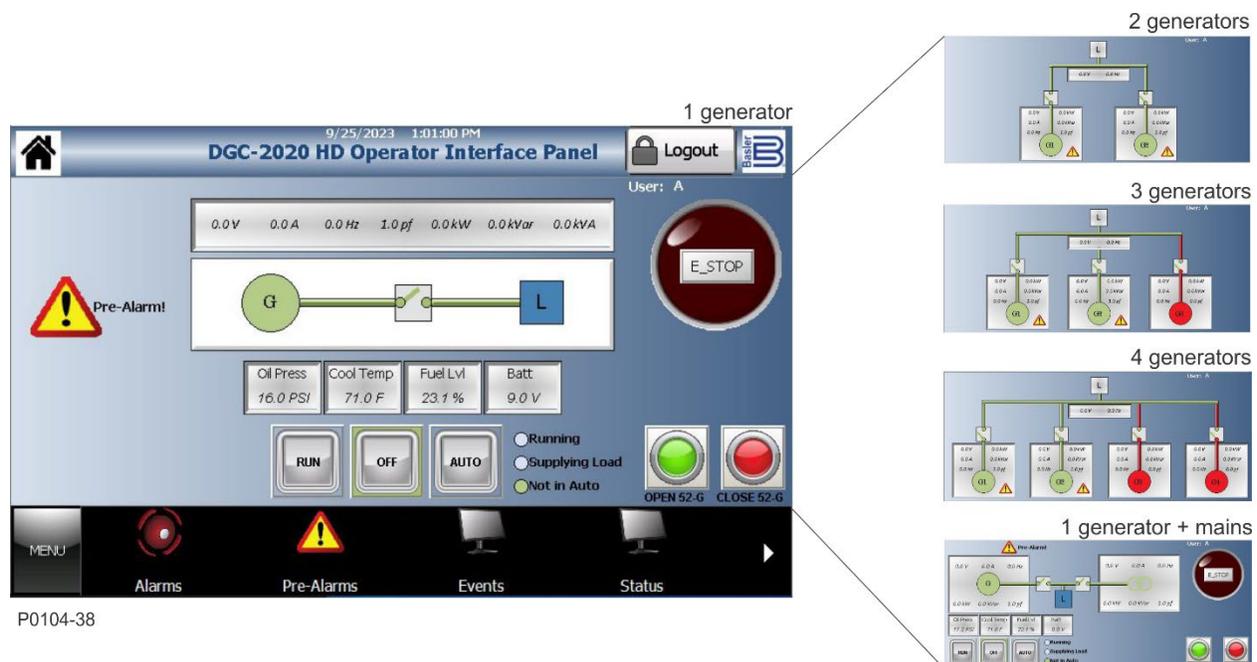
To set the sleep time for the display, alter the “Screen Saver Delay” value. A screensaver activates if no button presses are received at the display panel for the length of time specified. If the IDP-2020 goes to sleep, simply tap the display to awaken it (login credentials may need to be re-entered for full access). A setting of 1 to 120 minutes may be entered.

## **Controlling the DGC with the IDP-2020**

Control the DGC system using either the “Overview” screen or control screens specific to components. DGC controls are only accessible when [logged into the IDP-2020 with the correct password](#).

### **Controlling the DGC System: The Overview Screen**

The Overview screen (Figure 3-2) functions as a graphic representation of and control center for the DGC system. The Overview screen’s appearance varies according to the setup of the DGC system (single and/or mains or multiple generators). The DGC system setup can be changed using the Setup screen (Figure 3-1). Access the Overview screen by pressing the home button in the top left corner of any screen.



**Figure 3-2. Overview Screen Versions (DGC-2020HD Version)**

### Illustrations and Controls on the Overview Screen

The Overview screen graphically represents the genset setup and also acts as a limited control center. Major graphical elements are described below.

- Generators are illustrated as uppercase Gs enclosed in a circle (for multiple generators, a numeral will also be present). Press on the illustration to open [generator controls](#).
- Mains are illustrated as two circles arranged horizontally. Press on the illustration to open [mains controls](#).
- The load is illustrated as an uppercase L enclosed in a square.

- Breakers are illustrated as open or closed breakers in squares.

For a one-generator setup only, the Overview screen includes mode-switching, start-stop, and emergency stop capabilities. For multiple generator setups (DGC-2020HD only), these are available only on the component control screens.

#### Graphic Meanings on the Overview Screen

Graphic changes represent changes in the status of the system.

- Breaker illustrations appear open or closed based on the generator's state.
- Connector lines and generators alternate between green and red depending on whether the components are on or off. Green or red can mean on or off, [depending on user-configured settings](#).
- Alarm or pre-alarm symbols may appear. Press them to access [more information](#).

### Starting and Stopping Generators

Start and stop control is [password-protected](#) and can be performed from the Generator Control screen (Figure 3-3), accessible via “Gen Control” in the Menu or generator illustrations on the Overview or Synchronization screen (or, for one generator setups only, directly from the Overview screen). For DGC-2020HD applications, access the correct Generator Control screen by using the dropdown in the top left corner.

To start a generator, navigate to its Generator Control screen and press the ENGINE START button in the bottom left corner.

To stop a generator, navigate to its Generator Control screen and perform one of the following actions:

- In a non-emergency situation, press the ENGINE STOP button in the bottom left corner.
- In an emergency situation, press the E\_STOP button in the top right corner. After this button is pushed, the controller will need to be reset to regain function.

#### Resetting the Controller After an Emergency Stop

After the E\_STOP button has been pushed, the controller must be reset to start the generator again. Follow these steps to reset the controller.

1. Navigate to the generator's Generator Control screen.
2. Press the E\_STOP button again.
3. Press the OFF button in the bottom middle of the screen.

### Controlling Generators

Generator controls are found in the Generator Control screen (Figure 3-3), accessible via “Gen Control” in the Menu or generator illustrations on the Overview or Synchronization screen.

