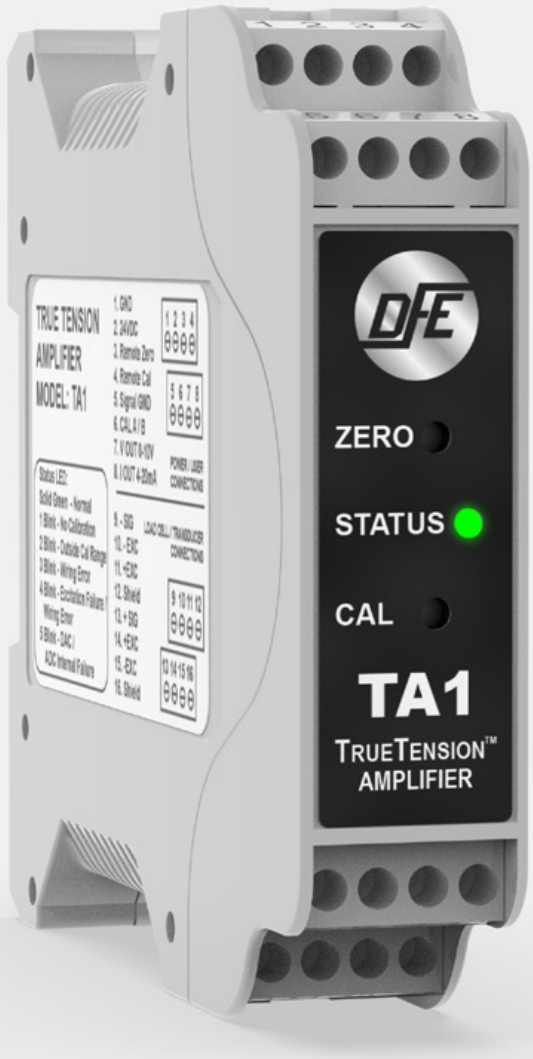
QUICK START GUIDE

THE TENSION CONTROL SPECIALISTS



MODEL TA1

TRUETENSION™ AMPLIFIER

(603) 332-6150

5 Year Warranty

www.dfe.com

SAFETY

This label indicates: “Read the Manual”

Make sure you read and understand all instructions and safety precautions listed in this manual before installing or operating your TA1 True Tension™ Amplifier. If you have any questions concerning the operation of your device or the information in this manual, please contact us.

Email: techsupport@dfe.com
Telephone: (603) 332-6150

- **Observe all warning labels**
- **Never remove warning labels**

⚠ **WARNING:** If this equipment is not connected or operated in the manner specified, the operating safety of this unit or of connected equipment cannot be guaranteed.

⚠ **WARNING:** The isolated output is designed to prevent ground loops and noise. It is not intended or approved for safety isolation of hazardous voltages. Do not install unit where isolated circuit and chassis ground are more than 40 Vpk differential.

The TA1 has no mechanical knobs, or switches to operate. All that is needed is a screwdriver to connect the wires and a pen to press the Zero and Cal buttons. Labels on each side of the product list:

1. Electrical connections and Cal / Zero blink sequences.
2. All safety/certification icons, input / output information and serial number.

Mount the unit either on a standard DIN rail or snap out the screw holders to mount with hardware.

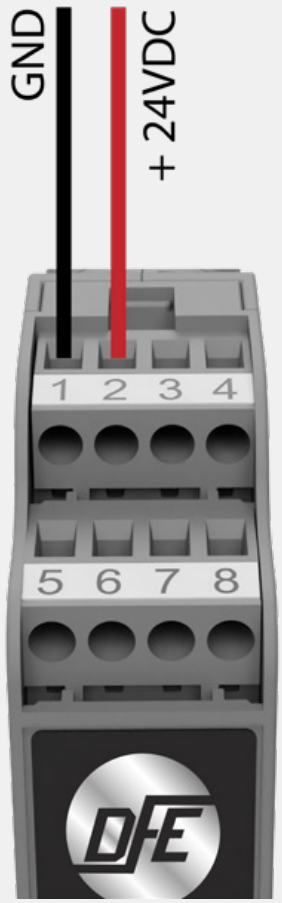
In addition to this Quick Start guide, please review the TA1 Instruction Manual (DFE P/N 801-2568) online at www.dfe.com to familiarize yourself with all of the unit's specifications, calibration and zeroing procedures, safety information, and wiring diagrams.

