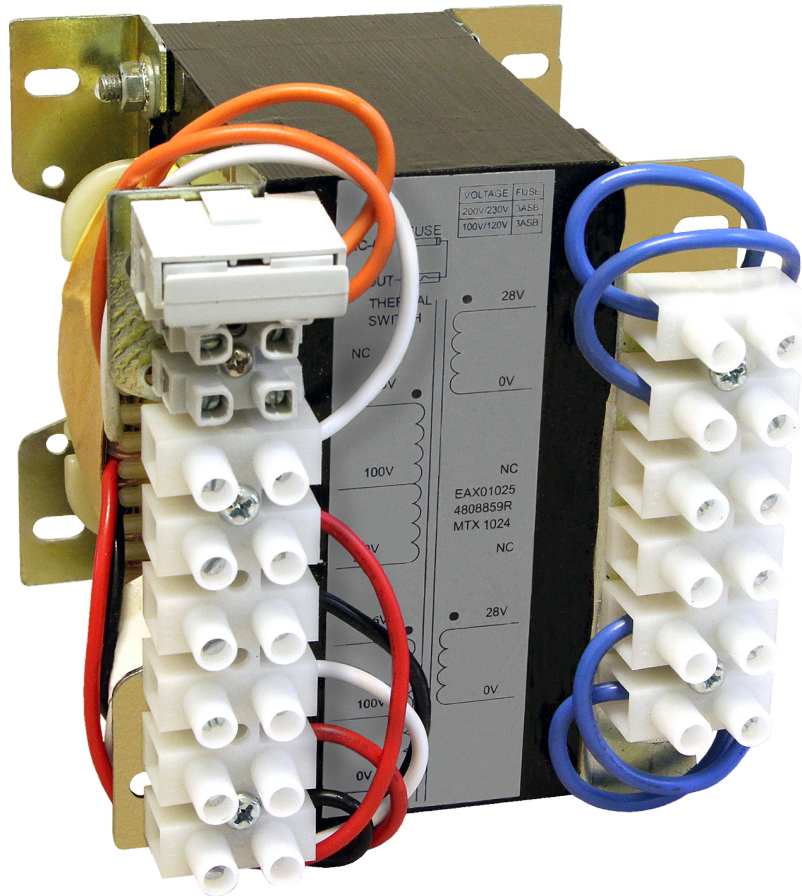




TV0.3-28-56-ST Hardware Manual

P/N: EDO123
Revision: 1.00.00



Global Technical Support

Go to www.aerotech.com/global-technical-support for information and support about your Aerotech products. The website provides downloadable resources (such as up-to-date software, product manuals, and Help files), training schedules, and PC-to-PC remote technical support. You can also complete Product Return (RMA) forms and get information about repairs and spare or replacement parts. For immediate help, contact a service office or your sales representative. Have your customer order number available before you call or include it in your email.

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EU Declaration of Conformity


Manufacturer Aerotech, Inc.
Address 101 Zeta Drive
 Pittsburgh, PA 15238-2897
 USA
Product TV0.3-28-56-ST

This is to certify that the aforementioned product is in accordance with the applicable requirements of the following Directive(s):

2014/35/EU	Low Voltage Directive LVD
2011/65/EU	RoHS 2 Directive

and has been designed to be in conformity with the applicable requirements of the following documents when installed and used in accordance with the manufacturer’s supplied installation instructions.

EN 61010-1:2001	Safety requirements for electrical equipment
-----------------	--

Name  / Alex Weibel
Position Engineer Verifying Compliance
Location Pittsburgh, PA

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Safety Components

Description	Rating	Approval Marks
CFTBN/3 fuse holder with terminal block	Fuse Holder: 250V AC @13A Terminal Block: 450V AC @20A	Semko, Fimko, IMQ, UL, UL 94V-0
Fuse	5x20mm, 250V, 3.15A, Glass, So-Blo	UL (E213695)
DG14H-06P Primary & Secondary terminal blocks	300V, 50A	C(UL)US, CE, UL 94V-2
ST-22W/115 °C Thermal Protector	7A @250V AC, 115 °C Trip, Self-Reset, Single Pole, Bi-Metal	UL (E162183), CSA, VDE, CQC
DD-NYU, Transformer core wires	130 °C	UL (E84081), NEMA MW 28-C
18 AWG Primary Wires	UL1015 Orange, White, Red, Black	UL (E50032) or UL (E204204)
16 AWG Secondary Wires	UL1015 Blue	UL (E50032) or UL (E204204)

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Safety Procedures and Warnings

The following statements apply wherever the Warning or Danger symbol appears within this manual. Failure to observe these precautions could result in serious injury to those individuals performing the procedures and/or damage to the equipment.

NOTE: Read this manual in its entirety before installing, operating, or servicing this product. If you do not understand the information contained herein, contact an Aerotech representative before proceeding. Strictly adhere to the statements given in this section and other handling, use, and operational information given throughout the manual to avoid injury to you and damage to the equipment.

NOTE: Aerotech continually improves its product offerings; listed options may be superseded at any time. Refer to the most recent edition of the Aerotech Motion Control Product Guide for the most current product information at www.aerotech.com.



DANGER: This product contains potentially lethal voltages. To reduce the possibility of electrical shock, bodily injury, or death the following precautions must be followed.

1. Disconnect electrical power before servicing equipment.
2. Disconnect electrical power before performing any wiring.
3. To minimize the possibility of electrical shock and bodily injury, extreme care must be exercised when any electrical circuits are in use. Suitable precautions and protection must be provided to warn and prevent persons from making contact with live circuits.
4. Do not connect or disconnect any electrical components or connecting cables while connected to a power source.
5. All components must be properly grounded in accordance with local electrical safety requirements.
6. Operator safeguarding requirements must be addressed during final integration of the product.



WARNING: To minimize the possibility of electrical shock, bodily injury or death the following precautions must be followed.

1. Use of this equipment in ways other than described by this manual can cause personal injury or equipment damage.
2. Moving parts can cause crushing or shearing injuries. Access to all stage and motor parts must be restricted while connected to a power source.
3. Cables can pose a tripping hazard. Securely mount and position all system cables to avoid potential hazards.
4. Do not expose this product to environments or conditions outside of the listed specifications. Exceeding environmental or operating specifications can cause damage to the equipment.
5. If the product is used in a manner not specified by the manufacturer, the protection provided by the product can be impaired and result in damage, shock, injury, or death.
6. Operators must be trained before operating this equipment.
7. All service and maintenance must be performed by qualified personnel.
8. This product is intended for light industrial manufacturing or laboratory use. Use of this product for unintended applications can result in injury and damage to the equipment.

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Chapter 1: TV0.3-28-56-ST Overview

The TV0.3-28-56-ST transformer assembly is for applications where an amplifier or drive “Motor Power” requirement is 28 or 56V AC, resulting in motor bus power of 40 and 80V DC respectively.

