

POWER Xpress® Plus

Power Supply + USB Modem for HART® Devices

User Manual



CE

POWER Xpress[®] Plus

Model H100USB-M

Power Supply + USB Modem for HART[®] Devices

PowerXpress Plus + USB Modem for HART[®] Devices

Overview

Congratulations on purchasing the PowerXpress *Plus* Power Supply + USB Modem for HART[®] Devices. The PowerXpress *Plus* allows you to power and communicate with HART[®] instruments using a personal computer's USB port, and HART[®] communication software or an external modem or handheld communicator.

The modem is isolated, and fully HART compliant. The PowerXpress *Plus* utilizes the power available from your PC's USB 2.x port and converts it to 24Vdc to provide 2-wire power and/or modem communications for HART[®] field devices. The power supply includes the necessary HART[®] communication load resistance and provides a quick modem and/or milliamp meter connection using standard min-grabbers. With this setup, all the necessary connections to the device are made with a single pair of mini-grabbers.

The PowerXpress *Plus* operates on as little as 30 mA of USB supplied power which is well within the capabilities of all PCs using the USB 2.0 standard. The PowerXpress *Plus* utilizes the MACTek VIATOR USB HART Interface and Software Driver included on the VIATOR Interface Installation CD. The driver creates a link between the USB port and the HART communication software by generating a virtual communications port.

The Power Supply and Modem Interface are enclosed in a compact rugged case, suitable for the industrial environments. You connect the PowerXpress *Plus* unit to your computer with an integral cable using the USB plug and connect to your field device with a 6 foot detachable 'Y' cable using the two Minigrabber[®] test clips.

The product can be used in 3 different modes: 1) Power + USB Modem, 2) Modem Only, or 3) Power Only. (See "Connecting to a HART Device")

For power only mode, you can use a PC USB port or the enclosed 110 – 220 VAC wall power adapter provided in the kit.

Getting Started

Hardware and Software Requirements:

- PowerXpress *Plus* + USB Modem for HART Devices - Model H100USB-M
- Computer with one or more USB ports
- Windows operating system software: (Except Windows NT)
- VIATOR+ Interface Installation CD

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- 3rd Party HART application software (for example: device configuration or asset management application that includes the device DD, EDD or DTM for communication with HART instruments)

HART Communication Software

HART communication software must be capable of recognizing virtual Com ports to work with the Interface.

DOS and Windows NT based applications do not recognize USB virtual com ports and are therefore not supported.

Your PowerXpress Plus Power Supply + USB Modem Kit includes:

- PowerXpress *Plus* USB HART Interface
- VIATOR Series Interface Installation CD
- Wall Power Adapter (110-220 VAC)
- 6-foot “Y” cable set with male plug and 2 test clips with mini-grabbers
- Instruction Manual

If any of these items is missing or damaged, please contact PowerXpress Solutions.

Connecting to a HART Device

The PowerXpress *Plus* has an integral cable with a USB plug for connection to the computer and a 6-foot ‘Y’ cable set with two test clips and a right angle male plug.

The product can be used in 3 different modes:

1. Power + USB Modem – used to power and communicate with a HART device for configuration or diagnostics.
2. Modem Only – used when a device is already powered (i.e. system loop power)
3. Power Only – powers the device with separate handheld or USB modem connection.

The modem connection to the HART network is transformer-isolated and polarity-insensitive when not using the power option. Transformer isolation allows you to connect the modem across the HART device power terminals. Polarity insensitivity means that you may attach either test clip to either side of the HART device or load Resistor when using the modem only connector.

When the PowerXpress *Plus* is providing power to the device, connect the Red (+) and Black (-) test clips to the appropriate power supply terminals on the device. The

