PD6400
PROVU High Voltage & Current Meter

HIGH VOLTAGE & CURRENT

- 1/8 DIN Digital Panel Meter with NEMA 4X, IP65 Front
- (1) High Voltage and (1) High Current Input
- Multiplication for Apparent Power Calculation
- 0-300 VAC or VDC Voltage Input
- 0-5 AAC or ADC Current Input
- Dual-Line 6-Digit Display, 0.6" (15 mm) & 0.46" (12 mm)
- 2 or 4 Relays with Interlocking Capability + Isolated 4-20 mA Output Options
- Free PC-Based MeterView Pro USB Programming Software
- No Assembly Required
- Optional SunBright Display Models for Outdoor Applications
- Operating Temperature Range: -40 to 65°C (-40 to 150°F)
- UL & C-UL Listed. E160849; 508 Industrial Control Equipment
- Input Power Options Include 85-265 VAC or 12-24 VDC
- Programmable Display, Function Keys & Digital Input
- External 4-Relay, Dual 4-20 mA Outputs & Digital I/O Expansion Modules
- RS-232 & RS-485 Serial Communication Options with Modbus RTU
- Light / Horn & Reset Button Accessory
- Split Core AC Current Transformers Up to 1000 A AC Available
- Control Station Accessory For Remote Operation of ProVu

PRECISION DIGITAL CORPORATION

PD6400 PROVU High Voltage & Current Meter

TABLE OF CONTENTS

PD6400 PROVU High Voltage & Current Meter

OVERVIEW

Front

- Large 0.6" Digits
- Rugged Front
- Dual-Line 6-Character Display
- User Configurable Lower Display (Showing Current)

UV Resistant Sunlight Readable

Front Panel NEMA 4X Rated

PD6400

- User Configurable Upper Display (Showing Voltage)
- Programmable Function Keys
- Alarm Status Indicators

Connections

- Form C (SPDT) relays
- Removable terminal blocks
- 2 or 4 relays + isolated 4-20 mA output option

4-20 mA Output Powered by PROVU

RELAY4   RELAY3   RELAY2   RELAY1   MA OUT

SIGNAL   TYPE   M-LINK   POWER

- Input Power Options: 85-265 VAC or 12/24 VDC
- Voltage or current inputs
- M-Link for adding expansion modules
- Digital input (F4)

Great For Measuring and Displaying Direct Voltage and Current

The PROVU PD6400 is a multipurpose, easy to use high voltage and current input meter ideal for measuring direct voltage and current or the output from voltage shunts and current transformers. It has one 0-300 VAC or VDC voltage input and one 0-5 AAC or ADC current input. The meter may be used with a single voltage or current input, or to measure both simultaneously. A math channel P calculates apparent power as the product of the voltage and current inputs.

The PD6400 can display voltage, current, and apparent power. The dual line display can show any two parameters simultaneously, or alternate between any parameters as well as their programmable units and tags.

A fully loaded PD6400 meter has the following: four SPDT relays and a 4-20 mA output. The PD6400 capabilities may be enhanced by adding the following external expansion modules: four SPST relays; creating an eight-relay meter, two digital I/O modules with four inputs and four outputs each, serial communication adapters for use with MeterView Pro or Modbus RTU, and a dual 4-20 mA expansion module; for a total of three 4-20 mA analog outputs.

Precision Digital offers a line of split core AC Current transformers that can be used with the PD6400 meter to measure AC current up to 1000 AAC.

ADVANCED DISPLAY FEATURES

Dual-Line Makes All the Difference

The PD6400 can display voltage, current, and apparent power. The dual line display can show any two parameters simultaneously, or alternate between any parameters as well as their programmable units and tags.

The PROVU's dual-line display makes all the difference both when programming the instrument and when using it in the field. When programming the instrument, the dual line display prompts for the needed information and also helps you keep track of where you are in the setup process. When using the instrument, the dual line display provides more information such as displaying the input in two different scales like Volts and Amps for measuring shunts and transformers. We call this the Dual-Scale feature.

Programming Assistance

The PROVU's PD6400 dual-line display makes programming the instrument much easier because the lower line prompts for the needed information and also helps you keep track of where you are in the setup process.

The PROVU is prompting for the value for Input 2 and displaying the default value of 5.00 A. The "5" in 5.00 is brighter than the rest of the digits indicating that it is the number that will be changed by the Up and Right arrows.

The PROVU is now prompting for what the user wants Display 2 to be; that is the value that corresponds to 5.00 A. In this case Display 2 is currently set to 95.00.

### Bright & Optional Super-Bright Display

The standard PROVU's display is bright enough for most applications, including moderate sun exposure. However, for direct sunlight exposure the PROVU is available with super-bright LEDs that make it possible to read the PROVU even in direct sunlight. Both versions of the PROVU have eight levels of adjustable intensity.

Rounding Feature for Even Steadier Display

The rounding feature is used to give the user a steadier display with fluctuating signals. It causes the display to round to the nearest value according to the rounding value selected (1, 2, 5, 10, 20, 50, or 100). For example, with a rounding value of 10, and an input of 12346, the display would indicate 12350.

Display Voltage and Current Individually or at Same Time

The PROVU PD6400 can accept both a voltage and a current input. These can be displayed as one or the other as illustrated in the first set of screen shots below or both at the same time as illustrated by the second set of screen shots.

Value & Volts

Value & Amps

Alternating Input Value and Units
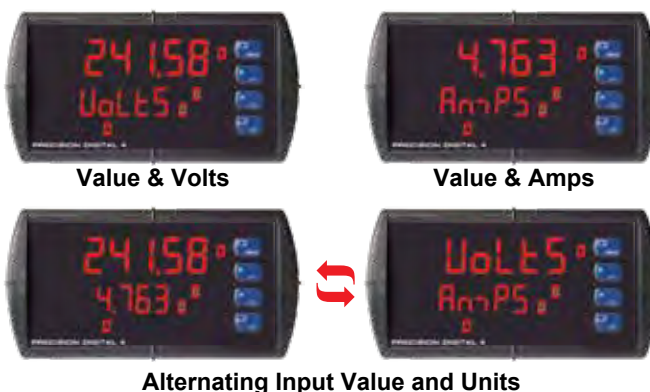
MeterView Pro can be used to scale the voltage and the current inputs on the PROVU PD6400 meter.

Toggling Between Reading & Units with Tag and Calculating Apparent Power

The PROVU below is programmed so the upper line toggles between the reading and units, and the lower line displays a tag. A math channel P calculates apparent power as the product of the voltage and current inputs shown in the bottom two images.


Upper line toggles between 241.58 and Volts and the lower line displays Gen 1

Upper line toggles between 1150.6 and Apparent Power and the lower line displays Gen 1

QUICK & EASY SCALE & PROGRAMMING METHODS

The PRoVu can be programmed either via the front panel push buttons or free, PC-based MeterView Pro software. MeterView Pro is resident on the PRoVu and is accessed by a provided USB cable, so it is by far the easiest way to program the PRoVu. The PRoVu can be calibrated either by applying a known signal or scaled by entering a desired value with the front panel buttons or MeterView Pro software. Most customers will use the scaling method because it is simpler and does not require a calibrated signal source. Selecting the input to be current or voltage is done with the front panel buttons or MeterView Pro software. Once programming is completed it can be locked with a password.

Free PC-Based MeterView Pro USB Programming Software & Cable
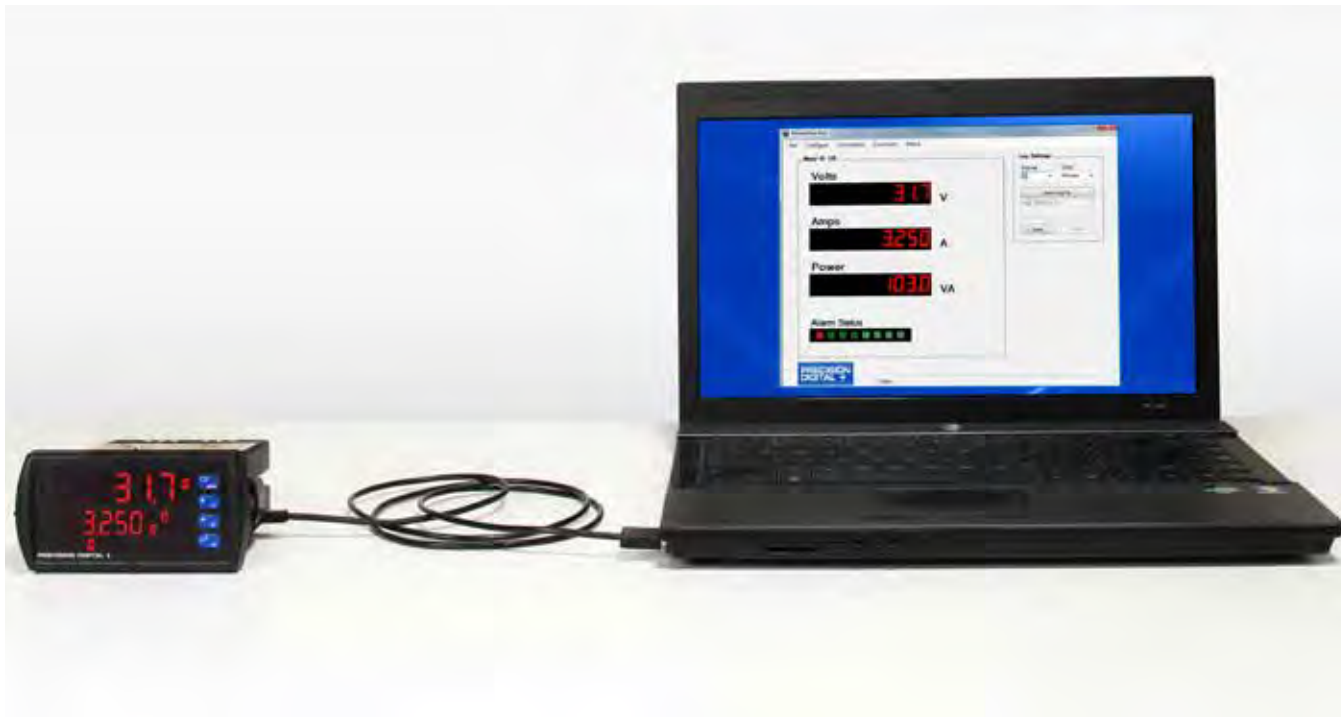
The PRoVu comes preloaded with free MeterView Pro programming software that connects and installs directly to your PC with a standard USB cable, also provided free with each instrument. This eliminates the need to insert CDs, install drivers, or download software from the internet. When you connect your PRoVu to your PC, MeterView Pro is downloaded to your PC, the software automatically selects the model you are programming, and you're ready to start programming immediately. Further simplifying the programming process, the PRoVu can be powered from the USB port, so no need to apply external power while programming your meter. In addition to programming, the software will also allow you to monitor, and datalog a PRoVu using your PC. You can also generate and save programming files for later use.

