



TW NT Series

**TW.TRN.TBOX.BT3**

**TWO-WIRE TECHNOLOGY**

**TONICK BLIND TRANSLATOR**

## DESCRIPTION

The BT3 DIN rail mount decoder translator is integrated with any third-part system to instantly add two-wire capability. The BT3 connects to the host controller / RTU / PLC via a RS485 Serial port, translating Modbus RTU commands into Tonick 2-wire signalling to control and monitor up to 127 field devices and 7 translators can be controlled from a single host controller adding up to 889 outputs and inputs to your control system.

## FEATURES

- Aluminum DIN rail mount enclosure
- Large terminals on two wire output
- Conformal coating to allow operation in 95% humidity (non-condensing)
- Operation rated to ambient +70°C.
- Suitable for use with complete Tonick decoder family

## SPECIFICATIONS

Electrical	
Operating voltage	24 ~ 32V <sub>RMS</sub> , 50 ~ 60 Hz
Supply current	1.3A minimum
Output voltage	23 ~ 31 V <sub>RMS</sub>
Output current	1.2A at +5°C Ambient 0.6A at +70°C Ambient
Recommended inverted power supply is 28V <sub>AC</sub> filtered, 60Hz (Tonick part number: PSU.28VAC.12DC)	
Line Signalling	
Decoders per Line	127 individually addressed decoders or Decoder-In-A-Line Solenoid (DIAS) 15 addressed sensors decoders
Active Decoders	16 DIAS 4 solenoids * Subject to total solenoid loads
Line Settling	3 seconds after line on

System	
CPU	Embedded Xtensa single core 32-bit LX7 microprocessor, up to 240MHz, 4MB SPI flash, 320kB SRAM, 128kB ROM
Firmware	Re-writable application in general flash space. Uses USB type-C as programming interface.
Communications	RS485 half-duplex (±80V fault, 15kV discharge) 9600 Baud, N,8,2 (other formats on request) A, B - DIP selectable line biasing resistors and 130Ω line terminating resistor.
Isolation	1kV between decoder line/ transformer AC input and RS485 circuitry.
Slave Address	1...7 using DIP switches. Factory Set: Slave address 1.
Connections	<b>AC</b> terminals should be wired to the transformer supply <b>L1</b> is the Field 'Live' terminal (Referred to as the 'line') <b>L2</b> is the Field 'Neutral' terminal <b>A</b> (D0), <b>B</b> (D1) are half duplex RS485 signals <b>B</b> is more +ve than <b>A</b> during line idle condition <b>COM</b> is the ground of the RS485 circuitry, must be connected to the RS485 <b>0V</b> of host device.

The RS485 is optically isolated from the Tonick BT3 decoder circuits by at least 1kV to protect against surges propagating in the host controller.

Grounding System	The Earth Stake terminal (EST) <b>MUST</b> be connected to a properly bedded earth stake or plate via a 4mm <sup>2</sup> (#11AWG) or larger earth wire. This earth system is not to be regarded as an electrical safety earth. Connection of the EST to a building and/or an electrical earth is <b>NOT</b> permitted. Use of the Tonick Line Terminating Unit (LTU) at each termination of the 2-wire path is recommended to complete the lightning protection system.
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Environmental	
Storage	0 to 70°C, 5% to 95% humidity (non-condensing)
Operation	±5 to +70°C, de-rated from 1.2A output at +50°C to 0.6A output at +70°C, 5 to 95% humidity (non-condensing) - Conformal coating with acrylic, except fan and terminals

### Certificate of Origin

Manufactured Australia

NOTE: FULL LINE OUTPUT VOLTAGE WILL BE CONTINUOUSLY APPLIED TO THE SOLENOIDS CONNECTED TO 'ON' DECODERS. ATTENTION MUST BE GIVEN TO THE SPECIFICATIONS OF THESE SOLENOIDS.  
**DO NOT EXCEED THE MAXIMUM OUTPUT CURRENT OF THE OEM DECODER ADAPTOR.**

Specifications subject to change

## CONTACT

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## HOW TO ORDER

Simply send us an email at [sales@tonick.com](mailto:sales@tonick.com), contact your local distributor, or phone **+61 8 9477 1188**

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