#### Control Actions

- To stop the generator, press the E\_STOP (emergency stop) in the top right of the screen. After this button is pressed, the controller must be [reset](#) to restart the generator.
- To start or stop the engine of the generator, press the ENGINE START or ENGINE STOP button in the bottom left corner of this screen.
- To open or close the breaker, press the OPEN 52-G or CLOSE 52-G button in the bottom left corner of this screen.
- To change the DGC operating mode, press the RUN, OFF, or AUTO button in the bottom middle of the screen. Indicators to the right show whether the generator is Running, Supplying Load, and Not in Auto.
- To adjust the frequency setpoint, press the up or down arrows in the top left corner of the screen.

- To adjust the voltage setpoint, press the up or down arrows in the top left corner of the screen.

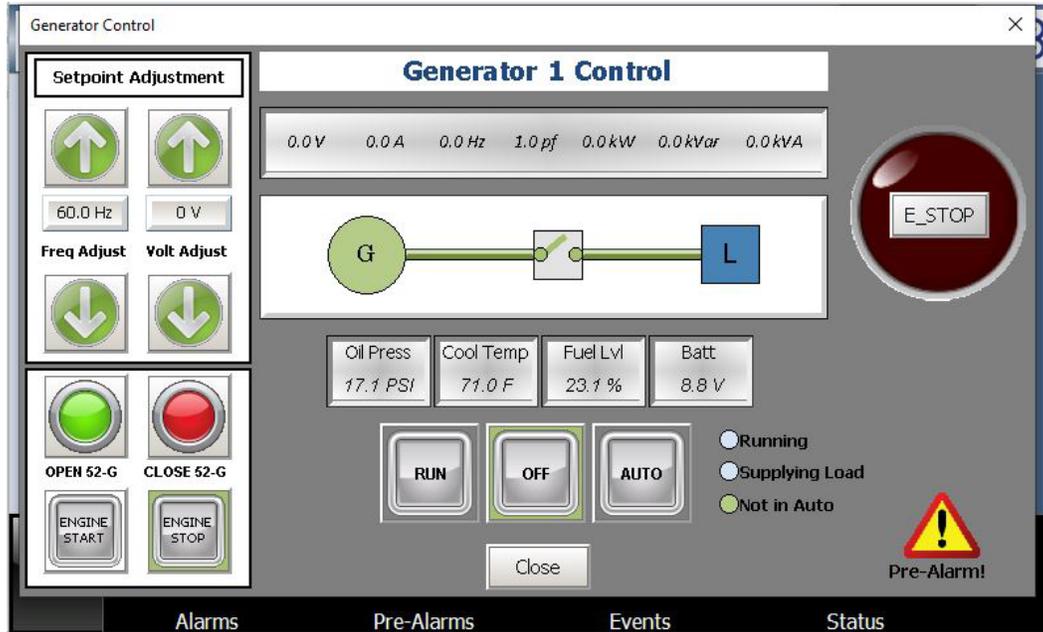


Figure 3-3. Generator Control Screen

### Controlling Mains (DGC-2020HD Only)

Mains controls are found in the Mains Power screen (Figure 3-4), accessible via “Mains Power” in the Menu or the mains illustrations on the Overview screen. These controls are only available for DGC-2020HD applications.

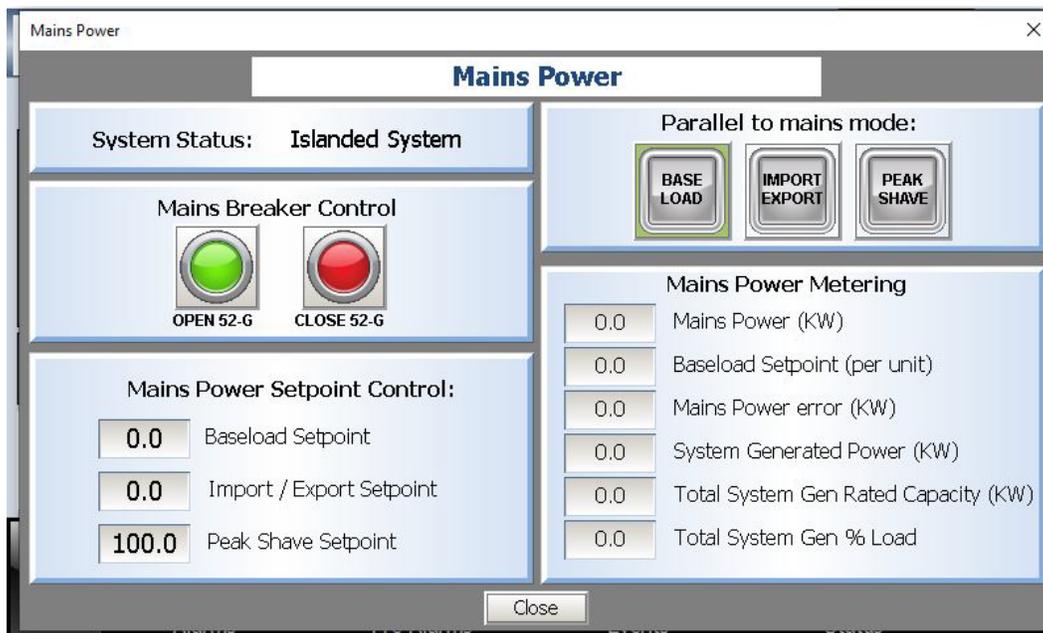


Figure 3-4. Mains Power Screen (DGC-2020HD Version)

#### Control Actions

- To switch modes, press the BASE LOAD, IMPORT EXPORT, or PEAK SHAVE buttons in the top right corner of this screen.
- To open or close the breaker, press the OPEN 52-G or CLOSE 52-G button in the middle left of this screen.

## Controlling Synchronization

Synchronization controls help operators moderate the relationships between parallel generators' functioning in a multiple generator system. These controls are found in the Synchronization screen (Figure 3-5), accessible via "Synch" in the Menu.