▶ Click here to watch the Meterview Pro video

Setup Screen

- Select Voltage or Current Input
- Select Decimal Point
- Set Line 1 Display Parameters
- Set Line 2 Display Parameters
- Set Analog Output Values
- Enable Manual Control
- Test Relays & Digital Outputs

Programming Screen

- Set Scale Values
- Set the Number of Points (up to 32)
- Import from Excel
- Export to Excel

Relays Screen

- Greatly Simplifies Programming a Variety of Relay Features
- Set Relay Action
- Set Sampling Time
- Set Set & Reset Points
- Set On/Off Time Delays
- Set Fail-Safe Operation
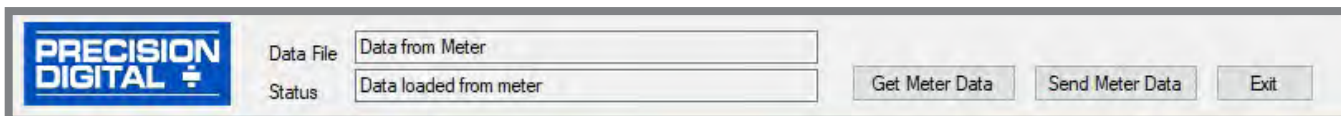- Set Input Break Relay Action

Save/Open Configuration

At the bottom of most MeterView screens are two tabs:

1. **Get Meter Data:** This reads the programming of the meter that is currently connected to the PC.
2. **Send Meter Data:** Clicking this button, sends current MeterView programming to the meter.

The configuration file can be sent, or retrieved, from the directory of your choice. This makes it very easy to program multiple meters with the same programming. It is also a great backup utility as well.
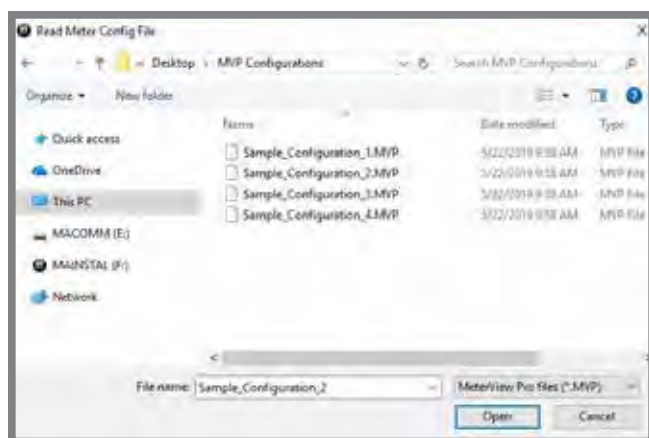
Specifications

System Requirements:
Microsoft® Windows® XP/Vista/7/8/10
Communications:
Onboard USB (firmware version 4.0 or higher),
RS-232 Adapter or RS-485 Adapter
Meter Address: 1 - 247
Reports:
• Data logging: Save as CSV file format
• Configuration: Save as PDC file format or print configuration
Baud Rate: 300 - 19,200 bps
Configuration: One meter at a time
Protocol:
Modbus RTU (requires PʀᴏVᴜ firmware version 4.0 or higher)

Note: Windows® 32/64-bit operating systems

Click here to watch the Meterview Pro video

Password Protection

The Password menu is used for programming three levels of security to prevent unauthorized changes to the programmed parameter settings:

Pass 1: Allows use of function keys and digital inputs

Pass 2: Allows use of function keys, digital inputs and editing set/reset points

Pass 3: Restricts all programming, function keys, and digital inputs

4-20 mA OUTPUT & RELAYS
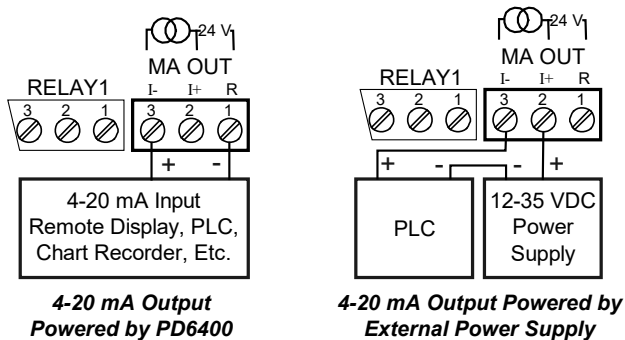
4-20 mA Analog Output

The isolated analog output can be configured to represent the process variable (PV), maximum (peak) value, minimum (valley) value, the value for any of the eight relay set points, or Modbus input. While the output is nominally 4-20 mA, the signal will accurately accommodate under- and over-ranges from 1 to 23 mA.

The 4-20 mA output can be reversed scaled such that 4 mA represents the high value and 20 mA represents the low value. For instance, a 4-20 mA output signal could be generated as the meter went from 100.0 to 0.0.

For applications where the input was linearized by the PᴿᴏVᴜ, the 4-20 mA output will represent that linearized value.

Connections

The PᴿᴏVᴜ can provide 40 mA at 24 VDC to power the 4-20 mA output signal or an external power supply can be used:

4-20 mA Output Powered by PD6400

4-20 mA Output Powered by External Power Supply

The internal 24 VDC power supply powering the analog output may be used to power other devices, if the analog output is not used. The I+ terminal is the +24 V and the R terminal is the return.

### PDA1011 Dual Isolated 4-20 mA Output Module

In addition to the on-board 4-20 mA output option, the PD6400 is also available with an external module that provides two more isolated 4-20 mA outputs. This allows the user to have separate 4-20 mA outputs for current, voltage and apparent power.

The 4-20 mA output can either be programmed using the front panel push buttons or free MeterView Pro software.

Front Panel Push Button Programming

The 4-20 mA analog output can be scaled to provide a 4-20 mA signal for any display range selected. No equipment is needed to scale the analog output; simply program the display values to the corresponding mA output signal. The Analog Output menu is used to program the 4-20 mA output based on display values.
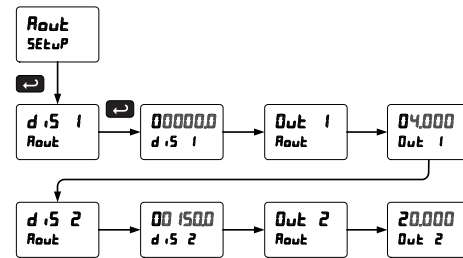
MeterView Pro Software Programming

When a meter is programmed as shown below, the output will be 4.00 mA when the display reads 0 and the output will be 20.00 mA when the display reads 150.0.

The meter can be set up for reverse scaling as shown below: the output will be 4.00 mA when the display reads 150.0 and the output will be 20.00 mA when the display reads 0.

Source: Source for generating the 4-20 mA output (e.g. PV)

Overrange: Analog output value with display in overrange condition

Underrange: Analog output value with display in underrange condition

Break: Analog output value when current input break is detected

Max: Maximum analog output value allowed regardless of input

Min: Minimum analog output value allowed regardless of input

Relays for Alarm & Control Applications

Adding relays to the PʀᴏVᴜ meter turns it into a sophisticated alarm device as well as a powerful, yet simple, alternative to a more complicated PLC system for control applications. The PʀᴏVᴜ can be equipped with up to four 3 A Form C (SPDT) internal relays and an additional four more 3 A Form A (SPST) external relays. Relays are highly user-configurable as the following screen shot from MeterView Pro indicates:

Values are intended to show programming choices. They are not intended to represent an actual application.

Setting Set and Reset Points (HI / LO Alarms)

All relays are independent of each other and may be programmed as high or low alarms with user desired set and reset points. Setting a set point above a reset point results in a high alarm and setting a set point below a reset point results in a low alarm. Alarms have 0 – 100% deadband and set and reset points may be set anywhere in the range of the meter.

