APPLICATION NOTE #17
HID ProxPass Vehicle Identification Tag

Introduction: HID ProxPass Tag

The HID ProxPass tag is used for identification purposes to control access to and from a parking facility. The tag attaches to and identifies a vehicle.

Advantages of using ProxPass

The ProxPass tag provides the user with “hands-free” access. With an average read range of six feet, it adds convenience for users who need to gain access into a parking facility, especially during extreme weather or in a hostile environment.

Company vehicles utilized by multiple employees can be tracked separately from the employees themselves, providing such information as whether the vehicle is on the lot, when it arrived and when it departed.

Description of ProxPass

The ProxPass tag is “active,” requiring a battery to operate. The battery provides the necessary power to extend the read range for hands-free access. Battery life is two to five years, depending on usage.

ProxPass adheres to the inside of the vehicle windshield. The tag is used with the MaxiProx reader, which is typically installed on a gooseneck pedestal with the face of the reader parallel to the controlled lane. As a vehicle approaches the MaxiProx reader, the information from the tag is transmitted to the reader and forwarded to the host system for user access confirmation.

The ProxPass tag’s discrete design and ease of installation inside the vehicle minimizes the risk of theft and damage inherent with other manufacturers’ tags and mounting locations.

HID Card Formats Used with ProxPass

The ProxPass tag is programmable for all HID formats.

Installation of ProxPass

Install ProxPass in upper or lower corner of the front windshield on the side of the vehicle adjacent to the MaxiProx reader. The unit should be mounted securely and not allowed to shift positions within the vehicle. This will protect the unit and maximize the consistency of read range parameters.

Refer to the installation instructions provided for further guidelines on using and installing the ProxPass tag.

Installation of the HID MaxiProx Reader

Install the MaxiProx reader on a gooseneck pedestal or stanchion. HID recommends using the Falcon S1R1235 stanchion. Because the stanchion is metal, use the Falcon MC5375-1CR MaxiProx reader acrylic spacer kit to buffer the reader from metal. The MaxiProx reader and stanchion should be installed far enough back from the vehicle lane so that vehicles driving by the reader will not damage it by striking it with side mirrors, bumpers, etc.

Care should be taken when setting up control lanes that vehicles entering can communicate with the ENTRY reader but will not pass through the read range zone of the EXIT reader. The inverse is also true. If you have a pre-existing installation where this is occurring, contact your controller manufacturer to setup a delay time for "same tag" reads on multiple readers.

Refer to the installation instructions provided for further guidelines on using and installing the MaxiProx reader.

End-User Instructions for the HID ProxPass Tag

The vehicle must be positioned so that the ProxPass tag enters the read zone as the vehicle approaches the MaxiProx reader. This may require the driver to slow or even stop completely in order for the tag to be read. It may be helpful to create lane controls to stage vehicles in the proper position for effective tag detection.

Other Considerations When Using the ProxPass Tag

Loop detectors may cause interference with MaxiProx readers and cause reduced read ranges. If this occurs, first consult the manufacturer of the loop detector to see if the frequency can be adjusted. HID utilizes 125khz to excite and transfer data. If the loop detector can be tuned, try to maximize the difference between the loop frequency and the HID reader frequency.

The average read range of the ProxPass tag (with the MaxiProx reader) is six feet. The maximum read range is up to eight feet. This should be considered when choosing a parking space. If you park within the read range of the MaxiProx reader, the ProxPass tag will continually try to communicate with it. This will drain the ProxPass batteries in a short period of time.

The ProxPass tags will try to intercommunicate, and are shipped in special packaging to avoid this. Once they are removed from the shipping materials and activated, they should be kept at least six inches apart. This distance should not cause problems with vehicles parked close together.

The batteries inside the ProxPass tag are not replaceable. When the battery life has expired, the tag needs to be replaced.

Possible effects on read range

Angle(s) of the tag (mount in vehicle) - General statement: the more surface are of the tag the reader can see the better the read range will be. Specifics: The tag will be mounted to the windshield of various vehicles, from sports cars, mini-vans, standard trucks, to commercial trucks. Each installation will have a different slope and wrap of the windshield. The degree of slope and wrap will determine the effective read range. (**example1**: Corvette, would have extreme slope and extreme wrap, the tag would be tilted back at least 45 degrees combined with maybe 10 degrees of wrap would provide less than 50% of the surface area to the reader).(**example 2**: Commercial truck, would have no slope and no wrap (basically the tag would be perpendicular to the reader), this is the worst case scenario).

Height of approach (in relation to the reader) - Again, the more surface area of the tag the better the read range. Tag mounts that are 3-4 feet above or below the reader will knock the read range down 3-4 feet.(**example**: Commercial truck, assuming a standard reader height of 3ft. and the tag mount at 6ft., your read range is about 4ft.)

Width of the lane (in relation to the reader) - Assuming the worst case scenario of the tag perfectly perpendicular to the reader, if you approach the reader as a vehicle would at a distance of less that 1ft., your read range is approx. 3ft. If you widen the approach distance to 7ft the reads are very intermittent. Conclusion, the vehicle approaching the reader should be in the 3-6ft. range for consistent reads.

Angle of reader (in relation to the lane - Most installations will have the reader mounted parallel to the lane. This helps create the perpendicular presentation. I have found that if the reader is mounted at a 45 degree angle to the lane it ensures the reader will have better visibility of the tag and eliminates the perpendicular tag instance.

Speed of presentation - **This has the single greatest effect on read range.** You must approach the reader at no greater than 2ft per second for consistent reads. Slower will provide greater read range (up to 8ft) and faster will drastically reduce read range (**Parallel - at 3ft per second, knocks the read range down to 4ft or less. Perpendicular - at 3ft per second, intermittent reads of less than 2ft).**