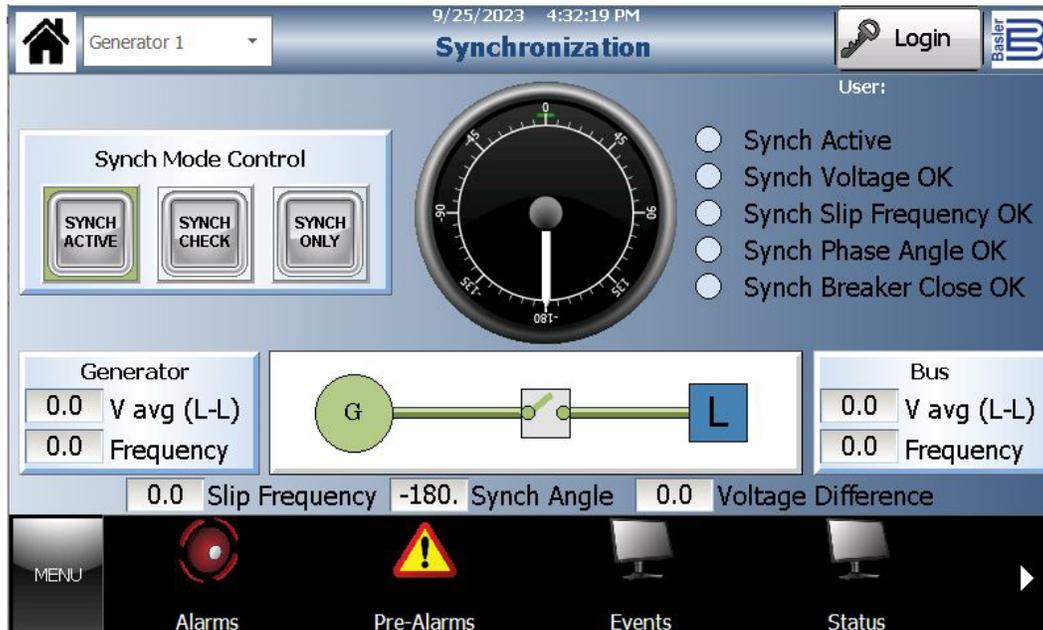


Figure 3-5. Synchronization Screen (DGC-2020HD Version)

### Control Actions

- For DGC-2020HD applications only, switch modes by pressing the SYNCH ACTIVE, SYNCH CHECK, or SYNCH ONLY button in the top left corner of the screen.

## Accessing Metering and Status

The IDP-2020 displays live digital metering values for the engine, generator, and bus components, as well as inputs, outputs, and load share. These are included as numbers and sometimes as gauges.

The IDP-2020 also provides indicators of machine, operations, and communications status. Status indicators are color-coded. The meanings of the colors are provided in Table 3-2.

The following tables provide navigation to different available metering and status indicators and are organized by system component. Note that available metering and status indicators may vary by DGC model.

Table 3-2. Color Meaning of Status Indicators

Color of Status Indicators	Meaning
White	OFF
Green/Red	ON

**Bus****Table 3-3. Bus Metering and Status**

Type	Screen	Navigation	Available
Metering	Bus Metering	MENU > Bus	<ul style="list-style-type: none"> <li>voltage (V) (VAB, VBC, VCA and V LL average, VAN, VBN, VCN, V2)</li> <li>current (A) (IA, IB, IC and I average, I1, I2, 3I0)</li> <li>frequency (Hz)</li> <li>power (kW)</li> <li>reactive power (kvar)</li> <li>kVA</li> <li>power factor (PF)</li> </ul>
Status Indicator	Bus Condition	MENU > Status > Bus Condition	<ul style="list-style-type: none"> <li>Dead</li> <li>Stable</li> <li>Failed</li> <li>Forward Rotation</li> <li>Reverse Rotation</li> </ul>

**Breaker (DGC-2020HD Only)****Table 3-4. Breaker Status**

Type	Screen	Navigation	Available
Status Indicator	Breaker Status	MENU > Status > Breaker Status	<ul style="list-style-type: none"> <li>Breaker Control Granted</li> <li>Closed</li> <li>OK to Close</li> <li>Open Setpoint Reached</li> <li>Failed to Close</li> <li>Failed to Open</li> </ul>
	Status	MENU > Status	<ul style="list-style-type: none"> <li>Gen Breaker Closed</li> <li>Mains Breaker Closed</li> </ul>

**Engine****Table 3-5. Engine Metering**

Type	Screen	Navigation	Available
Metering	Engine	MENU > Engine	<ul style="list-style-type: none"> <li>oil pressure</li> <li>coolant temperature</li> <li>engine load</li> <li>coolant level</li> <li>battery</li> <li>fuel level</li> <li>engine RPM</li> <li>total runtime hours</li> <li>hours until maintenance</li> </ul>

**Generator****Table 3-6. Generator Metering and Status**

Type	Screen	Navigation	Available
Metering	Overview	Home	<ul style="list-style-type: none"> <li>voltage (V)</li> <li>current (A)</li> </ul>