The transformer is prewired with two sets of terminal blocks (PRIMARY & SECONDARY) to simplify system wiring. The PRIMARY set of terminals has built-in fuse and access to multiple AC supply voltage configurations. The SECONDARY set of terminals gives access to the 28V AC taps. See [Figure 1-1](#).

The TV0.3-28-56-ST transformer is also thermally protected with an internal thermal switch, configured to trip at 115 °C.

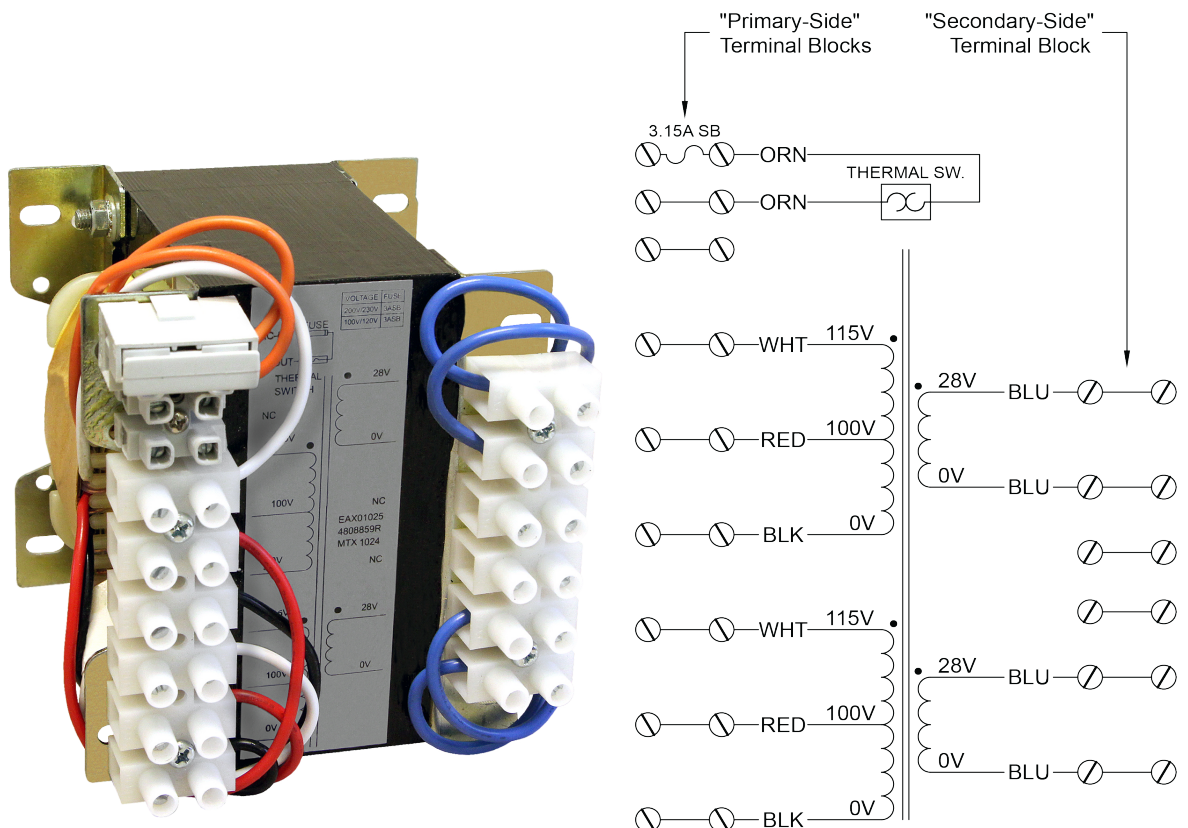


Figure 1-1: TV0.3-28-56-ST Schematic

Table 1-1: Specifications

Transformer	Aerotech EAX01025
Nominal AC Input Configurations (Volts AC, 50/60Hz)	~100 ~115 ~200 ~230
Nominal AC Output Configurations (Volts AC)	~28 (x2 28V taps @5A rms, wired in parallel for 28V AC @10A rms max) ~56 (x2 28V taps @5A rms, wired in series for 56V AC @5A rms max)
Total Wattage, Max	~300W @20 °C (Fan cooling recommended for higher ambient temperatures with high duty cycles)
Fuse	5x20 mm, 250V, 3.15A, Glass, Slo-Blo (Spare fuse is supplied inside fuse holder)
Internal Thermal Switch	115 °C Trip, Self-Reset, Single Pole, Bi-Metal
Mass	~10.2 lbs [3.8 kg]

