Point of Utilization Monitoring Adapter (PUMA)

User Guide

WARNING

Death, serious injury, or fire hazard could result from improper connection of this accessory. Read and understand these instructions and the applicable Dranetz-BMI or Original Equipment User's Guide before connecting this accessory. Follow all installation and operating instructions while using this accessory.

Connection of this instrument must be performed in compliance with the National Electrical Code (ANSI/NFPA 70-2008) of USA and any additional safety requirements applicable to your installation.

Installation, operation, and maintenance of this instrument must be performed by qualified personnel only. The National Electrical Code defines a qualified person as "one who has the skills and knowledge related to the construction and operation of the electrical equipment and installations, and who has received safety training on the hazards involved."

Qualified personnel who work on or near exposed energized electrical conductors must follow applicable safety related work practices and procedures including appropriate personal protective equipment in compliance with the Standard for Electrical Safety Requirements for Employee Workplaces (ANSI/NFPA 70E-2009) of USA and any additional workplace safety requirements applicable to your installation.

Published by Dranetz-BMI
1000 New Durham Road
Edison, NJ 08818-4019 USA
Telephone: 1-800-372-6832 or 732-287-3680
Fax: 732-248-1834
Web site: www.dranetz-bmi.com

Printed in the United States of America.

P/N UG-PUMA-US Rev A 08.15.09

ADVERTENCIA
Una conexión incorrecta de este instrumento puede producir la muerte, lesiones graves y riesgo de incendio. Lea y entienda este manual antes de conectar. Observe todas las instrucciones de instalación y operación durante el uso de este instrumento.

La conexión de este instrumento a un sistema eléctrico se debe realizar en conformidad con el Código Eléctrico Nacional (ANSI/NFPA 70-2008) de los E.E.U.U., además de cualquier otra norma de seguridad correspondiente a su establecimiento.

La instalación, operación y mantenimiento de este instrumento debe ser realizada por personal calificado solamente. El Código Eléctrico Nacional define a una persona calificada como "una que esté familiarizada con la construcción y operación del equipo y con los riesgos involucrados."

El personal cualificado que trabaja encendido o acerca a los conductores eléctricos energizados expuestos debe seguir prácticas y procedimientos relacionados seguridad aplicable del trabajo incluyendo el equipo protector personal apropiado en conformidad con el estándar para los requisitos de seguridad eléctricos para los lugares de trabajo del empleado (ANSI/NFPA 70E-2009) de los E.E.U.U. y cualquier requisito de seguridad adicional del lugar de trabajo aplicable a su instalación.

AVERTISSEMENT
Si l'instrument est mal connecté, la mort, des blessures graves, ou un danger d'incendie peuvent s'en suivre. Lisez attentivement ce manuel avant de connecter l'instrument. Lorsque vous utilisez l'instrument, suivez toutes les instructions d'installation et de service.

Cet instrument doit être connecté conformément au National Electrical Code (ANSI/NFPA 70-2008) des Etats-Unis et à toutes les exigences de sécurité applicables à votre installation.

Cet instrument doit être installé, utilisé et entretenu uniquement par un personnel qualifié. Selon le National Electrical Code, une personne est qualifiée si "elle connaît bien la construction et l'utilisation de l'équipement, ainsi que les dangers que cela implique."

Le personnel qualifié qui travaillent dessus ou s'approchent des conducteurs électriques activés exposés doit suivre des pratiques en matière et des procédures reliées par sûreté applicable de travail comprenant le matériel de protection personnel approprié conformément à la norme pour des conditions de sûreté électriques pour les lieux de travail des employés (ANSI/NFPA 70E-2009) des Etats-Unis et toutes les conditions de sûreté additionnelles de lieu de travail applicables à votre installation.

WARNUNG
Der falsche Anschluß dieses Gerätes kann Tod, schwere Verletzungen oder Feuer verursachen. Bevor Sie dieses Instrument anschließen, müssen Sie die Anleitung lesen und verstanden haben. Bei der Verwendung dieses Instruments müssen alle Installation- und Betriebsanweisungen beachtet werden.

Der Anschluß dieses Instruments muß in Übereinstimmung mit den nationalen Bestimmungen für Elektrizität (ANSI/NFPA 70-2008) der Vereinigten Staaten, sowie allen weiteren, in Ihrem Fall anwendbaren Sicherheitsbestimmungen, vorgenommen werden.

Installation, Betrieb und Wartung dieses Instruments dürfen nur von Fachpersonal durchgeführt werden. In dem nationalen Bestimmungen für Elektrizität wird ein Fachmann als eine Person bezeichnet, welche "mit der Bauweise und dem Betrieb des Gerätes sowie den dazugehörigen Gefahren vertraut ist."

Qualifiziertes Personal, das an bearbeiten oder herausgestellte angezogene elektrische Leiter sich nähern, muß anwendbare Sicherheit bezogener Arbeit Praxis und Verfahren einschließlich passende persönliche schützende Ausrüstung gemäß dem Standard für elektrische Sicherheitsauflagen für Angestellt-Arbeitsplätze (ANSI/NFPA 70E-2009) der Vereinigten Staaten und alle zusätzlichen Arbeitsplatzsicherheitsauflagen folgen, die auf Ihre Installation anwendbar sind.

Safety Summary

Definitions

WARNING statements inform the user that certain conditions or practices could result in loss of life or physical harm.

CAUTION statements identify conditions or practices that could harm the PUMA, its data, other equipment, or property.