			<ul style="list-style-type: none"> <li>• frequency (Hz)</li> <li>• power (kW)</li> <li>• reactive power (kvar)</li> <li>• power factor (PF)</li> </ul>
	Generator	MENU > Generator	<ul style="list-style-type: none"> <li>• voltage (V) (VAB, VBC, VCA and V LL average, VAN, VBN, VCN, V2)</li> <li>• current (A) (IA, IB, IC and I average, I1, I2, 3I0)</li> <li>• frequency (Hz)</li> <li>• power (kW)</li> <li>• reactive power (kvar)</li> <li>• kVA</li> <li>• power factor (PF)</li> </ul>
	Generator Control	MENU > Gen Control	<ul style="list-style-type: none"> <li>• oil pressure</li> <li>• coolant temperature</li> <li>• fuel level</li> <li>• battery</li> </ul>
Status Indicator	Generator	MENU > Generator	<ul style="list-style-type: none"> <li>• Stable</li> <li>• Failed</li> <li>• Dead</li> <li>• Rev Rotation</li> </ul>
	Status	MENU > Status	<ul style="list-style-type: none"> <li>• Auto Transfer Switch</li> <li>• EPS Supplying Load</li> <li>• Breaker Control Granted</li> <li>• Battle Override Enabled</li> <li>• Low Line Override Enabled</li> <li>• Grounded Delta Override Enabled</li> <li>• Single Phase Override Enabled</li> <li>• Single Phase AC Override Enabled</li> <li>• Low Coolant Level</li> <li>• Battery Charger Fail</li> <li>• Fuel Leak Detect</li> <li>• Engine Running</li> <li>• External Start Delay</li> <li>• Start Delay Bypass</li> <li>• Alternate Frequency Override</li> <li>• Cool Down Timer Active</li> <li>• Off Mode Cool Down</li> <li>• Cool Down Request From Logic</li> <li>• Cool Down &amp; Stop Request From Logic</li> <li>• Alarm Silence</li> <li>• Lamp Test Active</li> <li>• Idle Request</li> </ul>
	Sender Fail	MENU > Status > Sender Fail	<ul style="list-style-type: none"> <li>• Coolant Temperature</li> <li>• Oil Pressure</li> <li>• Fuel Level</li> <li>• Voltage</li> <li>• Speed</li> <li>• Coolant Level</li> <li>• Global</li> </ul>

## Input

**Table 3-7. Input Metering and Status**

Type	Screen	Navigation	Available
Metering	Inputs	MENU > Inputs	<ul style="list-style-type: none"> <li>Inputs (raw and/or scaled)</li> </ul>
Status Indicator	Inputs	MENU > Inputs	<ul style="list-style-type: none"> <li>Inputs</li> </ul>

## Load Share (DGC-2020HD Only)

**Table 3-8. Load Share Metering**

Type	Screen	Navigation	Available
Metering	Load Share	MENU > Load Share	<ul style="list-style-type: none"> <li>number of units in active segment</li> <li>number of units online</li> <li>system online capacity (kW)</li> <li>system online capacity (kvar)</li> <li>system generated kW</li> <li>system generated kvar</li> <li>speed PID</li> <li>voltage PID</li> <li>kW PID</li> <li>kvar PID</li> <li>load share output (raw and scaled)</li> <li>AVR output (raw and scaled)</li> <li>governor output (raw and scaled)</li> </ul>

## Mains

**Table 3-9. Mains Metering and Status**

Type	Screen	Navigation	Available
Metering	Overview	Home	<ul style="list-style-type: none"> <li>voltage (V)</li> <li>current (A)</li> <li>frequency (Hz)</li> <li>power (kW)</li> <li>reactive power (kvar)</li> <li>power factor (PF)</li> </ul>
	Mains Power	MENU > Mains Power	<ul style="list-style-type: none"> <li>baseload setpoint</li> <li>import/export setpoint</li> <li>peak shave setpoint</li> <li>mains power (kW)</li> <li>baseload setpoint (per unit)</li> <li>mains power error (kW)</li> <li>system generated power (kW)</li> <li>total system generator rated capacity (kW)</li> <li>total system generator percentage load</li> </ul>
Status Indicator	Mains Power	MENU > Mains Power	<ul style="list-style-type: none"> <li>Mains System Status</li> </ul>

## Output

**Table 3-10. Output Metering and Status**

Type	Screen	Navigation	Available
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Metering	Outputs	MENU > Outputs	<ul style="list-style-type: none"> <li>Outputs (raw and scaled)</li> </ul>
Status Indicator	Outputs	MENU > Outputs	<ul style="list-style-type: none"> <li>Outputs</li> <li>Configurable Elements</li> </ul>

## Synchronization

**Table 3-11. Output Metering and Status**

Type	Screen	Navigation	Available
Metering	Synchronization	MENU > Synch	<ul style="list-style-type: none"> <li>synch angle</li> <li>average generator voltage (L-L)</li> <li>generator frequency</li> <li>average bus voltage (L-L)</li> <li>bus frequency</li> <li>slip frequency</li> <li>synch angle</li> <li>voltage difference</li> </ul>
Status Indicator	Synchronization	MENU > Synch	<ul style="list-style-type: none"> <li>Synch Active</li> <li>Synch Voltage OK</li> <li>Synch Slip Frequency OK</li> <li>Synch Phase Angle OK</li> <li>Synch Breaker Close OK</li> </ul>

## Monitoring and Managing Alarms and Pre-Alarms

The IDP-2020 provides warning when there is a dangerous or function-hindering issue in the system in the form of alarms and pre-alarms.

To monitor and manage these, navigate to the Alarms and Pre-Alarms screens, accessible via “Alarms” or “Pre-Alarms” (respectively) in the Menu. These screens can also be accessed by pressing any alarm symbols present on Overview or control screens. The screens include grid-style indicators for active DGC alarms or pre-alarms.

- Alarms indicate that the DGC has identified an unusual and dangerous issue in the system. Alarms initiate a shutdown of a generator.
- Pre-alarms indicate that the DGC has identified a non-emergency issue in the system.

Alarms and pre-alarms can be either active or inactive and acknowledged or not acknowledged. Indicators are color-coded to reflect these states (Table 3-12).

- Active: Currently affecting the system
- Inactive: Not currently affecting the system
- Acknowledged: Seen by an operator
- Not Acknowledged: Not seen by an operator

**Table 3-12. Color Meaning of Alarms and Pre-Alarms**

Color of (Pre-)Alarm Row	Meaning	
	Active	Not Acknowledged
Yellow	X	
Amber (Orange)		X
Red	X	X

The Alarms and Pre-Alarms screens include buttons to acknowledge selected rows, acknowledge rows visible on-screen, clear rows visible on-screen, filter by generator, and pause (|) logging the alarms and pre-alarms. An alarm or pre-alarm cannot be cleared unless the condition causing the alarm has been corrected.