2 POWER AND OUTPUT CONNECTIONS

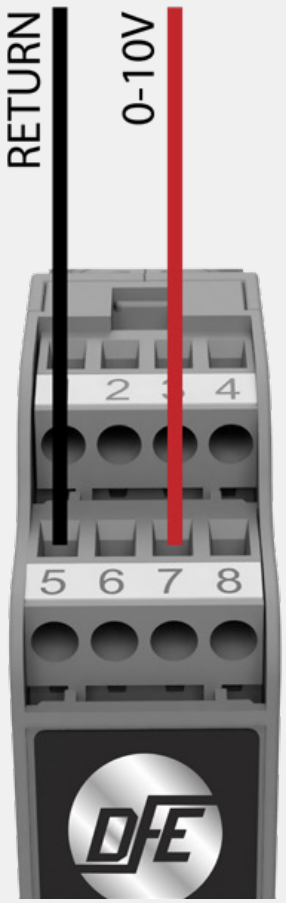
1. **Power Input**
   Power should be sourced to the TA1 on Pins 1 (GND) and 2 (+24 VDC)

2. **Tension Output**
   The tension output signal is provided in two options:
   - 0-10 V is available on Pins 5 (Return) & 7 (0-10 V)
   - 4-20 mA is available on Pins 5 (Return) and 8 (4-20 mA)

