



Xtreme PreView®

XPV4220A | XPV4226A | XPV4232A

Operating Manual / Installation Guide



www.preco.com

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FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference.

PATENTS

Patented under one or more of the following U.S. Patents:

5345471, 5523760, 5457394, 5465094, 5512834, 5521600, 5682164, 5630216, 5510800, 5661490, 5609059, 5774091, 5757320, 5581256, 5832772, 5519400, 5767953, 5767627, 5589838, 5563605, 5661385, 5517198, 5610611, 5883591, 5805110, 5754144, 7088284, and 7215278.

Other patents have been applied for.

TRADEMARKS

The names of actual companies and products mentioned herein may be the trademarks of their respective owners. Any rights not expressly granted herein are reserved.

Product Description

The Xtreme PreView® is a solid-state, pulsed radar object detection system designed to alert vehicle operators of obstacles. The system detects both moving and stationary objects in a pre-defined coverage area and reports the distance of the closest object via visual range indicators and an audible signal to the vehicle operator.

The Xtreme PreView® consists of three major components: an environmentally sealed sensor, an operator display mounted in the cab of the vehicle, and the associated cabling. The Xtreme PreView® system is not affected by harsh weather conditions, including temperature extremes, rain, sleet, snow, or fog.

The Xtreme PreView® system is designed to allow the maximum flexibility for different applications. Multiple sensor ranges, multiple operator display options, and a large selection of interconnect cables allow a system to be created for most applications.



The Xtreme PreView® sensor comes in three different models:

XPV 4220A	Twenty foot (6 meter) detection range
XPV 4226A	Twenty six foot (8 meter) detection range
XPV 4232A	Thirty two foot (10 meter) detection range

In addition, the Xtreme PreView® operator display comes in three different models:

CD 6102	Standard Ranging display
XPV 4103	Front/Rear display
XPV 4104	Left/Right display

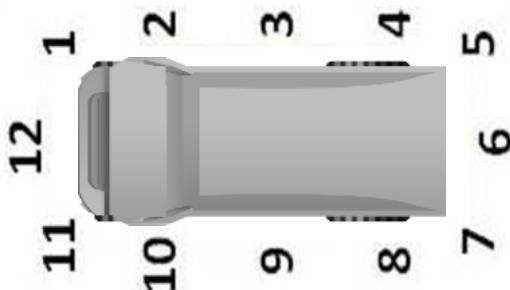
Multiple cables are available for the Xtreme PreView®. Cable models include, but are not limited to:

XPV 41PA	Power Adapter Cable
XPV 41CA	Cab Adapter Cable
XPV 4116	5 Meter Extension Cable
XPV 4132	10 Meter Extension Cable
XPV 4165	20 Meter Extension Cable
XPV 41Y1	1 Meter 'Y' Adapter Cable
XPV 41Y6	6 Meter 'Y' Adapter Cable
XPV 41AA	SAS Alarm Adapter Cable
XPV 41LA	SAS Light Adapter Cable

Sensor Description

The sensor assembly transmits and receives low power 5.8GHz radar signals. It then processes the returned signals to determine if an object has reflected any energy back to the sensor and reports this to the operator display. The sensor is designed to process and report detections within ½ of a second allowing the vehicle operator to quickly respond to any object within the detection zone. The sensor RF output is pulse modulated so that it will not interfere with similar devices, in fact, multiple sensors may be used on the same vehicle.

In addition to the different ranges available for the Xtreme PreView® sensor, each model also has the ability to have a unique sensor identification (ID) number. This ID number allows multiple sensors to work together to protect different areas of the vehicle. To simplify the assignment of sensor ID numbers, a clock dial approach is used.



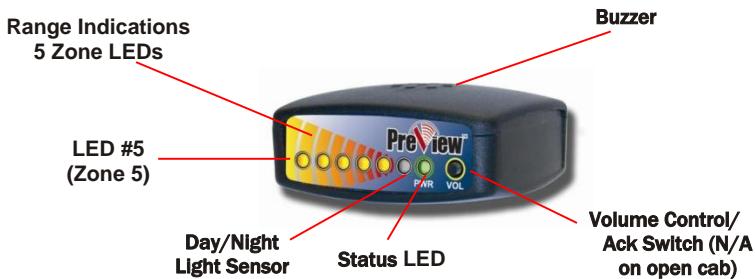
Operator Display Description – Standard Ranging and Open Cab

The operator display provides the vehicle operator with both visual and audible indications of a detected object. Range to the detected object is provided with five LED's. Each LED represents 1/5th of the total range. Example: For the XPV4232A, each LED represents approximately 6 feet (2 meters). The display unit also contains a buzzer to provide an audible alert that will increase in rate as an object becomes closer, providing the operator with another cue that an object is being detected.