NOTE statements call attention to specific information.

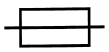
Symbols

The following International Electrotechnical Commission (IEC) symbols are marked on the top and rear panel in the immediate vicinity of the referenced terminal or device:

 Caution, refer to accompanying documents (this manual).

 Alternating current (ac) operation of the terminal or device.

 Ground conductor terminal.

 Fuse symbol

Safety Precautions

The following safety precautions must be followed whenever any type of connection is being made to the instrument.

- Connect the green safety (earth) ground first, before making any other connections.
- When connecting to electric circuits or pulse initiating equipment, open their related breakers. DO NOT install any connection of the instrument on live power lines.
- Connections must be made to the instrument first, then connect to the circuit to be monitored.
- Wear safety glasses and insulated gloves when making connections to power circuits.
- Hands, shoes and floor must be dry when making any connection to a power line.
- Make sure the unit is turned OFF before connecting probes to the rear panel.
- Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective.
- If the equipment is used in a manner not specified in this user's guide, the protection provided by the equipment may be impaired. These safety precautions are repeated where appropriate throughout this manual.

Medidas de seguridad

Las medidas de seguridad siguientes deberán observarse cuando se realice cualquier tipo de conexión al instrumento.

- Antes de hacer cualquier conexión, deberá enchufarse el conector de seguridad verde a tierra.
- Cuando se haga conexiones a circuitos eléctricos o a equipo de activación por pulso, deberá abrirse sus respectivas cajas de seguridad. NO deberá hacerse ninguna conexión del instrumento en líneas eléctricas bajo tensión.
- Las conexiones deberán hacerse primero al instrumento y, luego, al circuito a ser monitorizado.
- Al hacer conexiones a circuitos eléctricos, deberá utilizar anteojos y guantes protectores.
- Sus manos, zapatos y el piso deberán estar secos en todo momento en que se haga una conexión a un cable eléctrico.
- Verifique que la unidad esté DESACTIVADA antes de conectar sondas en el panel posterior.
- Previo a cada uso, deberá verificarse que los cables no estén rotos y que el material aislante no tenga rajaduras. Reemplace de inmediato cualquier parte defectuosa.
- Si el equipo es utilizado en una manera no especificado en la guía de este usuario, la protección proporcionada por el equipo puede ser dañada. Estas medidas de seguridad son repetidas donde apropia a través de este manual.

Mesures de Sécurité

Les mesures de sécurité suivantes doivent être prises chaque fois qu'un type de connexion quelconque est effectué sur l'instrument.

- Connecter d'abord la prise de terre de sécurité verte (terre) avant d'effectuer toute autre connexion.
- Ouvrir les disjoncteurs correspondants lors d'une connexion à des circuits électriques ou à des équipement de génération d'impulsions. NE PAS effectuer de connexion d'instrument sur des lignes électriques sous tension.
- Une fois toutes les connexions de l'instrument effectuées, connecter au circuit à contrôler.
- Porter des lunettes de protection et des gants isolants pour effectuer des connexions aux circuits électriques.
- S'assurer que les mains, les chaussures et le sol soient secs lors de connexions à une ligne électrique.
- S'assurer que l'unité est ÉTEINTE avant de connecter les sondes au panneau arrière.
- Inspecter tous les câbles, avant chaque utilisation, pour s'assurer que les isolants ne sont pas coupés ou fendus. Remplacer immédiatement tous les équipements défectueux.
- Si l'équipement est utilisé dans une manière pas spécifié dans ce guide de l'utilisateur, la protection fournie par l'équipement pourrait être diminuée. Ces précautions de sécurité sont répétées où s'approprie à travers ce manuel.

Sicherheitsvorkehrungen

Die folgenden Sicherheitsvorkehrungen sind immer dann zu befolgen, wenn eine Verbindung zum Instrument hergestellt wird.

- Schließen Sie zuerst die grüne Sicherheits-/Erdleitung an, bevor Sie eine andere Verbindung herstellen.
- Öffnen Sie beim Anschluß an elektrische Stromkreise oder Impulsauslösungseinrichtungen die entsprechenden Unterbrecher. Es dürfen KEINE Anschlüsse an das Instrument unter stromführenden Spannungsleitungen montiert werden.
- Die Verbindungen müssen zuerst am Instrument und danach an der zu überwachenden Schaltung hergestellt werden.
- Tragen Sie Schutzbrillen und Isolierhandschuhe, wenn Sie Anschlüsse an den Stromkreisen vornehmen.
- Hände, Schuhe und Fußboden müssen trocken sein, wenn Sie Anschlüsse an den Stromkreisen durchführen.
- Stellen Sie sicher, daß das Gerät AUSgeschaltet ist, bevor Sie an der rückwärtigen Konsole Meßfühler anschließen.
- Prüfen Sie vor jedem Gebrauch alle Kabel auf Bruchstellen und Risse in der Isolierung. Wechseln Sie schadhafte Kabel sofort aus.
- Wenn die Ausrüstungen in einer Weise benutzt wird, die nicht in diesem Benutzerhandbuch angegeben worden ist, der Schutz versorgt durch die Ausrüstungen darf verschlechtert werden. Diese Sicherheitsmaßnahmen sind wiederholt, wo sich durch dieses Handbuch aneignet.