Resetting the Relays (Action in MV Pro)

All relays are independent of each other and may be programmed to reset (*Action* in MV Pro) in the following ways:

- **Automatic:** Alarm will reset automatically once the alarm condition has cleared.
- **Automatic/Manual:** Alarm will reset automatically once the alarm condition has cleared but can also be reset using the F3 front panel button* at any time.
- **Latching:** Alarm must be reset manually and can be done so at any time. Press the F3 front panel button* at any time to clear the alarm.
- **Latching with Reset after Cleared:** Alarm must be reset manually and can only be done so after the alarm condition has cleared. Press the F3 front panel button* after the alarm condition has cleared to reset the alarm.

* Or by connecting an external switch to F4 terminal or with an optional digital input.

Time Delay (On and Off)

In many applications it is desirable to wait before turning off or on a relay – such as waiting for a process to settle before taking action. Each relay on the PʀᴏVᴜ can be programmed with independent on and off time delays of 0 to 999.9 seconds to achieve this.

Relays Auto Initialization

When power is applied to the meter, the front panel LEDs and alarm relays will reflect the state of the input to the meter.

Signal Loss or Current Input Break Relay Operation

When the meter detects a break in the current input, the relay will go to one of the following selected actions:

1. Turn On (Go to alarm condition)
2. Turn Off (Go to non-alarm condition)
3. Ignore (Processed as a low signal condition)

User Selectable Fail-Safe Operation

All relays are independent of each other and may be programmed for user selectable fail-safe operation. With the fail-safe feature activated, the relays will transfer to the alarm state on power loss to the meter.

Front Panel LEDs

The meter is supplied with four alarm points that include front panel LEDs to indicate alarm conditions. This standard feature is particularly useful for alarm applications that require visual-only indication.

Manual Output Control

Take control of any output with this feature. All relays can be forced ON or OFF, and the 4-20 mA output signal can be set to any value within its range. When the relays and 4-20 mA output are controlled manually, an LED labeled "M" is turned on and the associated Alarm LEDs (1-8) flash every 10 seconds indicating that the meter is in manual control mode.

Sampling Function (PV Triggered Timed Relay)

The sampling function allows the operator to set a relay as a "sampling" relay. When the PV reaches that set point, it will close that relay's contacts for a preset period of time (0.1 to 5999.9 seconds).

Interlock Relay(s)

This function allows a process to use one or more very low voltage input signals or simple switch contacts to control the state of one or more internal "interlock" relays. A violation (i.e. loss of input, open switch, or open circuit) forces one or more N/O interlock relay contacts to open. One input can be used in series with a number of interlock switches, or up to eight inputs can be required to force-on one (or more) internal interlock relays. Requires PDA1044 Digital I/O module or use of on-board digital input F4. Please see *ᴘʀᴏᴠᴜ Series Safety Interlock Feature* whitepaper on our website for more information.
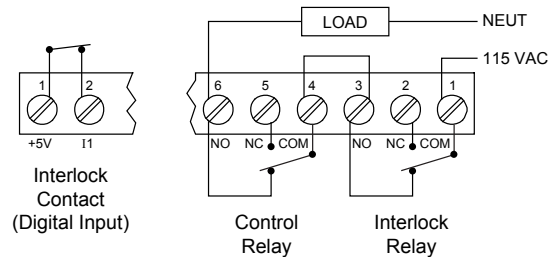

Switching Inductive Loads

The use of suppressors (snubbers) is strongly recommended when switching inductive loads to prevent disrupting the microprocessor's operation. The suppressors also prolong the life of the relay contacts. Precision Digital offers the PDX6901:
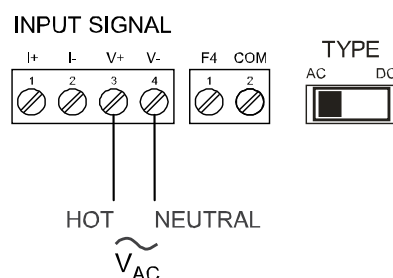
APPLICATION EXAMPLES

The PD6400 PROVU can be used to display application data for voltage, current, both, or apparent power. Each Channel, Voltage or Current, can be scaled independently. The following examples show just a few of the PD6400's application capabilities using generators and transformers. Each example is followed by a wiring diagram that shows proper switch position for the meter.

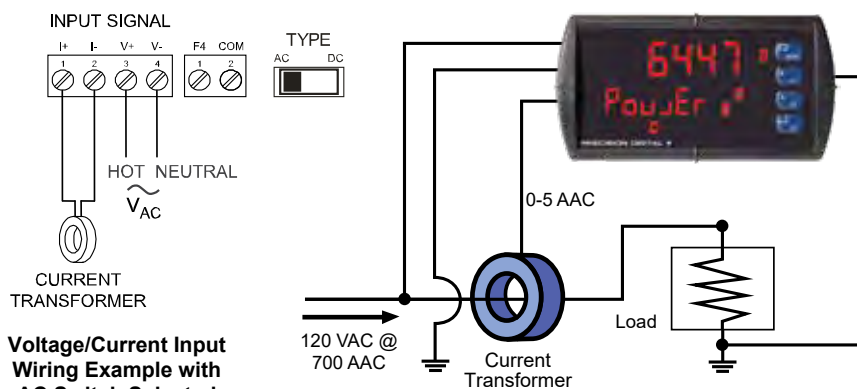### Voltage Measurement for a Generator Driving a Load
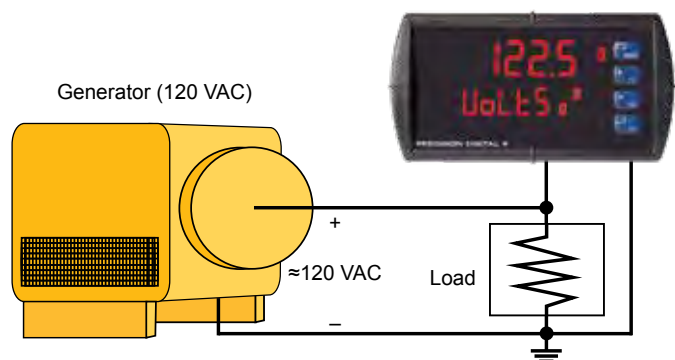
Voltage Input Application Example

Voltage Input Wiring Example with AC Switch Selected

Apparent Power Measurement with Three 4-20 mA Outputs

Voltage/Current Input Wiring Example with AC Switch Selected

Voltage/Current Input Application Example
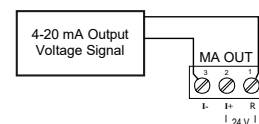
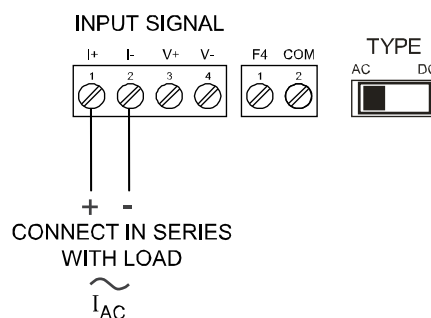**On-Board 4-20 mA Output Wiring**
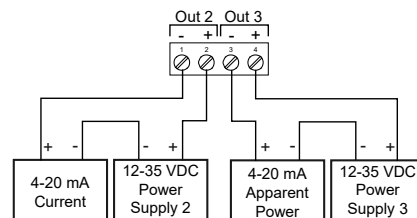
PDA1011 4-20 mA Output Module Wiring
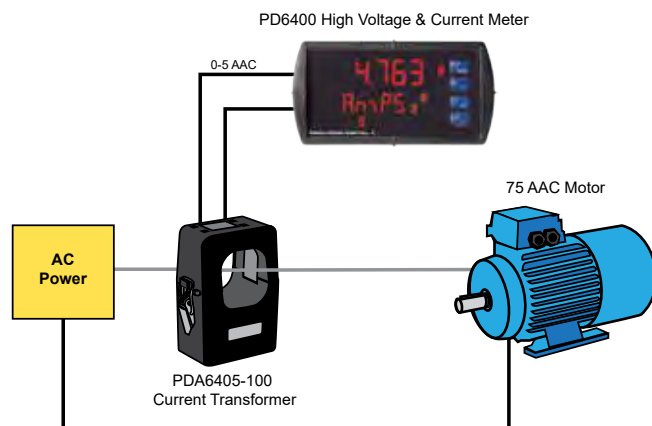
Current Measurement for a Lighting System
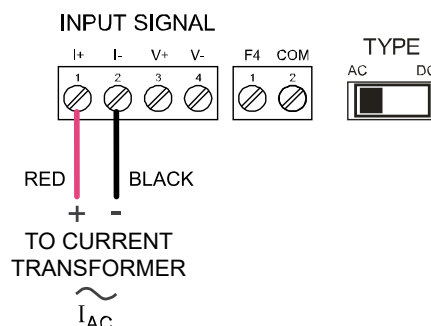
Current Input Application Example

Current Input Wiring Example with AC Switch Selected

Converting High AC Current with the PDA6405 Split Core AC Current Transformer

PD6400 High Voltage & Current Meter

Measuring Current with PDA6405-100 Current Transformer and PD6400 digital panel meter.

PD6400 Connections from PDA6405 Current Transformer with AC Switch Selected.

PDA6405 Split Core AC Current Transducer

Precision Digital offers a line of split core AC current transformers that convert the high AC current flowing through a cable or wire to a 0-5 AAC output that can be displayed on a PD6400. The PDA6420 works with a PD6400 because it puts out a 4-20 mA signal. They are available in ranges of 100, 200, 400, 600, and 1000 AAC. These nonintrusive devices feature split core convenience for easy installation and are a cost effective solution for monitoring load or proof of operation. The PDA6420 current transformers are ideal for monitoring current loads on pumps, driving fans and blowers, and sensing the status of heating coils and lighting.

