



Polaris 1000/1500

Polaris 2000/2500

Polaris 3000

Installation Guide

1 Safety Precautions

For safety purposes, please observe the following when unwrapping and installing the package:

- When opening the package, check that the contents have not been damaged during transit.
- Check to make sure that the product model and the labeling on the outside of the packaging are consistent.
- This product is designed for and suitable for most electrical power panels.
- Do not install this product at the openings of ventilation ducts or near heat sources.
- Make sure that the actual wiring conforms to the wiring diagram designated in this guide.
- Guard against dust and water damage.
- Make sure all power sources to be connected to the product have been shut off before installing.
- This symbol means double insulation.
- This symbol means to beware of electric shock, turn off all adjacent sources of high voltage during installation.
- This symbol means there is danger of electric shock.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The Polaris is a sensitive electrical equipment, care should be taken so that the maximum benefit and performance can be derived from the device.

Before cleaning or performing any maintenance on the Polaris, disconnect the device from its power source. The input voltage and current should be either turned off or disconnected.

Cleaning

Use a dry cloth or dry brush to wipe away the dust, or use in conjunction with a vacuum cleaner to suck the dust as it is being wiped away. Do not use any water or other liquid cleaning agents.

Ventilation

Check to make sure that there is sufficient space around the periphery of the Polaris to allow air to circulate. Reposition any extraneous wiring that is on the Polaris.

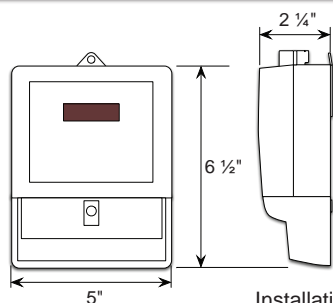
Maintenance

Check to make sure that the wiring contacts are tight and making good contact, tighten any terminal screws that may have loosened over time from jarring or vibration. Make sure that the wiring contact of each terminal is not touching or shorting adjacent terminals.

Repair

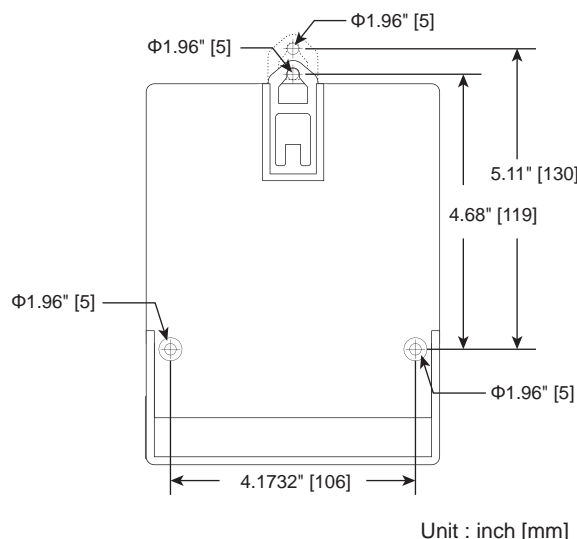
Do not attempt to repair the product or modify the circuitry, contact the product representative or a qualified electrical person if the product requires repair or servicing.