### Note

The IDP-2020 must be configured for Settings-level password access in order to enable clearing alarms initiated by the IDP-2020.

To view the statuses of specific alarms and pre-alarms (listed in the following paragraph), navigate to the Sender Fail Screen with following steps:

1. Press “Status” in the Menu.
2. Press the “Sender Fail” button.

The following alarm status indicators are included: coolant temperature, oil pressure, fuel level, voltage, speed, coolant level, and global conditions. The following pre-alarm status indicators are included: coolant temperature, oil pressure, fuel level, voltage, coolant level, and global conditions. These indicators follow status color-coding (Table 3-2).

### Viewing Communication Pre-Alarms Status

Many pre-alarms have to do with communication issues within the genset system. To assist in monitoring communications, the IDP-2020 provides a communications status screen, accessible via the following steps:

1. Press “Pre-Alarms” in the Menu.
2. Press the “Comms Pre-Alarms” button in the bottom right of the Pre-Alarms screen.

The following pre-alarms indicators may be included, depending on DGC model: AEM Comms Failures (1–4), Duplicate AEM, CEM Comms Failures (1–6), Duplicate CEM, CEM Hardware Mismatch, LSM Comms Failure, Duplicate LSM, Intergenset Comm Fail, ARP Ping Fail, ID Missing, ID Repeat, Missing System Components, System Segments Unreachable, Group Breaker Capacity Not Reached, Critical Breakers Missing, Loss of ECU Comm, and VRM Comms Failure.

These indicators follow status color-coding (Table 3-2).

### Logging and Viewing Past Events

To view past operator actions (such as changes in operating modes, changes in breaker status, logins, logout, clearing or acknowledging of alarms or pre-alarms, etc.), navigate to “Events” in the Menu. Events are timestamped to the nearest millisecond, including date and time. In multiple genset configurations (DGC-2020HD only), events are also identified by the genset controller ID.

## 4 • Mounting

IDP-2020 mounting consists of selecting a suitable mounting location, cutting the panel opening, and securing the display to the panel.

### Warning!

The control panel/equipment enclosure where the IDP-2020 will be installed must be removed from service and all related operating and control power de-energized before proceeding with IDP-2020 installation.

### *Mounting Considerations*

The IDP-2020 is intended for mounting in a cutout on a vertical panel in an environment where the ambient temperature does not exceed the operating temperature range. Heat created by nearby equipment must not cause the ambient temperature surrounding the IDP-2020 to exceed its maximum operating temperature.

The IDP-2020 can be mounted on a panel with a thickness no more than 0.43 inches (11.0 millimeters) for the 7-inch display or 0.31 inches (8.0 millimeters) for the 12-inch display.

### Warning!

Do not install or store the IDP-2020 where it is exposed to liquids, metal filings, debris, or explosive hazards. These conditions can cause electrical fires, shocks, or explosions.

### Caution

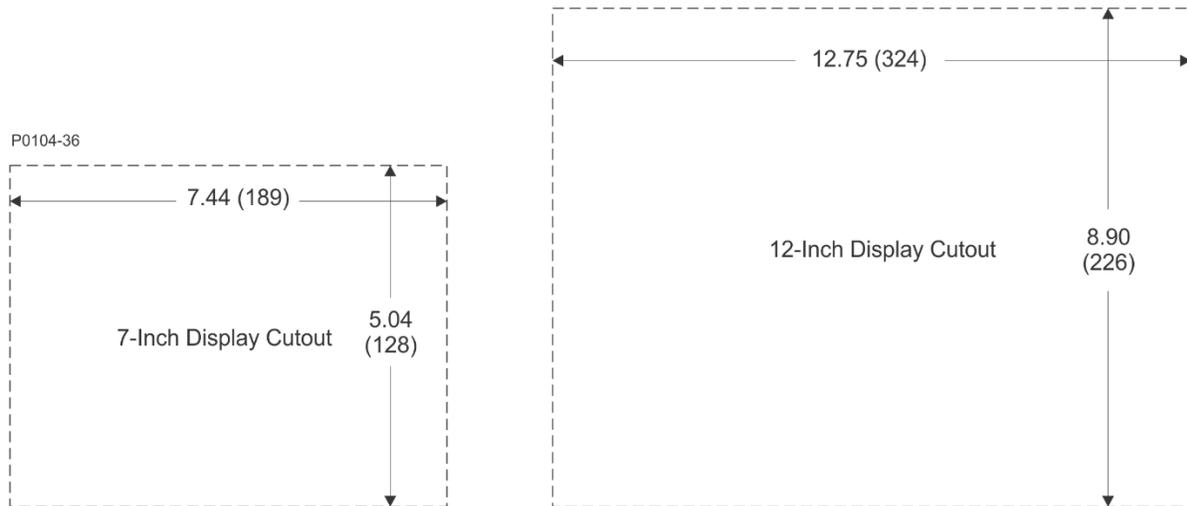
Do not install or store the IDP-2020 where it is exposed to sunlight, moisture, or strong magnetic fields. These conditions can cause the touch-screen to deteriorate, shortening the lifespan of the IDP-2020.

## Cutting the Panel Opening

Cut an opening in the mounting panel with the following dimensions:

1. 7-inch display: 7.44 inches (189 millimeters) wide and 5.04 inches (128 millimeters) high
2. 12-inch display: 12.75 inches (324 millimeters) wide and 8.90 inches (226 millimeters) high

Figure 4-1 illustrates the panel cutting dimensions.



**Figure 4-1. IDP-2020 Panel Cutting Dimensions**

## Securing the IDP-2020

The IDP-2020 is secured to a panel with four fasteners. For the 7-inch display, the hook of each fastener is inserted into one of four display panel insertion slots, and, for the 12-inch display, twelve fasteners are already built into the display. For both models, the fastener screw is tightened against the mounting panel (Figure 4-2).