Specifications:

Current Range: 100A, 200A, 400A, 600A, and 1000A (based on model)
Output: 0-5 A
Accuracy: +/- 1%
Burden: 2VA
Insulation Voltage: CAT IV 250 or CAT III 600VAC
Maximum Primary Voltage: 5000 VAC (Insulated Conductor)
Phase Angle: Less than 2 degrees at 50% of rated current
Frequency Range: 50/60 Hz
Operating Temperature: -40 to 55°C
Humidity: 0-95% RH non-condensing, Indoor use only
Pollution Degree: 2
Leads: 18AWG 1.0 m cable
UL File Number: UL recognized for US and Canada (E341727)

DIGITAL COMMUNICATIONS

Modbus® RTU Serial Communications

With the purchase of a serial communication adapter, PʀᴏVᴜ meters can communicate with any Modbus Master device using the ever-popular Modbus communications protocol that is included in every PʀᴏVᴜ. In addition to the typical Modbus capabilities of reading PVs and writing set points, below are some examples of other things that can be done with the meter's Modbus communications:

• Send a 6-character message to lower display upon an event
• Convert a digital value to a 4-20 mA signal
• Remote user control (i.e. change set points, acknowledge alarms)
• Input a Modbus digital PV (in place of analog input)
• Remote override of any, or all, relays and analog outputs

Modbus PV Input   **Remote Message**

Click here for more information on the PʀᴏVᴜ's Modbus capabilities

PDA1232 & PDA1485 Communication Modules

Serial communications on the PʀᴏVᴜ meter can be added anytime with external PDA1232 (RS-232) or PDA1485 (RS-485) communication adapters. Free Modbus protocol is included for use with the PʀᴏVᴜ serial communications modules.

Serial Adapters & Converters*

PDA1232
PʀᴏVᴜ RS-232
Serial Adapter

PDA1485
PʀᴏVᴜ RS-485
Serial Adapter

PDA7485-I
RS-232 to RS-422/485
Isolated Converter

PDA8232-N
USB to RS-232
Non-Isolated
Converter

PDA8485-I
USB to
RS-422/485
Isolated Converter

For more info on serial converters click here.

*All adapters and connectors supplied with appropriate cables.

FIELD EXPANSION MODULES

Add functionality to the PD6400 n the field with easy-to install external expansion modules. External expansion modules are available for RS-232 or RS-485 communications, digital I/O, 4 relays and dual 4-20 mA outputs. The menu items for these modules do not appear until the module is connected, simplifying the basic menu. Relay and digital I/O modules are shown below with optional DIN rail mounting kit, P/N PDA1002.

### PDA1044 I/O Expansion Module

Four digital inputs and four digital outputs are available per expansion module. The PʀᴏVᴜ meter will accept two of these modules. External digital inputs can function similarly to the front panel function keys or on-board digital input F4. They can be configured to trigger certain events (i.e. acknowledge/ reset alarms) or mimic front panel keys. The I/O module can be used to configure the PʀᴏVᴜ remotely, in essence giving the user control of the four front panel push buttons.

Digital outputs can be used to remotely monitor PʀᴏVᴜ's alarm relay output states, or the states of a variety of actions and functions executed by the meter.
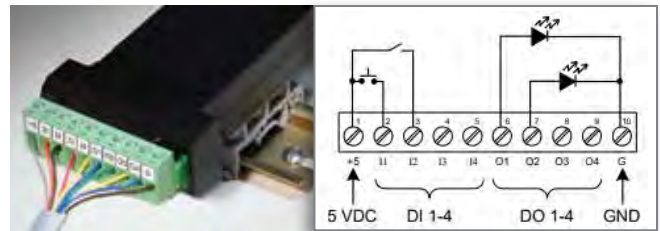
PDA1004 Relay Expansion Module

An external module containing four 3 A Form A (SPST) relays can be added to the PʀᴏVᴜ at anytime. Removable screw terminal blocks accept 12 to 22 AWG wire.
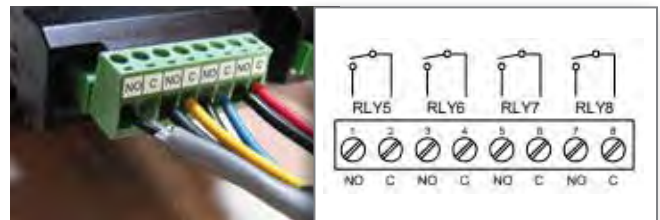
PDA1011 Dual Isolated 4-20 mA Output Module

In addition to the on-board 4-20 mA output option, the PD6400 is also available with an external module that provides two more isolated 4-20 mA outputs. This allows the user to have separate 4-20 mA outputs for current, voltage and apparent power. relays can be added to the PʀᴏVᴜ at anytime. Removable screw terminal blocks accept 12 to 22 AWG wire.
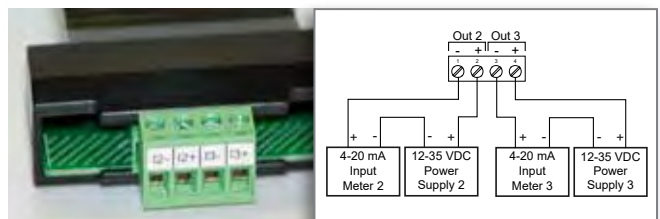
PHYSICAL FEATURES

The PROVU is designed for ease-of-use in industrial applications. Considerations include a NEMA 4X front panel, wide operating temperature range, removable screw terminal connectors, snap in place mounting brackets, forgiving panel cutout requirement, and UL Listing for electrical safety. All of these features are backed by a 3-year warranty.

Type 4X / NEMA 4X Front Panel

Not only does the PROVU's front panel UL Type 4X approval indicate it is waterproof, but it also indicates it is rugged. Part of the UL Type 4X test is to drop a 2 inch solid stainless steel ball from 8 feet on top of the meter's faceplate.

Wide Operating Temperature Range

The PROVU can operate from -40 to 65°C (-40 to 150°F) meaning it can be installed in a wide variety of indoor and outdoor industrial applications. And over this range, the PROVU will drift no more than 0.005% of calibrated span/°C max from 0 to 65°C ambient and 0.01% of calibrated span/°C max from -40 to 0°C ambient.

Removable Screw Terminal Connectors

Industrial applications require screw terminal connections for easy field wiring and the PROVU goes one step further in convenience by making them removable also.

Easy Plug-in Removable Terminal Connectors

Secured-in-Place Rugged Mounting Brackets

If you're installing the PROVU outdoors in the hot or cold weather, the last thing you want to do is fumble around with mounting brackets that don't stay in place. The PROVU's mounting brackets can be easily secured into place and then screwed down to the panel. These brackets are rugged so they can be tightened to the panel to provide a solid NEMA 4X seal.

Easy Secured-in-Place Mounting Brackets

Forgiving Panel Cutout Requirement

The PROVU's bezel has been oversized to allow for not perfectly executed panel cutouts where NEMA 4X seal is not required.

Over-Sized Bezel to Completely Cover Panel Cutouts

UL Listing for Electrical Safety

UL & C-UL Listed: USA & Canada
UL 508 Industrial Control Equipment
UL File Number: E160849
Front Panel: UL Type 4X, NEMA 4X, IP65; panel gasket provided
Low Voltage Directive: EN 61010-1:2010 Safety requirements for measurement, control, and laboratory use

USB Port for Easy Connection to MeterView Pro Free Software

USB cable conveniently plugs into side of PROVU meter

PD6400 ᴘʀᴏVᴜ High Voltage & Current Meter

OPERATIONAL FEATURES

Function Keys, F4 Terminal, Digital Inputs

There are three ways the user can interact with the ᴘʀᴏVᴜ to perform a variety of useful functions:

1. Three Front Panel Function Buttons

The default settings for the function keys are:

|		
F1	**F2**	**F3**
Reset Max/Min Reading	Display Max/Min Reading	Acknowledge Relays

2. F4 On-Board Digital Input

The PD6400 includes a digital input as standard. This digital input can operate with the interlock relays feature, force relays on from a signal from a PLC or relay on other equipment, and much more. This is ideal for installations where the meter is inaccessible behind a cover, or where an additional function key is needed for customized operation.
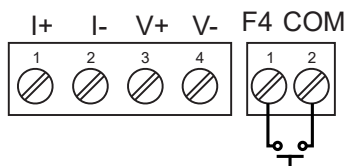
The F4 terminal is particularly useful for wiring up a remote switch to reset the relays as shown here:

3. Optional 4 Digital Input/Output Module PDA1044
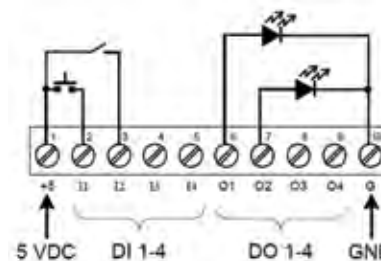
With these three methods, the ᴘʀᴏVᴜ can be programmed to trigger certain events (i.e acknowledge relays, reset max and/or min, disable/enable output relays, or hold current relay states), provide direct menu access points and more.

Remote Operation Using PDA2364-MRUE Control Station

The PD6400's four internal programming and operations buttons can be remotely controlled by using the PDA2364-MRUE 4-button control station accessory as shown in the diagram below.