There is also an Open Cab display available that is sealed against dust and moisture intrusion.

The operator display continuously monitors communication from the Xtreme PreView® sensor and in the event of a system failure or malfunction, will notify the operator with a fault indication.

For the Standard display, a switch is provided on the front panel of the display allowing the vehicle operator the ability to adjust the buzzer volume to three different levels or to provide an alarm acknowledge and silence the buzzer. The Open Cab version does not have the switch. The LED indicators are automatically compensated by an internal ambient light sensor to avoid excessive intensity in low light conditions.



Item	Description
Status LED	Illuminates green continuously after power is applied to the system. The status will change from green to red if a system malfunction occurs.
Range Indications	Illuminate to give operator a relative distance measurement to the closest detected object. LED's operate from the left to right, with a closer object resulting in more LED's illuminated.
Buzzer	Sounds audible tones to alert operator of obstacles. The buzzer tone rate will increase as the vehicle gets closer to an object.
Volume Control/Ack Switch	This momentary push button switch allows three different buzzer volume levels to be selected. It can also be configured as an acknowledge switch to silence the buzzer using the Service Tool.

Table 1. Standard Operator Display Description

Display Detection Warnings

Conditions	LED5	LED4	LED3	LED2	LED1	Buzzer
No Object Detected	Off	Off	Off	Off	Off	Off
Object in Zone 5	On	Off	Off	Off	Off	Sounding at 1Hz
Object in Zone 4	On	On	Off	Off	Off	Sounding at 1Hz
Object in Zone 3	On	On	On	Off	Off	Sounding at 2Hz
Object in Zone 2	On	On	On	On	Off	Sounding at 4Hz
Object in Zone 1	On	On	On	On	On	Sounding at 8Hz

Table 2. Standard Display LED and Buzzer Description

Additional buzzer warning options are available via advanced settings using the PrecoNet Service Tool (PVST4000). Contact PRECO Electronics® for more information regarding these options.

Operator Display Description – Front/Rear

The Front/Rear operator display provides the vehicle operator with both visual and audible indications of a detected object for a multiple sensor system. The Front/Rear display provides a single LED to indicate detection for both directions. There is also an Open Cab version of the Front/Rear display that is sealed.

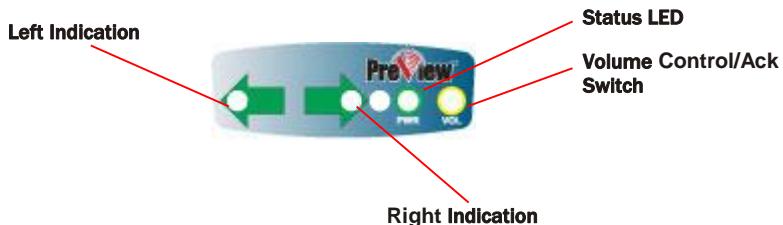
Like the Standard ranging display, the front/rear display also contains a buzzer to provide an audible alert that will increase in rate as an object becomes closer, providing the operator with another cue that an object is being detected. This display also includes the Status LED and the volume/acknowledge switch.



Operator Display Description – Left/Right

The Left/Right operator display provides the vehicle operator with both visual and audible indications of a detected object for a multiple sensor system. The Left/Right display provides a single LED to indicate detection for both directions.

Like the Standard ranging display, the left/right display also contains a buzzer to provide an audible alert that will increase in rate as an object becomes closer, providing the operator with another cue that an object is being detected. This display also includes the Status LED and the volume/acknowledge switch.



Object Detection Capability

The Xtreme PreView® system is a blind spot collision warning system designed to supplement other safety practices and/or devices. The machine operator is always the first line of defense when safely operating a vehicle.

The Xtreme PreView® system can detect most objects within the detection zone. However, there are some instances where objects can go undetected. Obstacle size, shape, relative location, and composition are all factors determining if, when and where an object is detected. The system operates by transmitting a pulse of very low power electromagnetic energy. Any energy that strikes an object reflects a certain amount of this energy back to the sensor. If the returned energy is of sufficient magnitude, it is used to indicate object presence and determine the object's distance. While the system can detect multiple objects, only the object closest to the vehicle is reported to the operator display since it represents the most significant collision threat.

