



Global Traffic  
Technologies

# Opticom™ Infrared System

## Opticom™ Models 752N and 754N Phase Selectors

Opticom™ Infrared System Matched Component Products

October 2007

### Description

The Opticom™ Model 752N Phase Selector is a plug-in, *two-channel*, dual-priority, encoded signal device designed for use with Opticom™ Infrared System Emitters and Detectors. The Opticom™ Model 754N Phase Selector is a plug-in, *four-channel*, dual-priority, encoded signal device designed for use with Opticom infrared system emitters and detectors. Both have additional outputs for use with NEMA traffic controllers that do not have internal preemption capabilities as well as controllers that do not recognize pulsing low-priority (TSP) outputs. In addition, the Opticom models 752N and 754N can operate like the standard Opticom models 752 and 754.

Opticom™ Phase Selectors are powered by AC mains and contain their own internal power supply to support Opticom infrared system detectors. The Opticom™ Model 760 Card Rack is required.

Opticom models 752N and 754N recognize and discriminate among three distinct Opticom emitter frequency rates via Opticom detectors: high priority, low priority and probe frequency. Within each of these three frequency rates, the phase selectors further discriminate among 10 classes of vehicle identification codes, with 1,000 individual vehicle codes per class—10,000 total per frequency rate.



Opticom™ Model 752N Phase Selector (left) and  
Opticom™ Model 754N Phase Selector (right)

Opticom models 752N and 754N internally record each activation of the system. Each entry contains the:

- Intersection name
- Date and time of the activity
- Vehicle class code of the activating vehicle
- Activating vehicle's ID number
- Channel called
- Priority of the activity
- Final green signal indications displayed at the end of the call
- Time spent in the final greens
- Duration of the activation
- Nearest intersection location information

## Opticom™ Infrared System Matched Component Products

### Opticom™ Models 752N and 754N Phase Selectors

Opticom™ Models 752N and 754N Phase Selectors also include RS232 interface capability to communicate with computers or controllers. Optional interface software is available for system setup and maintenance.

The primary Opticom™ Infrared System Detector inputs and power outputs are on the card edge connector. Two additional auxiliary detector inputs are available for each channel through a front panel connector. The connector also contains signal indication sensing inputs.

Each channel delivers a constant output for high-priority activation and a pulsed output for low-priority activation. A high-priority signal received on any channel will override any low-priority activation.

The probe frequency does not place a call request to the signal controller, but does log vehicles by ID number when they are in range.

#### Features

- Four channels of detection with Opticom model 754N
- Two channels of detection with Opticom model 752N
- Direct interface with NEMA controllers without internal preemption capabilities
- Direct interface with controllers that do not recognize pulsing TSP outputs
- Two auxiliary detectors per channel
- Green sensing
- Compatibility with encoded signal and non-encoded signal Opticom™ Infrared System Emitters
- High and low priority as well as probe frequency discrimination
- "First-come, first-served" priority within each priority level
- Priority-by-class setting via the interface software
- Direct installation into CA/NY Type 170 input files
- Automatic range setting using an encoded emitter
- User-adjustable range setting from 200 to 2,500 feet of operation
- Easy installation
- Compatibility with most traffic controllers
- Computer-based interface
  - RS232 communications front port and backplane
  - User-selected communications baud rate of 1,200 to 9,600 bits per second
  - Customizable range setting
  - Customizable ID code validation
  - Flexible programming options for priority control parameters
  - Detailed current Opticom™ Infrared System parameter information
  - History log of most recent Opticom infrared system activities (1,000 entries)
- 30,000 frequency/class/vehicle code ID combinations
- Front panel switches and diagnostic indicators for testing
- Erasable write-on pads for phase or movement labeling
- Possible configuration for operating without computer
- Crystal controlled circuitry
  - Accurate infrared signal recognition circuitry
  - Precise output pulse
  - Definitive call verification
- Regulated detector power supply
- Optically isolated outputs
- Multi-function test switch
  - High- and low-priority test calls
  - Reset to default parameters
  - Range setting
  - Diagnostic test
- Advanced built-in diagnostics and testing
- Opticom™ Model 755 Four-Channel Adapter Card (optional)

