

## 222N-TS2 GP7 Two Channel Detector Modules



- Exceeds all NEMA TS-1 and TS-2 Standards
- Excellent noise filtering
- Four frequency settings to eliminate crosstalk
- Pulse or presence modes per channel
- Sensitivity boost to hold small and high vehicles
- Event LED indicates present and historical loop faults
- Seven sensitivity levels per channel
- Sequentially scanned loops

The 222N-TS2 GP7 allows the user to optimize the detector's performance parameters for the most demanding detector application intersection control. For any application, the 222N-TS2 GP7 will identify loop events such as open loops, shorted loops or loops with excessive inductance changes. The event LED, using special flash rates, identifies the condition of loop fault, whether present or historical. This is the standard operation for intersection control where reliability is the major concern.

Designed especially for intersection control where cross-talk must be eliminated, the 222N-TS2 GP7 gives the user four different front panel selectable frequencies. In addition the 222N-TS2 GP7 is a scanning detector further reducing the possibility of cross-talk between two loops connected to the same detector.

Fast, predictable and consistent response times facilitate accurate speed and occupancy measurements. This level of performance is increasingly important for IVHS applications. Simple set-up is also a key feature of the 222N-TS2 GP7. Front panel frequency, sensitivity and mode switches allow the user to simply plug the unit in, adjust switches to desired positions and walk away.

## Specifications

Characteristic	Description																								
Frequency.....	Tuning range for a nominal loop inductance with a Q-factor >4 & <12 F1F2 mode: 46 to 2400 $\mu$ H nominal F0F2 mode: 38 to 1700 $\mu$ H nominal F1F0 mode: 26 to 1200 $\mu$ H nominal F0F0 mode: 18 to 700 $\mu$ H nominal																								
Sensitivity.....	Seven levels of sensitivity can be selected by DIL switch. Settings 7 through 0 are as follows: <table border="0"> <tr><td>7</td><td>1+2+4</td><td>= 0.01%</td></tr> <tr><td>6</td><td>0+2+4</td><td>= 0.02%</td></tr> <tr><td>5</td><td>1+0+4</td><td>= 0.04%</td></tr> <tr><td>4</td><td>0+0+4</td><td>= 0.08%</td></tr> <tr><td>3</td><td>1+2+0</td><td>= 0.16%</td></tr> <tr><td>2</td><td>0+2+0</td><td>= 0.32%</td></tr> <tr><td>1</td><td>1+0+0</td><td>= 0.64%</td></tr> <tr><td>0</td><td>0+0+0</td><td>= Channel Off</td></tr> </table> <p>All sensitivity settings, except the highest, activate a Sensitivity Boost. The detection threshold falls by 50% after detection is established to improve detection of high bed vehicles.</p>	7	1+2+4	= 0.01%	6	0+2+4	= 0.02%	5	1+0+4	= 0.04%	4	0+0+4	= 0.08%	3	1+2+0	= 0.16%	2	0+2+0	= 0.32%	1	1+0+0	= 0.64%	0	0+0+0	= Channel Off
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Operating Modes.....	Two modes of operation are available via a mode selection switch, Pulse (PLS) and Presence (PR).																								
Presence.....	Presence times of 16, 60, 120 minutes or permanent are available by setting the on board switch. Optional: any presence time value can be set from 1 to 127 minutes in 1 second increments.																								
Pulse.....	In pulse mode, a momentary output 125 $\pm$ 20ms (optional 250ms $\pm$ 30ms) is provided on vehicle entry. If the vehicle remains in the loop, a 2 second pulse paralysis time is provided before additional vehicles are detected.																								
Detect LED.....	<b>In detect:</b> High intensity Red LED lights for the duration of presence/ pulse setting in parallel with the channel output. <b>In fault:</b> Operates in parallel with the channel output.																								
Fault LED.....	<b>In open circuit loop fault:</b> LED flashes at 16Hz for 2 seconds and ON continuously for 2 seconds during current fault. Once the fault clears, the LED flashes continuously at 16Hz until reset. <b>In short circuit loop fault:</b> Pattern is the same as above except at 4Hz. <b>In loop drift fault:</b> Pattern is the same as above except at 1Hz. NOTE: Detector must be reset for historical fault condition to be cleared from memory.																								
Ambient Tracking.....	Asymmetrical tracking is used when the detector is quiescent.																								

## Response Times

With the following sensitivity settings:

Channel X	Other Channel	Response Times
.01 to .02%	.01 to .02%	35 ms +/- 4 ms
.04 to .16%	.04 & above	20 ms +/- 2ms
.16 & above	.04 & above	5 ms +/- 1 ms*

\*Value shown is in 'Fast Response' mode, times vary according to Traffic setting. See manual.

Characteristic	Description
Power Requirements.....	10.8 to 30 VDC. Maximum permissible RMS ripple = 700 millivolt.
Outputs.....	SolidState Optically isolated NPN Transistor $V_{ce}$ ON voltage +1.2 VDC @ 50mA This output conducts a maximum of 500 $\mu$ A in the OFF state at a collector-emitter voltage of +40VDC
Failsafe Output.....	A DETECT Output is given when the detector power supply fails. (Failsafe is default)
Input Supply Current.....	For each Detector Module: Nominal Current, normal operation = 60mA Maximum, with shorted loop-inputs = 90mA
Inductance Range.....	18 to 2400 $\mu$ H, automatically tuned
Lightning Protection.....	Exceeds NEMA and Caltrans
Temperature Range.....	-40°F to +176°F (-40°C to +80°C)
Dimensions.....	4.5" H $\times$ 6.875" D $\times$ 1.1" W

## Connections

22 pin card edge connector, mates with Cinch Jones 50-44A-30M

Pin	Function	Pin	Function
A	DC common (-)	N	Not used
B	DC 24V (+)	P	Not used
C	Reset	R	Not used
D	Ch. 1 Loopinput	S	Not used
E	Ch. 1 Loopinput	T	Not used
F	Ch. 1 output collector (+)	U	Not used
H	Ch. 1 output emitter (-)	V	Not used
J	Ch. 2 loopinput	W	Ch. 2 output collector (+)
K	Ch. 2 loopinput	X	Ch. 2 output emitter (-)
L	Chassis ground	Y	Not used
M	Not used	Z	Not used
1	Not used	12	Not used
2	Not used	13	Not used
3	Not used	14	Not used
4	Not used	15	Not used
5	Not used	16	Not used
6	Not used	17	Not used
7	Channel 1 Status Output	18	Not used
8	Not used	19	Not used
9	Not used	20	Channel 2 Status Output
10	Not used	21	Not used
11	Not used	22	Not used

NEMA detectors may not be compatible with 170 rack configurations.

## Other available detection products

These other detection products are also available from Peek Traffic:

224N-TS2	Four channel NEMA	p/n 82-1336-02
224NT-TS2	Extend/Delay Timing	p/n 82-1336-01
222N-TS2	NEMA TS-2	p/n 82-1339-01
222NT-TS2	NEMA TS-2, Timing	p/n 82-1341-01
222N	NEMA TS-1	p/n 82-1339-02

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**Peek Traffic Corporation**

A Quixote Company  
2511 Corporate Way  
Palmetto, Florida 34221  
phone: (941) 845-1200  
toll free in the US: 1 (866) 260-7335  
fax: 1 (941) 365-0837