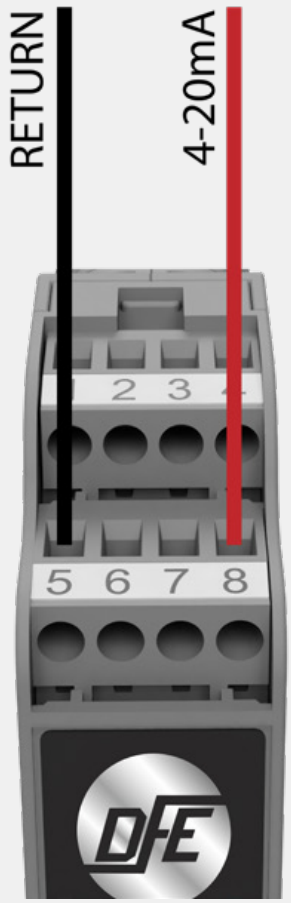
Power Input



Tension Output 0-10 V

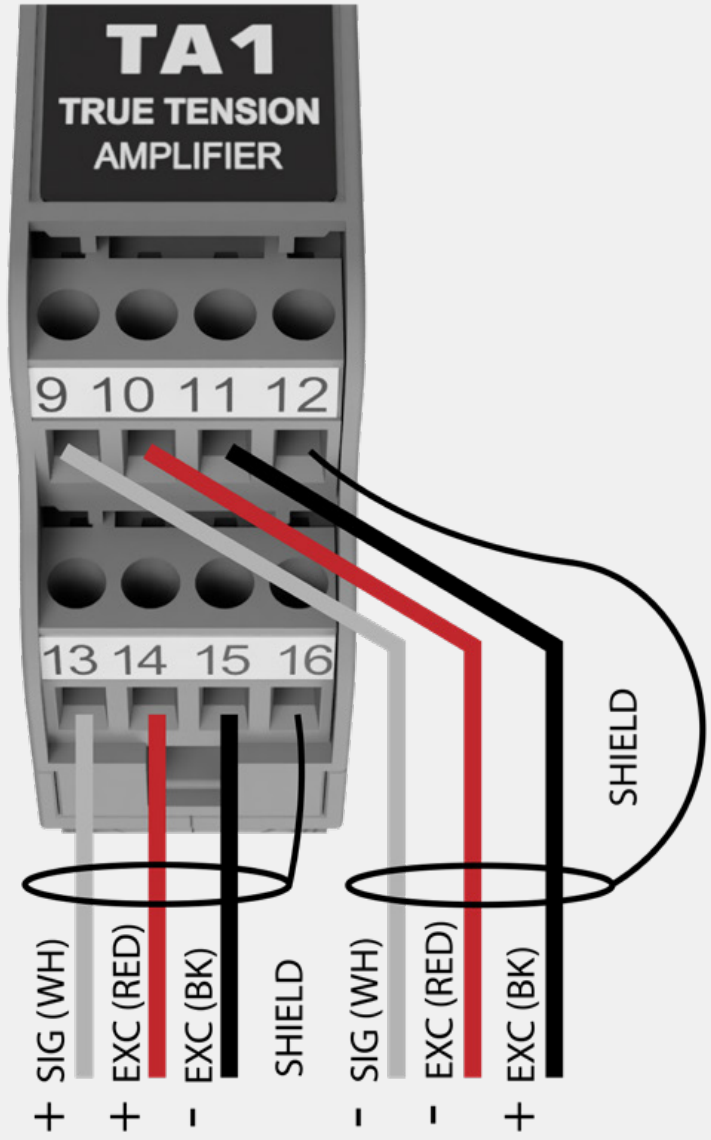


Tension Output 4-20 mA

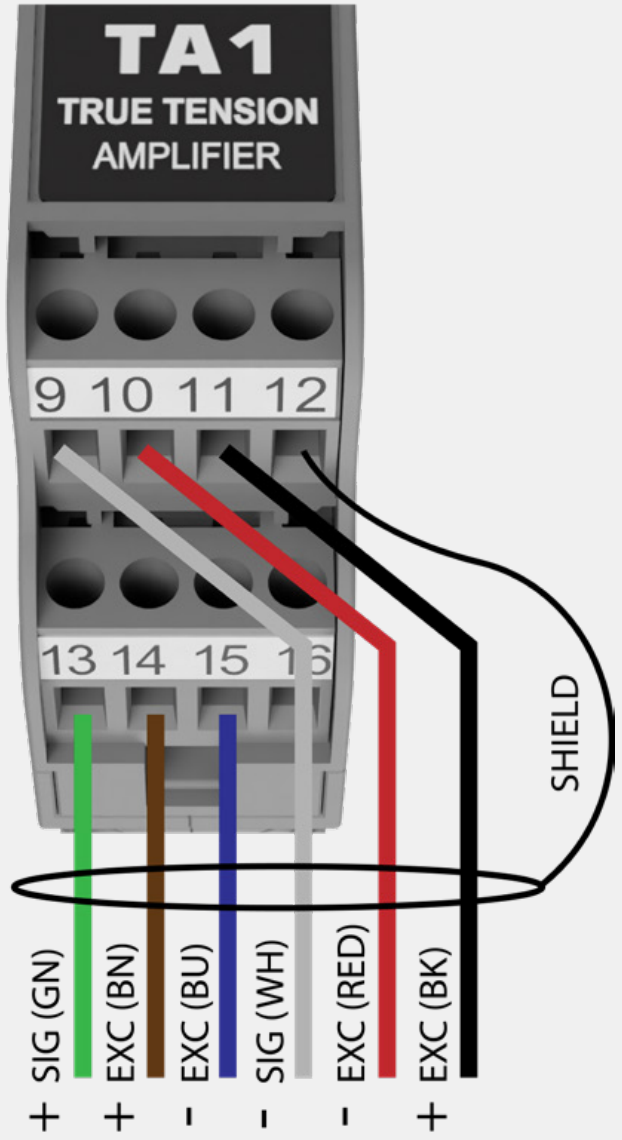


Make your connections based on the type of transducer you have.