The Control Station allows for remote control of the PD6400's four front panel buttons.

ProVu PD6400 High Voltage & Current Meter

PDA1044 I/O Expansion Module

To PDA1044 Digital I/O Module

PDA2364-MRUE Control Station
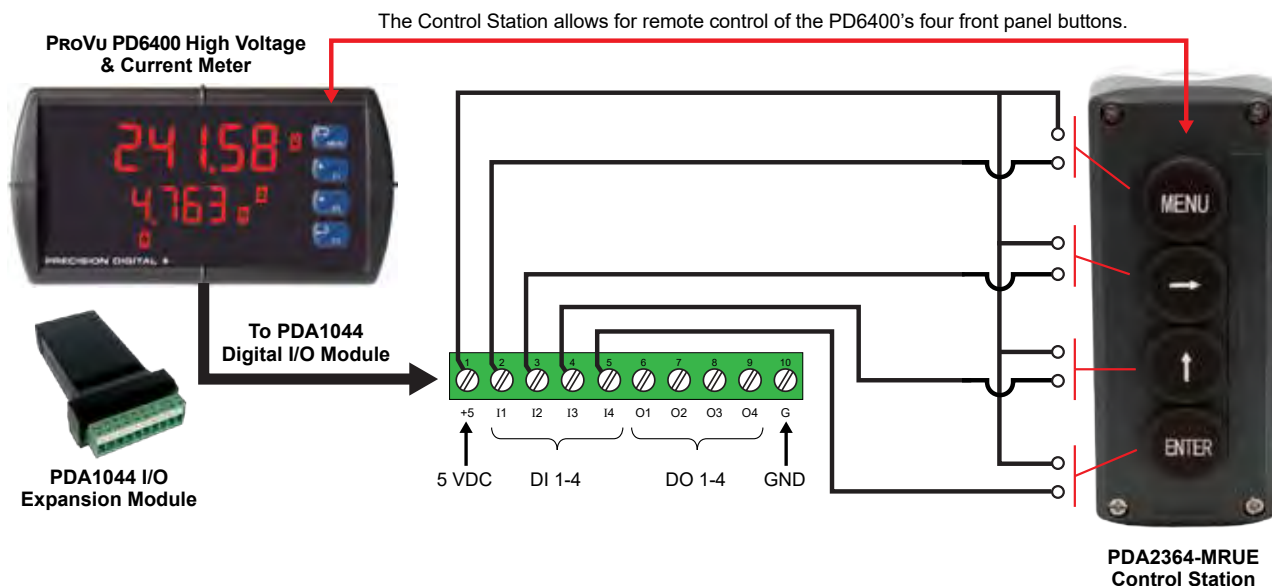
PD6400 ProVu High Voltage & Current Meter

Remote Operation of Front Panel Buttons

The user can operate the front panel buttons from a remote location by using digital inputs programmed in the following manner:

Click here to watch the Function Keys video

Max / Min Display

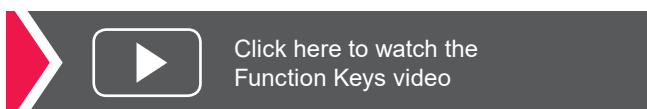Max/Min (or Peak/Valley) is standard on the ProVu PD6400. Either display can be configured to show either maximum or minimum excursion since last reset. The displays can also be configured to toggle between Max and Min values. Both values can be simply reset from the front panel.

MeterView Pro Monitoring & Datalogging Software

Not only does free MeterView Pro software greatly simplify setup and programming of the ProVu, it can also be used to monitor and datalog your process.

- Custom Tags: i.e. Power
- Custom Units: i.e. Amps, Volts
- Alarm Status Indicators

Datalog Report

Collected data logger information can be sent to a CSV file for importing into a spreadsheet program. Below is an example of one such file. Of course, once within the spreadsheet, much can be done to customize the data.

Relay Control

Relays can be controlled from MeterView Pro for testing purposes. This is commonly done to determine whether the relays are functioning properly. In the *Setup* window, under *Relay and Digital Out Test* you have the option of selecting the relays you want in an ON state or OFF state and also whether you want to leave the relays in manual control or to return them to automatic operation.

Click here to watch the Meterview Pro video
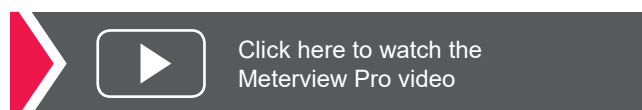
Function Key, Digital Inputs, & Digital Outputs Descriptions

The following table describes the actions that PROVU function keys and digital inputs can be programmed to perform. The table also describes how the digital outputs can be used to remotely monitor the PROVU's alarm relay states, or the states of a variety of actions and functions executed by the meter.

Display	Description	Item
rSt Hi	Reset the stored maximum display value	FK, DI, DO
rSt Lo	Reset the stored minimum display value	FK, DI, DO
rSt HL	Reset the stored maximum & minimum display values	FK, DI, DO
rELAY	Directly access the relay menu	FK, DI
SEt 1*	Directly access the set point menu for relay 1 (*through 8)	FK, DI
rLY d	Disable all relays until a button assigned to enable relays (rLY E) is pressed	FK, DI
rLY E	Enable all relays to function as they have been programmed	FK, DI
O HoLd	Hold current relay states and analog output as they are until a button assigned to enable relays (rLY E) is pressed	FK, DI
d HoLd	Hold the current display value, relay states, and analog output momentarily while the function key or digital input is active. The process value will continue to be calculated in the background.	FK, DI
Ln1 Hi	Display maximum display value on line 1	FK, DI
Ln1 Lo	Display minimum display value on line 1	FK, DI
Ln1 HL	Display maximum & minimum display values on line 1	FK, DI

Display	Description	Item
Ln2 Hi	Display maximum display value on line 2	FK, DI
Ln2 Lo	Display minimum display value on line 2	FK, DI
Ln2 HL	Display maximum & minimum display values on line 2	FK, DI
F On 1*	Force relay 1 (*through 4) into the on state. This is used in conjunction with a digital input expansion module to achieve interlock functionality.	FK, DI
Contrl	Directly access the control menu	FK, DI
diSAbL	Disable the selected function key or digital I/O	FK, DI
AcH	Acknowledge all active relays that are in a manual operation mode such as auto-manual or latching	FK, DI, DO
rESEt	Directly access the reset menu	FK, DI
mEnu	Mimic the menu button functionality (digital inputs only)	DI
riGHt	Mimic the right arrow/F1 button functionality (digital inputs only)	DI
uP	Mimic the up arrow/F2 button functionality (digital inputs only)	DI
EntEr	Mimic the enter/F3 button functionality (digital inputs only)	DI
ALm 1*	Provide indication when alarm 1 (*through 8) has been triggered (digital outputs only)	DO

FK: Function Keys   DI: Digital Inputs   DO: Digital Outputs

Watch video about the programmable function keys, digital inputs, and all the capabilities these features offer on the PROVU Series.

NEMA 4 & 4X FIELD ENCLOSURES

Precision Digital offers a variety of rugged enclosures that provide a high degree of protection against harsh operating environments. Thermoplastic and stainless steel NEMA 4X, and painted steel NEMA 4 enclosures for up to 10 PRoVu meters are available. In addition, Precision Digital offers a Light / Horn that can be mounted to most of these enclosures to provide visual and audible indication of alarms.

Download free 3-D CAD files of these instruments to simplify your drawings!

Plastic Enclosures (Externally Mounted)

PDA2300 Series (Covers with Hinge & Hasp)
This is Precision Digital's most economical line of enclosures for the PRoVu. The meter mounts through a hinged cover with a SS hasp allowing for easy access to meter wiring. Enclosures are available for 1 through 10 PRoVus.

PDA2301   **PDA2310**

PDA2800 Series (Covers with Screws)
This is Precision Digital's smallest line of enclosures for the PRoVu. The meter mounts through the cover that screws to the base of the enclosure. Available for 1 and 2 PRoVus.

PDA2811   **PDA2812**

Plastic Enclosures (Internally Mounted)

PDA3400 Series (Covers with screws)
This is Precision Digital's only line of enclosures for the PRoVu where the meter is fully housed inside the enclosure. Enclosures are available for 1, 2 and 3 ProVus.

PDA3407   **PDA3412**

Stainless Steel Enclosures (Externally Mounted)

PDA2600 Series (Covers with Hinge & Hasp)
This is Precision Digital's stainless steel line of enclosures for the PRoVu. The meter mounts through a hinged cover with a SS hasp allowing for easy access to meter wiring. Enclosures are available for 1 through 6 PRoVus.

PDA2604-1   **PDA2606**

Steel Enclosures (Externally Mounted)

PDA2700 Series (Covers with Hinge & Hasp)
This is Precision Digital's painted steel line of enclosures for the PRoVu. The meter mounts through a hinged cover with a hasp allowing for easy access to meter wiring. Enclosures are available for 1 through 6 PRoVus.

PDA2704-1   **PDA2706**

LIGHT / HORN & RESET BUTTON MOUNTED TO ENCLOSURE

PRoVu Meter in a PDA2301 Enclosure with MOD-LH Light / Horn and Reset Button.
Enclosure & MOD-LH Sold Separately. Assembly Required.