POWER Xpress[®] Plus

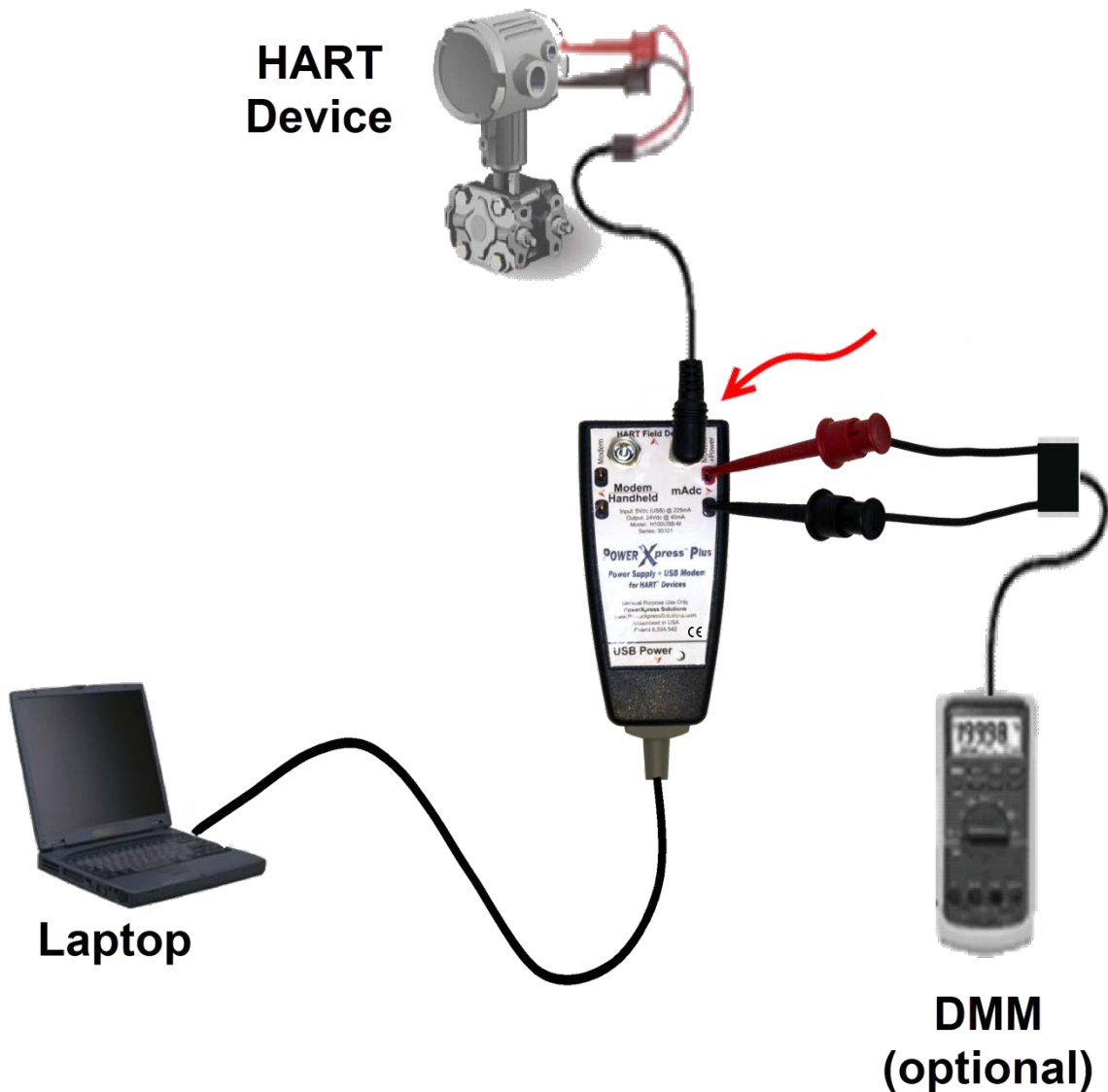
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PowerXpress Plus provides the HART load resistance simplifying the connection requirements.

Select “Modem” or “Modem + Power” mode by plugging the ‘Y’ cable into the correct jack as shown below.

Connecting to a HART Device – (Modem + Power Mode) PowerXpress Plus Providing Power and PC Modem Communications



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Connecting to a HART Device – (Modem Only Mode) PowerXpress Plus Providing PC Communications Only