2 Dimensions

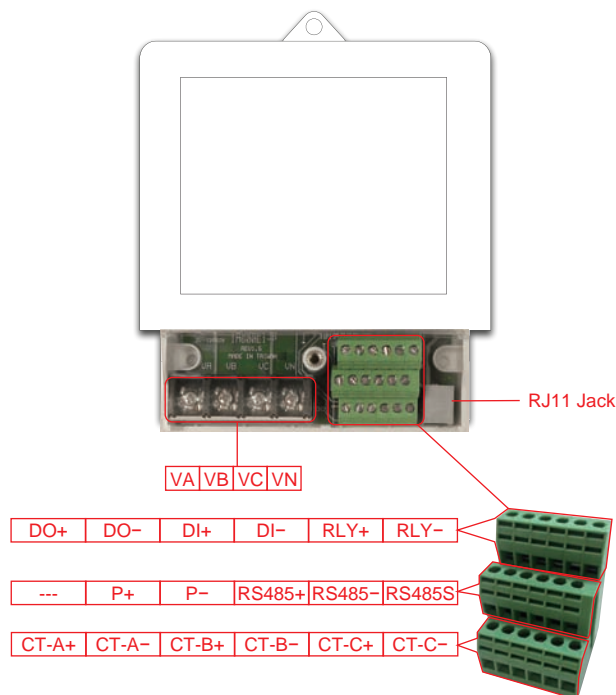


3 Mounting Procedure

- The Polaris is wall mounted, drill the screw holes according to the diagram below.
- Place the Polaris flush against the wall aligning the mount holes of the Polaris with the screw holes.
- Secure the Polaris using the screws through the mount holes.



4 Terminals



VA, VB, VC, VN	Phase A, B, C and N voltages
DO+, DO-	Digital output signal, reserved
DI+, DI-	Digital input signal, reserved
RLY+, RLY-	Reserved
P+, P-	Pulse output signal
RS485+, RS485-, RS485S	RS485 communications port
CT-A+, CT-A-	Phase A CT input
CT-B+, CT-B-	Phase B CT input
CT-C+, CT-C-	Phase C CT input
RJ11 Jack	Reserved

5 Installation

Electrical installation

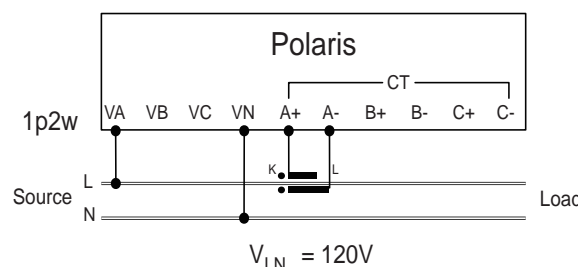
The Polaris is a sophisticated energy meter with multiple capabilities and functions. Before installation be sure to read and understand this section and the appropriate wiring diagrams. Installation of this device must be performed by qualified personnel according to these instructions and in conjunction with all applicable electrical codes. DAE Instrument and its representatives assumes no responsibility for any damage or injury resulting from the improper installation of this equipment.

- Check that the ratings and specification of the model to be installed is suitable for its intended application.
- Verify that the dedicated CT being used is compatible with the type of Polaris. Note that the Polaris cannot be directly used with non-DAE dedicated CTs. See the special application section for using the Polaris with common 5A output CTs.
- Verify that the current rating of the dedicated CT being used is suitable for its intended load.
- Make sure to turn off all power sources to the Polaris and any adjacent power sources before performing the installation.
- Attach the dedicated CTs to their appropriate phases.
- Connect the phase A voltage terminals of the Polaris to the corresponding power source with an intermediate 0.5A/250V fuse.
- Connect the voltage terminals of the Polaris to their corresponding phase voltages.
* Use 18 to 22 AWG, 600V wire for the voltage terminals.
- Assemble the CTs onto the corresponding conductors being measured making sure that the direction and orientation of the CTs with wiring are consistent. With solid core CTs, the wire must be threaded through the CT, which would necessitate disconnecting the wire from the load. With split core CTs and clamp type CTs, the CT can be opened and clipped or clamped onto the conductor without the need to disconnect the wiring to the load.