The amount of energy returned is based on a few factors:

- **Size** – a larger object usually reflects more energy than a smaller object.
- **Composition** – a metal object typically reflects more energy than a non-metallic object. A metallic object at the edge of the detection zone might be detected, whereas a wood object may not.
- **Scattering** – a solid object reflects more energy than a non-solid object such as tree branches, gravel, bushes, etc.
- **Shape** – complex shapes cause energy to be returned in a very non-uniform way. Very small variations or movement can change detection status.
- **Angle** – an object flat side perpendicular to the sensor will reflect more energy than an object at an angle. See below for an example of how angle can affect return energy.

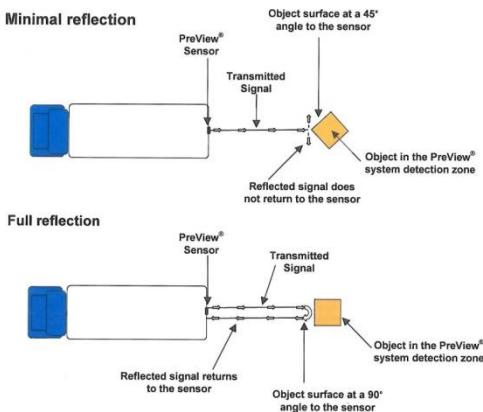


Figure 1. Object Reflection

Installation Instructions

Before you Start

Prior to installing the PreView® Object Detection System take time to familiarize yourself with the installation instructions, theory of operation, and PreView® system components. At a minimum, the following components are required for a system installation:

Sensor (1)

Display Unit (1)

Cab Adapter Cable - XPV41CA (1), Power Adapter Cable - XPV41PA (1), Reverse Adapter Cable - XPV41RA (1) and an Body Harness XPV4165, XPV4132, or XPV4116 (1),

Sensor Mounting Hardware (Included with the sensor)

1 1/2" x 1/4" Bolts, Hex Locking Nuts, and Flat Washers (4 each)

Display Mounting Hardware (Included with the display unit)

Mounting Bracket (1)

#4 Lock Washers (2)

#4-40 Hex Nuts (2)

Sensor Location

The PreView® sensor mounting location is integral to correct operation of the system. In a typical rear mounting application, the sensor should be mounted on the rear center of the vehicle at approximately 36" (1M) above the ground. In most installations, the sensor should be perpendicular to the ground. Select a location that will provide some protection from impact and debris while allowing an unobstructed view of the target hazard area. Prior to permanently attaching the sensor it is a good idea to temporarily affix the sensor, attach the display unit with the body harness and verify the detection pattern shape.

In many instances, the sensor must be mounted higher than the recommended 36" (1M) height. To compensate for this, the sensor can be angled depending on the height required. Mounting any closer to the ground than 24" (0.6M) may cause nuisance alarms due to detection of the ground.

Important!

Before the PreView® system is installed verify the selected mounting location provides a clear detection zone. This can be done by powering up the system with the sensor in the proposed location and verifying that nothing is being detected.

Sensor Mounting

1. Select the appropriate sensor mounting location.
2. The sensor must be mounted with the cable exit on the bottom.
3. Use the sensor's mounting holes as a template, scribe position marks through the holes. Drill 9/32" (7mm) holes centered at the marks.
4. Secure the sensor to the vehicle with the four supplied 1/4-20 UNC bolts, washers and nuts or equivalent. Apply a maximum torque of 50 inch pounds when securing the sensor.