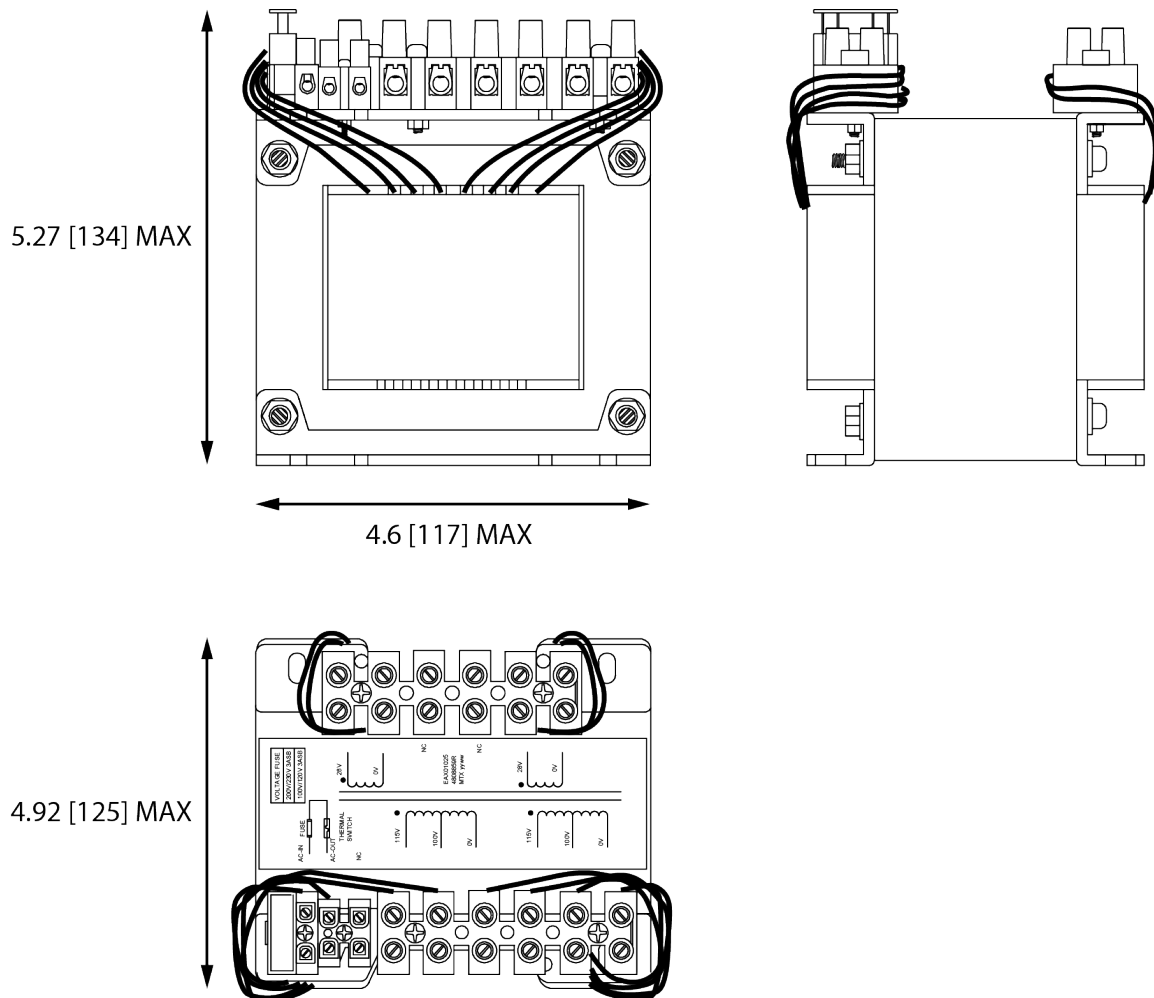


Figure 1-2: Transformer Dimensions

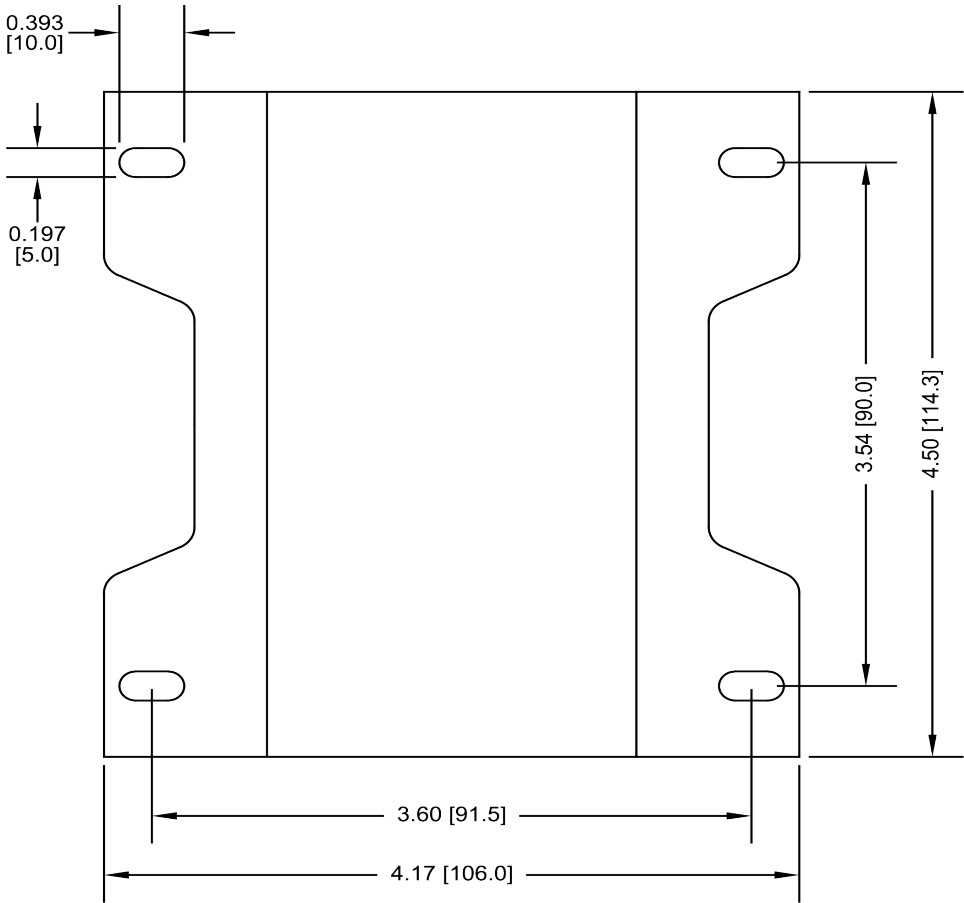


Figure 1-3: Transformer Mounting Dimensions

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Chapter 2: Wiring Examples

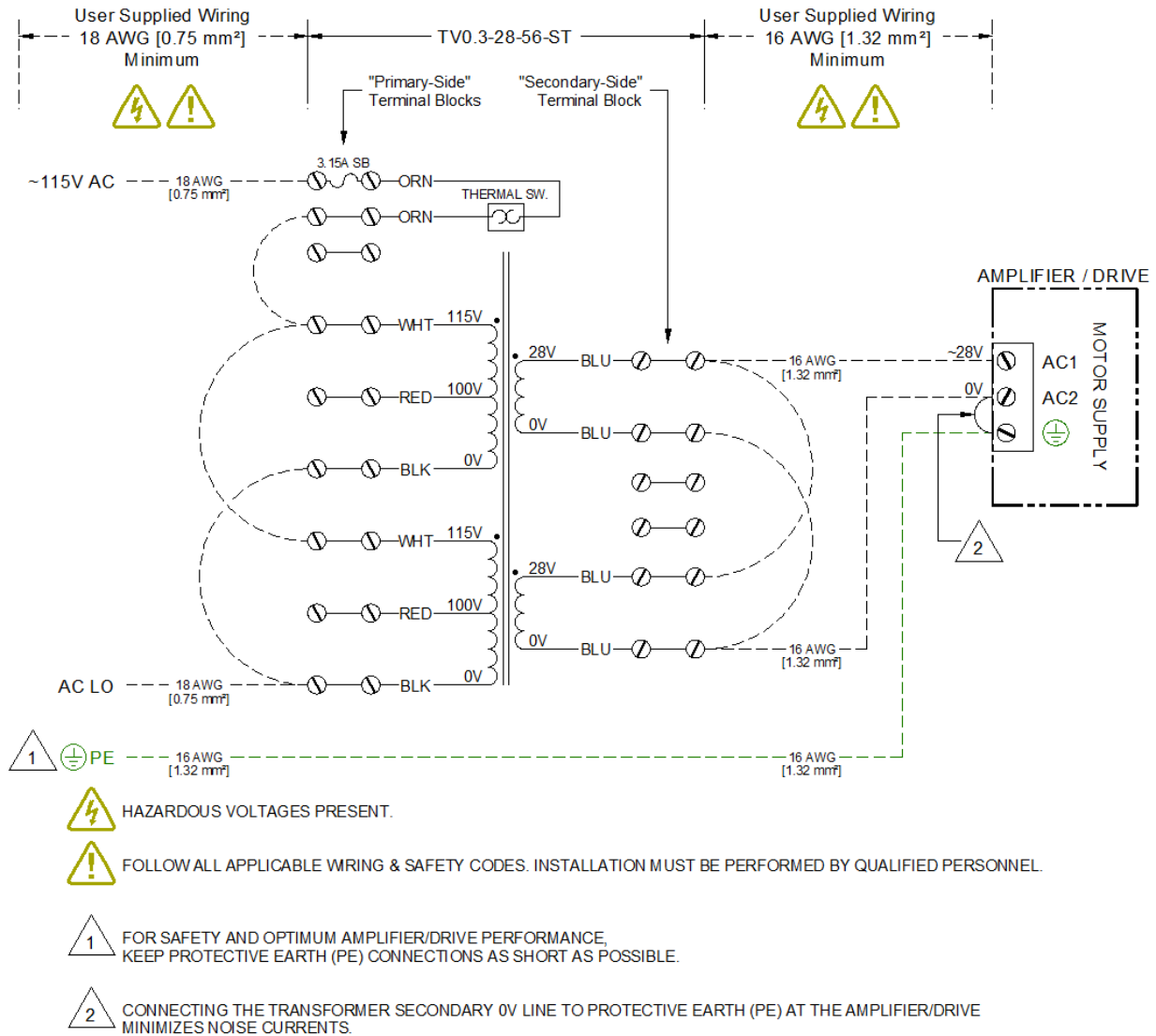


Figure 2-1: 115V AC Primary Supply with 28V AC Secondary Configuration

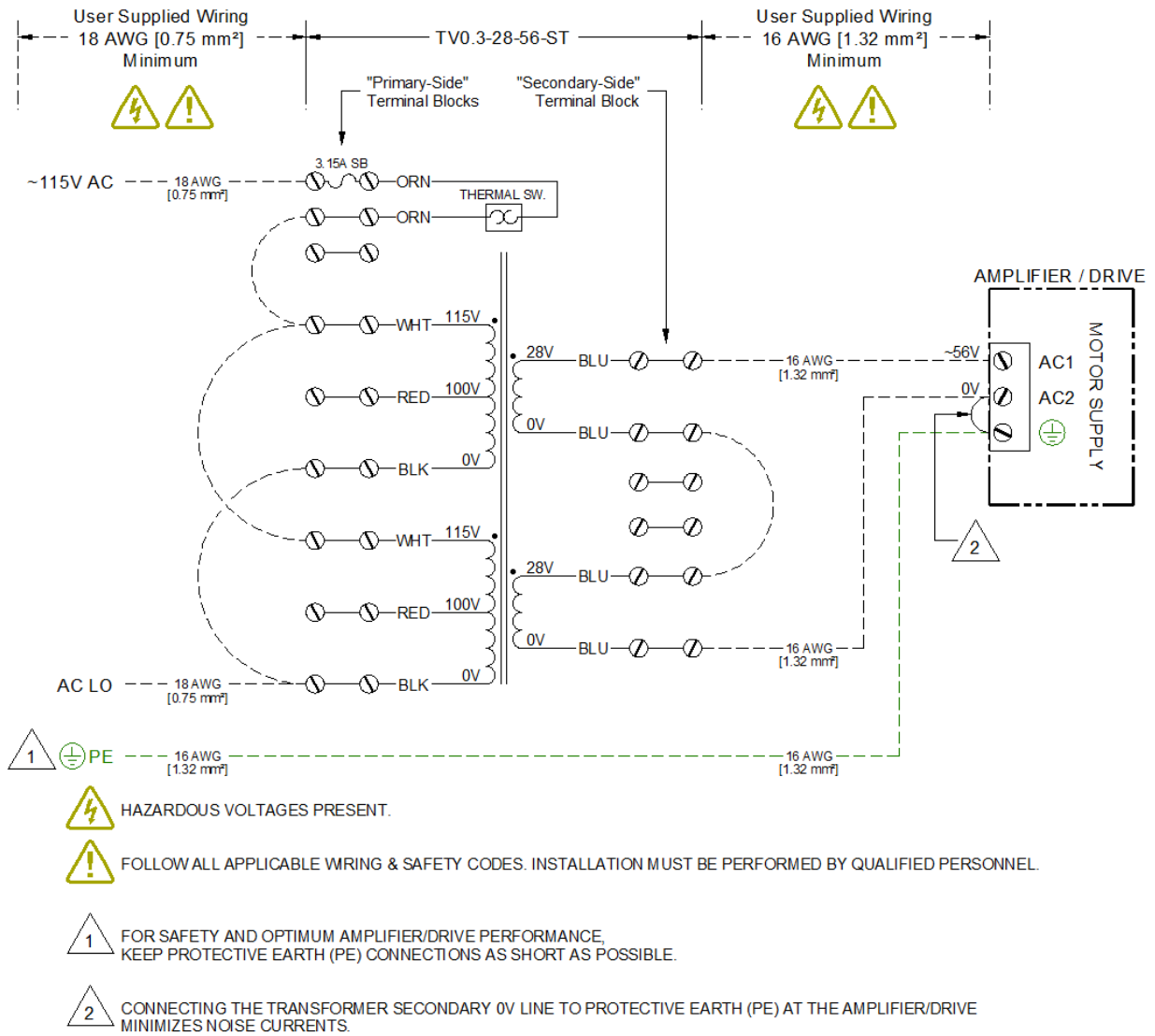


Figure 2-2: 115V AC Primary Supply with 56V AC Secondary Configuration

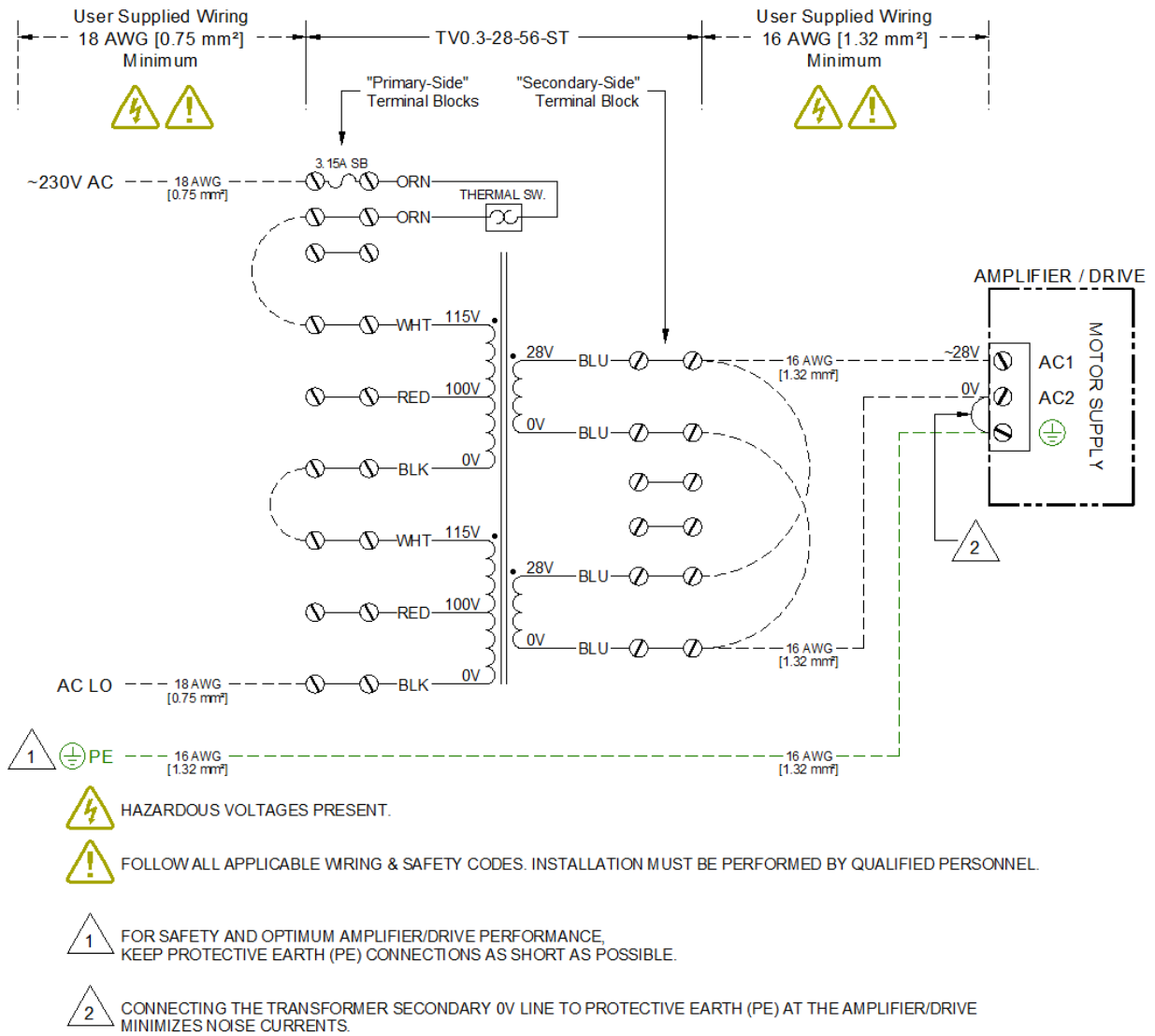


Figure 2-3: 230V AC Primary Supply with 28V AC Secondary Configuration

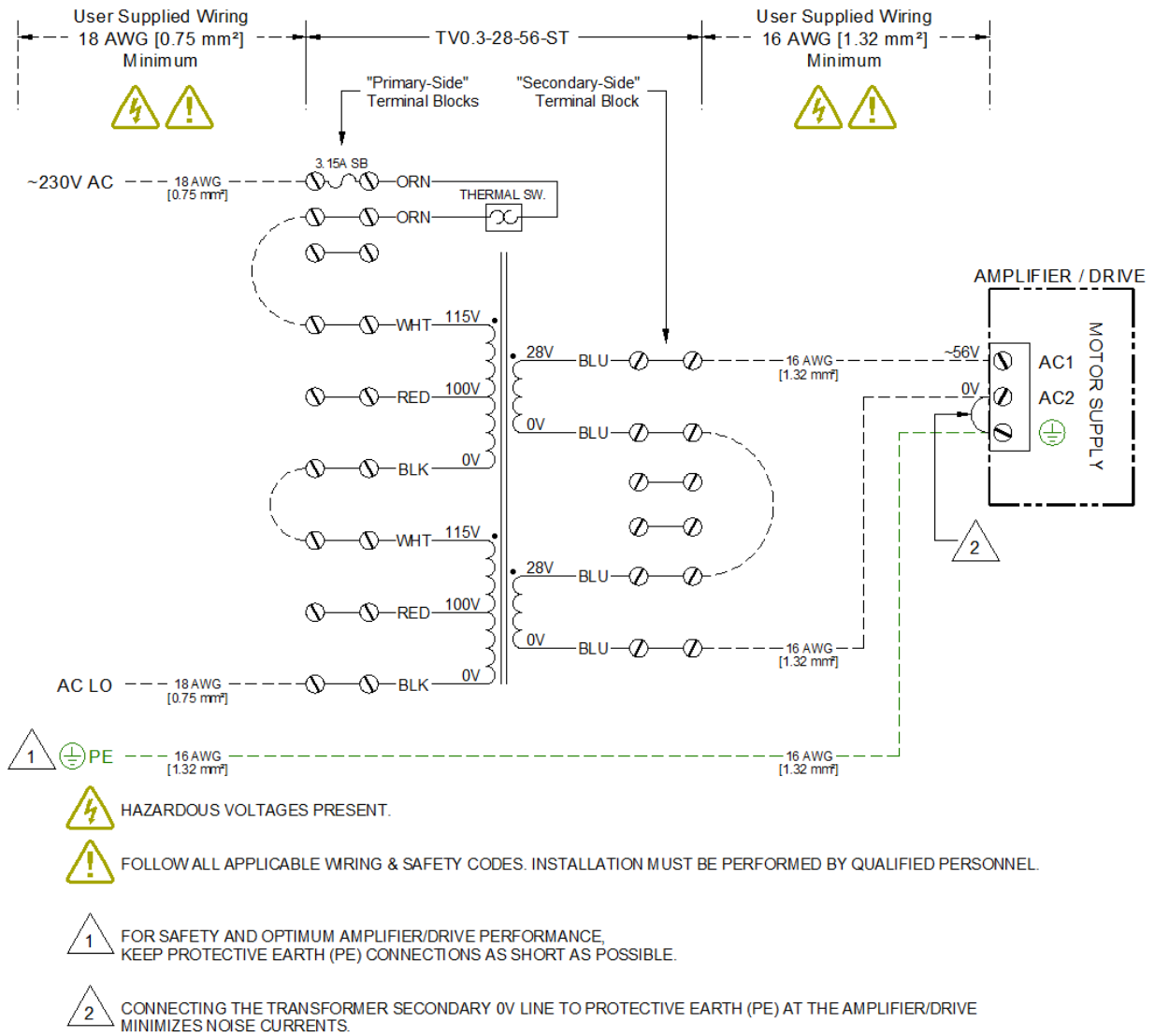


Figure 2-4: 230V AC Primary Supply with 56V AC Secondary Configuration

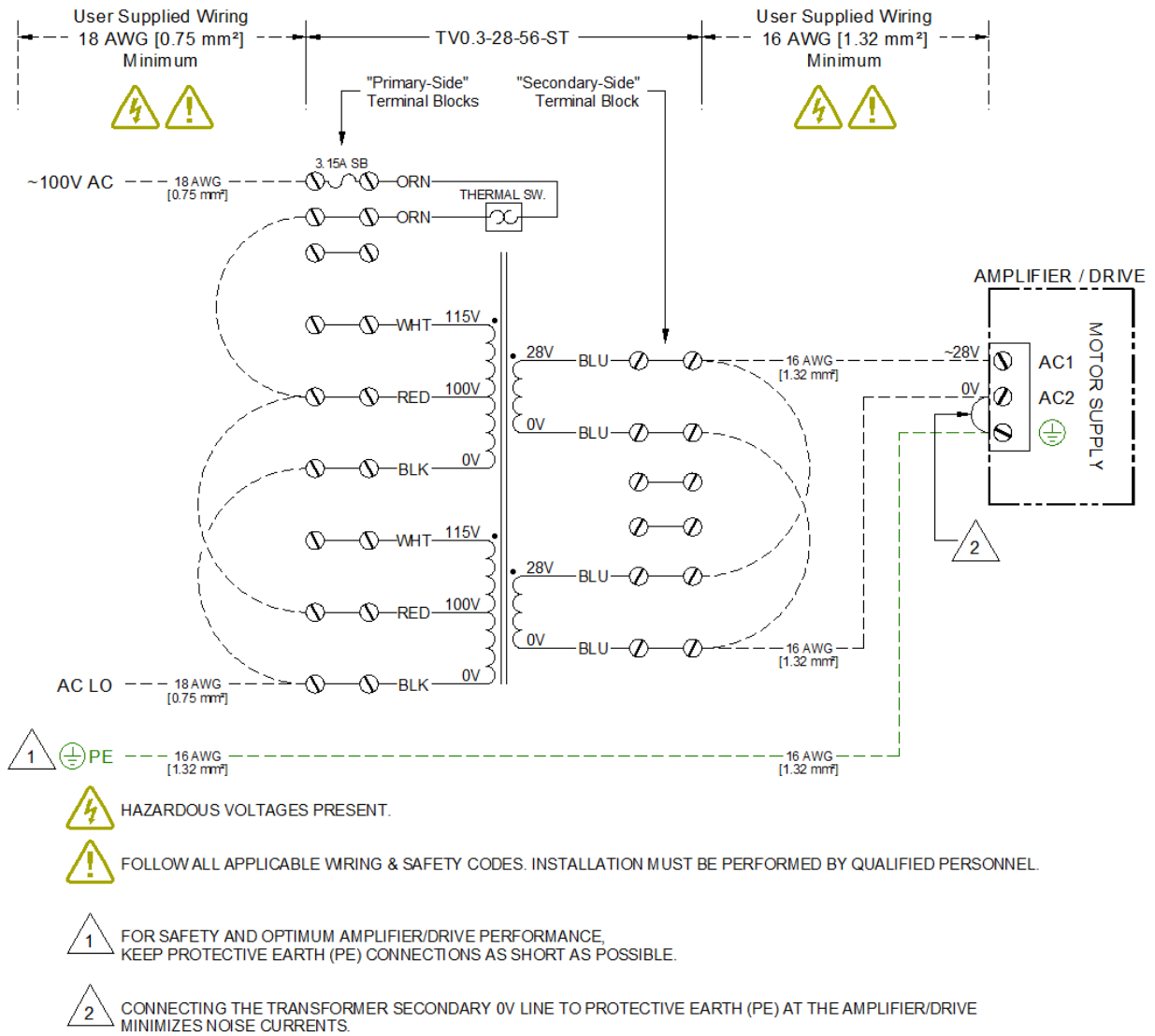


Figure 2-5: 100V AC Primary Supply with 28V AC Secondary Configuration

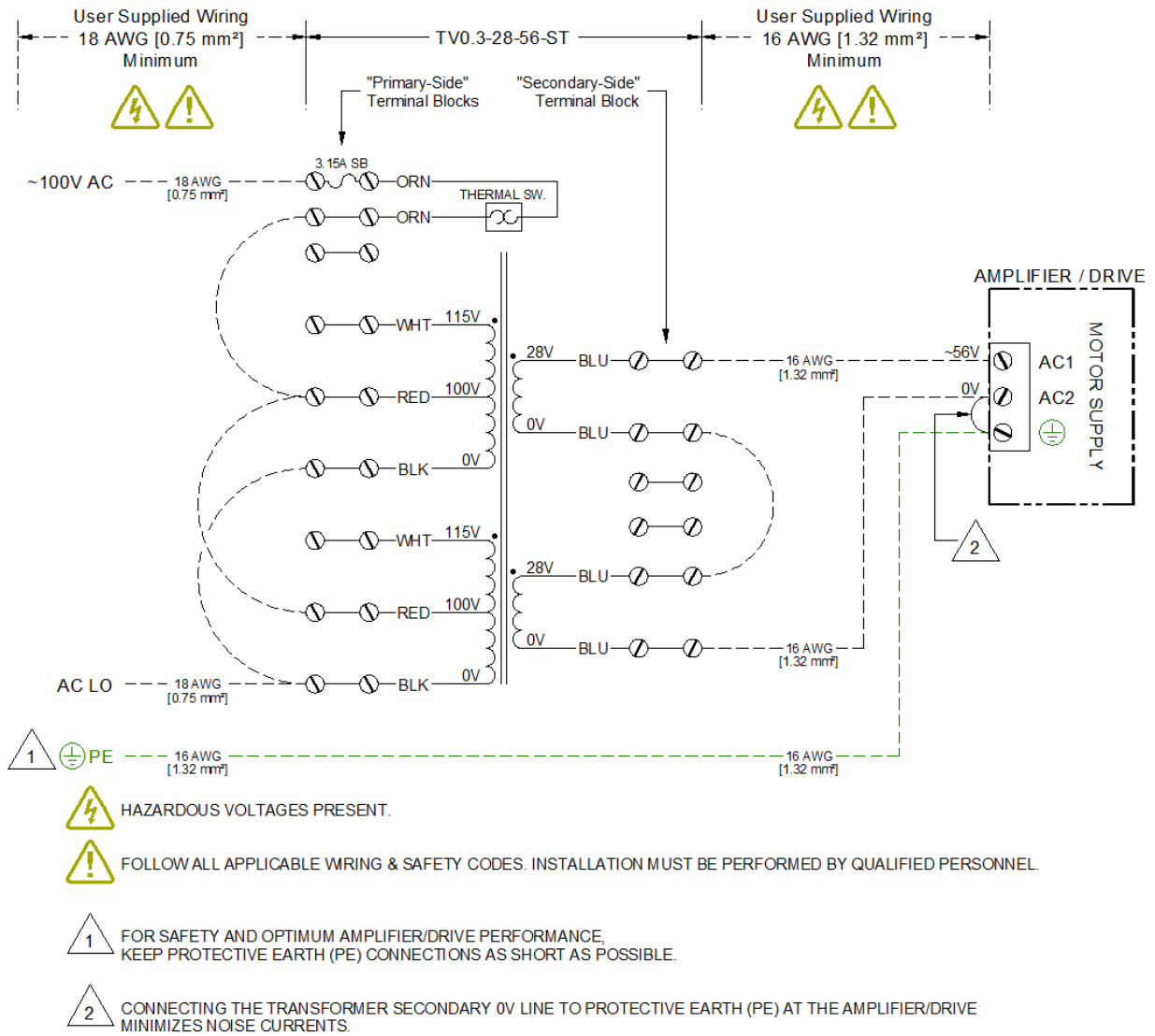


Figure 2-6: 100V AC Primary Supply with 56V AC Secondary Configuration

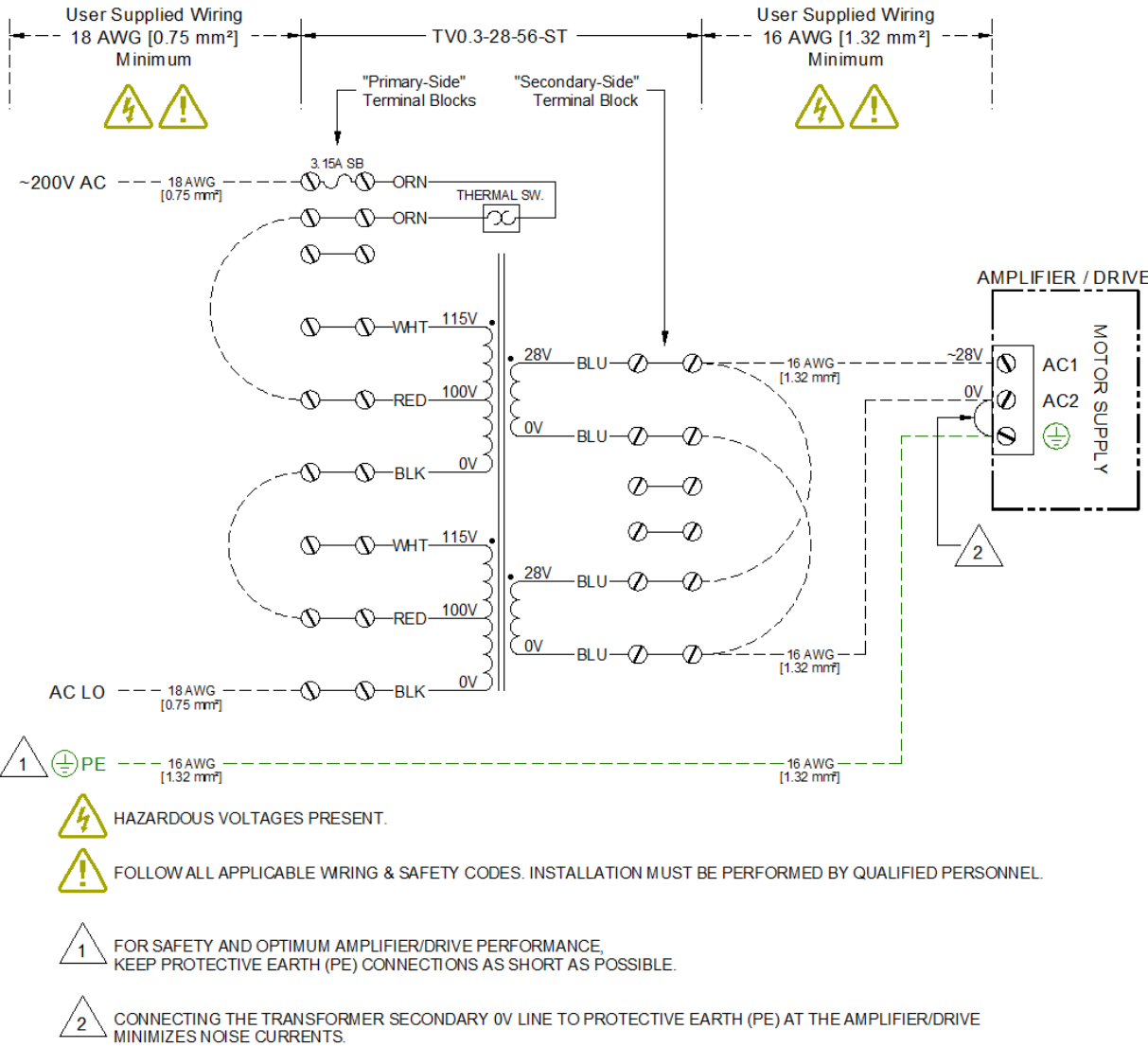


Figure 2-7: 200V AC Primary Supply with 28V AC Secondary Configuration

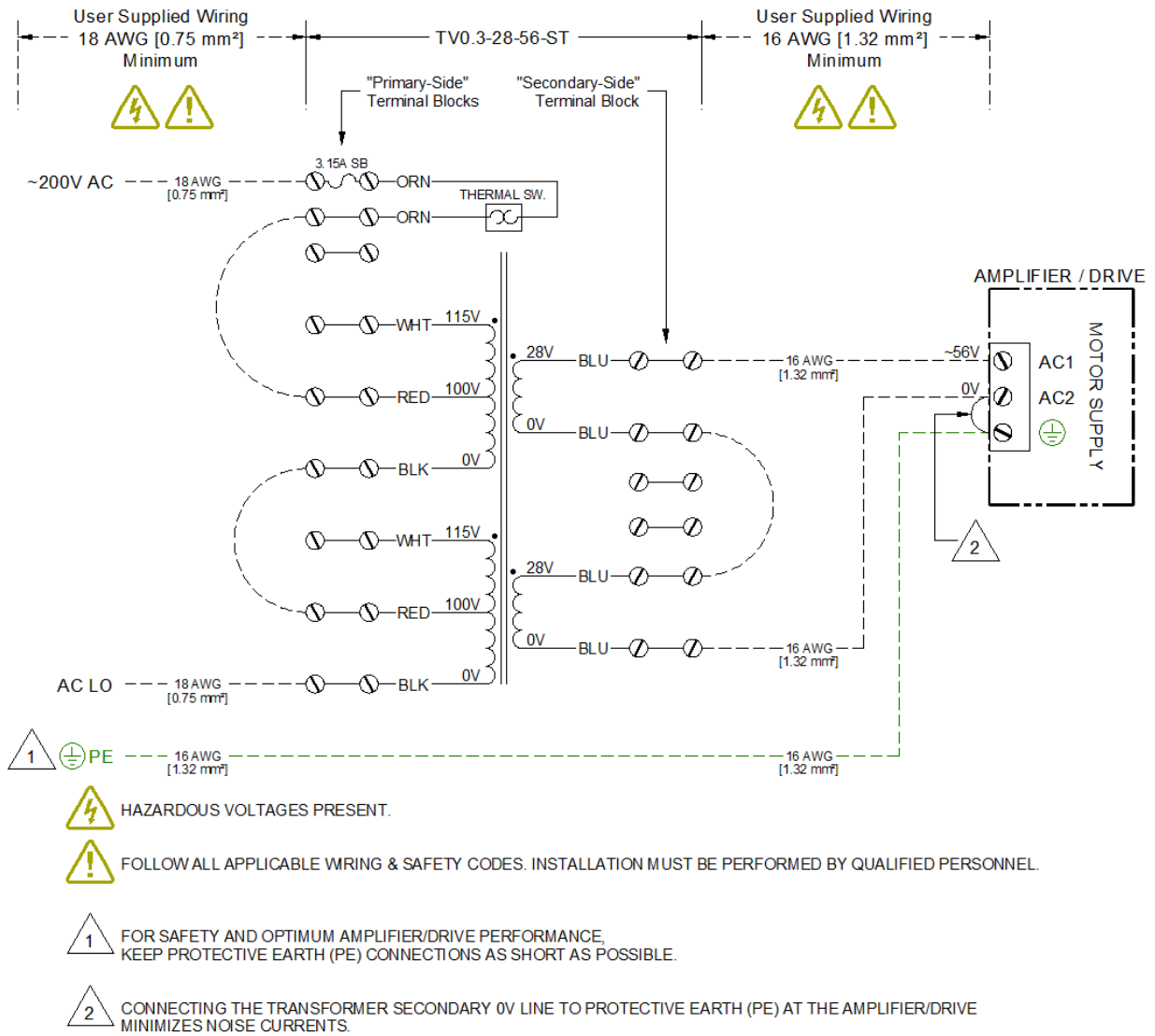


Figure 2-8: 200V AC Primary Supply with 56V AC Secondary Configuration

