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Dual Channel – Rack Mount Detector

Model N222 Features:

- 7 selectable sensitivities plus channel disable per channel.
- 4 selectable frequencies per channel
- Presence or pulse modes per channel
- Separate detect and fault indicators per channel
- Fault diagnostics differentiate between open, short and excessive inductance changes
- Meets or exceeds Caltrans specifications



The N222 has been specifically designed and engineered for use in the demanding Traffic Control industry. With standard operations including: seven sensitivities, four frequencies and selectable presence time options. The N222 covers your detection needs.

The N222's wide inductance range allows for use with the wide variety of loops found in the Traffic Control industry (for recommended loop sizes please consult the Northstar Loop Information Guide).

Separate indicators for detect and fault provide for quick visual verification of proper operation. Loop diagnostics are easily viewed with the front panel fault indicator, differentiating between current and historical faults thus facilitating troubleshooting.

Reliable operation and long field life are key engineering goals in every Northstar product.

N222 Specifications

Specifications/Selections

Operating Mode:

Presence = 15 minutes.
Pulse = 125ms +/- 25ms.

Pulse Paralysis:

When used in pulse mode, a pulse paralysis time of 2 seconds is incorporated to prevent multiple pulses being produced when a vehicle remains over the loop for an extended period.

Scanning:

Each channel is activated independently, minimizing crosstalk between adjacent loops connected to different channels of the same unit.

Front Panel Selections

Sensitivity:

7 levels of sensitivity per channel are available selected by a front panel DIP switch.
0 = Low Sensitivity (1.28%)
7 = High sensitivity (0.01%)

Setting	Level dL/L	Setting	Level dL/L
S0+S0+S0	Channel OFF	S0+S0+S4	0.08%
S1+S0+S0	0.64%	S1+S0+S4	0.04%
S0+S2+S0	0.32%	S0+S2+S4	0.02%
S1+S2+S0	0.16%	S1+S2+S4	0.01%

* Set to position S0+S0+S4 initially and adjust to obtain detection of desired vehicles.

Response Time:

Response times shown are with both channels set to the same sensitivity and in fail-secure operation.

Sensitivity	ResponseTime	Sensitivity	ResponseTime
0	-	4	8 +/- 2ms
1	3 +/- 1ms	5	14 +/- 4ms
2	4 +/- 1ms	6	30 +/- 6ms
3	6 +/- 1ms	7	50 +/- 10ms

Frequency:

Four separate frequency settings per channel are available selected by front panel DIP switches.
Frequency range: 15 to 150 KHz.

- F1+F2 = High
- F0+F2 = Medium High
- F1+F0 = Medium Low
- F0+F0 = Low

*Frequency changes by a minimum of 7% between settings.

Front Panel Indicators:

Each channel is equipped with two led indicators which indicate the current status of the channel. The red DETECT led shows solid red for vehicle present and flashes with an error specific code if the channel is experiencing a current loop fault. The Yellow EVENT led shows solid yellow during a current fault condition and flashes with the error code that indicates the type of previous fault condition that occurred.

Event Indicator Fault Codes:

Open Circuit Loop = Single flash and pause.
Short Circuit Loop = Double flash and pause.
Excessive Change in Inductance = Triple flash and pause.

Reset:

Each channel may be reset by front panel ON/OFF (DIP) switch or by temporarily selecting another sensitivity/mode setting then returning to the desired value. The detector itself may be reset by the application of a logic-ground true signal applied to pin C of the edge connector.

Channel Disable:

Each channel may be disabled by setting the front panel Sensitivity switches to the OFF setting i.e. S0 + S0 + S0.
Setting the channel to OFF will de-energize the loop for the selected channel.

Factory Settings:

- Set to HI frequency
- Set to Medium sensitivity (S0+S0+S4)
- Mode set to Presence

Ordering Information:

N222 = Dual channel rack mount detector

Outputs:

Optically Isolated Solid State Transistor.
Solid State Output rated Maximum Voltage 47V, ON voltage <1.5V at 50mA.

Supply Voltage:

10.8 to 30VDC, Maximum current consumption 60mA.

Tuning:

Automatically tunes to proper loop and lead-in with application of power.

Inductance Range:

20uH to 2000uH with a Q factor greater than 5.

Temperature Range:

-40 C to +80 C.

Lead-In Length:

Up to 5000 ft. with proper lead-in and loop.

Lightning and Transient Protection:

Loop inputs will withstand discharge of 2000V from a 10uF capacitor across the loop connections or from either loop input to ground.

Mechanical:

International size card: 4.5" H x 7" L, conformal coated, 44 contact (2 x 22), gold plated double sided edge connector. Front panel 1.125" W, with 3 inch handle.

Weight:

9 oz.

N222 Detector Connector – 44 pin double sided edge connector

Pin #	Functions
A	D.C. (-) Common
B	D.C. (+) Power
C	Reset
D & 4	Loop Ch. 1
E & 5	Loop Ch. 1
F	Output Ch. 1 Collector
H	Output Ch. 1 Emitter
J & 8	Loop Ch. 2
K & 9	Loop Ch. 2
L	Chassis Ground
W	Output Ch. 2 Collector
X	Output Ch. 2 Emitter

Specifications are subject to change without notice.

Northstar Controls L.L.C. warrants this product against defects in Manufacturing and workmanship for one year from date of shipment from the Northstar Controls L.L.C. factory.



L N222-Rev C