## Accessories



Opticom™ Model 758 Auxiliary Interface Panel

- ITS Link Interface software package
- Opticom™ Model 832 Communications Daughter Board

## Pin Index

- Card edge – 44-pin STD on the main PCB

### Pins Function

A	Ground
D	Channel A primary detector input
E	Detector 24 VDC power output
F	Channel A output, collector (+)
H	Channel A output, emitter (-)
J	Channel B primary detector input
K	Detector ground
L	Earth ground
M	AC - (in)
N	AC + (in)
P	Channel C primary detector input (not used model 752N)
R	Detector 24 VDC power output
S	Channel C output collector (+) (not used model 752N)
T	Channel C output emitter (-) (not used model 752N)
U	Channel D primary input (not used model 752N)
V	Detector ground
W	Channel B output collector (+)
19	TxD (output)
X	Channel B output emitter (-)
Y	Channel D output collector (+) (not used model 752N)
21	RxD (input)
Z	Channel D output emitter (-) (not used model 752N)

- Din connector – mini 6-pin female (front panel)

Pins	Function
1	RxD (data in)
2	Ground
3	TxD (data out)
4	RTS
5	CTS
6	Shield

- D-shell connector – 44-pin male (front panel)

### Pins Function

1	Phase 1 green input
2	Phase 2 green input
3	Phase 3 green input
4	Optoisolator return
5	Optoisolator return
6	Not used
7	Phase 2 (low priority output 2)
8	Phase 8 (low priority output 8)
9	Phase 6 (low priority output 6)
10	Confirmation light 1
11	Confirmation light 2
12	Preemption inhibit
13	Channel A auxiliary detector 2 input
14	Channel B auxiliary detector 2 input
15	Channel B auxiliary detector 1 input
16	Phase 4 green input
17	Phase 5 green input
18	Phase 6 green input
19	24 VDC power output
20	24 VDC power output
21	Phase 4 (low priority output 4)
22	Phase 3 (low priority output 3)
23	Phase 1 (low priority output 1)
24	Phase 7 (low priority output 7)
25	Phase 5 (low priority output 5)
26	Confirmation light 3
27	Confirmation light 4
28	Channel A auxiliary detector 1 input
29	Channel C auxiliary detector 2 input (not used model 752N)
30	Channel C auxiliary detector 1 input (not used model 752N)
31	Phase 7 green input
32	Phase 8 green input
33	Common green input
34	Detector ground
35	Detector ground
36	Not used
37	Not used
38	24 VDC input
39	NEMA manual enable control
40	NEMA interval advance
41	NEMA coordination isolation
42	NEMA free
43	Channel D auxiliary detector 2 input (not used model 752N)
44	Channel D auxiliary detector 1 input (not used model 752N)

## Opticom™ Infrared System Matched Component Products

### Operating Parameters

- Four dual-priority, and probe frequency, channels (model 754N)
- Two dual-priority, and probe frequency, channels (model 752N)
- “First-come, first-served” for vehicles with the same priority level (high or low)
- Priority override: always higher over lower
- Direct interface with NEMA controllers\* lacking internal preemption capabilities
- Direct interface with NEMA controllers that do not recognize pulsing low-priority outputs\*
- Opticom™ Infrared System Detector input(s): one per channel on the card edge connector and two auxiliary per channel through the auxiliary function harness
- Optional interface software for flexible programming options and call history

\*Use of an Opticom™ Model 758 Auxiliary Interface Panel is required.

- LED indicators
  - Power on
  - High signal/call per channel
  - Low signal/call per channel
- Multi-function test switch to enable diagnostics and test calls to each channel
- **Voltage:** 89 to 135 VAC, 60 Hz
- **Temperature:** -37° C to +74° C (-34.6° F to +165.2° F)
- **Humidity:** 5% to 95% relative

### Physical Dimensions

**Length:** 7.0 in. (17.8 cm)  
8.2 in. (20.8 cm) including handle

**Width:** (Model 752N) 1.1 in. (2.8 cm)  
(Model 754N) 2.3 in. (5.8 cm)

**Height:** 4.5 in. (11.4 cm)

**Weight:** (Model 752N) 0.53 lbs. (240 g)  
(Model 754N) 0.57 lbs. (260 g)

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