

Loop Detectors



STANDARD LOOP DETECTORS

Vehicle detectors are designed to be used in conjunction with a formed loop of wire that is buried in the pavement. When charged with electrical current, the loop wire produces a magnetic field that is changed by the presence of a vehicle. The vehicle detector measures the change in inductance and sends an electrical signal to operate equipment. 2½' x 6' with 20' lead in.

Part Number 373-1200



BONDO LOOP SEALANT

Flexible Loop Sealer is a durable economical polyester compound with 25 years of superior performance. It totally encapsulates sensitized wire loops to form an impervious weather barrier. It cures chemically, and with our additives it can be used in a wide range of conditions with maximum performance. 1 gal. shipped with 2 tubes of hardener.

Part Number 16-P606 Loop Sealant

Part Number 16-P609 Tube Hardener

Part Number 16-P610 Speed Set



Shelf Mount Loop Detectors

LMA-1250

- Single Channel
- Dual Programmable Relay Outputs

TWO MODELS COVER ALL VOLTAGES:

LMA-1250-LP operates on 12VDC, 24VDC, and Low Power.

LMA1250-HV operates on 120VAC and 240VAC

DEFLECTOMETER™:

The front panel 7-segment LED DEFLECTOMETER™ provides visual feedback and assistance for setting the correct sensitivity, reading the frequency of the loop, reporting Loop Faults, and indicating Delay & Extension Timing functions.

Sensitivity Meter:

With a typical size vehicle over the roadway loop, the DEFLECTOMETER™ functions as a Sensitivity Meter. The optimum sensitivity setting should provide a reading of "5". You can adjust the DEFLECTOMETER™ reading by using the front panel UP or DOWN sensitivity buttons. Automatic quantitative feedback of the loop system operation ensures that the detector is set to the most optimum sensitivity level to detect ALL vehicles, including motorcycles and high-bed vehicles.

Frequency Meter:

Following power-up or reset, the DEFLECTOMETER™ will indicate a 2 or 3 digit number (quickly flashes) that indicates the loop frequency of the loop & loop network. Keeping your loops separated by at least 5 kHz avoids crosstalk problems and future service calls.

Ten (10) Levels of Sensitivity:

10 levels of sensitivity (0 to 9) can be easily set using the UP or DOWN pushbuttons.

ADVANCED LOOP DIAGNOSTICS:

The Loop Fault Monitor continually checks the integrity of the loops and will report and store three types of loop faults; Open Loops, Shorted Loops, and 25% sudden changes in inductance.

LOOP FAULT MEMORY:

The Loop Fault Memory uses internal Non-Volatile memory to store and display the current and previous loop faults utilizing the front panel "Loop Fault" LED and DEFLECTOMETER™. A power loss or reset will not delete this memory. A MUST FOR TROUBLESHOOTING!



Standard Features

- Automatic Tuning
- Lightning & Surge Protection
- Four (4) Frequency Levels
- Compatible with ALL radio controls & remote openers
- Sensitivity Boost
- Fail Safe and Fail Secure Configurations
- Separate Color-Coded LED indicators
- Wide Loop Inductance Range: 20 to 2500 microHenries.

NOTE: The LMA-1250 Series is offered in either Fail Safe or Fail Secure configurations.

Part Number 395-10



Vehicle Detection

TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO



Shelf Mount Loop Detectors

LM 302t SERIES TWO CHANNEL TS-1 Type

The LM series of Loop Detectors takes vehicle detection one step further. They not only indicate vehicle presence with great accuracy and reliability, but also monitor the condition of the loop for diagnostic purposes.

The LM302 Series meet or exceed all standards specified in NEMA publication TS 1-1989 part 15 (Inductive Loop Detectors)

Detection Features

Automatic Tuning: No manual tuning is required.

Environmental Tracking: Ensures reliable operation by continuously adjusting for changes in ambient conditions.

15 Levels of Sensitivity: Allows users to fine tune the Loop Monitor™ to their application.

Four Loop Frequencies and

Sequential Scanning: Together, these features greatly reduce the incidence of crosstalk.

