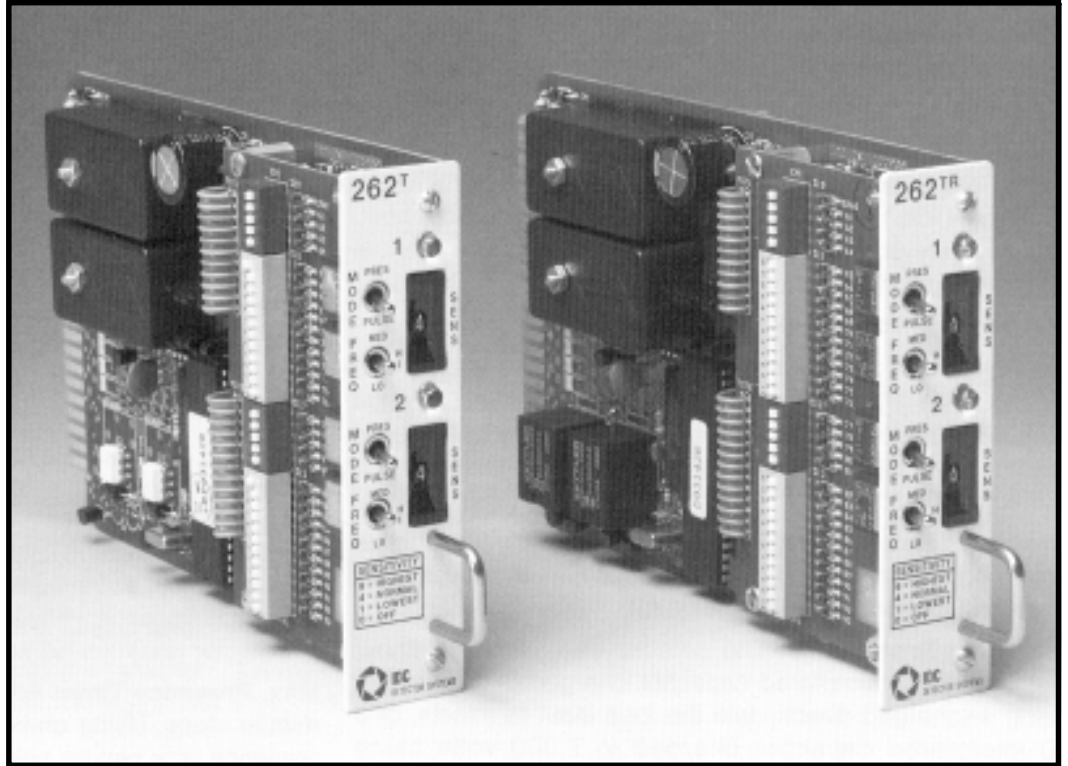


# U.S. Traffic Corporation

Manufacturers & System Engineers

## Models 262T, 262TR

### Two Channel Digital Inductive Loop Vehicle Detectors with Timing Functions



#### Features & Benefits

- Two detector channels in a single unit
- The Winky-Blink™ loop monitor remembers and indicates intermittent and failed loops
- If intermittent or failed loops self-heal, the detector will resume normal operation without requiring a manual reset
- Loops are sequentially scanned, which helps eliminate crosstalk
- Thumbwheel switches for sensitivity settings
- Nine levels of sensitivity per channel
- Gold contact toggle switches on front panel for frequency and mode selections, increase long term reliability
- Three loop frequencies per channel
- Two selectable modes per channel:
  - √ Pulse
  - √ Presence
- Digital delay and extension timers for each channel:
  - √ Delay time range is 0 to 63 seconds with 1 second steps
  - √ Delay is indicated by the LED flashing at 4 Hz
  - √ Delay inhibit control is connected to Ch. 1 - Pin 1 and Ch. 2 - Pin 2
  - √ Extension time range is 0 to 15.75 seconds in 0.25 second steps
  - √ Extension is indicated by the LED flashing at 16 Hz
- Self-tuning and complete environmental tracking
- Complete low power CMOS digital design
- Operates on a single DC power supply
- Transformer isolation for loops
- High intensity LED indicators
- Front panel width is 1.12 inches



## ▼ Specifications

**Self-Tuning:** The detector automatically tunes itself and is fully operational within one second after application of power or after being reset. 30 seconds is required before full presence time is possible.