Appendix A: Warranty and Field Service

Aerotech, Inc. warrants its products to be free from harmful defects caused by faulty materials or poor workmanship for a minimum period of one year from date of shipment from Aerotech. Aerotech's liability is limited to replacing, repairing or issuing credit, at its option, for any products that are returned by the original purchaser during the warranty period. Aerotech makes no warranty that its products are fit for the use or purpose to which they may be put by the buyer, whether or not such use or purpose has been disclosed to Aerotech in specifications or drawings previously or subsequently provided, or whether or not Aerotech's products are specifically designed and/or manufactured for buyer's use or purpose. Aerotech's liability on any claim for loss or damage arising out of the sale, resale, or use of any of its products shall in no event exceed the selling price of the unit.

THE EXPRESS WARRANTY SET FORTH HEREIN IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE. IN NO EVENT SHALL AEROTECH BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

Return Products Procedure

Claims for shipment damage (evident or concealed) must be filed with the carrier by the buyer. Aerotech must be notified within thirty (30) days of shipment of incorrect material. No product may be returned, whether in warranty or out of warranty, without first obtaining approval from Aerotech. No credit will be given nor repairs made for products returned without such approval. A "Return Materials Authorization (RMA)" number must accompany any returned product(s). The RMA number may be obtained by calling an Aerotech service center or by submitting the appropriate request available on our website (www.aerotech.com). Products must be returned, prepaid, to an Aerotech service center (no C.O.D. or Collect Freight accepted). The status of any product returned later than thirty (30) days after the issuance of a return authorization number will be subject to review.

Visit <https://www.aerotech.com/global-technical-support.aspx> for the location of your nearest Aerotech Service center.

Returned Product Warranty Determination

After Aerotech's examination, warranty or out-of-warranty status will be determined. If upon Aerotech's examination a warranted defect exists, then the product(s) will be repaired