TABLE OF CONTENTS

INTRODUCTION

Point of Utilization Monitoring Adapter

The Point of Utilization Monitoring Adapter (PUMA) allows users to safely connect a monitor in series with a particular piece of equipment to evaluate its load characteristics, energy usage and efficiency, and any potential power quality related issues. The PUMA is compatible with several portable and handheld instruments from Dranetz-BMI (see list of instruments compatible with PUMA on page 31 Technical Specifications). This User Guide describes the voltage and current interface between PUMA and the PowerXplorer® PX5, PowerGuide® 4400, and PowerVisa®, and how PUMA assists in the connection and monitoring of a single-phase load.

Making wiring connections have been simplified by allowing the user to connect the voltage outputs of the PUMA directly to the voltage inputs of the PX5/4400/PowerVisa. Current monitoring has also been simplified with internal CTs of the PUMA via an interface cable connecting to the current inputs of the PX5/4400/PowerVisa.

In addition, the PUMA can be utilized with other test and measurement equipment to monitor single-phase loads.

If using any other device, please refer to the original Equipment Manufacturer's User's Guide for additional information concerning installation, operation, and connections of your instrument.

Getting Started

Users may choose from the following PUMA packages available from Dranetz-BMI.

- PUMA-US
  consists of PUMA only.

- PUMA-USTR
  includes PUMA and DB9MTOTR current cable.

- PUMA-USTRV
  includes PUMA, DB9MTOTR current cable, and voltage cables consisting of three 114013-G1 jumpers, one 6ft red banana to banana P/N 900366, one 6ft white banana to banana P/N 900370, and one 6ft gray banana to banana P/N 900369.

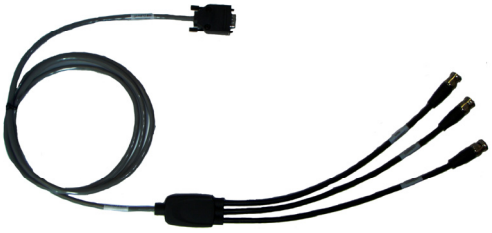
- PUMA-USBNC
  includes PUMA and DB9MTOBNC current cable.

- PUMA-USBNCV
  includes PUMA, DB9MTOBNC current cable, and voltage cables consisting of three 114013-G1 jumpers, one 6ft red banana to banana P/N 900366, one 6ft white banana to banana P/N 900370, and one 6ft gray banana to banana.

DB9MTOTR – Current Cable, DB9 Male to TR

(included with PUMA-USTR and PUMA-USTRV Only)

DB9MTOBNC – Current Cable, DB9 Male to BNC



(included with PUMA-USBNC and PUMA-USBNCV Only)

Voltage Cables

(included with PUMA-USTRV and PUMA-USBNCV Only)

BNC to 4 mm Adapter

Available as an optional accessory (DB P/N 67.9537-21)
for connection to DB9MTOBNC cable and multi-meter type equipment

CONNECTION PROCEDURE

WARNING

DO NOT fuse any ground connection.

To reduce the risk of fire, electrical shock, or physical injury it is strongly recommended to make connections to the instrument with all circuits de-energized. If it is necessary to make connections on energized circuits they must be made by Qualified personnel ONLY.

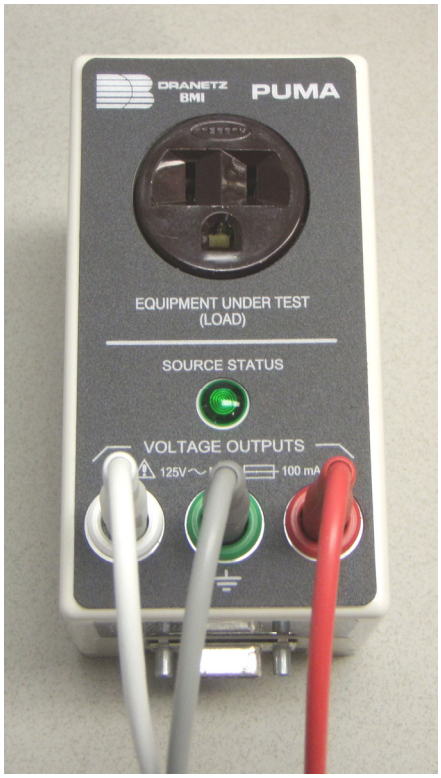
The National Electrical Code defines a qualified person as “one who has the skills and knowledge related to the construction and operation of the electrical equipment and installations, and who has received safety training on the hazards involved.”

Qualified personnel that work on or near exposed energized electrical conductors must follow applicable safety related work practices and procedures including appropriate personal protective equipment in compliance with the Standard for Electrical Safety Requirements for Employee Workplaces (ANSI/NFPA 70E-2009) of USA and any additional workplace safety requirements applicable to your installation.

Always refer to the applicable User’s Guide for additional information concerning installation, operation, and connections of Dranetz-BMI or Original Equipment Manufacturer’s instructions applicable to your installation.

Making Voltage Connections to PUMA

Connect to the PUMA first and then to the monitoring instrument with all power “OFF”.



- Line

Connect Red 4mm, 6ft banana to banana test lead (DB P/N 900366) to the Red terminal of the PUMA accessory.

- Neutral

Connect White 4 mm, 6 ft banana to banana test lead (DB P/N 900370) to the White terminal of the PUMA accessory.

- Ground

Connect Gray 4 mm, 6 ft banana to banana test lead (DB P/N 900369) to the Green terminal of the PUMA accessory.

Making Voltage Connections to PX5/4400/PowerVisa

If monitoring Line to Neutral, Line to Ground, and Neutral to Ground, proceed as follows.