Sensor Electrical Connections

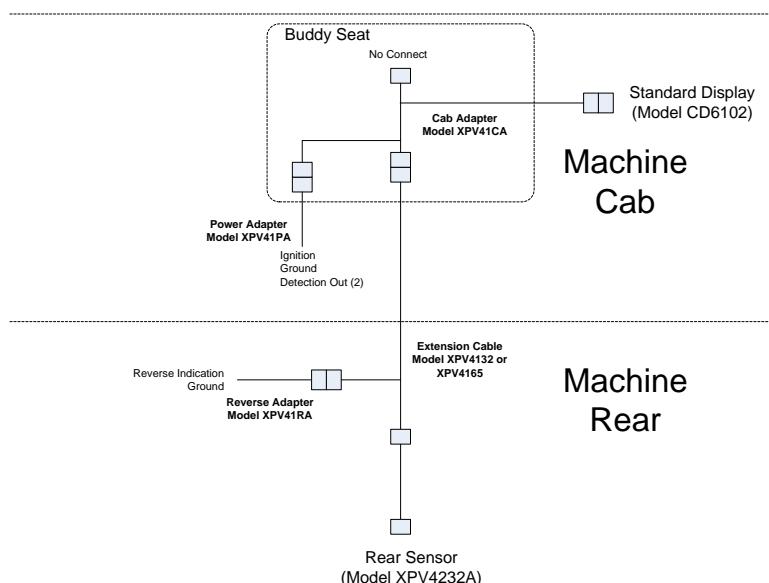
There are two requirements for the PreView® system to operate correctly, DC power between 9 and 33 volts and a reverse signal. Power should be obtained from a switched or keyed source to prevent the battery from discharging when the vehicle is not in operation. A reverse indication is required to activate the display buzzer and LED's when an object is detected. This reverse signal must become active at +9VDC minimum when the reverse gear is engaged.

1. Switched DC power is connected to the system using the Power Adapter Cable (XPV41PA). This power connection is designed to be done in the vehicle's cab. Machine power is connected to the red wire labeled Machine Power/Reverse. A ground connection is obtained from the black wire labeled Machine Ground.

Important!

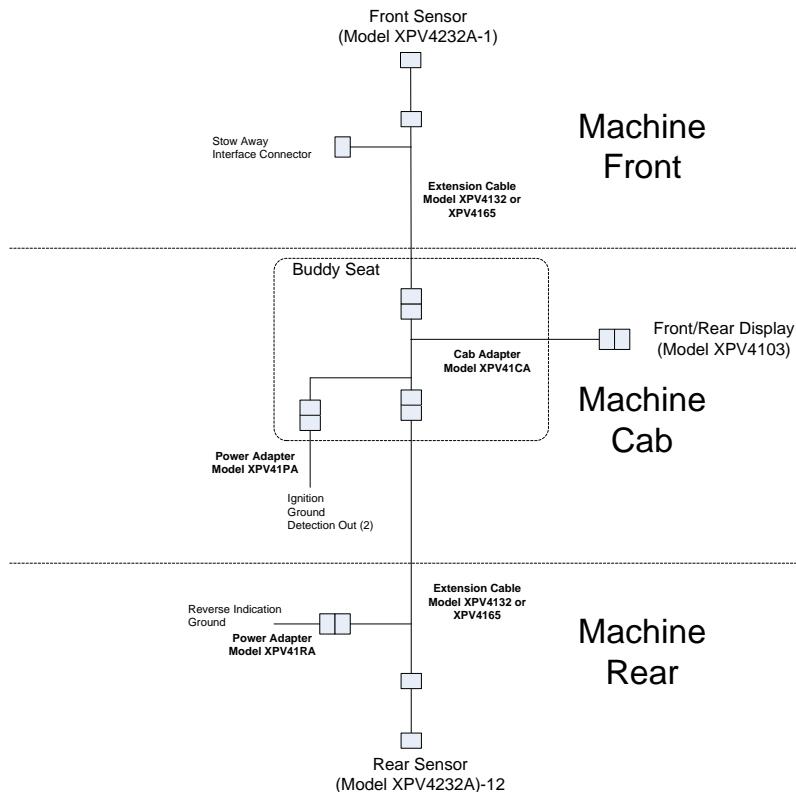
The PreView® system should have two fuses placed in series as an added safety precaution. The easiest method for making the power connection is to use the XPV41PA Power Adapter Cable and connect the red wire (Machine Power/Reverse) to the vehicles fuse box utilizing a 3A fuse. If a vehicle fuse is not available, then the Power Adapter wire should have an additional 3A fuse wired in series. This will double fuse the system for proper safety precautions.

2. The vehicle's reverse connection is obtained at the rear of the vehicle using the Reverse Adapter Cable (XPV41RA) that is connected to the Extension Cable. Reverse is connected to the red wire labeled Machine Power/Reverse.



Typical Single Sensor Installation Wiring Diagram

The Xtreme PreView® system easily allows multiple sensors to be used. The diagram below shows a front and rear sensor system and the required cabling.