Secure the IDP-2020 in the panel cutout by performing the following steps. Ensure that the IDP-2020 mounting gasket is in place before securing the display to the panel.

### Caution

Over-tightening the fastener screws will damage the display panel housing. Maximum screw torque is for the 7-inch screen is 8.85 in-lbs. (1 N•m), and maximum screw torque for the 12-inch screen is 7.97 in-lbs. (0.9 N•m).

1. Insert the IDP-2020 into the panel cutout and hold the IDP-2020 against the mounting panel.
2. Secure the IDP-2020 to the panel.
  - a. 7-inch display: Insert the hook of a hook-and-screw fastener in one of the four fastener insertion slots, and slide the hook into the narrower half of the opening. Rotate the screw clockwise to tighten it against the mounting panel.
  - b. 12-inch display: Locate one of the twelve fasteners, and rotate the screw clockwise to tighten the screw against the mounting panel. As it is turned, the metal tab on the screw will turn out 90° from its slot, and the tab should rest against the panel in its final position.
3. Repeat step 2 for the remaining fasteners.
4. As necessary, adjust the IDP-2020 position in the panel opening so that, when the IDP-2020 is secured against the panel, it is centered in the panel opening.

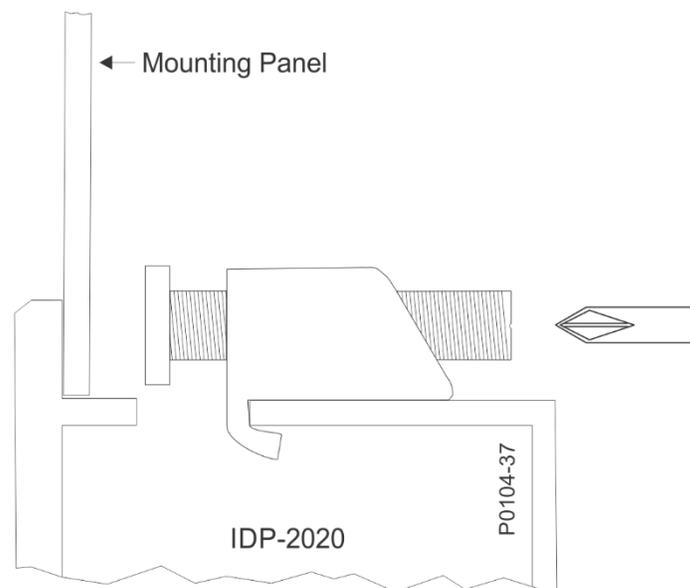


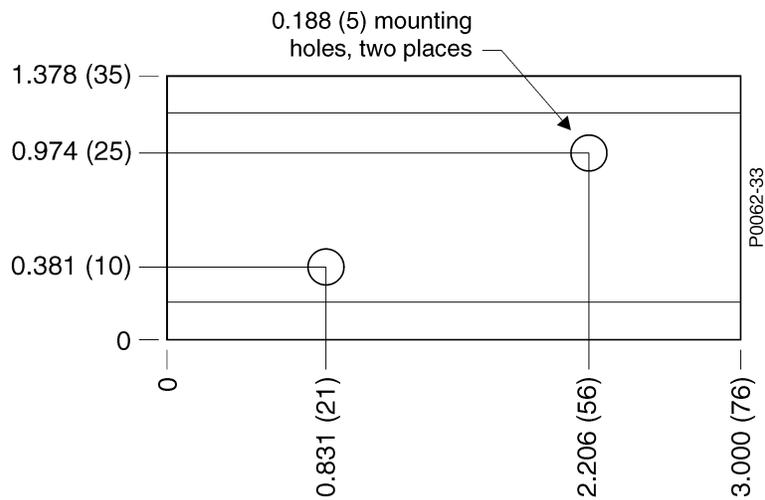
Figure 4-2. Fastener Attachment Arrangement Detail

## Mounting Accessories

Mounting details for the optional Ethernet switch and power supply are provided in the following paragraphs.