Light with
85 dB Horn

PRoVu
Process Meter

PDA2301
Enclosure

Reset
Button

PDA1024-01
Optional Power Supply
(required for PD6400 applications)

PDA1004 4-Relays
Expansion Module

Overview

Precision Digital offers a wide variety of NEMA 4 and NEMA 4X enclosures that can be equipped with MOD-LH Light / Horn and Reset Button. When MOD-LH is ordered, the accompanying enclosure on the order comes with the holes pre-drilled for the Light / Horn and the Reset Button and the user performs the mounting and wiring. Meter and enclosure are sold separately. The Light / Horn and the Reset Button can also be ordered as separate items and the user performs all hole-drilling, mounting and wiring as desired. The light and horn can be controlled independently of each other via separate relays on the PRoVu meter; and since the meter's relays can be reset in a variety of ways, there are several ways the Light / Horn option can operate. For instance, the horn can be programmed to silence at any time via the Reset Button or F3 front panel button on the PRoVu, and light to reset automatically when the alarm clears as the following table illustrates:

Relay #	Connected to	Default Reset Mode
1	Flashing Light[1]	Auto reset
2	Horn	Silence with Reset Button at any time
3	User Device	As user desires
4	User Device	As user desires

1. Light can be wired to flash or stay steady on.
2. See page 10 for additional ways the relays can be programmed

Note: For Light/Horn applications using the PD6400, an external power supply such as Precision Digital's PDA1024-01 must be used to power the Light / Horn.

Dimensions

Units: Inches (mm)

Ø 2.2
(55)

2.6
(65)

4.8
(122)

0.8
(20)

M22 x 1.5
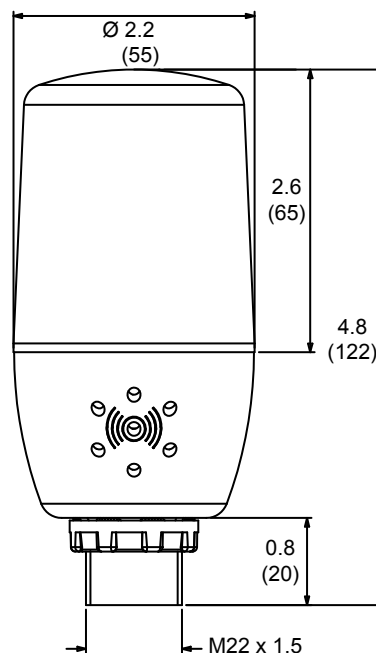
Click here to watch the
Light / Horn Video

PDA1024-01 24 VDC DIN Rail Power Supply

For Light/Horn applications using the PD6400, an external power supply such as Precision Digital's PDA1024-01 must be used to power the Light / Horn.

**PDA1024-01 Power Supply
Installed in a PDA2301 Enclosure**

**PDA1024-01
24 VDC Power Supply**

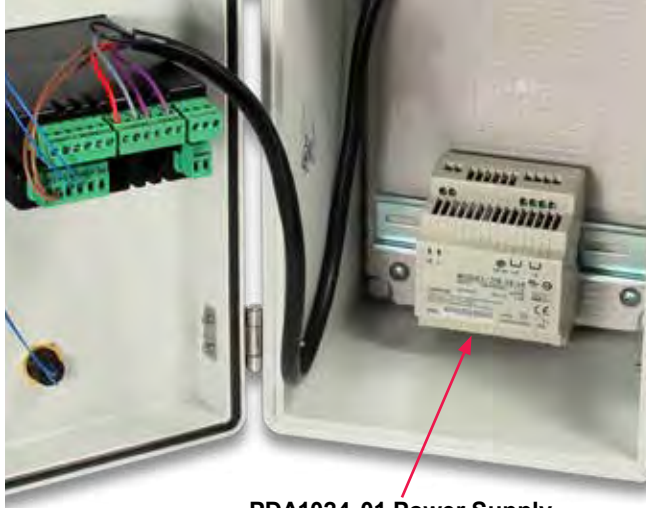|	
Input Voltage	85 ~ 264VAC 120 ~ 370VDC
Output Voltage	24 VDC; ±10% 1.5A rated current
Input Frequency	47 ~ 63Hz
AC Current	0.88A/115VAC 0.48A/230VAC
Connections	Two terminals provided for +V and -V to simplify wiring of multiple devices
Operating Temperature	-20° to 60°C
Safety Standards	UL60950-1, TUV EN60950-1 Approved, Design refer to EN50178
EMC	Compliance to EN55011, EN55022 (CISPR22) Class B, EN61000-3-2, -3 EN61000-4-2, 3, 4, 5, 6, 8, 11, ENV50204, EN55024, EN61000-6-1, EN61204-3 Light industry, Criteria A
Dimensions	3.07" x 3.66" x 2.20" (78 mm x 93 mm x 56 mm) (W x H x D)

Wiring Connections for MOD-LH Models

The following diagrams are for MOD-LH models with a single color light. See MOD-LH manual for wiring connections for MOD-LH5CB1 and MOD-LH3CB1-RYG models.

Using External Power Supply (PDA1024-01)
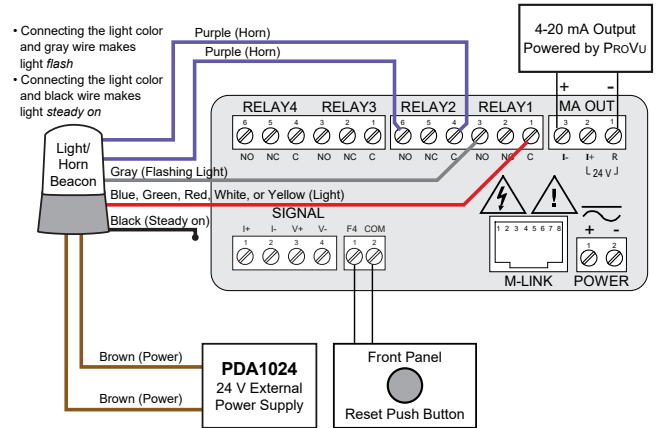
- Form C (SPDT) relays
- Removable terminal blocks
- 2 or 4 relays + isolated 4-20 mA output option
- Universal 85-265 VAC or 12/24 VDC input power
- Voltage or current inputs
- M-Link for adding expansion modules
- Digital input (F4)

Complete Product Line of Displays and Controllers
IN ALL SHAPES, SIZES & LOCATIONS

Big, Bright Displays For Indoor or Outdoor in Bright Sunlight

Large Dual-Line 6-Digit Display

24 VDC Transmitter Power Supply

MeterView® Pro USB Programming Software

Universal 85-265 VAC or 12-24 VDC Input Power Options

4-20 mA, 0-10 V, Thermocouple, RTD, Strain Gauge, High Voltage, & Modbus Inputs

Up To Four 3 A Form C Relays (SPDT)

IECEx

EXPLOSION-PROOF
ProtEX-MAX Series

- NEMA 4X, IP68 Rated Enclosure
- SafeTouch® Through-Glass Buttons
- Operating Temperature of -40 to 65°C
- Worldwide Approvals

LARGE DISPLAYS
Helios Series

- 1.8" Digits Readable From 100 Feet
- NEMA 4X, IP65 Rated Enclosure
- Operating Temperature of -40 to 65°C
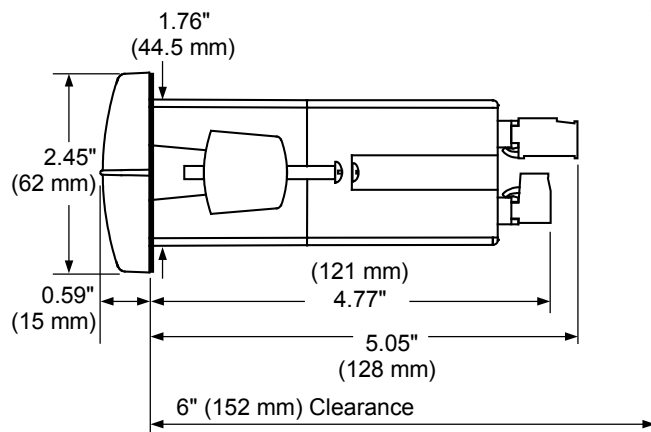- Now UL and C-UL Approved!

PANEL METERS
PROVU Series

- NEMA 4X, IP65 Rated Front
- Programmable Function Keys
- UL, C-UL, and CE Approvals
- 1/8 DIN Size

Find Quality Products Online at: **www.GlobalTestSupply.com**   sales@GlobalTestSupply.com

PD6400 PRoVu High Voltage & Current Meter

DIMENSIONS

1.76"
(44.5 mm)

2.45"
(62 mm)

0.59"
(15 mm)

(121 mm)
4.77"

5.05"
(128 mm)

6" (152 mm) Clearance

Side View

Optional Connectors Installed

4.17"
(106 mm)

3.61"
(91.5 mm)

4.68"
(119 mm)
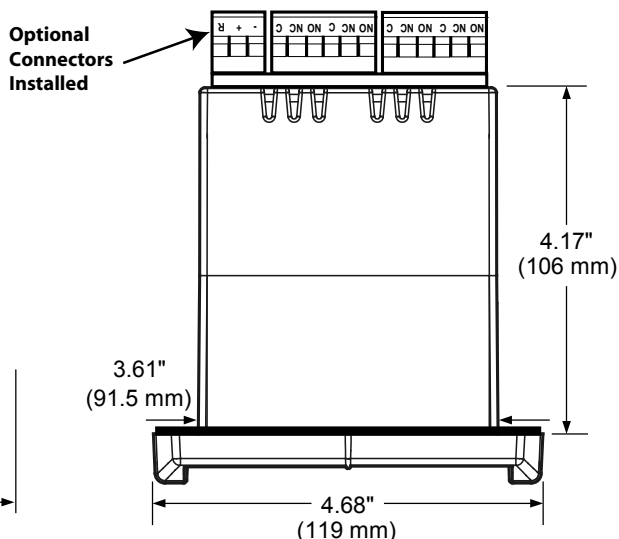
Top View

Notes:
1. Panel cutout required: 1.772" x 3.622" (45 mm x 92 mm)
2. Panel thickness: 0.040 - 0.250" (1.0 mm - 6.4 mm)
3. Mounting brackets lock in place for easy mounting
4. Clearance: Allow 6" (152 mm) behind the panel

CAD
ENCLOSURE DIMENSIONAL DRAWINGS

Download free 3-D CAD files of these instruments to simplify your drawings!