at no charge and shipped, prepaid, back to the buyer. If the buyer desires an expedited method of return, the product(s) will be shipped collect. Warranty repairs do not extend the original warranty period.

Fixed Fee Repairs - Products having fixed-fee pricing will require a valid purchase order or credit card particulars before any service work can begin.

All Other Repairs - After Aerotech's evaluation, the buyer shall be notified of the repair cost. At such time the buyer must issue a valid purchase order to cover the cost of the repair and freight, or authorize the product(s) to be shipped back as is, at the buyer's expense. Failure to obtain a purchase order number or approval within thirty (30) days of notification will result in the product(s) being returned as is, at the buyer's expense.

Repair work is warranted for ninety (90) days from date of shipment. Replacement components are warranted for one year from date of shipment.

Rush Service

At times, the buyer may desire to expedite a repair. Regardless of warranty or out-of-warranty status, the buyer must issue a valid purchase order to cover the added rush service cost. Rush service is subject to Aerotech's approval.

On-site Warranty Repair

If an Aerotech product cannot be made functional by telephone assistance or by sending and having the customer install replacement parts, and cannot be returned to the Aerotech service center for repair, and if Aerotech determines the problem could be warranty-related, then the following policy applies:

Aerotech will provide an on-site Field Service Representative in a reasonable amount of time, provided that the customer issues a valid purchase order to Aerotech covering all transportation and subsistence costs. For warranty field repairs, the customer will not be charged for the cost of labor and material. If service is rendered at times other than normal work periods, then special rates apply.

If during the on-site repair it is determined the problem is not warranty related, then the terms and conditions stated in the following "On-Site Non-Warranty Repair" section apply.

On-site Non-Warranty Repair

If any Aerotech product cannot be made functional by telephone assistance or purchased replacement parts, and cannot be returned to the Aerotech service center for repair, then the following field service policy applies:

Aerotech will provide an on-site Field Service Representative in a reasonable amount of time, provided that the customer issues a valid purchase order to Aerotech covering all transportation and subsistence costs and the prevailing labor cost, including travel time, necessary to complete the repair.

Service Locations

<http://www.aerotech.com/contact-sales.aspx?mapState=showMap>

USA, CANADA, MEXICO Aerotech, Inc. Global Headquarters Phone: +1-412-967-6440 Fax: +1-412-967-6870	CHINA Aerotech China Full-Service Subsidiary Phone: +86 (21) 3319 7715	GERMANY Aerotech Germany Full-Service Subsidiary Phone: +49 (0)911 967 9370 Fax: +49 (0)911 967 93720
JAPAN Aerotech Japan Full-Service Subsidiary Phone: +81 (0)50 5830 6814 Fax: +81 (0)43 306 3773	TAIWAN Aerotech Taiwan Full-Service Subsidiary Phone: +886 (0)2 8751 6690	UNITED KINGDOM Aerotech United Kingdom Full-Service Subsidiary Phone: +44 (0)1256 855055 Fax: +44 (0)1256 855649

Have your customer order number ready before calling.

Appendix B: Revision History

Table C-1: Manual Changes

Revision	Description
1.00.00	Updated drawings were added

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