**Environmental and Drift Tracking:** The detector is fully self-compensating for environmental changes and component drift over the full temperature range and the entire loop inductance range.

**Loop Inductance Range:** 50 to 2000 microhenries with Q factor of 5 or greater.

**Loop Feeder Length:** Up to 4,000 feet (1219 m) maximum with proper feeder cable and appropriate loops.

**Loop Frequency:** Three frequencies (normally in the range of 15 to 84 kilohertz) are switch selectable for each channel. The detector should be manually reset following a manual change in loop frequency.

**Loop Input:** Transformer isolated.

**Reset:** Switch closure between D.C. Common (Pin A) and the reset line (Pin C) for 15 microseconds or longer will reset both detector channels. (Note that the detector is reset automatically whenever the sensitivity level or mode switch is changed.)

**Grounded Loop Operation:** The loop isolation transformer allows operation with poor quality loops (which may include one short to ground at a single point).

**Lightning Protection:** The detector can tolerate, without damage, a 10 microfarad capacitor charged to 2,000 volts being discharged directly into the loop input terminals, or a 10 microfarad capacitor charged to 2,000 volts being discharged between either loop terminal and earth ground.

**Faulty/Intermittent Loop Monitor:** If the total inductance of the detector input network goes out of the range specified for the detector or suddenly changes more than 25%, the detector will immediately generate a failsafe continuous output (CALL) in either presence mode or pulse mode, and the front panel LED will begin repeating bursts of three blinks, the Winky-Blink™ mode. This failsafe condition will continue until the inductance returns to its previous value at which time the detector output will automatically resume normal operation. However, the red DETECT LED will continue in the Winky-Blink™ mode until the detector is manually reset or a power interruption occurs. This feature helps identify intermittent loop problems not present during troubleshooting. (The detector input network consists of the loop or loops plus the feeder [lead-in or home run] cable up to the connector on the detector.)

**Sequential Scanning:** The two loops are activated alternately to minimize crosstalk.

**Sensitivity:** Vehicle detection results from a sufficient negative

change in loop inductance ( $-\Delta L/L$ ). Nine detection sensitivity levels, plus OFF are switch selectable per channel. (Note that the detector is reset automatically whenever the sensitivity level is changed.)

Sensitivity	$\Delta L/L$	Sensitivity	$\Delta L/L$
Level 9	0.0025%	Level 4	0.08%
Level 8	0.005%	Level 3	0.16%
Level 7	0.01%	Level 2	0.32%
Level 6	0.02%	Level 1	0.64%
Level 5	0.04%	Level 0	OFF

**Channel Off State:** While the channel sensitivity switch is set to the "0" position, the channel output is off and the channel is reset.

**Mode:** Two modes of operation are determined by the front panel Mode switch:

- **PRESENCE:** Is a presence mode with a hold time of four minutes minimum (regardless of vehicle size) and typically 60 to 90 minutes for a car. Other hold times are possible by special order from factory.
- **PULSE:** Is a pulse mode with a pulse of  $125 \pm 25$  ms. duration generated for each vehicle detected. Each detected vehicle is instantly tuned out if it remains in the loop detection zone longer than two seconds. This enables detection of subsequent vehicles entering the detection zone. As each vehicle leaves the detection zone, the detector resumes full sensitivity within 0.75 seconds.

**Max. Presence Time:** Adjustable from 0-31 minutes in one minute steps. Using on-board DIP switches, the maximum presence time can be selected to occur when a vehicle call persists for the preset time or on the next loss of green following the preset time. The maximum presence time is disabled when all switches are set to zero.

**Call Delay Time:** The DELAY selection switch on the main circuit board permits Output calls to be delayed from 0 to 63 seconds in one second steps.

