

## Product Specification

Product: Tonick 2-wire Translator – BT2

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### Description

- True A/C 2-wire decoder for landscape applications, compatible with Tonick decoder translators.

### Features

The Tonick BT2 features include;

- Aluminium DIN rail mount enclosure.
- Large terminals on two wire output.
- Optional DIN41612 connector with mixed terminals for plug-in capability.
- Conformally coated to allow operation in 95% humidity (non-condensing).
- Operation rated to ambient +70 °C.
- Suitable for use with the complete Tonick decoder family.

### Variants

#### TW.TRN.BT2

- Open board format

#### TW.TRN.BT2.TBOX

- DIN mount format.

### Electrical

- Supply Voltage 24 ~32 V RMS AC 50 or 60Hz
- Supply current UP TO 1.3A
- Output Voltage 23-31 V RMS AC
- Output current Max continuous
  - 1.2A at +5°C Ambient
  - 0.6A at +70°C Ambient

### Electrical (cont,)

- Recommended Inverted power supply is 12VDC - 28VAC, Constant, 60Hz (Tonick part number: PSU1228.)

*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.*

### Line signalling

- Up to 127 Tonick 2 Wire decoders, or DIAS (Decoder In A Solenoid).
- Up to 16 actives (Subject to total solenoid loads)
- Allow 45 seconds after power-up, before switching decoders
- Custom firmware for OEM systems.
- Compatible with all Tonick Decoders and with Decoder-In-A-Solenoid (DIAS).
- Compatible with all Tonick Sensor decoders for moisture, pressure, water level, flow and digital inputs.

### Approvals

- CE (European) marked and compliant
- RoHS (European) compliant & lead free

### CPU

- 8-bit RISC. 8MIPs, 64K flash / 4K RAM / 4K EEPROM.

### Firmware

- Re-writable application in general flash space. Uses Kanda Keyfob programmer.

### Communications

- RS485 half-duplex (+-80V fault, 15kV discharge)
- 9600 Baud, N,8,2 (Other formats on request)
- A, B line biasing resistors and 130 Ohm line terminating resistor

### Isolation

- 1KV between decoder line/ transformer AC input and RS485 circuitry

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## Slave address programmable

- 1...7 using the plug-in DIL switches. Factory Set: Slave address 1

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## Connections

The Tonick BT2 should be wired as follows.

- AC and AC terminals should be wired to the transformer supply
- L1 is the Field Cable 'Live' terminal (referred to as the 'line')
- L2 is the Field Cable 'Neutral' terminal
- EST1 The Earth Stake terminal (EST) MUST be connected to a properly bedded earth stake or plate via a 4mm<sup>2</sup> (#11 AWG) or larger earth wire. This earth system is not to be regarded as an electrical safety earth.
- RS485 Terminals
- A (D0), B (D1) are half duplex RS485 signals. B is more +ve than A during line idle conditions
- COM is the ground of the RS485 circuitry and must be connected to the RS485 0V of host controller.
- The RS485 is optically isolated from the Tonick BT2 decoder circuits by at least 1KV to help protect against lightning surges propagating into the host controller.

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## Grounding system

- The Earth Stake terminal (EST) MUST be connected to a properly bedded earth stake or plate via a 4mm<sup>2</sup> (#11 AWG) 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 NOT 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 Degrees Centigrade  
5% to 95 % humidity (non -condensing).
- Operation  $\pm 5$  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).
- Conformally coated with Acrylic, except fan and terminals

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## Certificate of Origin

- Manufactured in the EU.

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## Warranty

- 5-year warranty including damage by lightning.

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Please refer to the Tonick OEM Guide for integration information.

