

ACM 705A Single-Loop Vehicle Detector Manual

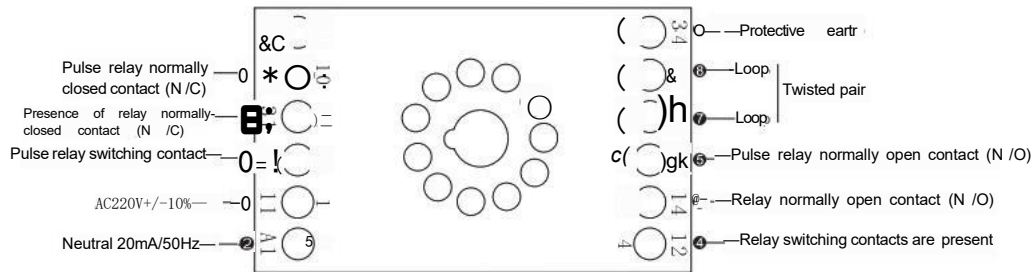
Ver.2.0

1. Technical Parameters



Power Supply	AC 110/220V±10%/50/60Hz;DC 12/24V (Optional:Please check the body label for details.)
Sensitivity:	Adjustable in 4 levels
Working Frequency	20KHz-170KHz
Response Time:	10ms
Working Temp.	-20°C~+65°C
Humidity:	95%or less (non-condensing)
Presence Mode:	Unlimited presence/Limited presence:500ms
Max.Loop Size:	8M x1M
Output Mode:	Relay
Feeder Length:	With 10M (twisted,a Min.of 20 twists per meter.)

2. Wiring Diagram



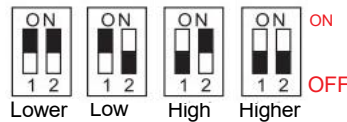
3. Work Status Indication

Power Indicator:It stays on during working hours.

Detection Indicator:After the power is on,the detector will calibrate automatically,about 3 seconds.During calibration,the green indicator will always be on.(Note:There should be no vehicles on the loop during calibration.)After the calibration is completed,the green indicator will go out. (The green indicator goes out when there is no car;stays on when there is a car;continues to flash when the vehicle detector is abnormal.)

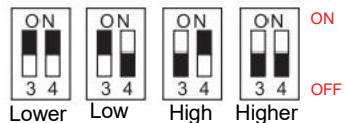
4. Frequency Adjustment

The user can change the frequency of the loop to avoid crosstalk from adjacent loops or ambient frequencies.The detector provides four frequency options,which can be set by the DIP1 and DIP2 on the panel.



5. Sensitivity Adjustment

The user can change the sensitivity by the DIP3 and DIP4 on the panel,with 4 levels. When debugging,first set the sensitivity to a lower level.If there is no output, increase the sensitivity by one level.Repeat this process until the vehicle detector works normally and stably.



6. Automatic Sensitivity Boost

Automatic Sensitivity Boost is selected by DIP5 on the panel.OFF -Disabled,ON -Enabled.

7. Filter Mode

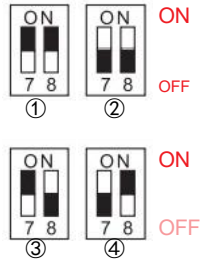
When the environmental electromagnetic disturbance is large and causes malfunction,you can pull DIP6 to ON to increase the filter coefficient to filter out the disturbance.In filter mode,the reaction time of the detector is delayed and the sensitivity will reduce.

Usually,the filter mode is disabled by setting the DIP6 to "OFF".

【Attention】 If the detector doesn't work normally,please check the loop,whether the embedding is correctly,whether the feeder is twisted or damaged,then adjust the operating frequency and sensitivity level,and finally use the enhanced filter mode.

8. Relay Output(Factory Default Setting:DIP7-ON,DIP8-ON)

DIP7	DIP8	Designation
ON	ON	When the vehicle enters the loop,K1(Pin3/4)will close.After the vehicle leaves, K1(Pin3/4)will open,meanwhile K2 (Pins 5/6)will close for 500ms and then open. When the vehicle enters the loop,K1(Pin3/4)will dose;meanwhile K2 (Pins 5/6)will
OFF	OFF	close for 500ms and then open.After the vehicle leaves,K1(Pin3/4)will open. When the vehicle enters the loop,K1(Pin3/4)will close for 500ms and then open.After
ON	OFF	the vehide leaves,K2 (Pins 5/6)will close for 500ms and then open.
OFF	ON	When the vehicle enters the loop,K1(Pin3/4)and K2 (Pins 5/6)will close.After the vehicle leaves,K1(Pin3/4)and K2 (Pins 5/6)will dose.



9. Reset

When the detector is powered on,press the reset button on the panel,the detector will be restarted and reset to a car-free state.

10. Installation Information

Loop and Feeder Specification

The loop must consist of insulated wire with a minimum copper cross-sectional area equivalent to 1.5 square millimeters.The feeder should be of the same material,but twisted,a minimum of 20 twists per meter.

Joints in the loop or feeder are not recommended.

Where this is not possible,joints are to be soldered and terminated in a waterproof junction box.This is extremely important for reliable detector performance.



Where long loop feeders are used,or feeders are routed together with other electrical wiring,the use of a screened cable is suggested for the feeder.

The screen must be earthed at the detector end only.

Sensing Loop Geometry

Sensing loops should,unless site conditions prohibit,be rectangular in shape and should normally be installed with the longest sides at right angles to the direction of traffic movement.These sides should ideally be 3 fe et apart.

The length of the loop will be determined by the width of the roadway to be monitored.The loop should reach to within 1 foot of each edge of the roadway.

In general,loops having a circumference measurement in excess of 30 feet should be installed using 2 turns of wire,while loops of less than 30 feet in circumference should have three or more turns.Loops with a circumference measurement of less than 18 feet should have four turns.It is good practice at time of installation to construct adjacent loops with alternate three and four turn windings to minimize crosstalk.

Loop Installation

All permanent loops should be installed in the roadway by cutting slots with a masonry cutting disc or similar device.A45° crosscut should be made across the loop corners to reduce the chance of damage that can be caused to the loop cable at right angle corners.A slot must also be cut from the loop circumference at one corner of the loop to the roadway edge to accommodate the feeder.Please refer to the loop documentation for the slot width and depth.

A continuous loop and feeder is obtained by leaving a tail long enough to reach the detector before inserting the cable into the loop slot.Once the required number of turns of wire is wound into the slot arou nd the loop circumference,the wire is routed again via the feeder slot to the roadway edge.A similar length is allowed to reach the detector and these two free ends are twisted together to ensure they remain in close proximity to one another.(Minimum 10 turns per foot). Maximum recommended loop feeder length is 300 feet.It should be noted that the loop sensitivity decreases as the feeder length increases,so ideally,the feeder cable should be kept as short as possible.The loops are seated using a"quick-set"black epoxy compound or hot bitumen mastic to blend with the roadway surface