MODEL C / F / UPB / RS

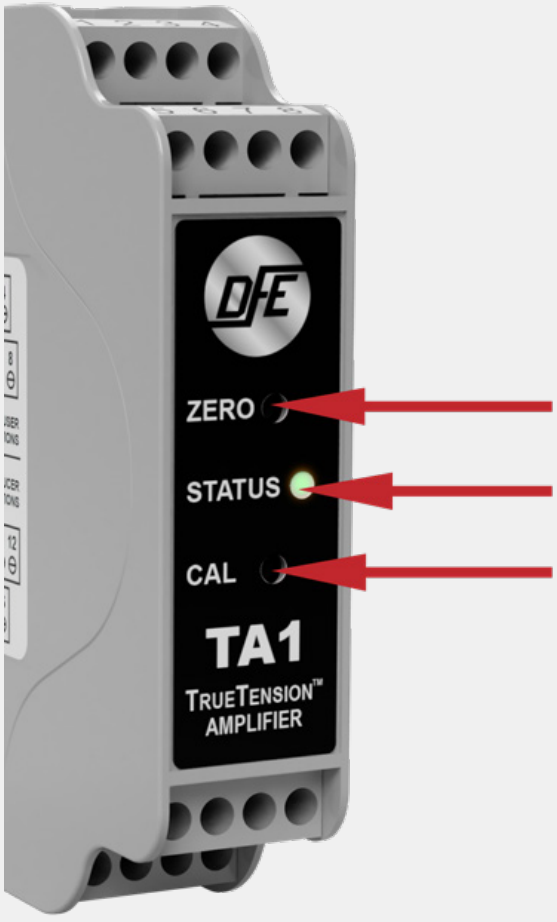


MODEL TR / NW / RFA / VNW / LT



4 CALIBRATION AND ZERO

A calibration process must be performed before your amplifier is ready to indicate tension. Select an appropriate calibration weight. The weight determines the value of web tension that will produce full output of the TA1. For example: A 15 lb weight will result in full output at 150 lbs of tension if the 10% calibration is performed. If a calibration of 25% is used, a calibration weight of 15 lbs will result in a full output at 60 lbs of tension. The first step of any calibration is Zeroing out the amplifier.



Zero Button - Used to zero the amplifier

Status LED - Indicator light for amplifier status

Cal Button - Used to calibrate the amplifier

1. ZERO: Ensure nothing is hanging on or pressing on the transducer roll (including the calibration rope). Press the ZERO pushbutton on the unit front panel for at least 1 second. The unit will automatically adjust and store the tension-zero value one second after the button is pressed. The unit will rapid flash the green status LED to indicate the zero has been stored. Release the button. The Output1 will read 0 VDC and Output2 will read 4 mA.

2. CALIBRATION: During the calibration the transducer(s) should be loaded. Fasten one end of the rope in the machine and thread the other end around the transducer roll in exactly the same path the web will take. Be sure the rope does not pass around any driven rolls, drag bars, or anything else that can affect tension. Ideally the rope should hit an idler roll immediately before and after the tension sensing roll. It does not have to pass over any other rollers once these three are strung. Attach the weight to the free end of the rope as shown in Figure 10. The weight should not touch anything. **Wait for the weight to stop swinging.**

To calibrate at 10%：
Push and Hold the Cal Button (About 1 Second) until confirmation blinks, then release the button. The output will read 10% of full scale after calibration.

To calibrate at 25%：
Push and Hold Cal Button (About 10 Seconds) until you see two sets of confirmation blinks. Then release the button. The output will read 25% of full scale after calibration. If no blink occurs, inadequate Cal weight used.

CALIBRATION AND ZERO continued...

Remove the weight and observe the output. It should read 0 VDC or 4 mA with nothing touching the tension sensing roller. Calibration weight percentage is 25% of full scale.

The TA1 is running normally when the status LED is showing a solid green. If it is not staying on and is blinking, refer to the list of blink sequences indicating errors. Perform the action required to clear them. Contact Technical Support if you need additional help.

Your TA1 is now calibrated and ready for operation.