Three Selectable Modes:

Pulse: For counting and volume.

Short Presence: For normal detection.

Long Presence: For sites where loops may be occupied for extended periods of time.

Diagnostic Features

Color-Coded, Separate LEDs for Detect &

Fault Indication: Eliminates the confusion encountered with other detectors that use only one LED to display both faults and detection. The Yellow Fault LED works independently from the Red Detect LED to display the type of fault: Short, Open or 25% change of inductance. Each type of fault is indicated by a unique sequence of flashes allowing the user to diagnose loop failures at a glance.

Fault Memory: Records previous fault information. If a problem self-heals, the LM302 will resume normal operation. The contents of the memory will be displayed on the Fault LED. This feature can be used to isolate the source of intermittent loop failures.

Options: Optically Isolated Solid State Outputs
Delay and Extension Timing



2-Channel Shelf-Mount Type Shown

SPECIFICATIONS

Power Supply: 15 VAC +20%, 60 Hz, 3 W max.

Delay and Extension Timing (LM302t):

Delay times up to 63 seconds in 1 second increments, and extension times up to 15.75 seconds in 0.25 second increments may be selected by setting the appropriate front panel DIP switches to the ON position. The DETECT LED indicator will flash at a 2 Hz rate while the delay timer is running and at a 4 Hz rate while the extension timer is running.

Part Number 395-302



Order by Phone 1-262-814-7000 Toll-free 1-800-236-0112
or Order by Fax 1-262-814-7017 Toll-free 1-800-444-0331



Shelf Mount Loop Detectors

ORACLE S2E SERIES – DUAL CHANNEL TS-1 Type

The ORACLE “ENHANCED” detectors not only indicate vehicle presence with great accuracy and reliability, but also incorporate a complete built-in loop analyzer for optimum detector set-up and loop diagnostic purposes.

New Features

LCD View Screens: The Loop Frequency, $-\Delta L/L\%$, Loop Inductance, DEFLECTOMETER™ Pie Graph, DEFLECTOMETER™ Numeric Optimizer, DEFLECTOMETER™ Streaming Graph, Frequency Stability Graph, Sensitivity Level, Mode of Operation, and Vehicle Counting Accumulator can be viewed on the front panel LCD for each channel simultaneously.

DEFLECTOMETER™ Pie Graph & Numeric Value Indicator: While the DEFLECTOMETER™ pie graph displays an instantaneous indication of the current Call strength, the Streaming Graph display graphically shows the Call strength over time. The horizontal axis represents a six second interval. The vertical axis represents Call strength. The graph streams when there is a Call present.

Frequency Stability Graph: The frequency stability graph provides the capability to analyze each frequency level to ensure proper selection of the nominal loop tuning frequency. The XY graph displays detector frequency samples with respect to the reference. A variation from the center of the graph depicts frequency instability on the channel. Basically a thin smooth graph offers a more optimum frequency selection over a thick uneven line.

PAIRED CHANNEL FUNCTIONS:

Directional Logic and 3rd Car Logic: When both of the paired channels have detection in Directional Logic mode, the last channel to have detection will output a CALL until the detection for the last channel ends, even if the detection ends for the first channel. This feature is intended to be used in freeway ramps for wrong way

detection and left turn lanes where other movements in the intersection tend to clip the detection zone of the left turn lane. 3rd Car Logic provides a Call output when both channels are in the Call state. 3rd Car Logic is typically used in left turn queues to provide logic for Protected-Permissive movements.

Enhanced Features

Programmable Navigation: The ORACLE “ENHANCED” Series provides a flexible and simple programming process via the front panel bidirectional toggle switches. Moving through the menu choices has never been easier. The new QuikSet mode navigates to commonly used menu items quickly.

Loop Fault History Log: For each channel, the LCD screen can display the last 25 loop fault conditions and power events.

Loop Inductance Display Indicator: In the “Induct” display mode the LCD screen displays the equivalent system loop inductance (loop and lead-in inductance) within the range of 20 to 2500 micro Henries.

