



6167 Clark Center Avenue
Sarasota, Florida 34238
Internet: www.northstarcontrols.com
Fax: (941) 926-2461 Tel: (941) 926-2454

Single Channel – Shelf Mount Detector With Optional Timing

Model NT11 & NT11-E Features:

- Extend and Delay Timing (E Model)
- 16 selectable Sensitivities
- 4 selectable Frequencies
- Presence or Pulse Modes
- Selectable Presence Times
- Separate Detect and Fault Indicators
- Fault Diagnostics differentiate between Open, Short and Excessive Inductance Changes
- Meets or Exceeds NEMA TS-1 Standards



The NT11 & NT11-E has been specifically designed and engineered for use in the demanding Traffic Control industry. With standard operations including: sixteen sensitivities, four frequencies and selectable presence time options. The NT11 & NT11-E covers your detection needs.

The NT11 & NT11E'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.

NT11 & NT11- E Specifications

Specifications/Selections

Operating Mode:

Presence = 15 minutes (Short), 120 minutes (Long)
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.

Front Panel Selections

Sensitivity:

16 levels of sensitivity are available selected by front panel DIP switches.

- 0 = Low Sensitivity (2.56%)
- 15 = High sensitivity (0.01%)

Setting	Level dL/L	Setting	Level dL/L	Setting	Level dL/L
15	.01%	10	.06%	5	.32%
14	.015%	9	.08%	4	.48%
13	.02%	8	.12%	3	.64%
12	.03%	7	.16%	2	.96%
11	.04%	6	.24%	1	1.28%
				0	2.56%

Medium sensitivity is used for most applications; this is a setting of 7 or 8. Always use the lowest sensitivity setting that detects the desired vehicles.

Frequency:

Four separate settings controlled by front panel DIP switches. Frequency range: 15 to 150 KHz.

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

Timing Options (E model):

Output signal may be Extended from 0 to 15.75 seconds in .25 second increments and Delayed from 0 to 63 seconds in 1 second increments. Both functions are activated by front panel DIP switches.

* Delay timing function may be inhibited by a 120VAC signal (reference Neutral) applied to Pin J of the connector.

Reset:

Channel may be reset by pressing the reset button or by temporarily selecting another sensitivity or mode setting then returning to the desired value.

Factory Settings:

- Set to HI frequency
- Set to Medium sensitivity (8)
- Presence time set to Short (15 minutes)
- Pulse length set to 125ms
- Relay = fail-safe

Northstar Ordering Information:

NT11 Single Channel Shelf Mount Detector
NT11-E Single Channel Shelf Mount Detector with Extend and Delay Timing.

Outputs:

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

Failsafe:

A constant detect is provided during the following present conditions: power failure*, open, short or 25% inductance change.
* Not provided in units with solid state outputs.

Relay Output Rating:

10A, 277VAC, 24VDC. Output is failsafe (assumes detect condition on power failure).

Power:

115VAC +/- 20%, 1W

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. Protection exceeds NEMA specification.

Mechanical:

Dimensions: 5.5" D x 5.5" H x 2" W excluding connector.

Weight:

1 lb

Indicators:

Front panel indicators include:

Detect – Red, solid during detect. Flashes to indicate delay or extend operation.

Fault – Yellow, solid for current or flashing for historical fault.

Fault flash sequence is related to the type of fault sensed.

- 1 blink – 1 space = Open
- 2 blinks – 1 space = Short
- 3 blinks – 1 space = 25% inductance change

Connector — 10 Pin MS 3102-A-18-P mating with MS 3106-A-18-1S.

Pin #	Function	Color
C	Power (+)	Black
A	Power (-)	White
H	Chassis Ground	Green
B	Relay Common	Yellow
F	Relay N.O.	Blue
G	Relay N.C.	Red
D	Loop	Gray
E	Loop	Brown
I	Spare	White/Blk
J	120VAC Timer Override	White/Red

Note: The above connection is shown with correct power supplied and no vehicle present.

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 NT11-Rev A