A. 1- Phase 2 Wire

Applicable for models with ordering code :

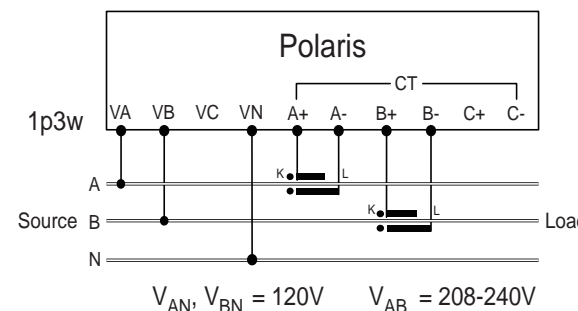
P102-050	P152-050
P102-100	P152-100
P102-200	P152-200



B. 1- or 2- Phase 3 Wire

Applicable for models with ordering code :

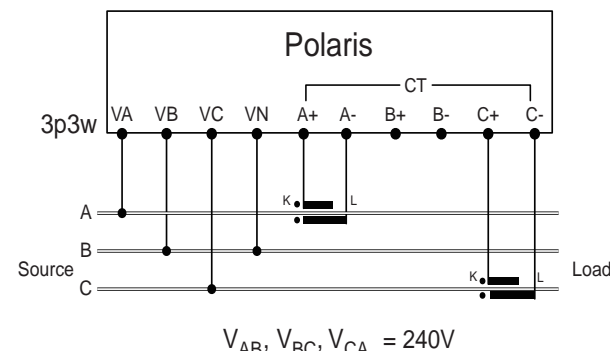
P103-050	P153-050
P103-100	P153-100
P103-200	P153-200



C. 3- Phase 3 Wire

Applicable for models with ordering code :

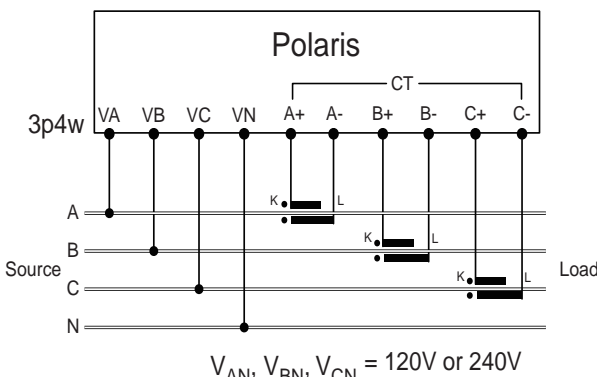
P203-005	P253-005	P303-005D
P203-050	P253-050	P303-050D
P203-100	P253-100	P303-100D
P203-200	P253-200	P303-200D



D. 3- Phase 4 Wire

Applicable for models with ordering code :

P204-005	P254-005	P304-005D
P204-050	P254-050	P304-050D
P204-100	P254-100	P304-100D
P204-200	P254-200	P304-200D
P205-005	P255-005	P305-005D
P205-050	P255-050	P305-050D
P205-100	P255-100	P305-100D
P205-200	P255-200	P305-200D



Terminal Detail

- Use the proper size and wire type as per electrical regulations.
- Make sure that the wires are screwed tightly onto the terminals and making good contact.



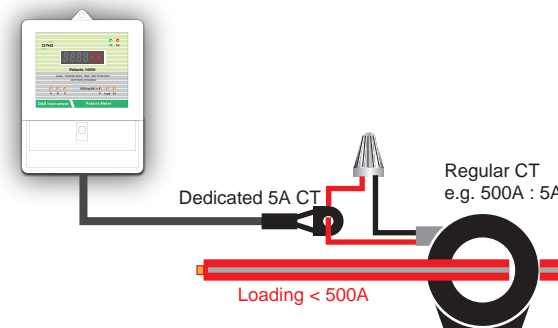
European Style Cable Lug Recommended

Power Supply

The power supply of the Polaris is derived from the phase A voltage. To provide additional protection for the Polaris, a 0.5A/250V fuse should be placed between the Polaris and the power source as shown in each of the electrical wiring diagrams.

Using a Regular 5A Output CT

For installations with pre-existing CTs or if larger capacities is required, the user should choose the dedicated 5A CT and connect the user provided CT to the dedicated 5A CT as shown in the diagram below.