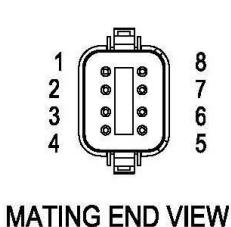
Typical Front/Rear Dual Sensor Installation Wiring Diagram

Contact PRECO Electronics® for information on other system configurations.

Auxiliary Output Electrical Connection

The Power Adapter Cable (XPV41PA) also provides access to the sensor auxiliary output or detection indication. The auxiliary output is active any time a detection is present and provides a high impedance state to ground. This output is protected against an over current condition and can be used to trigger a camera or to activate a backup alarm or light with a maximum current sink of 1 amp. For devices that exceed the 1 amp current limit an intermediary relay must be used. This output is available in the machine cab or at the rear of the vehicle. There are two white wires available, labeled Front Detect and Rear Detect.

All connections to the sensor are accomplished through its integrated adapter cable. For reference, the pin out of the Deutsch connector is shown below.



CONNECTOR PIN OUT	
P1	SIGNAL NAME
1	BATTERY PWR(+)
2	GROUND
3	CAN H
4	CAN L
5	DISPLAY PWR(+)
6	DISPLAY GND
7	ALARM OUT
8	REVERSE IN

Display Unit Installation

The display unit should be mounted where the vehicle operator can easily view it while backing. The PreView® display unit comes equipped with a mounting bracket and hardware. If desired, the display unit can be mounted to the display bracket with the supplied hardware. This bracket can then be mounted in the vehicle cab as desired.

Initial System Power Up and Test

After the sensor and display are installed, wired, and connected, power should be applied to test correct system operation. When the system is operating correctly in an open field with no obstructions, the status LED indicating green will be the only light illuminated. If any of the detection (yellow) LED's are lit, check for any obstruction which may be detected by the sensor. If possible move the sensor so it is not detecting the object(s).

If for some reason the system is malfunctioning, the status LED will turn from green to red, one of the yellow LED's will be illuminated, and the buzzer will emit a short stutter sound. Refer to the Error Indications and Troubleshooting sections following to determine the error and solution.

Once the system has been installed, the detection zone should be tested. Testing is typically accomplished by using two individuals. One individual remains in the vehicle, engages the vehicle brake, and places the vehicle in the appropriate gear. The other individual then walks through the detection zone. The individual in the vehicle then notes where the display activates and communicates this to the person outside. By moving about the vehicle and noting when the display activates, an accurate detection zone can be mapped.

Operator Display Error Indications

Since the Xtreme PreView® system can utilize multiple sensors, an advanced error reporting system is necessary to both alert the operator and assist a technician in troubleshooting any problems. The operator display LED's will provide an error code detailing any sensor or system malfunction. An error is signified by the status LED being red, the buzzer making a short stutter tone, and a single yellow detection LED indicating the detection type.

Standard Ranging and Open Cab Displays

There are three possible error modes that can be indicated. They are:

LED Error Code	Possible Reason
First right LED on	No communication with sensor(s)
2 nd right LED on	Built in Self-Test Error – Contact Factory
Middle LED on	Missing sensor from system (multiple sensors only)

Table 4. Display Error Codes

In the example figure below, the status LED is red and the right most yellow LED is illuminated. From the table above, this indicates the display is not communicating with a sensor. Possible causes may be that sensor does not have power applied or a disconnected cable between the sensor and the display unit. Consult the Troubleshooting section in the manual for other possible causes.



Figure 2. Example Display Error Code

Front/Rear and Left/Right Displays

Due to the limited number of LED's available, the error reporting system for Front/Rear and Left/Right displays is different than the Standard Ranging displays. For Front/Rear displays, either the front or rear LED will flash to indicate a problem has occurred with a front or rear sensor, respectively. For Left/Right displays, either the left or right LED will flash to indicate a problem has occurred with a left or right sensor, respectively.

The error code is indicated by the number of quick LED flashes followed by a short off time. The error code flash sequences for Front/Rear and Left/Right displays are identical to those described in Table 4.