Normal Operation = Solid Green

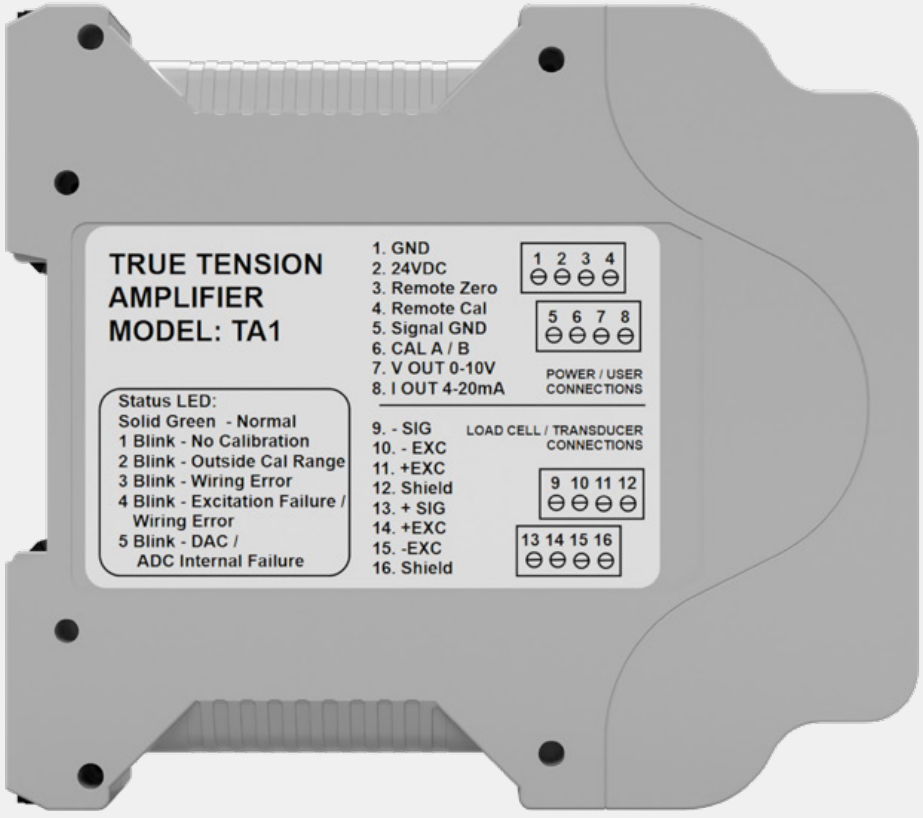
1 BLINK = No Calibration Performed
Action Required: *Perform Calibration. TA1 is not factory calibrated. A calibration must be performed at the customers site. Each calibration is specific to the installation configuration. If using CAL B – a separate calibration must be performed.*

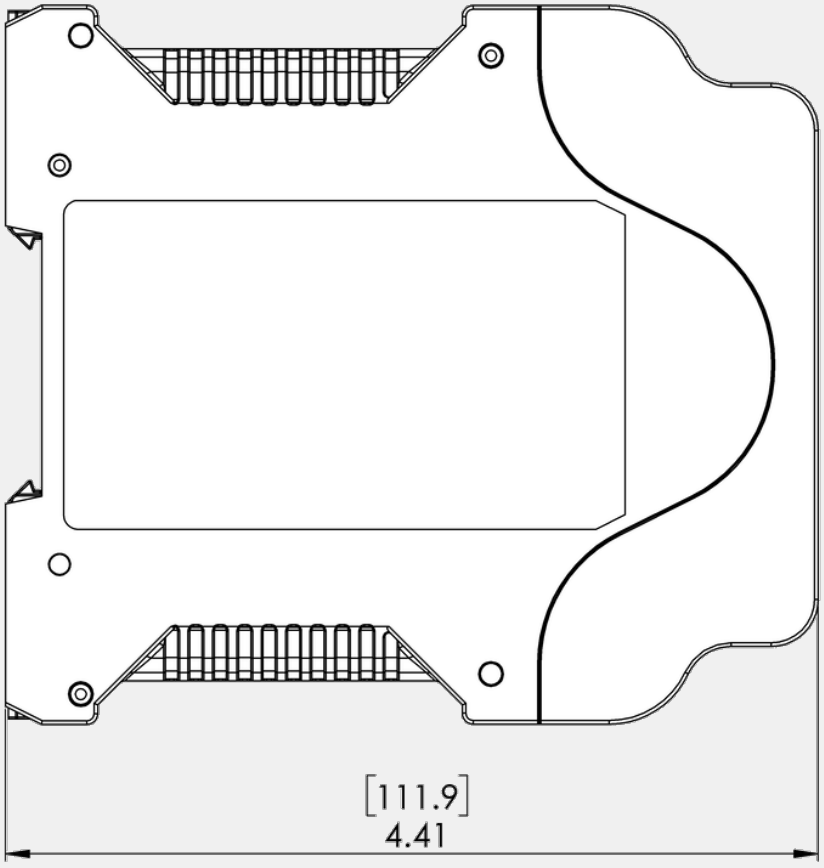
2 BLINKS = Outside Cal Range
Once calibrated the TA1 will indicate an over range or under range condition by setting the error code to 'Outside Cal Range'. The error is active once -20% or 120% tension is exceeded.
Action Required: *To clear this error the tension must be brought back into range, or a new calibration will need to be performed to do so.*