High Intensity Front Panel Back Lighting: The Liquid Crystal Display (LCD) incorporates a white LED backlight. The backlight is energized when any switch is actuated and remains on for 2 hours after the last switch actuation. The backlight improves visibility in poor lighting conditions.



Variable Character Channel ID: Up to five characters or numbers can be selected to identify each channel of detection.

Part Number 395-Oracle-S



Rack Mount Loop Detectors

ORACLE 2E SERIES – DUAL CHANNEL TS-1 Type

The ORACLE “ENHANCED” series meet or exceed all applicable requirements in NEMA TS 1-1989 and NEMA TS2-2003.

New Features

LCD View Screens: The Loop Frequency, $\Delta L/\%$, Loop Inductance, DEFLECTOMETER™ Pie Graph, DEFLECTOMETER™ Numeric Optimizer, DEFLECTOMETER™ Streaming Graph, Frequency Stability Graph, Sensitivity Level, Mode of Operation, and Vehicle Counting Accumulator can be viewed on the front panel LCD for each channel simultaneously.

DEFLECTOMETER™ Pie Graph & Numeric Value Indicator: While the DEFLECTOMETER™ pie graph displays an instantaneous indication of the current Call strength, the Streaming Graph display graphically shows the Call strength over time. The horizontal axis represents a six second interval. The vertical axis represents Call strength. The graph streams when there is a Call present.

Frequency Stability Graph: The frequency stability graph provides the capability to analyze each frequency level to ensure proper selection of the nominal loop tuning frequency. The XY graph displays detector frequency samples with respect to the reference. A variation from the center of the graph depicts frequency instability on the channel. Basically a thin smooth graph offers a more optimum frequency selection over a thick uneven line.

PAIRED CHANNEL FUNCTIONS:

Directional Logic and 3rd Car Logic: When both of the paired channels have detection in Directional Logic mode, the last channel to have detection will output a CALL until the detection for the last channel ends, even if the detection ends for the first channel. This feature is intended to be used in freeway ramps for wrong way detection and left turn lanes where other movements in the intersection tend to clip the detection zone of the left turn lane. 3rd Car Logic provides a Call output when both channels are in the Call state. 3rd Car Logic is typically used in left turn queues to provide logic for Protected-Permissive movements.



Enhanced Features

Programmable Navigation: The ORACLE “ENHANCED” Series provides a flexible and simple programming process via the front panel bidirectional toggle switches. Moving through the menu choices has never been easier. The new QuikSet mode navigates to commonly used menu items quickly

Loop Fault History Log: For each channel, the LCD screen can display the last 25 loop fault conditions and power events.

Loop Inductance Display Indicator: In the “Induct” display mode the LCD screen displays the equivalent system loop inductance (loop and lead-in inductance) within the range of 20 to 2500 microHenries

High Intensity Front Panel Back Lighting: The Liquid Crystal Display (LCD) incorporates a white LED backlight. The backlight is energized when any switch is actuated and remains on for 2 hours after the last switch actuation. The backlight improves visibility in poor lighting conditions

Variable Character Channel ID: Up to five characters or numbers can be selected to identify each channel of detection.

Part Number 395-Oracle



Rack Mount Loop Detectors

LM602

DUAL CHANNEL – NEMA TS-1 Type

The LM602 has been specifically designed to deal with all traffic and highway applications and meets or exceeds all requirements of NEMA Standard TS1-1989 (R2000), Section 15 (Inductive Loop Detectors).

Rugged Handle Assembly: The rugged integrated handle assembly is made of GE Lexan™, which is a super durable polycarbonate resin. The design of this assembly strengthens and protects the whole PCB assembly much better than conventional metal face plates. The temperature stability of critical components is improved with the larger more encompassing enclosure. Detailed operating instructions are conveniently attached directly on the side of the unit, eliminating the need for instruction cards.

Separate Detect / Fault LEDs: The Fault (FLT) indicator displays the type of fault: Short, Open or 25% change of inductance. Each type of fault is indicated by a unique sequence of flashes allowing the user to diagnose loop failures at a glance. Individual indicators eliminate the confusion encountered with other detectors that use only one LED to display both faults and detection.