CONNECTIONS

- Form C (SPDT) relays
- Removable terminal blocks
- 2 or 4 relays + isolated 4-20 mA output option

4-20 mA Output
Powered by PRoVu

RELAY4   RELAY3   RELAY2   RELAY1   MA OUT

6 5 4   3 2 1   6 5 4   3 2 1   3 2 1

NO NC C   NO NC C   NO NC C   NO NC C   I- I+ R
└ 24 V ┘

I+ I- V+ V-   F4 COM
1 2 3 4   1 2

SIGNAL   TYPE   M-LINK   POWER

AC DC

1 2 3 4 5 6 7 8

+ -
1 2
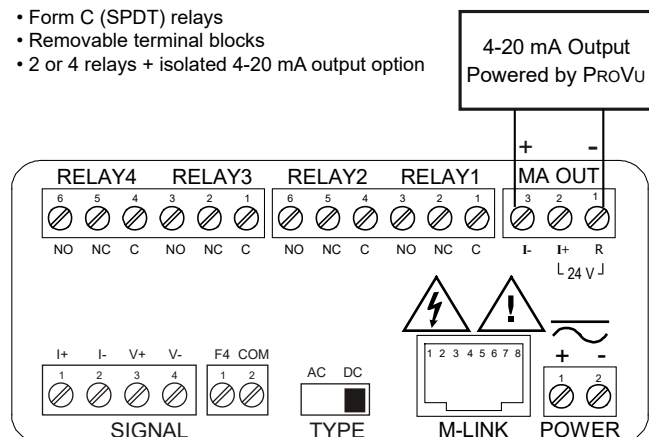
- Input Power Options: 85-265 VAC or 12/24 VDC
- Voltage or current inputs
- M-Link for adding expansion modules
- Digital input (F4)
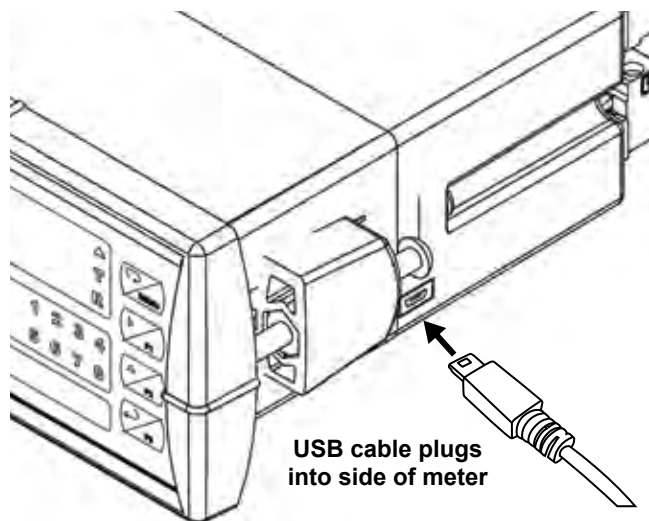
USB cable plugs into side of meter

▶ Click here to watch video on how to connect a 2-wire transmitter to a PRoVu

SPECIFICATIONS

Except where noted all specifications apply to operation at +25°C.

General

Display: Upper display: 0.60" (15 mm) high. Lower display: 0.46" (12 mm) high. Both are 6 digits (-99999 to 999999), with red LEDs.
Display Intensity: Eight user-selectable intensity levels
Display Update Rate: 5/second (200 ms)
Overrange: Display flashes 999999
Underrange: Display flashes -99999
Display Assignment: The main (Big) and secondary (Little) displays may be assigned to process values for Channels A (Ch-A, current), V (Ch-V, voltage), or P (Ch-P, apparent power); toggle between (Ch-A & Ch-V, Ch-A & Ch-P, Ch-V & Ch-P, and Ch-A, Ch-V, & Ch-P); relay set points; max and/or min values for CH-A, Ch-V, or Ch-P; CH-A and units; Ch-V and units; Ch-P and units; or Modbus input. The lower display may also be set to show engineering units or be set to off, with no display.
Front Panel: NEMA 4X, IP65
Programming Methods: Four front panel buttons, digital inputs, PC and MeterView Pro software, Modbus registers, or cloning using Copy function.
F4 Digital Input Contacts: 3.3 VDC on contact. Connect normally open contacts across F4 to COM.
F4 Digital Input Logic Levels: Logic High: 3 to 5 VDC
Logic Low: 0 to 1.25 VDC
Noise filter: Programmable from 2 to 199 (0 will disable filter)
Filter Bypass: Programmable from 0.1 to 99.9% of calibrated span
Recalibration: Calibrated at the factory. Recalibration is recommended at least every 12 months.
Max/Min Display: Max / min readings reached by the process are stored until reset by the user or until power to the meter is cycled.
Password: Three programmable passwords restrict modification of programmed settings.
Non-Volatile Memory: All programmed settings are stored in non-volatile memory for a minimum of ten years if power is lost.
Power Options: 85-265 VAC 50/60 Hz, 90-265 VDC, 20 W max, or optional model with 12-24 VDC ±10%, 15 W max.
Fuse: Required external fuse: UL Recognized, 5 A max, slow blow; up to 6 meters may share one 5 A fuse.
Normal Mode Rejection: Greater than 60 dB at 50/60 Hz
Isolation: 500 V AC/DC potential allowed between voltage and current input channels. Channels isolated by 3 MΩ impedance 4 kV input/output-to-power line 500 V input-to-output or output-to-P+ supply.
Overvoltage Category: Installation Overvoltage Category II: Local level with smaller transient overvoltages than Installation Overvoltage Category III.
Environmental:
Operating temperature range: -40 to 65°C
Storage temperature range: -40 to 85°C
Relative humidity: 0 to 90% non-condensing
Connections: Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays, digital I/O, and serial communication adapters.
Enclosure: 1/8 DIN, high impact plastic, UL 94V-0, color: black
Mounting: 1/8 DIN panel cutout required: 3.622" x 1.772" (92 mm x 45 mm). Two panel mounting bracket assemblies are provided.
Tightening Torque: Screw terminal connectors: 5 lb-in (0.56 Nm)
Dimensions: 4.68" x 2.45" x 5.64" (119 mm x 62 mm x 143 mm) (W x H x D)
Weight: 9.5 oz (269 g)

UL File Number: UL & C-UL Listed. E160849; 508 Industrial Control Equipment.
Warranty: 3 years parts & labor

USB Connection:

Compatibility: USB 2.0 Standard, Compliant
Connector Type: Micro-B receptacle
Cable: USB A Male to Micro-B Cable
Driver: Microsoft® Windows® XP/Vista/7/8/10
Power: USB Port

Voltage and Current Inputs

High Voltage Input: One high voltage input (Channel V) 0-300 VDC or VAC; Switch Selectable, Modbus PV (Slave)
High Current Input: One high current input (Channel A) 0-5 AAC or ADC; Switch Selectable, Modbus PV (Slave)
Channels: Channel A, Channel V, Channel P (Math Channel for Apparent Power)
AC/DC Selection: Switch selectable for AC or DC inputs. Channels A and V share AC/DC selection.
Apparent Power Math: Apparent power P calculated as $P = A * V$
Programmable Constants: Constant C (Adder): -99.999 to 999.999, default: 0.000. Constant F (Factor): 0.001 to 999.999, default: 1.000.
Accuracy: ADC: 0.03% Full Scale ±1 count,
AAC: 0.1% Full Scale ±1 count,
VDC: 0.05% Full Scale ±1 count,
VAC: 0.15% Full Scale ±1 count, square root & programmable exponent accuracy range: 10-100% of calibrated span
Temperature Drift: 0.005% of calibrated span/°C max from -40 to 65°C ambient
Signal Input Conditioning: Linear, square root, programmable exponent, or round horizontal tank volume calculation.
Multi-Point Linearization: 2 to 32 points for Channel A and V
Low-Flow Cutoff: 0-999999 (0 disables cutoff function). Independent for Channel A and V.
Decimal Point: Up to five decimal places or none: *d.ddddd*, *dd.dddd*, *ddd.ddd*, *dddd.dd*, *ddddd.d*, or *dddddd*.
Calibration Range:

Input Channel	Input Range	Minimum Span Input 1 & Input 2
A	+/- 0-5 ADC/0-5 AAC	+/- 0.005 ADC/0.010 AAC
V	+/- 0-300 VDC/0-300 VAC	+/- 0.1 VDC/0.3

Note: An error message will appear if the input 1 and input 2 signals are too close together.
Input Impedance: Voltage Input: greater than 3 MΩ.
Current Input: 0.01 Ω.
Input Overload: Voltage input protected up to 500 VDC
Current input protected up to 10 A by a 10A/300V fast acting non-resettable fuse. Fuse is NOT resettable after a fault; unit must be factory reconditioned.
F4 Digital Input Contacts: 3.3 VDC on contact. Connect normally open contacts across F4 to COM.
F4 Digital Input Logic Levels: Logic High: 3 to 5 VDC
Logic Low: 0 to 1.25 VDC

Relays

Rating: 2 or 4 SPDT (Form C) internal and/or 4 SPST (Form A external; rated 3 A @ 30 VDC and 125/250 VAC resistive load; 1/14 HP (≈ 50 watts) @ 125/250 VAC for inductive loads such as contactors, solenoids, etc.