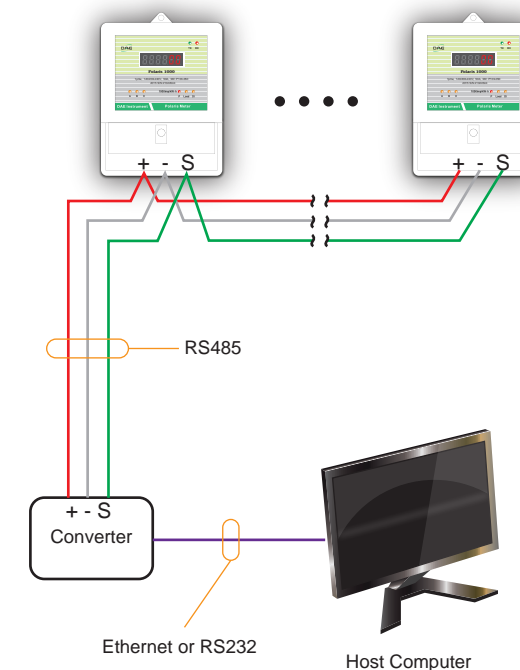
RS485 installation

The RS485 can be optionally equipped with an RS485 communication port. This port can be used for connecting with PC for remote reading.

Multiple Polaris units can be connected to the same RS485 network. All the positive terminals are to be connected together using the same red conductor, and all the negative terminals are to be connected together to the same blue wire. The shielding wire should be grounded to the panel or enclosure.

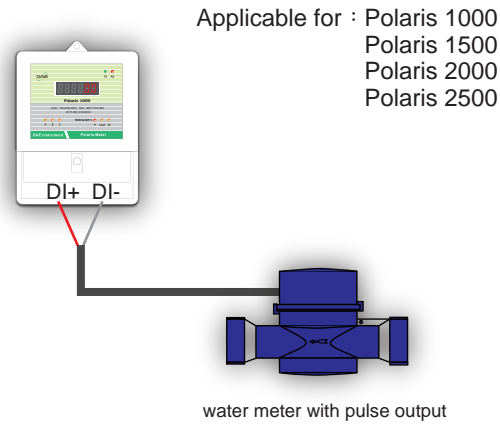
When connecting as a network, the RS485 wires should be daisy chained as shown in the diagram, it should not be branched off or looped.

Since most modern computers have no built in RS485, a converter is necessary to convert the RS485 signals into something the host computer can understand.



Please see [4 Front Panel](#) for the RS485 terminals

External input for water meter (Optional)



Please see  for the DI+,DI- terminals

6 Warranty and Return Policy

Warranty

The warranty is effective for a period of five years from the date of shipment. The buyer must inform DAE of the defect within 80 days after the defect is experienced or found. DAE's responsibility is limited to repair, replacement, or refund, any of which may be selected by DAE in its sole discretion. DAE reserves the right to substitute functionally equivalent new or serviceable used parts.

This warranty covers only defects from normal use and does not include the defects due to improper installation, improper maintenance, misuse, neglect, water damage, acts of nature, tornadoes, any alterations or repairs by others not DAE.

DAE's liability to the Customer from the sale of DAE's products, whether such liability is asserted on the basis of contract, tort or otherwise, shall not exceed the purchase price paid by Customer for the products claimed.

Return Policy

All returned material must be in good," as new" and in salable condition. A 20% restocking fee is charged on all RMA's. Products may not be returned if more than 80 days have elapsed since the shipment date from DAE.

Buyer must notify DAE and request a Returned Material Authorization Number (RMA Number) and state the specific reason for return. Unauthorized returns will not be accepted. When requesting an RMA Number please supply the following information:

1. Distributor name and address
2. Model number of meter
3. Original purchase order number
4. Reason for return

All paperwork and boxes must be marked with an RMA number issued by DAE. All authorized returned materials must be shipped freight prepaid to DAE. DAE is not responsible for uninsured packages or packages lost by your carrier.

RMA's are only valid for 30 days. The buyer will be responsible for all return shipping costs and customs duties.