Use three Interconnect Jumpers (P/N 114013-G1) supplied with the PX5/4400/PowerVisa cable set and connect as follows:

- Line Reference

Connect interconnect jumper from CH A (+) to CH B (+).

- Neutral Reference

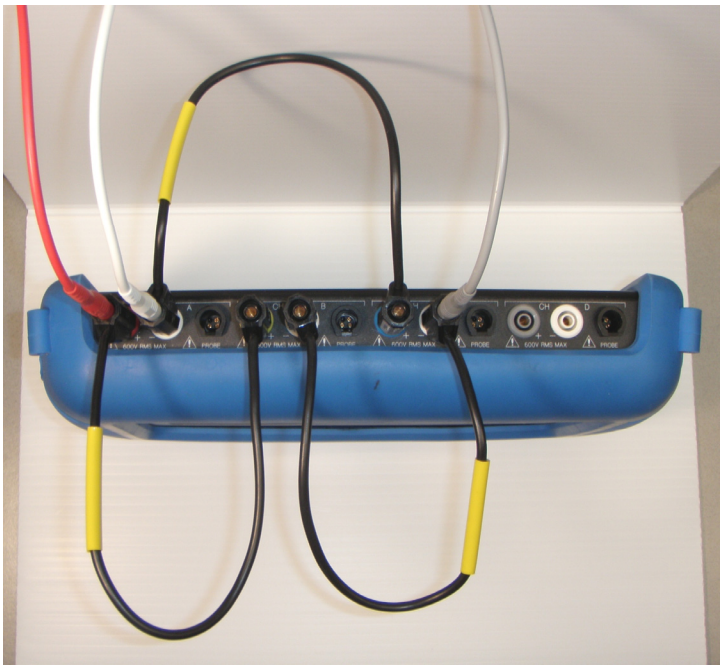
Connect interconnect jumper from CH A (-) to CH C (+).

- Ground Reference

Connect interconnect jumper from CH B (-) to CH C (-).

Connecting the PX5/4400/PowerVisa and PUMA

Once proper connections have been made at the PUMA and at the PX5/4400/PowerVisa, it is necessary to connect the two devices to complete the process.



➨ Line
Connect Red 4mm, 6ft banana to banana test lead from PUMA to CH A (+) Red terminal of the PX5/4400/PowerVisa.

➨ Neutral
Connect White 4 mm, 6 ft banana to banana test lead from PUMA to CH A (-) White terminal of the PX5/4400/PowerVisa.

➨ Ground
Connect Gray 4 mm, 6 ft banana to banana test lead from PUMA to CH C (-) White terminal of the PX5/4400/PowerVisa.

Making Current Connections to PX5/4400/PowerVisa

There are two cable types available to be able to monitor Line, Neutral, or Ground currents:

DB9MTOTR (P/N 118007-G1) - Current Cable, DB9 Male to TR

DB9MTOBNC (P/N 118007-G2) - Current Cable, DB9 Male to BNC

- Line (CHA)

Connect circular connector labeled **CH A Line Current** of applicable cable to channel A of the PX5/4400/PowerVisa.
This connection will allow monitoring of line to ground current.

- Ground (CH B)

Connect circular connector labeled **CH B Ground Current** of applicable cable to channel B of the PX5/4400/PowerVisa.
This connection will allow monitoring any current flowing through the ground.

- Neutral (CH C)

Connect circular connector labeled **CH C Neutral Current** of applicable cable to channel C of the PX5/4400/PowerVisa.
This connection will allow monitoring of the neutral to ground current.

Applying Power

WARNING
Make sure all connections are properly connected before power is applied to the measurement circuits. Failure to do so could result in risk of fire, electrical shock, or physical injury.

1. Plug in the PUMA adapter to an ac outlet.

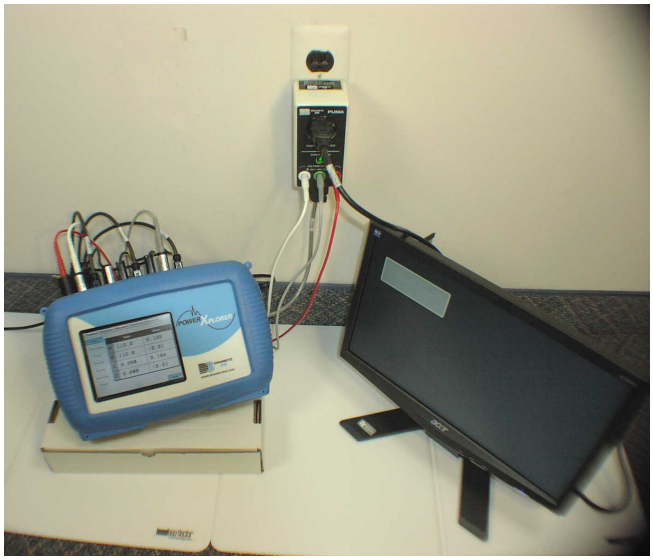
2. Power on the PX5/4400/PowerVisa.

3. Plug in the equipment under test and power on the equipment.

   Refer to the applicable Dranetz-BMI or Original Equipment Manufacturer's User's Guide for additional information concerning installation, operation, and connections of your instrument.

4. Setup the PX5/4400/PowerVisa using the wizard setup described in the next section of this user guide under the **Basic Setup Menu** heading (refer to page 26 of this guide).