Noise Suppression: Noise suppression is recommended for each relay contact switching inductive loads.

Relay Assignment: Each relay independently assigned to Ch-A, Ch-V, CH-P, or Modbus

Deadband: 0-100% of span, user programmable

High or Low Alarm: User may program any alarm for high or low trip point. Unused alarm LEDs and relays may be disabled (turned off).

Relay Operation: automatic (non-latching), latching (requires manual acknowledge), sampling (based on time), pump alternation control (2 to 8 relays), Off (disable unused relays and enable interlock feature, manual on/off control mode).

Relay Reset: User selectable via front panel buttons or digital inputs, or PC.
1. Automatic reset only (non-latching), when input passes the reset point.
2. Automatic + manual reset at any time (non-latching).
3. Manual reset only, at any time (latching).
4. Manual reset only after alarm condition has cleared (latching).
Note: Front panel button or digital input may be assigned to acknowledge relays programmed for manual reset.

Time Delay: 0 to 999.9 seconds, on & off relay time delays. Programmable and independent for each relay.

Fail-Safe Operation: Programmable and independent for each relay. *Note: Relay coil is energized in non-alarm condition. In case of power failure, relay will go to alarm state.*

Auto Initialization: When power is applied to the meter, relays will reflect the state of the input to the meter.

Break Condition Operation: Relay condition when sensor break detected. Programmable independently for each relay as On, Off, or Ignore (maintain last condition).

Modbus® RTU Serial Communications

Meter Address/Slave ID: 1 - 247
Baud Rate: 300 - 19,200 bps
Transmit Time Delay: Programmable between 0 and 199 ms
Data: 8 bit (1 start bit, 1 or 2 stop bits)
Parity: Even, odd, or none with 1 or 2 stop bits
Byte-to-Byte Timeout: 0.01 - 2.54 seconds
Turn Around Delay: Less than 2 ms (fixed)

Isolated 4-20 mA Transmitter Output

Output Source: Process channel A, V, or P, max or min for channel A, V, or highest or lowest max or min of A and V, set points 1-8, Modbus input, or manual control mode

Scaling Range: 1.000 to 23.000 mA for any display range

Calibration: Factory calibrated: 4.000 to 20.000 = 4-20 mA output

Analog Output Programming: 23.000 mA maximum for all parameters: Overrange, underrange, max, min, and break

Accuracy: ± 0.1% of span ± 0.004 mA

Temperature Drift: 0.4 µA/°C max from 0 to 65°C ambient, 0.8 µA/°C max from -40 to 0°C ambient
Note: Analog output drift is separate from input drift.

Isolated Transmitter Power Supply: Terminals I+ & R: 24 VDC ± 10%. Isolated from the input at >500 V. May be used to power the 4-20 mA output or other devices. All models rated @ 40 mA max.

External Loop Power Supply: 35 VDC maximum

Output Loop Resistance:

Power supply	Minimum	Maximum
24 VDC	10 Ω	700 Ω
35 VDC (external)	100 Ω	1200 Ω

MOD-LH Light / Horn

Light Colors:
MOD-LHRB1: Red
MOD-LHGB1: Green
MOD-LHYB1: Yellow
MOD-LHBB1: Blue
MOD-LHWB1: White
MOD-LH5C: User selectable: red, green, yellow, blue, white
MOD-LH3C-RYG: 1 layer each of red, yellow, green (consult factory for other colors available)

Light Action: Can be wired to flash (not available on MOD-LH5CB1) or stay steady on

Light / Horn & Reset Button Installation: When MOD-LH is ordered with an enclosure, the user performs installation and wiring of Light / Horn and Reset Button in pre-drilled holes.

Horn: 85 dB

Rating: IP 65

Light / Horn Independence: Light and horn can be controlled via separate relays

Power Requirement: 24 VDC from external power supply such as PDA1024-01.

Reset / Silence Button: NEMA 4X; may be wired to F4 terminal on PROVU. F3 front panel button can also be used to reset relays.

Reset Button Labels: The Light / Horn accessory comes with 9 pre-printed message labels the user can affix under the red button: RESET, BATCH, ACK, TARE, SILENCE, STOP, START, PAUSE, START/STOP

Light / Horn Mounting Connection: M22

Hole Sizes: Light / Horn: 0.875" (22 mm);
Reset Button: 0.630" (16 mm)

Cable Length: 3.28 feet (1 meter)

Operating Temperature Range: -5 to 40°C (23 to 104°F)

MeterView Pro Programming Software

System Requirements:
   Microsoft® Windows® XP/Vista/7/8/10

Communications:
   Onboard USB (firmware version 4.0 or higher),
   RS-232 Adapter or RS-485 Adapter

Meter Address: 1 - 247

Reports:
   • Data logging: Save as CSV file format
   • Configuration: Save as PDC file format or print configuration

Baud Rate: 300 - 19,200 bps

Configuration: One meter at a time

Protocol:
   Modbus RTU (requires PROVU firmware version 4.0 or higher)

*Note: Windows® 32/64-bit operating systems

ORDERING INFORMATION

PROVU PD6400 • Standard Models		
85-265 VAC Model	**12-24 VDC Model**	**Options Installed**
PD6400-6R0	PD6400-7R0	None
PD6400-6R2	PD6400-7R2	2 Relays
PD6400-6R3	PD6400-7R3	4-20 mA Output
PD6400-6R4	PD6400-7R4	4 Relays
PD6400-6R5	PD6400-7R5	2 Relays & 4-20 mA Output
PD6400-6R7	PD6400-7R7	4 Relays & 4-20 mA Output

PROVU PD6400 • SunBright Display Models		
85-265 VAC Model	**12-24 VDC Model**	**Options Installed**
PD6400-6H0	PD6400-7H0	None
PD6400-6H2	PD6400-7H2	2 Relays
PD6400-6H3	PD6400-7H3	4-20 mA Output
PD6400-6H4	PD6400-7H4	4 Relays
PD6400-6H5	PD6400-7H5	2 Relays & 4-20 mA Output
PD6400-6H7	PD6400-7H7	4 Relays & 4-20 mA Output

Accessories	
Model	**Description**
MOD-LHRB1	Red[2] Light / Horn and Reset Button with Holes Drilled for Light / Horn and Reset Button in Enclosure[1]
PDA-BUTTON	Momentary Pushbutton (Red, Green, or Black)
PDA-LHR	Red[2] Light / Horn
PDA1002	DIN Rail Mounting Kit for Two Expansion Modules
PDA1004	4-Relay Expansion Module
PDA1011	Dual Isolated 4-20 mA Expansion Module
PDA1044	4 Digital Inputs & 4 Digital Outputs Module
PDA1232	RS-232 Serial Adapter
PDA1485	RS-485 Serial Adapter
PDA7485-I	RS-232 to RS-422/485 Isolated Converter
PDA8232-N	USB to RS-232 Non-Isolated Converter
PDA8485-I	USB to RS-422/485 Isolated Converter
PDX6901	Suppressor (snubber): 0.01 µF/470 Ω, 250 VAC

1. When this MOD is ordered, the enclosure comes pre-drilled with holes for Light / Horn and Reset Button to be installed by user. Meter and enclosure are sold separately. The Light / Horn hole is in the back left corner of the enclosure and the Reset button is centered on the front of the enclosure about an inch off the bottom of the door. If the user would prefer to mount these items in different locations, order the PDA-LHR and the PDA-BUTTON1R separately and drill holes and mount as desired.
2. For other light color options see the MOD-LH Series manual (LIMMODLH).

NOTE: LIGHT / HORN MUST BE POWERED BY EXTERNAL POWER SUPPLY SUCH AS PDA1024-01.

PROVU Upgrade Cards	
Model	**Description**
PD1102	2 Relays
PD1103	4-20 mA Output[1]
PD1104	4 Relays
PD1105	2 Relays + 4-20 mA Output[1]
PD1107	4 Relays + 4-20 mA Output[1]

1. Output calibration required by user.
2. These upgrade cards are intended for customers who already have a meter and want to upgrade its functionality.

AC Current Transformers	
Model	**Description**
PDA6405-100	100 AAC Current Transformer with 0-5 AAC Output
PDA6405-200	200 AAC Current Transformer with 0-5 AAC Output
PDA6405-400	400 AAC Current Transformer with 0-5 AAC Output
PDA6405-600	600 AAC Current Transformer with 0-5 AAC Output
PDA6405-1000	1000 AAC Current Transformer with 0-5 AAC Output

PDA2360 Series Control Stations	
Model	**Description**
PDA2360-E	Emergency Stop Button
PDA2361-A	1 Black Ack Button
PDA2364-MRUE	4 Black Buttons: Menu, Right, Up, Enter

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⚠ **WARNING**

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