### Ethernet Switch

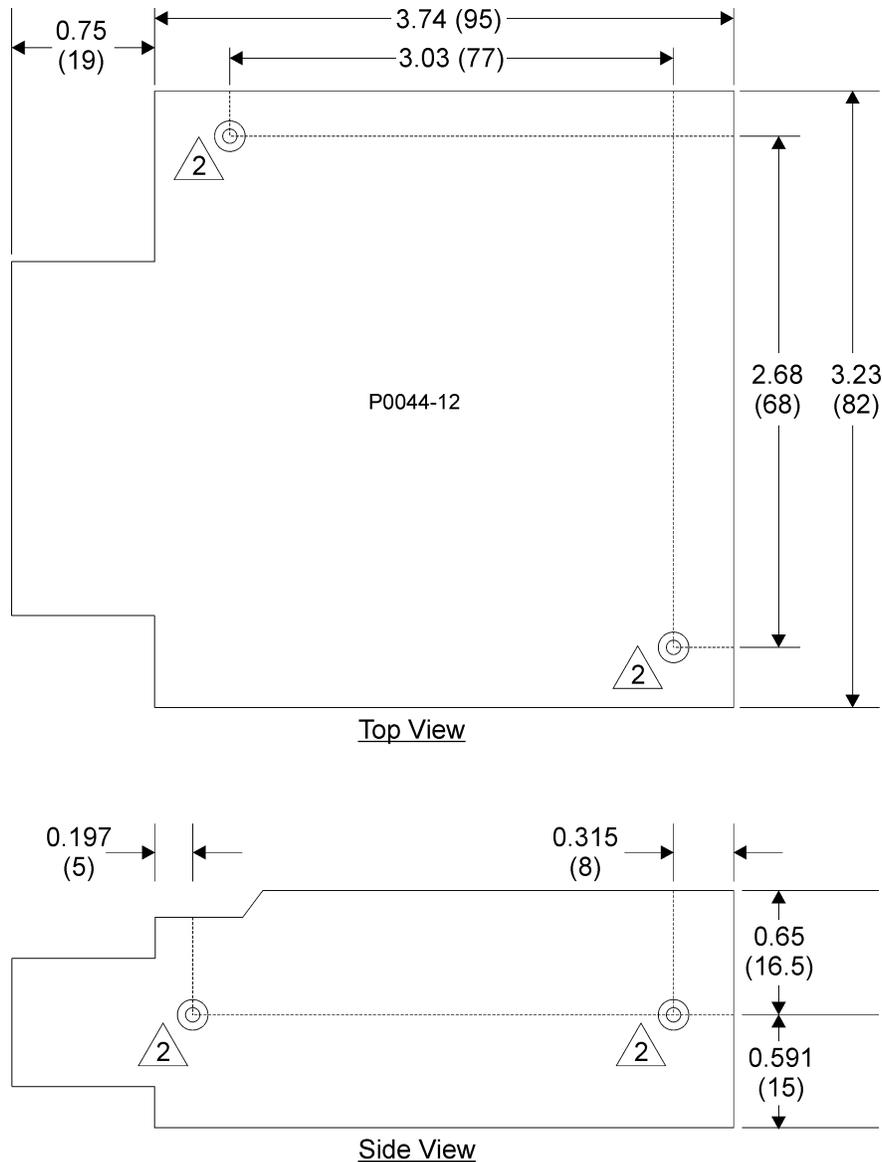
The optional, eight-port Ethernet switch (P/N 41133) can be mounted using the DIN mounting rail accessory (P/N 9323900001). DIN mounting rail dimensions are shown in Figure 4-3. Dimensions are shown in inches with millimeters in parenthesis.



**Figure 4-3. Ethernet Switch Mounting Rail Dimensions**

## Power Supply

If an existing, adequate 24 Vdc power source is not available, a separate power supply must be installed to provide the 24 Vdc, 28 W required by the IDP-2020. A suitable power supply is available from Basler Electric. Request part number 9334503101. Power supply mounting dimensions are illustrated in Figure 4-4.



1. Dimensions are in inches (millimeters).

2. M3 tapped holes (2). Mounting screws must not protrude into power supply by more than 0.236 (6).

3. Weight is 220 grams (7.76 ounces).

**Figure 4-4. IDP-2020 Power Supply Mounting Dimensions**



## 5 • Connections

IDP-2020 connections consist of connectors for control power and communication. Connectors are located on the bottom and back sides (Figure 5-2) of the display.

### Caution

The IDP-2020 must be connected to ground before being connected to either communications or power. Otherwise, the device may incur damage. The IDP-2020 should be connected to communications before power.

### Communication Connections

Data and commands can be exchanged between the IDP-2020 and DGC using Ethernet (DGC-2020HD only) or serial communication via Modbus. When connected, the display can be polled via Modbus to acquire data collected by the DGC connected to the IDP-2020.

#### Modbus Communication

An Ethernet port (DGC-2020HD only) or serial communication port enables the IDP-2020 to be polled and provide values of system parameters monitored by the DGC. These ports are located on the bottom of the display and are shown in Figure 5-2.

#### Software Updates

A Type A USB port on the IDP-2020 is used for software updates. The 7-inch display has one USB port located on its left side, and the 12-inch display has two USB ports located on its left and bottom sides. These ports are shown in Figure 5-2.

See the *Communication* chapter for communication setting and application information

### Control Power Connections

IDP-2020 control power is provided by a suitably-sized, external 24 Vdc power supply (18–32 V). The power supply should meet the following standards: EN/IEC 60950, EN/IEC 61558-2-4 (CE), and Class 2 (UL/cUL).

The IDP-2020 ground and control power wiring connects to the display panel through a three-conductor connector that plugs into a jack located on the bottom side of the IDP-2020. Figure 5-2 shows the location of the IDP-2020 control power jack. Figure 5-1 illustrates the wire assignments for the connector.