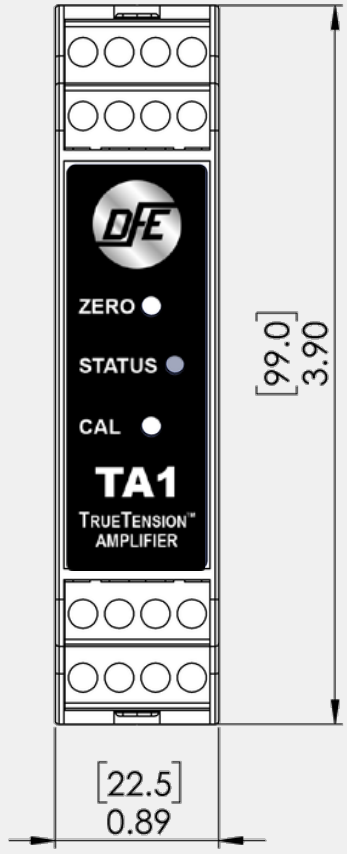
3 BLINKS = Wiring Error
Will alert until the load cell are wired correctly.
Action Required: *Check wiring and retry. Refer to page 4. Check for loose wires at the terminal blocks, check for shorts, and be sure the load cells are connected. If the transducers need trouble shooting – contact tech support for assistance.*
Overload Condition (LT Transducer):
Will intermittenly alert if overload is reached.
Action Required: *Check that the tension range does not exceed the transducer load rating. Reduce wrap angle to reduce effective net force exerted on load cell.*

4 BLINKS = Excitation Failure or Wiring Error
Action Required: *Check for shorts in the transducer / load cell wiring. If the transducers need trouble shooting – contact tech support for assistance.*

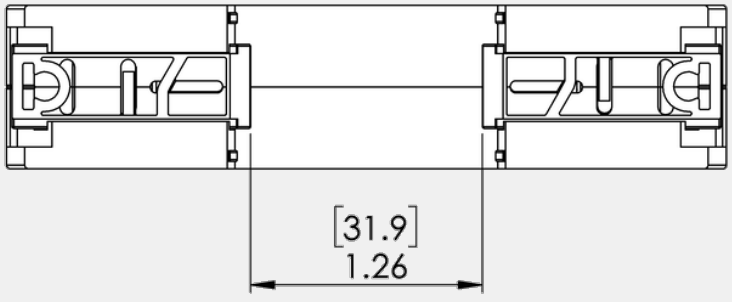
5 BLINKS = DAC/ADC Internal Failure
Action Required: *Contact DFE for replacement.*



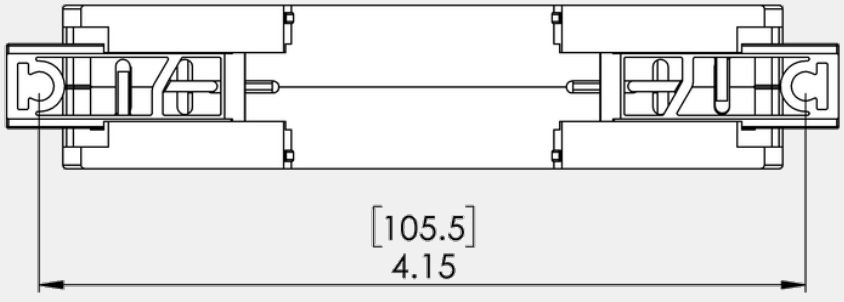




DIN RAIL MOUNT



SCREW MOUNT



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To view or download the **TA1 Instruction Manual** go to:

https://dfe.com/products/tension-amplifiers/true-tension-amplifier-model-ta1/

Please call Technical Support if you need assistance.

E-mail: techsupport@dfe.com

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