5. You can will now be able to measure or monitor V, I, VARS, VA, and W parameters.



NOTE: Above illustration shown is for the Dranetz-BMI PowerXplorer PX5. Refer to the applicable Dranetz-BMI or Original Equipment Manufacturer's User's Guide for additional information concerning installation, operation, and connections of your instrument.

Page Intentionally left blank

Making Voltage Connections to PUMA and other test equipment

When using PUMA with other non-Dranetz-BMI instrumentation refer to the original equipment user guide for additional information that applies to your equipment.

In this example a multi-meter is used to make measurements and since the meter does not have multiple inputs it is necessary to make each desired measurement one at a time.

WARNING
Test leads and any wiring devices used with PUMA not provided by Dranetz-BMI must be rated applicable for your application for both voltage and current parameters and must be constructed of agency rated materials (such as UL, CSA, or VDE).

Line to Neutral measurement

Connect Red 4mm, 6ft banana to banana test lead (DB P/N 900366) or equivalent to the Red terminal of the PUMA accessory.

Connect White 4mm, 6ft banana to banana test lead (DB P/N 900370) or equivalent to the White terminal of the PUMA accessory.

WARNING
Make sure all connections are properly connected before power is applied to the measurement circuits. Failure to do so could result in risk of fire, electrical shock, or physical injury.

1. Set the applicable voltage setting to the multi-meter and connect the red voltage test lead to the PUMA and the other end to the multi-meter “V” voltage terminal. Connect the white voltage test lead to the “COM” common terminal and then power on the meter.

2. Plug in the PUMA adapter to an ac outlet.

3. Plug in the equipment under test and power on the equipment.

   Refer to the applicable Dranetz-BMI or Original Equipment Manufacturer’s User’s Guide for additional information concerning installation, operation, and connections of your instrument.

Line to Ground measurement

Connect Red 4mm, 6ft banana to banana test lead (DB P/N 900366) or equivalent to the Red terminal of the PUMA accessory.

Connect Gray 4mm, 6ft banana to banana test lead (DB P/N 900369) or equivalent to the Green terminal of the PUMA accessory.

1. Set the applicable voltage setting to the multi-meter and connect the red voltage test lead to the PUMA and the other end to the multi-meter “V” voltage terminal. Connect the gray voltage test lead to the “COM” common terminal and then power on the meter.

2. Plug in the PUMA adapter to an ac outlet.

3. Plug in the equipment under test and power on the equipment.

   Refer to the applicable Dranetz-BMI or Original Equipment Manufacturer’s User’s Guide for additional information concerning installation, operation, and connections of your instrument.

Neutral to Ground measurement

Connect White 4mm, 6ft banana to banana test lead (DB P/N 900370) or equivalent to the White terminal of the PUMA accessory.

Connect Gray 4mm, 6ft banana to banana test lead (DB P/N 900369) or equivalent to the Green terminal of the PUMA accessory.

1. Set the applicable voltage setting to the multi-meter and connect the white voltage test lead to the PUMA and the other end to the multi-meter “V” voltage terminal. Connect the gray voltage test lead to the “COM” common terminal and then power on the meter.

2. Plug in the PUMA adapter to an ac outlet.

3. Plug in the equipment under test and power on the equipment.

   Refer to the applicable Dranetz-BMI or Original Equipment Manufacturer’s User’s Guide for additional information concerning installation, operation, and connections of your instrument.

Making Current Connections to PUMA and other test equipment

When using PUMA with other non-Dranetz-BMI instrumentation refer to the original equipment user guide for additional information that applies to your equipment.

In this example a multi-meter is used to make measurements and since the meter does not have multiple inputs it is necessary to make each desired measurement one at a time.

WARNING
Test leads and any wiring devices used with PUMA not provided by Dranetz-BMI must be rated applicable for your application for both voltage and current parameters and must be constructed of agency rated materials (such as UL, CSA, or VDE).

WARNING
If using a standard multi-meter or other test equipment that can only make one current measurement at a time it is necessary to power off the PUMA and other equipment before making any individual single current measurements.

Line Current measurement

Connect White 4mm, 6ft banana to banana test lead (DB P/N 900366) or equivalent to the White terminal of the PUMA accessory.

Connect Gray 4mm, 6ft banana to banana test lead (DB P/N 900369) or equivalent to the Green terminal of the PUMA accessory.

1. Connect the **DB9MTOBNC** cable to the DB9 connector of the PUMA and secure the cable to the connector.

2. Set the applicable voltage setting to the multi-meter and connect the optional BNC to 4 mm adapter to the multimeter with the red terminal inserted into the “V” voltage terminal and the black terminal into the “COM” common terminal. Connect the BNC cable end labeled **CHA Line Current** to the BNC to 4 mm adapter and power on the meter.

3. Plug in the PUMA adapter to an ac outlet.

4. Plug in the equipment under test and power on the equipment.

   Refer to the applicable Dranetz-BMI or Original Equipment Manufacturer’s User’s Guide for additional information concerning installation, operation, and connections of your instrument.

Calculations:

The scale factor each of the internal current transformers (CT's) is 10 Amps / Volt.

As an example for a measured voltage of .0193 V on the meter would translate to a current of 0.193 amps.

(.0193 V) x (10 A / V) = 0.193 A

Ground Current measurement

The connections between the PUMA and meter are the same as described for the Line Current measurement except that the BNC connector labeled **CH B Ground Current** is to be connected to the BNC to 4 mm adapter.