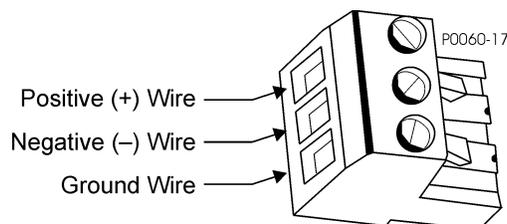
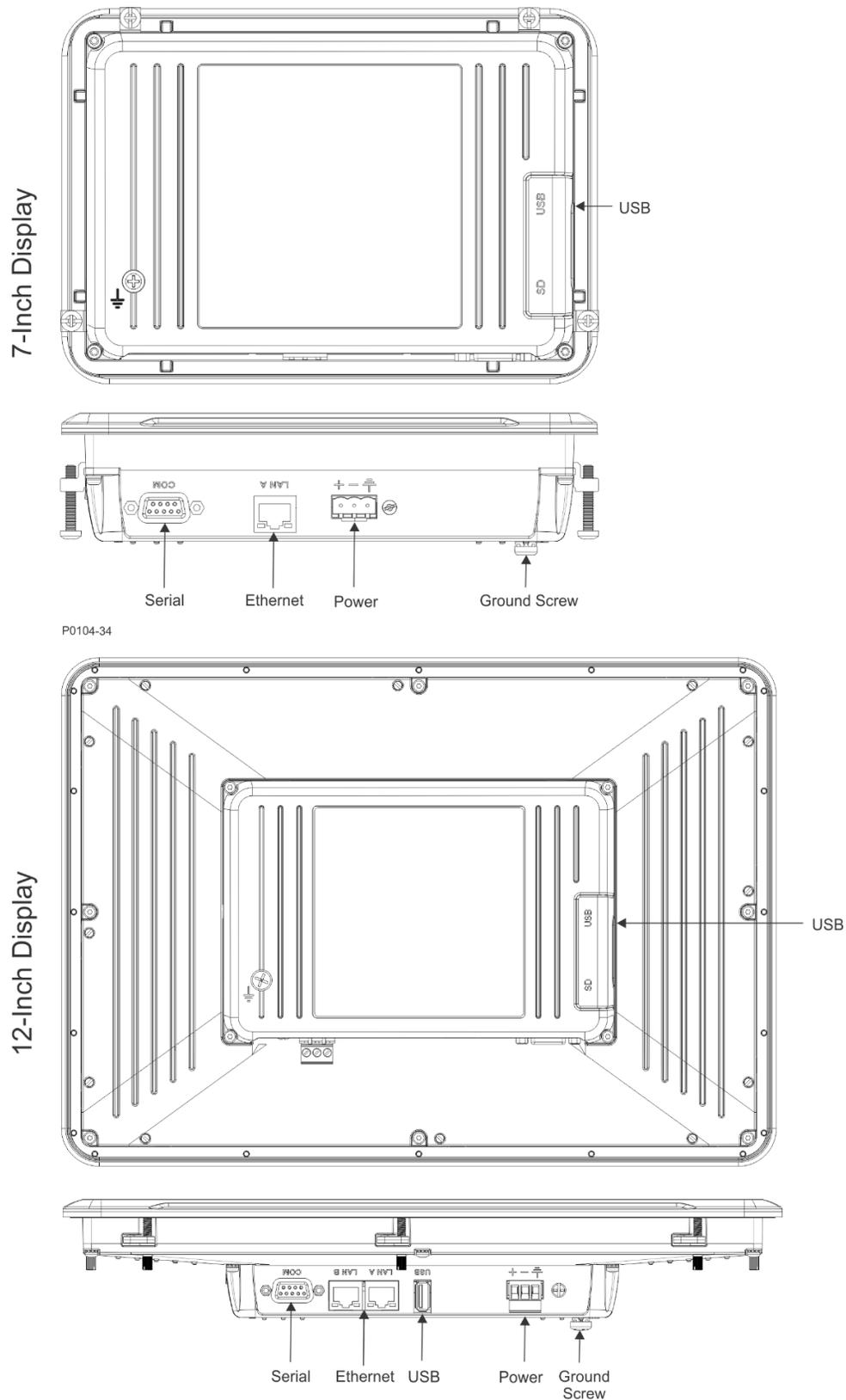


Figure 5-1. Control Power Connector Wire Assignments

When connecting the ground and control power wires to the connector, observe the following guidelines:

- Use 14 to 20 AWG (2.08 to 0.52 mm<sup>2</sup>) solid-conductor or stranded-conductor wire.
- Strip each wire end so that 0.28 inches (7 millimeters) of conductor is exposed.

- Secure each wire to the connector using a small, flat-blade screwdriver. The recommended connector screw torque is 15.9 to 19.5 inch-pounds (1.8 to 2.2 N•m).



**Figure 5-2. IDP-200 Bottom- and Left-Side Connectors**

## 6 • Maintenance

### ***Cleaning***

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When necessary, clean the IDP-2020 gently using a soft, dry cloth.

If a detergent is needed, dampen a cloth with an alcohol- or ammonia-based cleanser, gently wipe the device clean, and then remove any residual cleanser or moisture as soon as possible.

#### **Warning!**

Do not use sharp objects on or otherwise risk penetrating the IDP-2020 touchscreen. The LCD display liquid inside the screen can cause irritation. If your skin or eyes come into contact with the LCD display liquid, wash it off immediately, and seek medical attention.

### ***Battery***

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If necessary, replace the existing battery with a BR2032 battery.

#### **Warning!**

Installing the battery incorrectly or using the wrong type of battery may result in fire or explosion.

### ***Storage***

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Store an unused IDP-2020 in an environment which complies with the temperature and humidity parameters listed in the *Specifications* chapter.



# 7 • Specifications

IDP-2020 specifications are listed in the following paragraphs.

## ***Control Power***

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### **7-inch**

Nominal Voltage ..... 24 Vdc  
 Voltage Range ..... 18 to 32 Vdc  
 Power Consumption ..... 14.4 W at 24 Vdc

### **12-inch**

Nominal Voltage ..... 24 Vdc  
 Voltage Range ..... 18 to 32 Vdc  
 Power Consumption ..... 28.8 W at 24 Vdc

## ***Display***

---

### **7-inch**

Type ..... TFT color LCD  
 Size ..... 7 in (177.8 mm), measured diagonally  
 Resolution ..... 800 (wide) by 480 (high) pixels  
 Color ..... 64k

### **12-inch**

Type ..... TFT color LCD  
 Size ..... 12.1 in (307.3 mm), measured diagonally  
 Resolution ..... 1280 (wide) by 800 (high) pixels  
 Color ..... 262k

## ***Communication Interfaces***

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### **Ethernet**

Type ..... Ethernet, 10/100 Base-T (shielded RJ-45)  
 Connection ..... LAN port

### **Serial**

Type ..... 9-pin female (RS-485)  
 Connection ..... COM port

### **USB**

Type ..... USB 2.0  
 Connection ..... USB-A port  
 Output Current ..... 500 mA or less

## ***Environment***

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Operating Temperature ..... -10 to 60°C (14 to 140°F)  
 Storage Temperature ..... -20 to 70°C (-4 to 158°F)

Humidity ..... 5 to 85%, non-condensing

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## ***Vibration and Shock Resistance***

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### **Vibration**

Tested with IEC 60068-2-6

Withstands..... 1 g

### **Shock**

Tested with IEC 60068-2-27

Withstands..... 15 g, half-sine, 11 ms

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## ***Weight***

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7-inch Display..... 0.8 kg (1.8 lb.)

12-inch Display..... 2.6 kg (5.7 lb.)