Loop Fault Memory: Loop Fault Memory reports previous loop fault information. If a loop problem self-heals, the detector channel will resume normal operation. The contents of the memory will be displayed on the Fault (FLT) indicator. This feature can be used to isolate the source of intermittent loop failures.

Automatic Tuning / Loop Configuration: No manual tuning is required and works effectively on all inductive loops from 20 to 2500 microHenries.

Fifteen (15) Levels of Sensitivity: Allows users to fine tune to their application.

Four Loop Frequencies and Sequential Scanning: Together these features greatly reduce the incidence of crosstalk.



Three Selectable Modes:

Short Presence: For normal detection.

Long Presence: For sites where loops may be occupied for extended periods of time.

Pulse: For counting and volume.

Environmental Tracking: Ensures reliable operation by continuously adjusting for changes in ambient conditions.

Options: Relay Outputs, Model LM602R

Part Number 395-602



Vehicle Detection

TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO

Rack Mount Loop Detectors

LM602T

TWO CHANNEL NEMA TS-1

Built-in DEFLECTOMETER™ Technology Provides Users With:

- Call Strength Indicator for Optimum Sensitivity Programming
- Frequency Meter for immediate analysis of loop frequency, avoiding loop cross-talk problems
- Pushbutton Programming

DEFLECTOMETER Call Strength Indicator: The Call Strength Indicator provides the technician with a simple one-step method for accurately setting the optimum level of sensitivity that ensures accurate vehicle detection of all vehicles, including motorcycles and high-bed trucks. **NO MORE GUESSING!**

When a medium size vehicle is over the roadway loop, a DEFLECTOMETER™ Call Strength value of “5” assures that the optimum sensitivity has been achieved. You can adjust the DEFLECTOMETER™ reading DYNAMICALLY without moving the vehicle by using the front panel UP or DOWN sensitivity buttons. **IT DOES NOT GET ANY EASIER THAN THIS!**

Frequency Meter: The built-in Frequency Meter reports the operating frequency of the loop network. Ensuring that adjacent loops are separated by at least 5 kHz will avoid crosstalk problems and future service calls.

Output CALL Test Mode: The Output Call Test Mode provides a straight forward way to test that the Controller Unit is receiving an active output from the detector. This eliminates the need for cabinet test switches and associated wiring. A huge time saving feature during system set-up and trouble-shooting.

Rugged Handle Assembly: The rugged integrated handle assembly is made of GE Lexan™, which is a super durable polycarbonate resin. The design of this assembly strengthens and protects the whole PCB assembly much better than conventional metal face plates. The temperature stability of critical components is improved with the larger more encompassing enclosure. Detailed operating instructions are conveniently attached directly on the side of the unit, eliminating the need for instruction cards.



Advanced Loop Diagnostics: The Fault (FLT) indicator displays the type of fault: Short, Open or 25% change of inductance. The Fault Monitor will report and store three types of loop faults; Open Loops, Shorted Loops, and 25% sudden changes in inductance. Each type of fault is indicated by a unique sequence of flashes allowing the user to diagnose loop failures at a glance.

Standard Features

- Delay & Extension Timing
- Automatic Tuning
- Lightning & Surge Protection
- Four Frequency Levels
- Fail Safe Output Configuration
- Separate Color-Coded LED indicators
- Wide Loop Inductance Range: 20 to 2500 microHenries.

Part Number 395-602T



Rack Mount Loop Detectors

LM622

DUAL CHANNEL – NEMA TS-2 Type A

The LM622 has been specifically designed to deal with all traffic and highway applications and meets or exceeds all requirements of NEMA Standard TS2-2003, Section 6.5 (Inductive Loop Detectors).

Rugged Handle Assembly: The rugged integrated handle assembly is made of GE Lexan™, which is a super durable polycarbonate resin. The design of this assembly strengthens and protects the whole PCB assembly much better than conventional metal face plates. The temperature stability of critical components is improved with the larger more encompassing enclosure. Detailed operating instructions are conveniently attached directly on the side of the unit, eliminating the need for instruction cards.