Flashing Sequence	Reason
1 on, 1 off	Built in Self-Test Error – Contact Factory
2 on, 1 off	Built in Self-Test Error – Contact Factory
3 on, 1 off	No communication with sensor(s)
4 on, 1 off	Missing sensor from system (multiple sensors only)

Table 5. F/R and L/R Display Error Codes

PreView® Daily Maintenance

Detach this page and place with daily operator maintenance procedures

Safety Message to Operators of Vehicles with PreView® Systems

1. The PreView® system is intended as an Object Detection System and should not be relied upon as your first line of defense for the safe operation of the vehicle. It should be used in conjunction with established safety programs and procedures to augment the safe operation of the vehicle, ground personnel, and adjacent property. Should the system become inoperative, it could jeopardize the safety or lives of those who depend on the system for safety.
2. Testing and inspection of the system in accordance with these instructions and record of the results should be listed on the daily maintenance report. The units installed on operating vehicles must be tested each day prior to the vehicle's operation. Results of this test must be recorded in the maintenance log.
3. People operating this equipment **MUST** check for proper operation at the beginning of every shift or safety inspection period.
4. People's lives depend on the proper installation of this product in conformance with these instructions. It is necessary to read, understand and follow all instructions shipped with the product.
5. Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.
6. The PreView® Object Detection System is intended for commercial use. Proper installation of a back-up aid requires a good understanding of truck electrical systems and procedures, along with proficiency in the installation.
7. Store these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

Testing and Maintenance

IMPORTANT: A walk around test shall be performed every day to verify proper function of the system and to familiarize the operator with the zone of detection. More frequent inspections should be performed when:

The vehicle is operating in a particularly dirty or harsh environment.

The operator has reason to suspect the system has been damaged.

This test should be performed with two people, one who remains in the cab (the operator), and one who walks through the sensor field to the rear of the vehicle (the assistant).

1. Clean the black sensor surface of any accumulation of dirt, mud, snow, ice, or debris.
2. Visually inspect the attached wiring and cable and verify that they are properly secured, not chafing or dangling free where they could become snagged and damaged. Inspect the radar sensor and operator display module and verify that they are securely attached to the vehicle.
3. Start the vehicle, set the park brakes, and place the vehicle in reverse.
4. Verify the green "POWER" light is illuminated on the in-cab display.
5. The area to the rear of the vehicle should be clear of obstacles for a distance of 8 meters. If the display shows any indicator other than the green light then there are objects to the rear of the vehicle that will interfere with the test. Move the vehicle to a clear area and proceed.

6. The assistant should move to the rear of the vehicle and to the side so that he is in sight of the operator's mirrors. He should begin $\frac{1}{2}$ meter (20") to the rear of the rearmost part of the vehicle. As the assistant walks towards the centerline of the vehicle parallel to the rear, the external backup alarm will activate, signifying the sensor has detected him. Upon hearing the backup alarm the operator should verify that all of the display LED's are lit and the audible alarm is quickly pulsing. Note: If an external backup alarm is not connected, the operator will notice a detection only by the display LED's and buzzer operation and communicate the detection or lack of detection to the assistant as the assistant moves through the area to the rear of the vehicle.
7. The assistant should continue walking through the area at the rear of the vehicle noting the area that detection occurs.
8. Now walk from the center of the rear of the vehicle straight back, away from the vehicle. When the alarm quits sounding the detection limit has been reached.
9. Move halfway back and remain still for a few seconds, the alarm should continue to sound, demonstrating the system's ability to detect a still object.
10. The assistant should walk the complete rear of the vehicle noting the detection edges of the entire coverage area.
11. After the test the assistant needs to communicate to the operator the details on where detection started and stopped to the rear of the vehicle.

For questions, call +1.844.787.2327 toll free in the USA. Call +1.208.323.1000 or send a fax request to +1.208.323.1034 for outside the USA, or submit an online request at www.preco.com/contact-us/. A safety specialist will respond within 24 hours.

Troubleshooting

Display Status LED is not illuminated.

- Verify that DC power (9-33V) is applied to the sensor.
- Verify that the cables between the sensor and display are connected.

Display Status LED is RED.

- Check connection between display and sensor(s).
- Use the PVST4000 Service Tool to further diagnose system

All the display LED's are illuminated when sensor is mounted.

- Verify the sensor is pointing outward from the vehicle in an open area with no obstructions. This may require removing the mounting screws and lifting the sensor out away from the rear of the vehicle. If the display LED's are not active when moved away from the vehicle, but are active when mounted, then the sensor's mounting position will have to be moved.

Sensor is detecting the ground, indicated by a few of the display LED's being lit.

- In an open field, either move the sensor up higher or slightly angle the sensor upward 5 to 10 degrees. The minimum recommended mounting height is 24 inches.