**Call Delay Inhibit:** Switch closure (1 volt offset max) between a call delay inhibit line (Ch. 1 = Pin 1, Ch. 2 = Pin 2) and D.C. Common inhibits the call delay time function for that channel.

**Call Extension Time:** The EXTEND selection switch on the main circuit board permits Output calls to be extended from 0 to 15.75 seconds in 0.25 second steps. Full call extension is added to the end of every vehicle detection regardless of vehicle spacing. A circuit board (diode) option determines whether extension is added to all calls or only those calls occurring when the call delay inhibit line is connected to D.C. Common.

**Detect Indicator:** High intensity red light emitting diode (LED) indicates output status of channel:

- **DELAY PERIOD:** Indicator flashes at 4 Hz with 50% duty cycle if a vehicle is being detected but the call delay time has not expired.
- **NORMAL CALL:** Indicator is steadily on after the call delay time has expired and while a vehicle is still being detected.
- **EXTEND PERIOD:** Indicator flashes at 16 Hz with a 50% duty cycle after the vehicle is no longer detected but the extend time has not expired.
- **FAILED OR OUT-OF-RANGE LOOP:** Indicator emits the Winky-Blink™ signal of three 50 ms "blinks" 50 ms apart once per second. Note: If the loop frequency is manually changed, the Winky-Blink™ signal may appear if the detector is not then manually reset.

**Maximum Response Time:** Measured with both channels set to the same sensitivity level.

Sensitivity	Response Time*	Sensitivity	Response Time*
Level 0	OFF	Level 5	6 milliseconds
Level 1	5 milliseconds	Level 6	8 milliseconds
Level 2	5 milliseconds	Level 7	12 milliseconds
Level 3	5 milliseconds	Level 8	20 milliseconds
Level 4	5 milliseconds	Level 9	36 milliseconds

**Solid State Output Ratings:** Optically coupled transistors: 40 VDC maximum collector to emitter; 50 mA maximum collector current. The transistor saturation level is 1.2 VDC maximum. The output transistor is protected with a 47 volt zener diode connected between the emitter and collector.

**Relay Ratings:** The relay contacts are rated for: 3 A max, 150 VDC max, 300 VAC max, and 100 watts max switched power.

**Power:** 16 to 30 VDC, 80 mA maximum

**Operating Temperature:** -40° F to +180° F  
(-40° C to +82° C)

**Size:** 4.5" H x 6.87" L x 1.12" W  
(11.43 x 17.46 x 2.84 cm)

Edge card connector is centered on the 4.5" edge.

**Weight:** 6 oz (170 gm)

**Connector:** 2 x 22 Pin edge card connector with 0.156 inch contact centers. Key slots located between B & C and M & N.

Model 262T			
Pin	Function	Pin	Function
A	D.C. (-) Common	F	Output #1 Collector
1	Channel 1 Delay Inhibit	H	Output #1 Emitter
B	D.C. (+) Power	8 & J	Loop #2
2	Channel 2 Delay Inhibit	9 & K	Loop #2
C	Reset	L	Chassis Ground
4 & D	Loop #1	W	Output #2 Collector
5 & E	Loop #1	X	Output #2 Emitter
Key Slots Between B & C, M & N.			

NOTE: All pins not listed in the above table are spares.

Model 262TR			
Pin	Function	Pin	Function
A	D.C. (-) Common	F	Output #1 Relay (N.O.)*
1	Channel 1 Delay Inhibit	H	Output #1 Relay (COM.)
B	D.C. (+) Power	8 & J	Loop #2
2	Channel 2 Delay Inhibit	9 & K	Loop #2
C	Reset	L	Chassis Ground
4 & D	Loop #1	W	Output #2 Relay (N.O.)*
5 & E	Loop #1	X	Output #2 Relay (COM.)
Key Slots Between B & C, M & N.			

NOTES: The N.O. contacts are shown for power applied, loop(s) connected, and no vehicles present.

All pins not listed in the above table are spares.

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Specifications are subject to change without notice to reflect improvements and upgrades.