Separate Detect / Fault LEDs: The Fault (FLT) indicator displays the type of fault: Short, Open or 25% change of inductance. Each type of fault is indicated by a unique sequence of flashes allowing the user to diagnose loop failures at a glance. Individual indicators eliminate the confusion encountered with other detectors that use only one LED to display both faults and detection.

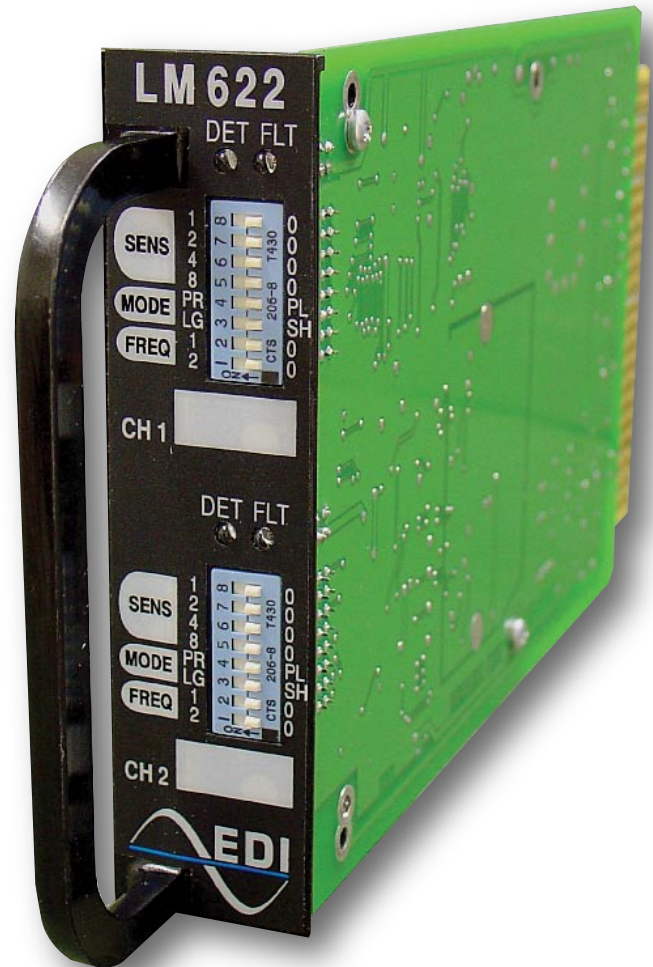
Loop Fault Memory: Loop Fault Memory reports previous loop fault information. If a loop problem self-heals, the detector channel will resume normal operation. The contents of the memory will be displayed on the Fault (FLT) indicator. This feature can be used to isolate the source of intermittent loop failures.

Standard Features

Automatic Tuning / Loop Configuration: No manual tuning is required and works effectively on all inductive loops from 20 to 2500 microHenries.

Fifteen (15) Levels of Sensitivity: Allows users to fine tune to their application.

Four Loop Frequencies and Sequential Scanning: Together these features greatly reduce the incidence of crosstalk.



Three Selectable Modes:

Short Presence: For normal detection; Long Presence: For sites where loops may be occupied for extended periods of time.

Pulse: For counting and volume.

Environmental Tracking: Ensures reliable operation by continuously adjusting for changes in ambient conditions.

Options: Relay Outputs, Model LM622R

Part Number 395-622



Vehicle Detection

TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO TAPCO

Rack Mount Loop Detectors

LMD622T

TWO CHANNEL NEMA TS-2 TYPE C

Built-in DEFLECTOMETER™ Technology Provides Users With:

- Call Strength Indicator for Optimum Sensitivity Programming
- Frequency Meter for immediate analysis of loop frequency, avoiding loop cross-talk problems
- Pushbutton Programming

Why guess when you can know your detector is optimally programmed and performing for all vehicle classes!