Specifications

SENSOR SPECIFICATIONS (Typical)

Model:	XPV4220A, XPV4226A, and XPV4232A
Transmitter:	Pulsed RF transmitter at 5.8GHz operating under FCC Part 15.249
Connector:	Deutsch DT06-08SA-E008
Sealing:	Electronics sealed from dust and moisture to IP69K
Housing Material:	Polycarbonate radome
Dimensions:	7.56" H x 7.35" W x 2.39" D (19.2cm x 18.7cm x 6.0cm)
Weight:	2.2 lb. (1.0 kg)
Operating Temperature:	-40°F to +185°F (-40°C to +85°C)
Vibration:	25G RMS all three axes
Shock:	25G all three axes
Mounting:	Four 0.328" (8.3mm) diameter holes on 6.50" horizontal centers, and 5.00" vertical centers. Unit is supplied with 1/4-20 screws for mounting purposes. Recommended torque is 50 inch-lbs.

DISPLAY SPECIFICATIONS (Typical)

Model:	CD6102, XPV4103, PV4104 and Open Cab Versions
Housing Material:	Polycarbonate/ABS alloy
Dimensions:	1.00" H x 2.25" W x 2.00" D (2.5cm x 5.7cm x 5.1cm)
Weight:	0.25 lb. (0.11 kg)
Mounting:	User dependent

ELECTRICAL SPECIFICATIONS

Input Voltage:	9-33VDC, over voltage protected to 150V
Input current:	0.2 amp maximum, inrush current limited to 1A
Polarity:	Negative ground, Polarity protected to 150V
Power Connection:	Available through sensor connector
Auxiliary Output:	+150V tolerant, Active State: switched to ground, over current protected to 1 amp sink maximum. Inactive State: high impedance

OPERATING CHARACTERISTICS

Maximum Range:	32 feet (10m)
Programmable Ranges:	10 to 32 feet (3m to 10m)
Warning Ranges:	5 zones divided into programmed range
Minimum Resolution:	1 foot

COMMUNICATION

Physical Layer:	CAN 2.0B, 250 KB/s
Protocol Layer:	SAE J1939 Extended
Data Update Rate:	70 ms

MAINTENANCE

Daily: Follow test and maintenance procedure.

REGULATORY COMPLIANCE

Compliant with FCC Part 15.249 (5725-5875MHz).

FCC ID: OXZPV2000A

E Mark: ECE Reg 10 10R-059262

PRODUCT MANUFACTURED IN THE USA

+1.866.977.7326

www.preco.com

3700045G

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Warranty Information

MANUFACTURER STANDARD LIMITED WARRANTY AND LIMITATION OF LIABILITY

Manufacturer warrants that on the Date of Purchase this Product will conform to Manufacturer's published specifications for the product, which are available from Manufacturer on request, and Manufacturer warrants that the product is free from defects in materials and workmanship. This Limited Warranty for the sensor and display extends for sixty (60) months - from the date of shipment. Manufacturer will, at its option, repair or replace any product found by Manufacturer to be defective and subject to this Limited Warranty.

This Limited Warranty does not apply to parts or products that are misused; abused; modified; damaged by accident, fire or other hazard; improperly installed or operated; or not maintained in accordance with the maintenance procedures set forth in Manufacturer's Installation and Operating Instructions.

To obtain warranty service, you must ship the product(s) to the specified Manufacturer location within thirty (30) days from expiration of the warranty period. To obtain warranty service you must call PRECO Electronics® Customer Service at +1.866.977.7236 or +1.208.323.1000, or fax your request to +1.208.323.1034. Customer Service will issue warranty authorization and further instructions. You must prepay shipping charges and use the original shipping container or equivalent.

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This Limited Warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

Any oral statements or representations about the product which may have been made by salesmen or Manufacturer representatives do not constitute warranties. This Limited Warranty may not be amended, modified or enlarged, except by a written agreement signed by an authorized official of Manufacturer which expressly refers to this Limited Warranty.

PreView® Configuration Options:

PreView® Plus Monitor System – Ultimate safety and object detection system configurable with up to 4 cameras and 24 sensors.

PreView® Safety Alert System – The PreView® radar sensor detects an object in the blind spot. Once the object is detected, PreView® triggers the back-up alarm to either increase the sound of the alarm OR change the beep rate to alert pedestrians outside of the vehicle of the danger.

Custom System Configurations – Thanks to the advanced engineering by the PRECO Electronics® Engineers, the technology behind PreView® sensors can easily integrate or control your vehicles existing or new safety systems.

Proudly developed by



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