Neutral Current measurement

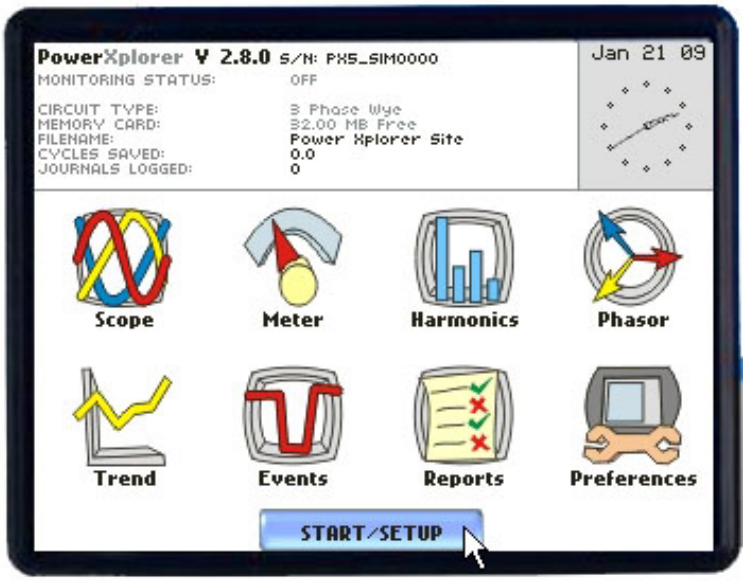
The connections between the PUMA and meter are the same as described for the Line Current measurement except that the BNC connector labeled **CH C Neutral Current** is to be connected to the BNC to 4 mm adapter.

BASIC SETUP MENU

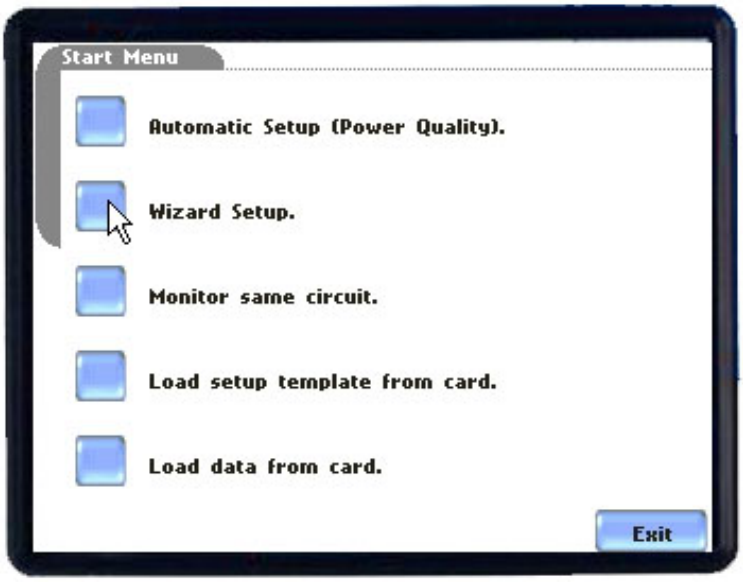
Scale Factor Setup

Follow the procedure below to set the necessary scale factors when using the PUMA accessory with either PX5/4400/PowerVisa.

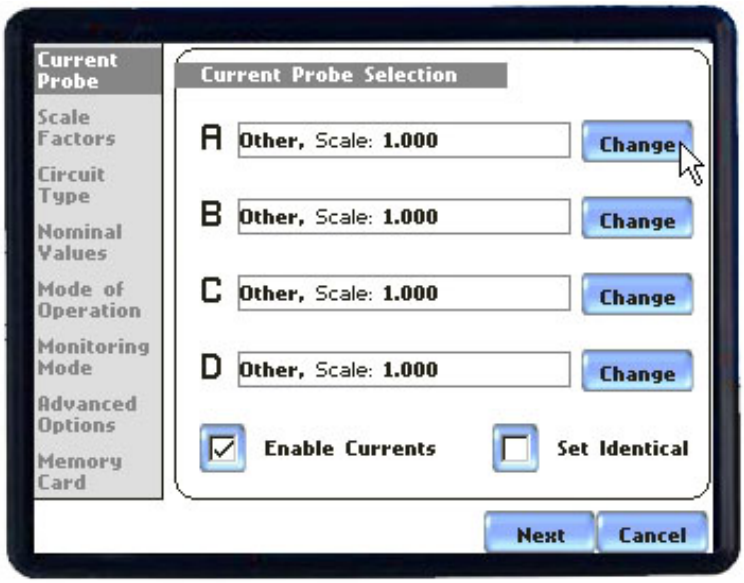
1. From the Start menu, press **Start/Setup**.