Enhanced Features

DEFLECTOMETER™ Call Strength Indicator:

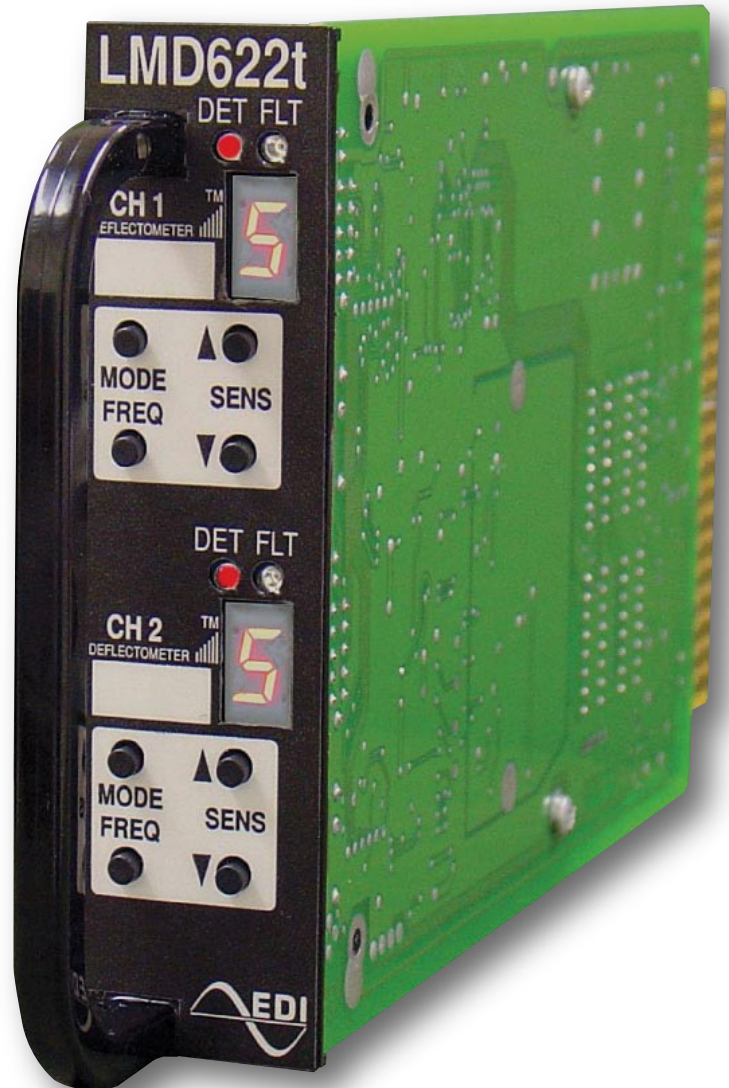
The Call Strength Indicator provides the technician with a simple one-step method for accurately setting the optimum level of sensitivity that ensures accurate vehicle detection of all vehicles, including motorcycles and high-bed trucks. **NO MORE GUESSING!**

Frequency Meter: The built-in Frequency Meter reports the operating frequency of the loop network. Ensuring that adjacent loops are separated by at least 5 kHz will avoid crosstalk problems and future service calls.

Output CALL Test Mode: The Output Call Test Mode provides a straight forward way to test that the Controller Unit is receiving an active output from the detector. This eliminates the need for cabinet test switches and associated wiring. A huge time saving feature during system set-up and trouble-shooting.

Rugged Handle Assembly: Same as LM-622 (previous page)

Advanced Loop Diagnostics: The Fault (FLT) indicator displays the type of fault: Short, Open or 25% change of inductance. The Fault Monitor will report and store three types of loop faults; Open Loops, Shorted Loops, and 25% sudden changes in inductance. Each type of fault is indicated by a unique sequence of flashes allowing the user to diagnose loop failures at a glance.



Standard Features

- Delay & Extension Timing
- Automatic Tuning • Lightning & Surge Protection
- Four (4) Frequency Levels
- Fail Safe Output Configuration
- Separate Color-Coded LED indicators
- Wide Loop Inductance Range: 20 to 2500 microHenries.

Part Number 395-622T



Order by Phone 1-262-814-7000 Toll-free 1-800-236-0112
or Order by Fax 1-262-814-7017 Toll-free 1-800-444-0331