For use with a Device Connected to a Loop or a Self-Powered Device

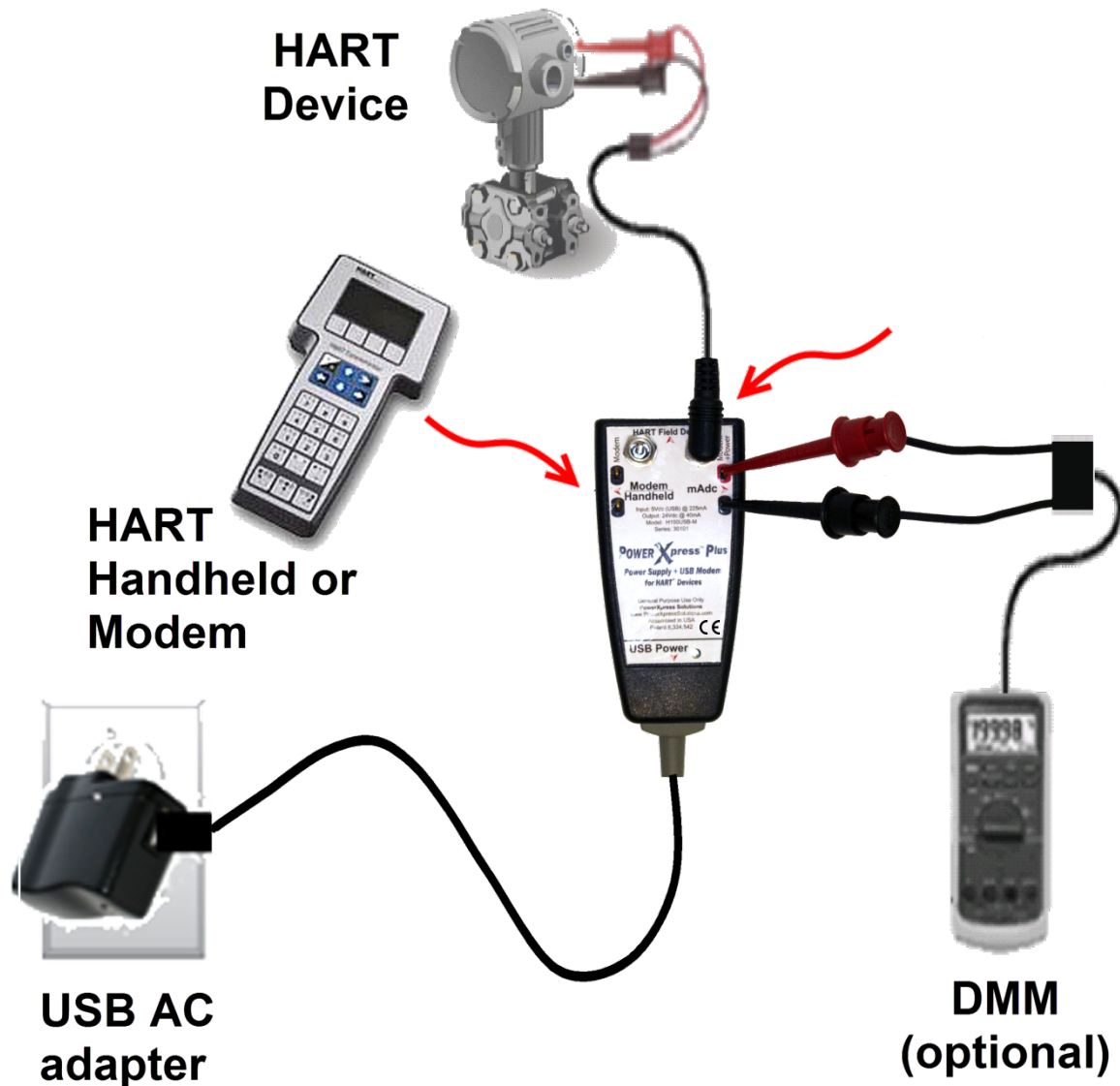


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Power Supply + USB Modem for HART[®] Devices

Connecting to a HART Device – (Power Only Mode) PowerXpress Plus Providing Power with Handheld or External Modem providing HART Communication



Standby and Hibernate Power Saving Modes

The VIATOR Modem Interface driver supports all portable computer power saving modes. However, interruption of HART communication software by a Standby or Hibernate mode may necessitate restarting the HART communication software to continue HART communications.

Technical Specifications

Electrical Specifications:

Power Supply: No external supply required; powered by the USB 2.0 port.

Supply Current: 5V @ 225mA providing power
5V @ 30mA modem only

Connections:

Computer Industry standard IBM-PC compatible USB A connector

HART Test cable with Two Mini-grabber test clips, with polarity sensitive termination when providing power.

Output Level: Fully HART compliant. 0.5 +/- .1Vpp trapezoidal wave @1200/2200 Hz.

Approvals:

CE Conformity EMC Directive (2004/108/EC) IEC 61326

Software Requirements:

Operating System: Windows 98 (second edition), Windows ME,
Windows 2000, Windows XP, Windows 7, Windows 8
(Windows NT is **not** supported as NT does not support USB)

HART Cable:

Cable: Jacketed, twisted pair wire about 4.5 ft long and then split into two independent test leads 1.5 ft long for a total cable length of about 6 ft.

Connection Mini-grabber test clips, with polarity sensitive termination when providing power.

USB Cable:

Cable: Jacketed, Power 24AWG, Signal 28AWG twisted, Double shielded, 1 ft long.

Connector USB A Male

Environmental Specifications:

Temperature: Operating: 0° C to 50° C (32° F to 122° F)

Storage: -40° C to 85° C (-40° F to 185° F)

Humidity: 0% to 95% relative humidity (non-condensing).

Area Classification: General Purpose

Physical Dimensions:

Enclosure: 95 x 48 x 12.7 mm

ABS enclosure suitable for industrial use.

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USB Pin Connections

	Pin #	Description
Data D+	3	Differential full speed USB data at 12MHz, normally high
Data D-	2	Differential full speed USB data at 12MHz, normally low
VBUS	1	5V
GND	4	Ground



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CUSTOMER REGISTRATION FAXBACK FORM

Dear PowerXpress Plus® Customer:

To register your product, please provide the information requested below and scan/email this registration form to **PowerXpress Solutions** at Chuck@PowerXpressSolutions.com. This information will enable us to serve you better with timely distribution of product updates and new product information.

Sincerely,
PowerXpress Solutions

TO: Customer Registration, **PowerXpress Solutions**
PHONE: (678) 637-9062
EMAIL: Chuck@PowerXpressSolutions.com
NAME: _____
E-MAIL: _____
COMPANY: _____
STREET: _____
CITY: _____ STATE: _____ ZIP: _____
COUNTRY: _____
PHONE: _____ FAX: _____
DATE OF PURCHASE: _____
PURCHASED: PowerXpress Plus Model Number(s) _____
PowerXpress Plus Serial Number(s) _____
PURCHASED FROM WHOM? _____
COMMENTS: _____

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PowerXpress Solutions
Phone: 678-637-9062
www.PowerXpressSolutions.com
email: Info@PowerXpressSolutions.com