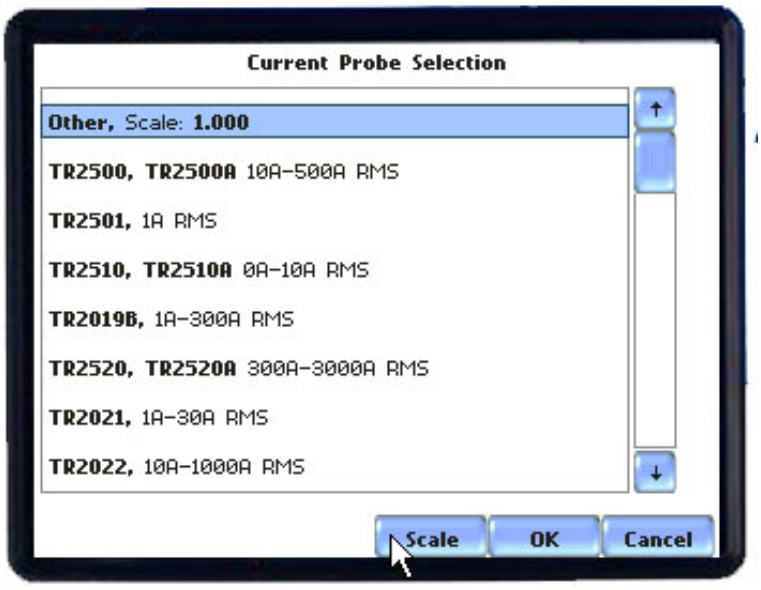
2. Press **Wizard Setup**.



3. Select **Enable Currents**, and if using identical probes, select **Set Identical**. Proceed to press **Change** to set the scale factors.



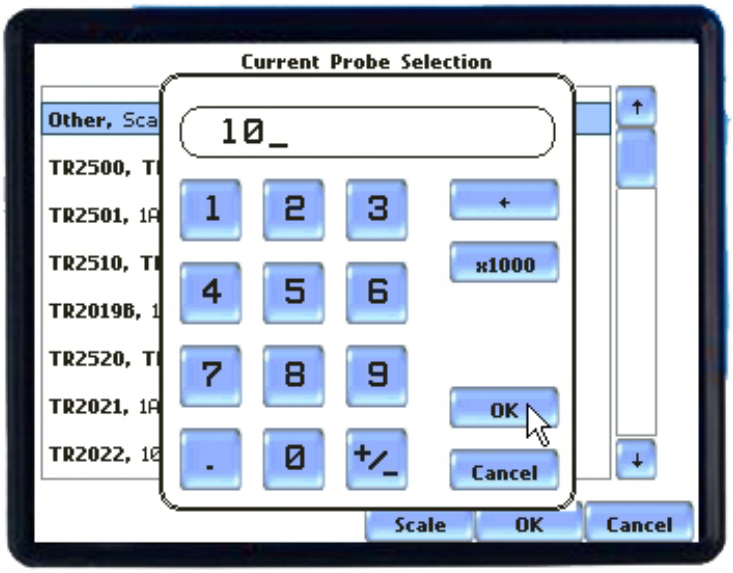
4. Highlight **Other, Scale: 1.000** and then press **Scale.**



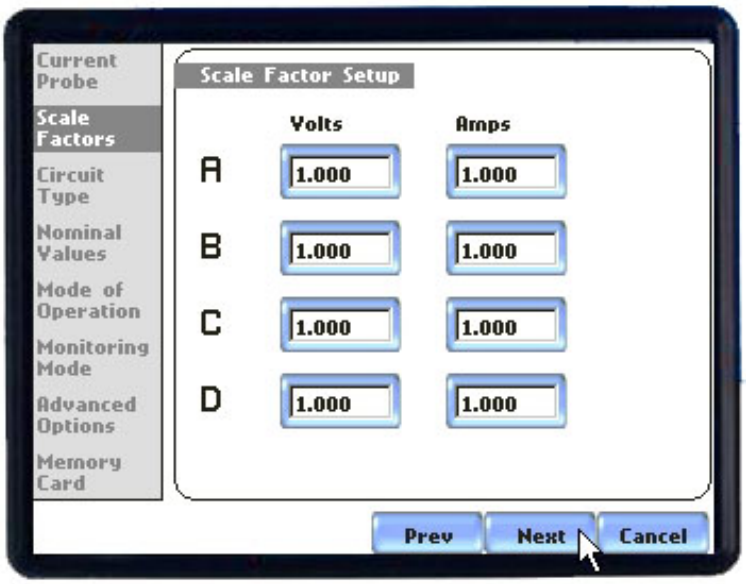
NOTE: Scale factors for each monitoring channel need to be set to its proper values to obtain the expected monitoring values.

5. Before setting the scale factor value, it is necessary to verify that you use the proper probe scale factor to be entered.

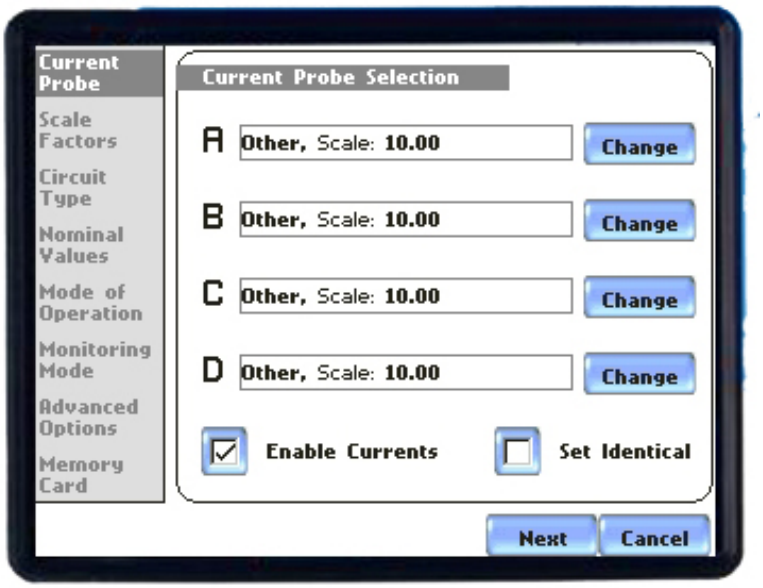
   Enter the value **10** and then press **OK**.



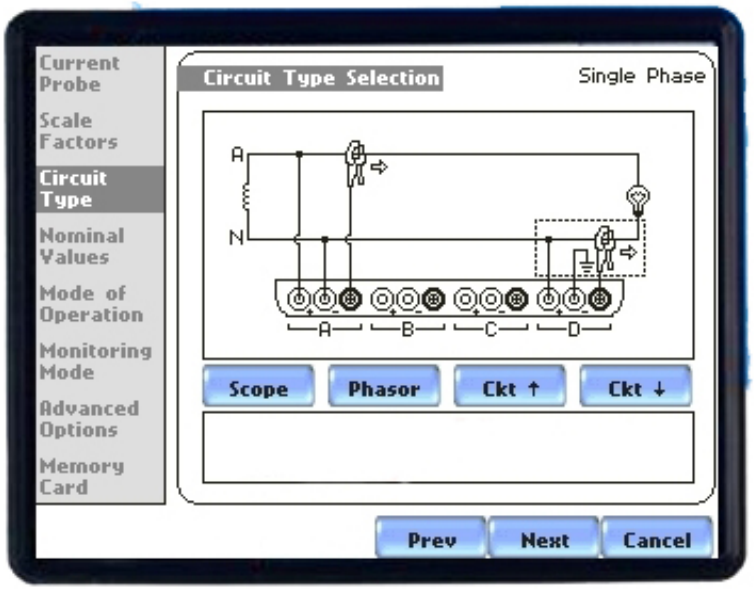
6. Scale factors on this screen are left at the default of 1:1 when using the PUMA accessory.



7. Press **Next** to proceed to the next screen.



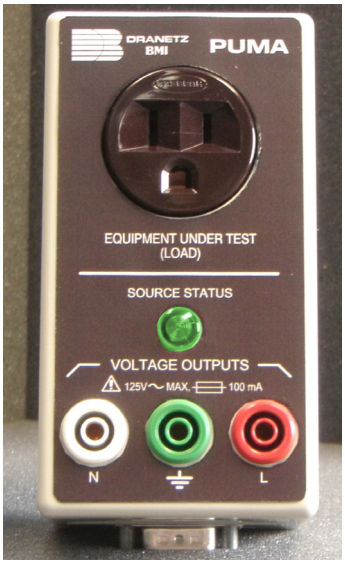
8. Select the proper circuit type that you will be monitoring and proceed through the remaining setup screens.



NOTE: Refer to the applicable user guide for additional information.

Page Intentionally left blank

TECHNICAL SPECIFICATIONS



Voltage Outputs

Connections – Cables and Jumpers

- Three banana-banana , 6ft cables - Line, Neutral, Ground (Red – P/N 900366, White – P/N 900370, Gray – P/N 900369) for connection to PUMA.
- Interconnect cables for connection to instrument using voltage jumper cable P/N 114013-G1.

Fused – 100 mA (internal to PUMA)

Internal CTs

Current Range	0 to 15A steady state
Accuracy	Amplitude +/- 1% for current range of 0.5A to 15A Phase +/- 0.5 degrees for current range of 0.5A to 15A
Scale Factor	Enter 10 in instrument setup

Current Connections

DB9MTOTR -
9pin D-Sub for connection with Current Interface Cable to three connectors compatible with current inputs on instrument

DB9MTOBNC -
9pin D-Sub for connection with Current Interface Cable to three connectors compatible with BNC connector inputs

Output Plug Type

Model PUMA-US for US and Canadian 120V, 15A circuits

Dranetz-BMI instruments compatible with PUMA

PowerXplorer PX5	*PP4300*
PowerGuide 4400	*Mavowatt 30-40-70*
PowerVisa	*Signature System*
Energy Platform	*DataNode 5520*
PowerGuia	*DualNode 5593*

Environmental Conditions

Operating	0 to 50 °C (32 to 122 °F)
Storage	-20 to 55 °C (4 to 131 °F)
Humidity	0 to 95% non-condensing
Altitude	2000m (6560ft)

Installation Category CAT II, Pollution Degree 2

Source Status

Green LED indicator when illuminated indicates that power source is “ON”.

Page Intentionally left blank

Statements and Notices

Statement of warranty

All products of Dranetz-BMI are warranted to the original purchaser against defective material and workmanship for a period of one year from the date of delivery. Dranetz-BMI will repair or replace, at its option, all defective equipment that is returned, freight prepaid, during the warranty period. There will be no charge for repair provided there is no evidence that the equipment has been mishandled or abused. This warranty shall not apply to any defects resulting from improper or inadequate maintenance, buyer-supplied hardware/software interfacing, unauthorized modification or misuse of the equipment, operation outside of environmental specifications, or improper site preparation or maintenance.

Statement of reliability

The information in this manual has been reviewed and is believed to be entirely reliable, however, no responsibility is assumed for any inaccuracies. All material is for informational purposes only and is subject to change without prior notice.

Notice regarding proprietary rights

This publication contains information proprietary to Dranetz-BMI. By accepting and using this manual, you agree that the information contained herein will be used solely for the purpose of operating equipment of Dranetz-BMI.

Copyright

Trademarks

PowerXplorer®, PowerGuide®, and PowerVisa™ are registered trademarks of Dranetz-BMI.